



Nallamuthu Gounder Mahalingam College

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An Autonomous Institution, Affiliated to Bharathiar University,
90, Palghat Road, Pollachi -642001, Tamilnadu, INDIA, Coimbatore

3.4.4 : Details of Books/Chapters/Conference Proceedings

Sl. No.	Name of the Teacher	Title of the Book published	Title of the Chapter published	Title of the proceedings of the conference	Name of the conference	National / International	Year and month of publication	ISBN of the Book/Conference Proceeding	Affiliating Institute of the teacher at the time of publication	Name of the Publisher
1	Dr. Indumathy Ramasamy	NA	Bioactive Compounds Derived from Marine Sources for Cancer Therapy and Chemoprevention, Bioactive Compounds from Medicinal Plants for Cancer Therapy and Chemoprevention	NA	NA	International	24-Sep	978-981-5238-55-6	Nallamuthu Gounder Mahalingam College	Bentham Science Publisher
2	Dr. T. Gowrani	NA	Sodium ion conducting biomaterial electrolyte based on Centella Asiatica incorporated with sodium perchlorate for primary sodium ion battery	Book of Abstracts - 18th Asian Conference on Solid state ionics ACSSI-2024	18th Asian Conference on Solid state ionics ACSSI-2024	International	24-Feb	978-93-340-1267-5	Nallamuthu Gounder Mahalingam College	Subramanian-Thangathai Educational Trust
3		NA	Influence of Sodium Molybdate on the inhibition Efficiency of ATMP-Cd ²⁺ System on Mild Steel in Aqueous Environment	Proceedings of International Conference on Computational Nanoscience and Energy Storage Technology	International Conference on Computational Nanoscience	International	Jul-23	978-81-951871-9-5	Nallamuthu Gounder Mahalingam College	Navanila Maruthi Publication



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					and Energy Storage Technology					
4	Dr. M. Selladurai	NA	Synthesis and Characterization Of ZnO Nanoparticles Using Artabotrys Hexapetalus Leaf Extract and its Photo Degradation Of Methylene Blue	Proceedings of International Conference on Computational Nanoscience and Energy Storage Technology	International Conference on Computational Nanoscience and Energy Storage Technology	International	Jul-23	978-81-951871-9-5	Nallamuthu Gounder Mahalingam College	Navanila Maruthi Publication
5	Dr. N. Neelakandewari	NA	Effect of surfactant concentration on the ethanol sensing properties of ZnO Nanostructures at room temperature	Proceedings of International Conference on Computational Nanoscience and Energy Storage Technology	International Conference on Computational Nanoscience and Energy Storage Technology	International	Jul-23	978-81-951871-9-5	Nallamuthu Gounder Mahalingam College	Navanila Maruthi Publication



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6		NA	Photovoltaic Performance of Polyhedral Tin Oxide Nanostructured Dye Sensitized Solar Cell	Proceedings of International Conference on Computational Nanoscience and Energy Storage Technology	International Conference on Computational Nanoscience and Energy Storage Technology	International	Jul-23	978-81-951871-9-5	Nallamuthu Gounder Mahalingam College	Navanila Maruthi Publication
7		NA	Preparation, Characterization and Application of CuO-MgO Nanocomposite for C-C Coupling Reactions	Proceedings of International Conference on Computational Nanoscience and Energy Storage Technology	International Conference on Computational Nanoscience and Energy Storage Technology	International	Jul-23	978-81-951871-9-5	Nallamuthu Gounder Mahalingam College	Navanila Maruthi Publication
8		NA	Enhanced room temperature ethanol sensing properties of In doped MoO ₃ – MoO ₂	Proceedings of International Conference on Recent Advancements in Materials Science and Technology	International Conference on Recent Advancements in Materials Science and Technology	International	24-Jan	978-93-95898-91-1	Nallamuthu Gounder Mahalingam College	Springer



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9		NA	Nanometric evaluation of Nanocrystalline ZrO ₂ Coatings toward BWR application-An AFAM Investigation	Proceedings of International Conference on Recent Advancements in Materials Science and Technology	International Conference on Recent Advancements in Materials Science and Technology	International	24-Jan	978-93-95898-91-1	Nallamuthu Gounder Mahalingam College	Springer
10		NA	Molybdenum Oxide Microrods for Ethanol Vapour Detection at Room Temperature	Proceedings of Two Days National Conference on Advanced Biocompatible Materials and Devices / Systems for Biomedical Applications	National Conference on Advanced Biocompatible Materials and Devices / Systems for Biomedical Applications	National	Aug-23	978-81-961902-6-2	Nallamuthu Gounder Mahalingam College	Sri Ramakrishna Engineering College
11		NA	Influence of Calcination Temperature on the Photovoltaic Properties of TiO ₂ Nanostructures	Proceedings of Two Days National Conference on Advanced Biocompatible Materials and Devices / Systems for Biomedical Applications	National Conference on Advanced Biocompatible Materials and Devices / Systems for Biomedical Applications	National	Aug-23	978-81-961902-6-2	Nallamuthu Gounder Mahalingam College	Sri Ramakrishna Engineering College



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12		NA	Room Temperature Acetone Sensing Ability of Interwoven Mesoporous Zinc Oxide Fibrous Network	Proceedings of Two Days National Conference on Advanced Biocompatible Materials and Devices / Systems for Biomedical Applications	National Conference on Advanced Biocompatible Materials and Devices / Systems for Biomedical Applications	National	Aug-23	978-81-961902-6-2	Nallamuthu Gounder Mahalingam College	Sri Ramakrishna Engineering College
13		NA	Preparation and Characterization of Nickel Aluminate-A Solid Acid Catalyst for Solvent Free Acylation Reaction	Proceedings of Two Days National Conference on Advanced Biocompatible Materials and Devices / Systems for Biomedical Applications	National Conference on Advanced Biocompatible Materials and Devices / Systems for Biomedical Applications	National	Aug-23	978-81-961902-6-2	Nallamuthu Gounder Mahalingam College	Sri Ramakrishna Engineering College
14	Dr.S.Niraimathi	NA	A DEEP NEURAL NETWORK TO CLASSIFY THE SPECIES OF NATURAL VEGETATION BASED ON VEGETATION INDEX	ADVANCES IN MULTIDISCIPLINARY & CURRENT RESEARCH	NA	NA	Sep-23	978-93-5813-019-5	Nallamuthu Gounder Mahalingam College	RK Publishers



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15	Dr.S.Niraimathi	NA	A DATA-DRIVEN METHOD FOR BIPOLAR DISORDER DIAGNOSIS: LEVERAGING MACHINE LEARNING AND DEEP LEARNING	INTERNATIONAL CONFERENCE ON SMART INNOVATIVE TECHNOLOGIES ON DATA ANALYTICS (ICSITDA '23)	INTERNATIONAL CONFERENCE ON SMART INNOVATIVE TECHNOLOGIES ON DATA ANALYTICS (ICSITDA '23)	International	2023	978-93-83191-92-5	Nallamuthu Gounder Mahalingam College	NA
16	Dr.S.Niraimathi	NA	Early Bipolar Disorder Prediction Using Hybrid Neural Networks	International Conference on Innovative Technologies and its Applications	NA	International	NA	978-93-91347-62-8	Nallamuthu Gounder Mahalingam College	NA
17	Dr.S.Niraimathi	NA	A Review on Detection and Prediction of Bipolar Disorder Using Deep Learning	First International Conference on Contemporary Progress in Engineering & Technology	First International Conference on Contemporary Progress in Engineering & Technology	International	NA	NA	Nallamuthu Gounder Mahalingam College	Department of Information Technology, KGISL Institute of Technology, Coimbatore, Tamil Nadu



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18	Dr.B.Azhagusundari	NA	Classification Of Lung Cancer Prediction Using Various Machine Learning Techniques	DLCIS'24 Proceedings of Two Day National Conference on Deep Learning & Computer Interaction for Sustainability	Proceedings of Two Day National Conference on Deep Learning & Computer Interaction for Sustainability (DLCIS'24)	National	Jan-24	978-93-94004-73-3	Nallamuthu Gounder Mahalingam College	NGM College, Pollachi
19	Dr.S.Niraimathi	NA	Bipolar Disease Prediction Using Caswide Resnet Algorithm	DLCIS'24 Proceedings of Two Day National Conference on Deep Learning & Computer Interaction for Sustainability	Proceedings of Two Day National Conference on Deep Learning & Computer Interaction for Sustainability (DLCIS'24)	National	Jan-24	978-93-94004-73-3	Nallamuthu Gounder Mahalingam College	NGM College, Pollachi



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20	Dr.B.Azhagusundari	NA	Gold Market Data Prediction Using Novel Distance Weighted Knn With Feature Extraction	DLCIS'24 Proceedings of Two Day National Conference on Deep Learning & Computer Interaction for Sustainability	Proceedings of Two Day National Conference on Deep Learning & Computer Interaction for Sustainability (DLCIS'24)	National	Jan-24	978-93-94004-73-3	Nallamuthu Gounder Mahalingam College	NGM College, Pollachi
21	Dr.S.Niraimathi	NA	DEEP LEARNING APPROACHES TO CLASSIFY NATURAL VEGETATION SPECIES	DLCIS'24 Proceedings of Two Day National Conference on Deep Learning & Computer Interaction for Sustainability	Proceedings of Two Day National Conference on Deep Learning & Computer Interaction for Sustainability (DLCIS'24)	National	Jan-24	978-93-94004-73-3	Nallamuthu Gounder Mahalingam College	NGM College, Pollachi
22	Dr.P.Archanaa	NA	Technology Start - Ups: Innovation And Growth	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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					For Global Leadership By 2047					
23	Dr.P.Archan aa	NA	Sustainable Business Practices In Startups	SUSTAINABLE DEVELOPMENT S THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	National	2023	978-93-94004-58-0	Nallamuthu Gounder Mahalingam College	Shanlax Publications
24	Dr.P.Archan aa	NA	Role Of Msme In Connecting Rural India	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	National	2023	[978-93-94004-39-9	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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25	Dr.T.Vijaya Chithra	NA	ROLE OF ENTREPRENEURSHIP IN PROMOTING RURAL WOMEN EMPOWERMENT	ICSSR Sponsered Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	ICSSR Sponsered Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications
26	Dr.T.Vijaya Chithra	NA	ICT TOOLS IN TEACHING LEARNING PROCESS	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications
27	Dr.T.Vijaya Chithra	NA	THE ETHICS OF DATA PRIVACY IN DIGITAL MARKETING: CONSUMER PERCEPTIONS AND INDUSTRY PRACTICES	FUSION OF KNOWLEDGE: MULTIDISCIPLINARY PERSPECTIVES IN RESEARCH	FUSION OF KNOWLEDGE: MULTIDISCIPLINARY PERSPECTIVES IN RESEARCH	National	2023	978-93-5879-211-9	Nallamuthu Gounder Mahalingam College	Shanlax Publications
28	Dr.T.Vijaya Chithra	NA	THE ROLE OF DIGITAL TRANSFORMATION IN SUPPLY CHAIN MANAGEMENT	CONFLUENCE OF CURIOSITY: MULTIDISCIPLINARY EXPLORATIONS IN MODERN RESEARCH	CONFLUENCE OF CURIOSITY: MULTIDISCIPLINARY	National	2023	978-93-5879-799-2	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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					EXPLORATIONS IN MODERN RESEARCH					
29	Dr.M.Deepa	NA	ECONOMIC EMPOWERMENT OF WOMEN	Proceedings of the Two days National Seminar on “Necessity to Empower Women in Hi-Tech Horizon: Safety and Well-being” (under the theme of Women@75)	Proceedings of the Two days National Seminar on “Necessity to Empower Women in Hi-Tech Horizon: Safety and Well-being” (under the theme of Women@75)	National	2024	978 – 81 – 969021 – 4 – 8	Nallamuthu Gounder Mahalingam College	Sri Krishna Arts and Science College, Coimbatore – 641008
30	Dr.M.Deepa	NA	Impact of New Education Policy	National Education Policy (NEP 2020) A RoadMap To New Education Era	National Education Policy (NEP 2020) A RoadMap To New Education Era	National	2023	978-81-19295-63-0	Nallamuthu Gounder Mahalingam College	Taran Publication , New Delhi



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31	Dr.M.Deepa	NA	A Study on Awareness Towards Financial Services Provided by the MSME among Entrepreneurs - With Special Reference to Pollachi Taluk	Proceedings - A Two-Day National Conference on Role of Entrepreneurship in the Changing Economic Environment	Proceedings - A Two-Day National Conference on Role of Entrepreneurship in the Changing Economic Environment	National	2023	978-81-967053-7-4	Nallamuthu Gounder Mahalingam College	Department of Commerce, KPRCAS, Coimbatore
32	Dr.M.Deepa	NA	AN OVERVIEW OF WOMEN EMPOWERMENT THROUGH EDUCATION	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications
33	Dr.M.Deepa	NA	Overview on Central Bank and Digital Currency	CONFERENCE PROCEEDINGS ON "ARTIFICIAL INTELLIGENCE IN BANKING AND INSURANCE"	CONFERENCE PROCEEDINGS ON "ARTIFICIAL INTELLIGENCE IN BANKING AND	National	2023	978-93-340-0104-4	Nallamuthu Gounder Mahalingam College	DEPARTMENT OF COMMERCE WITH BANKING AND INSURANCE SRI RAMAKRISHNA



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					INSURANCE"					COLLEGE OF ARTS & SCIENCE (Autonomous)
34	Dr. M. Nirmala	NA	FUNCTIONAL MECHANISM OF CYBER SECURITY IN DIGITAL SAFETY	India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence	India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence	National	2024	978-93-94004-31-3	Nallamuthu Gounder Mahalingam College	Shanlax Publications
35	Dr. M. Nirmala	NA	LEARNING RESPONSIBILITY	Blended Mode of Teaching and Learning for Teachers Community	Blended Mode of Teaching and Learning for Teachers Community	National	2023	978-93-94004-06-1	Nallamuthu Gounder Mahalingam College	Shanlax Publications
36	Dr. M. Shanmuga Priya	NA	DIGITAL INNOVATION IN BUSINESS	India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence	India 2.0: Vision for India 2047 - Digital Ecosystem &	National	2024	978-93-94004-31-3	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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					Harnessing Artificial Intelligence					
37	Dr. Gomathi Devi	NA	ICT TOOLS IN TEACHING LEARNING PROCESS	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications
38	Dr. Gomathi Devi	NA	Women Customer's Opinion Towards Network Security in Online Purchase	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	National	2023	978-93-94004-58-0	Nallamuthu Gounder Mahalingam College	Shanlax Publications
39	Dr. Gomathi Devi	NA	Challenges Faced by Cottage Industry in India	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	National	2023	[978-93-94004-39-9	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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					MENT					
40	Dr. Gomathi Devi	NA	TECHNOLOGICAL REFORMS IN AGRICULTURAL GROWTH	ICSSR Sponsered Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	ICSSR Sponsered Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications
41	Dr. R. Ramya	NA	SIGNIFICANCE OF DIGITAL INNOVATION IN BUSINESS PROCESS	India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence	India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence	National	2024	978-93-94004-31-3	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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42	M. Gayathri	NA	IMPACT OF DIGITAL PUBLIC INFRASTRUCTURE AND OUTLOOK IN INDIA	India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence	India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence	National	2024	978-93-94004-31-3	Nallamuthu Gounder Mahalingam College	Shanlax Publications
43	M. Gayathri	NA	ROLE OF ENTREPRENEURSHIP IN PROMOTING RURAL WOMEN EMPOWERMENT	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications
44	M. Gayathri	NA	ICT TOOLS IN TEACHING LEARNING PROCESS	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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45	Ms. M. Gayathri	NA	ROLE OF MSME IN CONNECTING SOCIETY	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	National	2023	[978-93-94004-39-9	Nallamuthu Gounder Mahalingam College	Shanlax Publications
46	Ms. M. Gayathri	NA	Challenges Faced by Cottage Industry in India	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	National	2023	[978-93-94004-39-9	Nallamuthu Gounder Mahalingam College	Shanlax Publications
47	Dr. T. Mohana Sundari	NA	DIGITAL ECONOMY	India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence	India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing	National	2024	978-93-94004-31-3	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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					Artificial Intelligence					
48	Dr. T. Mohana Sundari	NA	TECHNOLOGY STARTUPS: INNOVATION AND GROWTH	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications
49	Dr. T. Mohana Sundari	NA	INNOVATIVE ICT PEDAGOGIES	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications
50	Dr. T. Mohana Sundari	NA	DIGITAL INDIA AND INDUSTRY 4.0	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	National	2023	978-93-94004-58-0	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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51	Dr. T. Mohana Sundari	NA	ENTREPRENEURSHIP DEVELOPMENT THROUGH MSME	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	National	2023	[978-93-94004-39-9	Nallamuthu Gounder Mahalingam College	Shanlax Publications
52	Dr. T. Mohana Sundari	NA	Investment Banking	CONFERENCE PROCEEDINGS ON "ARTIFICIAL INTELLIGENCE IN BANKING AND INSURANCE"	CONFERENCE PROCEEDINGS ON "ARTIFICIAL INTELLIGENCE IN BANKING AND INSURANCE"	National	2023	978-93-340-0104-4	Nallamuthu Gounder Mahalingam College	DEPARTMENT OF COMMERCE WITH BANKING AND INSURANCE SRI RAMAKRISHNA COLLEGE OF ARTS & SCIENCE (Autonomous)



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53	S. Rajagopalan	NA	APPLICATION OF DIGITAL ECOSYSTEM IN EDUCATIONAL ENVIRONMENT	India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence	India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence	National	2024	978-93-94004-31-3	Nallamuthu Gounder Mahalingam College	Shanlax Publications
54	S. Rajagopalan	NA	Signification of Knowledge Creation and Innovation in Higher Education Institutions	ICSSR Sponsered Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	ICSSR Sponsered Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications
55	S. Rajagopalan	NA	Artificial Intelligence in Education (AIED) and AI as a Distruptive Technologyn in Learning	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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56	S. Rajagopalan	NA	Efforts of Green Financing and Digital India Towards the development of Micro Enterprises in India	SUSTAINABLE DEVELOPMENT S THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	National	2023	978-93-94004-58-0	Nallamuthu Gounder Mahalingam College	Shanlax Publications
57	S. Rajagopalan	NA	Highlights of Entrepreneurial and Start-up Schemes available for Food Production Industries	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	National	2023	[978-93-94004-39-9	Nallamuthu Gounder Mahalingam College	Shanlax Publications
58	Dr. R. Ramya	NA	TEACHERS ROLE IN BLENDED LEARNING ENVIRONMENT	Blended Mode of Teaching and Learning for Teachers Community	Blended Mode of Teaching and Learning for Teachers Community	National	2023	978-93-94004-06-1	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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59	Dr. R. Ramya	NA	SUSTAINABLE BUSINESS PRACTICES IN START-UPS	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	National	2023	978-93-94004-58-0	Nallamuthu Gounder Mahalingam College	Shanlax Publications
60	Dr. R. Ramya	NA	SKILL DEVELOPMENT THROUGH EDUCATION	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	National	2023	[978-93-94004-39-9	Nallamuthu Gounder Mahalingam College	Shanlax Publications
61	R. Subhasangeetha	NA	AWARENESS OF ARTIFICIAL INTELLIGENCE IN EDUCATION	India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence	India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence	National	2024	978-93-94004-31-3	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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62	M.Gayathri	NA	Central Banks Digital Currencies in Future Digital Transformation	National Conference on Innovation & Current Trends in Commerce , Business, Economics & Information Technology	National Conference on Innovation & Current Trends in Commerce , Business, Economics & Information Technology	National	2023	978-93-601-604-8	Nallamuthu Gounder Mahalingam College	KG College of Arts and Science
63	Rajagopalan S	NA	HIGHLIGHTS OF PEOPLE ANALYTICS AND HR PROCESS AUTOMATION	ONE DAY INTERNATIONAL CONFERENCE ON “MODERN MANAGEMENT EQUIPPED WITH TECHNOLOGIES ”	ONE DAY INTERNATIONAL CONFERENCE ON “MODERN MANAGEMENT EQUIPPED WITH TECHNOLOGIES”	International	2023	978-81-952402-7-2	Nallamuthu Gounder Mahalingam College	K.M.G. COLLEGE OF ARTS & SCIENCE, GUDIYATAM



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64	Rajagopalan S	NA	Role of Green Banking in the Green Economy and Sustainable Environment	CONFERENCE PROCEEDINGS ON "ARTIFICIAL INTELLIGENCE IN BANKING AND INSURANCE"	CONFERENCE PROCEEDINGS ON "ARTIFICIAL INTELLIGENCE IN BANKING AND INSURANCE"	National	2023	978-93-340-0104-4	Nallamuthu Gounder Mahalingam College	DEPARTMENT OF COMMERCE WITH BANKING AND INSURANCE SRI RAMAKRISHNA COLLEGE OF ARTS & SCIENCE (Autonomous)
65	Rajagopalan S	NA	CONTRIBUTION OF G-20 TOWARDS THE GROWTH STRATEGIES AND MARKETING PLANS FOR WORLD ECONOMY	G20 AND INDIAN MANAGEMENT PRACTICES	G20 AND INDIAN MANAGEMENT PRACTICES	NA	NA	978-93-90956-40-1	Nallamuthu Gounder Mahalingam College	DK International Research Foundation
66	Dr.P.Archan aa	Research Methodology in Commerce, Business and Economics	NA	NA	NA	NA	NA	978-81-19070-36-7	Nallamuthu Gounder Mahalingam College	Red Shine, Publication



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67	Visalakshi. R	NA	Revolutionizing Commerce: Unveiling the Transformative Power of Artificial Intelligence in Trade	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications
68	Visalakshi. R	NA	Adult Education and Life Long Learning	Impact of New Education Policy (NEP) Among Future Generation	Impact of New Education Policy (NEP) Among Future Generation	National	2023	978-93-9400-26-9	Nallamuthu Gounder Mahalingam College	NA
69	Visalakshi. R	NA	Women Empowerment	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications
70	Visalakshi. R	NA	Vision to Victory; India's Global Leadership by 2047	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives For Global	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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					Leadership By 2047					
71	Dr.R.Malathi Ravindran	NA	A Study on Early Prediction of Lung Cancer Using Machine Learning Techniques	DLCIS'24 Proceedings of Two Day National Conference on Deep Learning & Computer Interaction for Sustainability	Proceedings of Two Day National Conference on Deep Learning & Computer Interaction for Sustainability (DLCIS'24)	National	Jan-24	978-93-94004-73-3	Nallamuthu Gounder Mahalingam College	NGM College, Pollachi
72	Dr.R.Malathi Ravindran	NA	Glimpses of Image Processing	DLCIS'24 Proceedings of Two Day National Conference on Deep Learning & Computer Interaction for Sustainability	Proceedings of Two Day National Conference on Deep Learning & Computer Interaction for Sustainability (DLCIS'24)	National	Jan-24	978-93-94004-73-3	Nallamuthu Gounder Mahalingam College	NGM College, Pollachi



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73	Dr. A. Logamadevi	Muthach Sirukilai	NA	NA	NA	NA	2024	978-93-93866-83-4	Nallamuthu Gounder Mahalingam College	Akani Veliyeedu
74	Dr. A. Logamadevi	Vilakkappatt a kani	NA	NA	NA	NA	2024	978-93-93866-90-5	Nallamuthu Gounder Mahalingam College	Akani Veliyeedu
75	Dr. A. Logamadevi	Antharath tamarai	NA	NA	NA	NA	2024	978-93-93866-86-8	Nallamuthu Gounder Mahalingam College	Akani Veliyeedu
76	Dr. A. Logamadevi	Sake	NA	NA	NA	NA	2023	978-93-95260-08-4	Nallamuthu Gounder Mahalingam College	Vishnupura m pathipagam
77	Dr. A. Logamadevi	CELEBRATING MILLETS LEGACY AND CONTRIBUTION TO AGRICULTURE-CMLCA-2023	NA	NA	NA	National	2023	978-93-6076-841-6	Nallamuthu Gounder Mahalingam College	Raja Rammohun Roy ISBN Agency



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78	Dr. A. Logamadevi	NA	NUTRITIONAL BENEFITS AND BIOACTIVE ATTRIBUTES OF GLUTEN-FREE PSEUDO CEREALS: THEIR ROLE IN MANAGING CELIAC DISEASE	National Seminar on “Celebrating Millets Legacy & Contribution to Agriculture-CMLCA-2023” – ICSSR Sponser	National Seminar on “Celebrating Millets Legacy & Contribution to Agriculture-CMLCA-2023” – ICSSR Sponser	National	2023	978-93-6076-841-6	Nallamuthu Gounder Mahalingam College	
79	Sarvalingam A.	NA	SURVEY OF WEED INFESTATION IN MILLET CULTIVATION FIELD IN VIRUDHUNAGAR DISTRICT	National Seminar on “Celebrating Millets Legacy & Contribution to Agriculture-CMLCA-2023” – ICSSR Sponser	National Seminar on “Celebrating Millets Legacy & Contribution to Agriculture-CMLCA-2023” – ICSSR Sponser	National	2023	978-93-6076-841-6	Nallamuthu Gounder Mahalingam College	
80	Dr. M. Akilanayaki	NA	WOMEN ENTREPRENEURS IN DIGITAL INDIA	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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					For Global Leadership By 2047					
81	Dr. M. Akilanayaki	NA	INSTITUTIONAL REFORM AND TECHNOLOGICAL ADVANCEMENTS IN INDIAN AGRICULTURE DEVELOPMENT	ICSSR Sponsered Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	ICSSR Sponsered Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications
82	Dr. M. Akilanayaki	NA	ROLE OF EDUCATION IN THE EMPOWERMENT OF WOMEN	Impact of New Education Policy (NEP) Among Future Generation	Impact of New Education Policy (NEP) Among Future Generation	National	2023	978-93-9400-26-9	Nallamuthu Gounder Mahalingam College	NA



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83	Dr. M. Akilanayaki	NA	EMPOWERING INDIA'S MSMEs: PATHWAY TO ECONOMIC GROWTH, RESILIENCE, SOCIAL INCLUSION	SUSTAINABLE DEVELOPMENT S THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	National	2023	978-93-94004-58-0	Nallamuthu Gounder Mahalingam College	Shanlax Publications
84	Dr. M. Akilanayaki	NA	THE ROLE OF ATMANIRBHAR BHARAT ABHIYAN IN INDIAN ECONOMY TRANSFORMATION THROUGH INNOVATION	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	National	2023	[978-93-94004-39-9	Nallamuthu Gounder Mahalingam College	Shanlax Publications
85	Dr. M. Akilanayaki	NA	SELF-RELIANT INDIA MISSION- A REVOLUTION IN THE GROWTH OF INDIAN ECONOMY	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	National	2023	[978-93-94004-39-9	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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					C DEVELOPMENT					
86	Dr. P. Gurusamy	NA	THE ROLE OF ATMANIRBHAR BHARAT ABHIYAN IN INDIAN ECONOMY TRANSFORMATION THROUGH INNOVATION	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	National	2023	[978-93-94004-39-9	Nallamuthu Gounder Mahalingam College	Shanlax Publications
87	Dr. P. Gurusamy	NA	TRANSFORMATION OF EDUCATION SECTORS IN INDIA AFTER THE NATIONAL EDUCATIONAL POLICY 2020-AN EMPIRICAL STUDY	Impact of New Education Policy (NEP) Among Future Generation	Impact of New Education Policy (NEP) Among Future Generation	National	2023	978-93-9400-26-9	Nallamuthu Gounder Mahalingam College	NA



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88	Ms. M. Shanmugapriya	NA	EMPOWERMENT OF WOMEN THROUGH SELF HELP GROUPS	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications
89	Ms. M. Shanmugapriya	NA	STUDY OF NEP ISSUES, APPROACHES AND CHALLENGES	Impact of New Education Policy (NEP) Among Future Generation	Impact of New Education Policy (NEP) Among Future Generation	National	2023	978-93-9400-26-9	Nallamuthu Gounder Mahalingam College	NA
90	Ms. M. Shanmugapriya	NA	Skill Development for Indian Youth: Challenges and Opportunities	RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT	ICSSR Sponsored National Seminar on Rural Women Empowerment through Skill Development	National	2023	978-93-5980-468-2	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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91	Ms. M. Shanmugapriya	NA	ROLE OF ICT IN THE PROCESS OF TEACHING AND LEARNING	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications
92	Ms. M. Shanmugapriya	NA	A STUDY ON MOBILE COMMERCE IN INDIA	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	National	2023	978-93-94004-58-0	Nallamuthu Gounder Mahalingam College	Shanlax Publications
93	Ms. M. Shanmugapriya	NA	IMPORTANCE OF COTTAGE INDUSTRIES	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	National	2023	[978-93-94004-39-9	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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94	Ms. V. Poornima	NA	A STUDY ON THE PROGRESS OF PRADHAN MANTRI JEEVAN JYOTI BIMA YOJANA (PMJJBY) FROM 2015 TO 2022	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications
95	Ms. V. Poornima	NA	Skill India Initiative for Atmanirbhar Bharat	RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT	ICSSR Sponsored National Seminar on Rural Women Empowerment through Skill Development	National	2023	978-93-5980-468-2	Nallamuthu Gounder Mahalingam College	Shanlax Publications
96	Ms. V. Poornima	NA	AN INTRODUCTION TO ICT TOOLS	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications
97	Ms. V. Poornima	NA	A STUDY ON THE HISTORY OF EDUCATION POLICIES IN INDIA	Impact of New Education Policy (NEP) Among Future Generation	Impact of New Education Policy (NEP)	National	2023	978-93-9400-26-9	Nallamuthu Gounder Mahalingam College	NA



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					Among Future Generation					
98	Ms. V. Poornima	NA	DIGITAL FINANCIAL INCLUSION IN INDIA: CHALLENGES AND OPPORTUNITIES	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	National	2023	978-93-94004-58-0	Nallamuthu Gounder Mahalingam College	Shanlax Publications
99	Dr. N. Bagyalakshmi	Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047 (Volume I & II)	NA	NA	ICSSR Sponsered Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications
100	Dr.V.Meera	Perspective of ICT Tools in Education	NA	NA	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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101	Dr.T.S.Kavitha	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	NA	NA	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	National	2023	978-93-94004-58-0	Nallamuthu Gounder Mahalingam College	Shanlax Publications
102	Ms. G. Nithya	NA	AGRICULTURAL REFORMS: NEED AND SCOPE	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications
103	Ms. G. Nithya	NA	Women Empowerment: Problems	Rural Women Empowerment through Skill Development	ICSSR Sponsored National Seminar on Rural Women Empowerment through Skill Development	National	2023	978-93-5980-468-2	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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104	Ms. G. Nithya	NA	INDUSTRY 4.0 AND ITS IMPACT ON INDIAN ECONOMY	SUSTAINABLE DEVELOPMENT S THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	National	2023	978-93-94004-58-0	Nallamuthu Gounder Mahalingam College	Shanlax Publications
105	Dr. S. Kaleeswari	NA	The Impact of Women Empowerment Schemes in Tamil Nadu State Transport Corporation Limited (TNSTC), Coimbatore	ICSSR Sponsered Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	ICSSR Sponsered Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications
106	Dr. S. Kaleeswari	NA	A STUDY ON ROLE OF ICT IN EDUCATION	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications
107	Dr. S. Kaleeswari	NA	A Study on the Role of Government Schemes to Uplifting the Education of Girls	Rural Women Empowerment through Skill Development	ICSSR Sponsored National Seminar on Rural Women	National	2023	978-93-5980-468-2	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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					Empowerment through Skill Development					
108	Dr. S. Kaleeswari	NA	ROLE OF MSMEs IN ECONOMIC DEVELOPMENT OF INDIA	SUSTAINABLE DEVELOPMENT S THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	National	2023	978-93-94004-58-0	Nallamuthu Gounder Mahalingam College	Shanlax Publications
109	Dr.Ahila.D	NA	ENHANCING SAFETY AND SECURITY: UPI TRANSACTIONS FOR COLLEGE GIRLS	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications
110	Dr.Ahila.D	NA	Young Women in Entrepreneurship: Exploring UPI as a Business Enabler among College Students	Rural Women Empowerment through Skill Development	ICSSR Sponsored National Seminar on Rural Women Empowerment through Skill	National	2023	978-93-5980-468-2	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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					Development					
111	Dr. V. Meera	NA	Awareness on Capabilities for Women Empowerment	Rural Women Empowerment through Skill Development	ICSSR Sponsored National Seminar on Rural Women Empowerment through Skill Development	National	2023	978-93-5980-468-2	Nallamuthu Gounder Mahalingam College	Shanlax Publications
112	Dr. T.S. Kavitha	NA	THE FOURTH INDUSTRIAL REVOLUTION (I4.0) IN INDIA: CHALLENGES & OPPORTUNITIES	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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113	Dr. T.S. Kavitha	NA	WOMEN EMPOWERMENT THROUGH WOMEN ENTREPRENEURSHIP IN MSME SECTOR	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications
114	Dr. T.S. Kavitha	NA	MICROFINANCE FOR SUSTAINABLE RURAL INDIA: ISSUES AND CHALLENGES	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	National	2023	[978-93-94004-39-9	Nallamuthu Gounder Mahalingam College	Shanlax Publications
115	Dr. T.S. Kavitha	NA	DIGITAL STARTUPS AND WOMEN ENTREPRENEURSHIP: A STUDY ON STATUS OF WOMEN ENTREPRENEURS IN INDIA	Proceedings of the Two days National Seminar on “Necessity to Empower Women in Hi-Tech Horizon: Safety and Well-being” (under the theme of Women@75)	Proceedings of the Two days National Seminar on “Necessity to Empower Women in Hi-Tech Horizon: Safety and Well-being” (under the	National	2024	978 – 81 – 969021 – 4 – 8	Nallamuthu Gounder Mahalingam College	Sri Krishna Arts and Science College, Coimbatore – 641008



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					theme of Women@75)					
116	Jayaprakash R	PERFORMANCE ANALYSIS OF CLASSICAL CNN BASED MODEL VERSUS RF-DCNN CLASSIFIER MODEL	NA	NA	NA	NA	NA	NA	Nallamuthu Gounder Mahalingam College	NA
117	Jayaprakash R	Deep Learning Technology in Healthcare Industry	NA	NA	NA	NA	NA	978-1-304-17075-0	Nallamuthu Gounder Mahalingam College	Lulu.com



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118	Jayaprakash R		OVERVIEW ON NEW EDUCATION POLICY 2020 ON MODERN EDUCATION DIGITAL INNOVATION	Impact of New Education Policy (NEP) Among Future Generation	Impact of New Education Policy (NEP) Among Future Generation	National	2023	978-93-9400-26-9	Nallamuthu Gounder Mahalingam College	NA
119	Dr. B. Indira Priyadharshini	MAPPING THE LIVELIHOOD VULNERABILITIES OF WOMEN INFORMAL WORKERS IN COIMBATORE DISTRICT DURING COVID – 19	NA	NA	NA	National	2023	978-93-6076-389-3	Nallamuthu Gounder Mahalingam College	Shanlax Publications
120	Dr.M.V.Sathiyabama		Challenges and Problems of Women Empowerment	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications
121	Dr.T.Kiruthika		ICT TOOLS IN TEACHING LEARNING	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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			PROCESS						College	
122	Dr.M.V.Sat hiyabama	NA	Challenges and Opportunities of Women Entrepreneurs	Rural Women Empowerment through Skill Development	ICSSR Sponsored National Seminar on Rural Women Empowerment through Skill Development	National	2023	978-93-5980-468-2	Nallamuthu Gounder Mahalingam College	Shanlax Publications
123	Dr.M.V.Sat hiyabama	NA	IMPLEMENTATION OF NEW EDUCATION POLICY ON THE HIGHER EDUCATION AND ITS OPPORTUNITIES	Impact of New Education Policy (NEP) Among Future Generation	Impact of New Education Policy (NEP) Among Future Generation	National	2023	978-93-9400-26-9	Nallamuthu Gounder Mahalingam College	NA
124	Dr. B. Indira Priyadharshini	NA	CHALLENGES AND OPPORTUNITIES OF NEP IN HIGHER EDUCATIONAL INSTITUTION	Impact of New Education Policy (NEP) Among Future Generation	Impact of New Education Policy (NEP) Among Future Generation	National	2023	978-93-9400-26-9	Nallamuthu Gounder Mahalingam College	NA



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125	Dr.M.V.Sat hiyabama	NA	Challenges and Problems of Women Empowerment	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications
126	Dr.T.Kiruthika	NA	ICT TOOLS IN TEACHING LEARNING PROCESS	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications
127	Dr.T.Kiruthika	NA	DIGITAL FINANCIAL INCLUSION IN INDIA - AN OVERVIEW	ICSSR Sponsered Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	ICSSR Sponsered Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications
128	Dr.N.Radha	NA	Ulocking Potential: Harnessing AI for Effective English Language Teaching	Proceedings of National Seminar on English Language Teaching through Artificial Intelligence	Proceedings of National Seminar on English Language Teaching through Artificial Intelligence	National	NA	NA	Nallamuthu Gounder Mahalingam College	NA



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129	J.Malin	NA	Spread of Psychological Pressure in Fitzgerald's the Curious Case of Benjamin Button	Proceedings of National Seminar on English Language Teaching through Artificial Intelligence	Proceedings of National Seminar on English Language Teaching through Artificial Intelligence	National	NA	NA	Nallamuthu Gounder Mahalingam College	NA
130	G.Amutha	NA	Degraded Section of Society in Dattani's Seven Steps Around the Fire	Proceedings of National Seminar on English Language Teaching through Artificial Intelligence	Proceedings of National Seminar on English Language Teaching through Artificial Intelligence	National	NA	NA	Nallamuthu Gounder Mahalingam College	NA
131	P.Mariammal	NA	Emancipation of Women For Attaining Self - Identity and Self Assertion in Anita Nair's Mistress	Proceedings of National Seminar on English Language Teaching through Artificial Intelligence	Proceedings of National Seminar on English Language Teaching through Artificial Intelligence	National	NA	NA	Nallamuthu Gounder Mahalingam College	NA



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132	K.Reshma	NA	Waving Surrealism and Realism in AIMEE Bender's the Particular Sadness of Lemon Cake	Proceedings of National Seminar on English Language Teaching through Artificial Intelligence	Proceedings of National Seminar on English Language Teaching through Artificial Intelligence	National	NA	NA	Nallamuthu Gounder Mahalingam College	NA
133	M.Abinaya	NA	Antagonism of Exile in Jean Rhys's Wide Sargasso Sea	Proceedings of National Seminar on English Language Teaching through Artificial Intelligence	Proceedings of National Seminar on English Language Teaching through Artificial Intelligence	National	NA	NA	Nallamuthu Gounder Mahalingam College	NA
134	Dr.R.Kiruthiga	NA	The impact of AI on English Language Pedagogy: Perspectives from Educators and Learners	Proceedings of National Seminar on English Language Teaching through Artificial Intelligence	Proceedings of National Seminar on English Language Teaching through Artificial Intelligence	National	NA	NA	Nallamuthu Gounder Mahalingam College	NA



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135	A.Velumani	NA	Natural Language Processing in English Language Teaching: Leveraging AI for Improved Understanding and Communication	Proceedings of National Seminar on English Language Teaching through Artificial Intelligence	Proceedings of National Seminar on English Language Teaching through Artificial Intelligence	National	NA	NA	Nallamuthu Gounder Mahalingam College	NA
136	NA	Threads of Thoughts - I (Communication Skills)	NA	NA	NA	NA	NA	NA	Nallamuthu Gounder Mahalingam College	Nallamuthu Gounder Mahalingam College
137	Dr.C.R.Durga Devi	NA	Ensemble Gradient Boosting Classifier for Traffic Aware Big data Analytics	Proceeding of Two Day National Conference on Deep Learning & Computer Interaction for Sustainability (DLCIS'24)	Two Day National Conference on Deep Learning & Computer Interaction for Sustainability (DLCIS'24)	National	Jan-24	978-93-94004-73-3	Nallamuthu Gounder Mahalingam College	NA



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138	Ms.Prabavathi	NA	Wavelet - Poisson Compression: A Novel Approach for Image Coding and Transmission	Proceeding of Two Day National Conference on Deep Learning & Computer Interaction for Sustainability (DLCIS'24)	Two Day National Conference on Deep Learning & Computer Interaction for Sustainability (DLCIS'24)	National	Jan-24	978-93-94004-73-3	Nallamuthu Gounder Mahalingam College	NA
139	Dr. M. Rathamani	NA	ANALYSIS OF HEART DISEASES DATASET USING NEURAL NETWORK APPROACH	NA	NA	NA	NA	NA	Nallamuthu Gounder Mahalingam College	NA
140	Dr.R.Deepa	NA	Transformative Search: Advancing Web Page Re-Ranking With Transformer -Powered Deep Learning Algorithms	DLCIS'24 Proceedings of Two Day National Conference on Deep Learning & Computer Interaction for Sustainability	Proceedings of Two Day National Conference on Deep Learning & Computer Interaction for Sustainability (DLCIS'24)	National	Jan-24	978-93-94004-73-3	Nallamuthu Gounder Mahalingam College	NGM College, Pollachi



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141	Dr. M. Rathamani	NA	EMERGING TECHNOLOGIES FOR TRANSFORMING TEACHING AND LEARNING	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications
142	Dr.M.Sakthi	NA	Security Requirements and Challenges of 6G Technologies and Applications	International Conference on Advanced Computing (ICAC-2023)	International Conference on Advanced Computing (ICAC-2023)	International	2023	NA	Nallamuthu Gounder Mahalingam College	NA
143	Dr.M.Sakthi	Network and Data Communications	NA	NA	NA	NA	NA	9.78936E+12	Nallamuthu Gounder Mahalingam College	CIIT
144	Dr.M.Maheswari	NA	A Study of Solving Decision Making Problem Using Soft Set Theory	DLCIS'24 Proceedings of Two Day National Conference on Deep Learning & Computer Interaction for Sustainability	Proceedings of Two Day National Conference on Deep Learning & Computer Interaction for Sustainability (DLCIS'24)	National	Jan-24	978-93-94004-73-3	Nallamuthu Gounder Mahalingam College	NGM College, Pollachi



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145	Dr.V.Inthumathi	NA	Separation Axioms on Soft Multi Topological Spaces	DLCIS'24 Proceedings of Two Day National Conference on Deep Learning & Computer Interaction for Sustainability	Proceedings of Two Day National Conference on Deep Learning & Computer Interaction for Sustainability (DLCIS'24)	National	Jan-24	978-93-94004-73-3	Nallamuthu Gounder Mahalingam College	NGM College, Pollachi
146	Dr.V.Inthumathi	NA	Hypersoft Semi-Connected Spaces	International Conference on Emerging Trends in Computational Mathematics and Data Science (ICETCMD S -24)	International Conference on Emerging Trends in Computational Mathematics and Data Science (ICETCMD S -24)	International	Jan-24	978-81-966558-08	Nallamuthu Gounder Mahalingam College	Sri Krishna Publications
147	Dr.A.M.Ananda Kumar	NA	Pharmacognostical Evaluation and Phytochemical Profiling of Important Plant Species Zizhyphus Oenoplia l.	Novel Materials of Sustainable Future	Novel Materials of Sustainable Future	NA	NA	978-951871-6-4	Nallamuthu Gounder Mahalingam College	NA



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148	Dr.A.M.Ananda Kumar	NA	Enhancing Learning and Engagement by Integration ICT Tools in Biological Science	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications
149	Dr.D.Sowmiya	NA	Qualitative and Quantitative analysis of the unexplored fern, Thelypteris meeboldii from Southern Western Ghats, Tamil Nadu	Recent Innovations in Health & Biological Sciences (ICRIHBS 2023)	Recent Innovations in Health & Biological Sciences (ICRIHBS 2023)	International	2023	978-93-95105-12-5	Nallamuthu Gounder Mahalingam College	NA
150	Dr.P.Sathiskumar	NA	Texonomic Significance on Morphological and Anatomical Characters of Cardiospermum Halicacabum L. and Cardiospermum Corindum . (Sapindaceae)	Novel Materials of Sustainable Future	Novel Materials of Sustainable Future	NA	NA	978-951871-6-4	Nallamuthu Gounder Mahalingam College	NA
151	Dr.R.Rakki muthu	NA	In vitro Antioxidant Activities of Methanolic Extracts of Henckelia Incana (VAHL) Spreng	Novel Materials for Harnessing Green Hydrogen for Energy and Environment Applications - A Step Forward Towards National Hydrogen Mission	ICSSR Sponsored Two Days National Conference	NA	Mar-23	978-81-951871-5-7	Nallamuthu Gounder Mahalingam College	NA



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152	Dr.R.Rakki muthu	NA	Innovative ICT Pedagogies in Biological Science Education: Transforming Learning Experiences	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications
153	Dr.T.SuryaP raba	NA	AI in the English Language Classroom: Transforming Teaching and Learning Practices	Proceedings of National Seminar on English Language Teaching through Artificial Intelligence	Proceedings of National Seminar on English Language Teaching through Artificial Intelligence	National	NA	NA	Nallamuthu Gounder Mahalingam College	NA
154	Dr.T.SuryaP raba	NA	The Role of Good and Evil in Shakespeare's Macbeth	Revisiting Shakespeares in the Milliennium	Revisiting Shakespeares in the Milliennium	NA	NA	978-81-965809-9-5	Nallamuthu Gounder Mahalingam College	K.S.RANG ASAMY COLLEGE OF ARTS AND SCEICNE (AUTONOMOUS), TIRUCHENGODE, NAMAKKAL (DT).



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Sl. No.	Name of the Teacher	Title of the Book published	Title of the Chapter published	Title of the proceedings of the conference	Name of the conference	National / International	Year and month of publication	ISBN of the Book/Conference Proceeding	Affiliating Institute of the teacher at the time of publication	Name of the Publisher
155	Dr. S. Shanmuga Priya	NA	Preparation and Characterization of Blend Biopolymer Electrolyte Based on Iota Carrageenan and Aloe Vera for Sodium Ion Dr. Battery	18th Asian Conference on Solid State Ionics, 2024	18th Asian Conference on Solid State Ionics, 2024	NA	NA	NA	Nallamuthu Gounder Mahalingam College	NA
156	D.V.EZHIL ARASIGN ANAKUMARI	NA	INFLUENCE OF ELECTROLYTE IN THE ELECTROCHEMICAL PERFORMANCE OF ZTO NANOPARTICLES	PROCEEDINGS OF INTERNATIONAL CONFERENCE ON AND DENERGY COMPUTATIONAL NANOSCIENCE AND ENERGY STORAGE TECHNOLOGY (ICCNST-23)	PROCEEDINGS OF INTERNATIONAL CONFERENCE ON AND DENERGY COMPUTATIONAL NANOSCIENCE AND ENERGY STORAGE TECHNOLOGY (ICCNST-23)	NA	NA	978-81-951871-9-5	Nallamuthu Gounder Mahalingam College	NA



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157	T.E.MANJ ULAVALLI	NA	INFLUENCE OF TRANSITION METAL DOPED BARIUM STANNATE FOR SUPERCAPACITOR APPLICATION	PROCEEDINGS OF INTERNATIONAL CONFERENCE ON AND DNERGY COMPUTATIONAL NANOSCIENCE AND ENERGY STORAGE TECHNOLOGY (ICCNES-23)	PROCEEDINGS OF INTERNATIONAL CONFERENCE ON AND DNERGY COMPUTATIONAL NANOSCIENCE AND ENERGY STORAGE TECHNOLOGY (ICCNES-23)	NA	NA	ISBN: 978-81-951871-9-5	Nallamuthu Gounder Mahalingam College	NA
158	T.E.MANJ ULAVALLI	NA	INVESTIGATION OF PURE AND Cu DOPED ZnCo _{0.4} FOR SUPERCAPACITOR APPLICATION	PROCEEDINGS OF INTERNATIONAL CONFERENCE ON AND DNERGY COMPUTATIONAL NANOSCIENCE AND ENERGY STORAGE TECHNOLOGY (ICCNES-23)	PROCEEDINGS OF INTERNATIONAL CONFERENCE ON AND DNERGY COMPUTATIONAL NANOSCIENCE AND ENERGY STORAGE TECHNOLOGY (ICCNES-23)	NA	NA	978-81-951871-9-5	Nallamuthu Gounder Mahalingam College	NA



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					STORAGE TECHNOLOGY (ICCNЕСТ-23)					
159	T.E.MANJULAVALLI	NA	SYNTHESIS AND CHARACTERIZATION OF PURE AND COBALT DOPED ZINCSTANNATE NANOPARTICLES	PROCEEDINGS OF INTERNATIONAL CONFERENCE ON AND DENERGY COMPUTATIONAL NANOSCIENCE AND ENERGY STORAGE TECHNOLOGY (ICCNЕСТ-23)	PROCEEDINGS OF INTERNATIONAL CONFERENCE ON AND DENERGY COMPUTATIONAL NANOSCIENCE AND ENERGY STORAGE TECHNOLOGY (ICCNЕСТ-23)	NA	NA	978-81-951871-9-5	Nallamuthu Gounder Mahalingam College	NA



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160	M. KARTHIKA	NA	COMPUTATIONAL STUDY ON STRUCTURAL STABILITY OF HYDROGEN BONDED CAFFEINE AND THEOBROMINE	PROCEEDINGS OF INTERNATIONAL CONFERENCE ON AND DENERGY COMPUTATIONAL NANOSCIENCE AND ENERGY STORAGE TECHNOLOGY (ICCNST-23)	PROCEEDINGS OF INTERNATIONAL CONFERENCE ON AND DENERGY COMPUTATIONAL NANOSCIENCE AND ENERGY STORAGE TECHNOLOGY (ICCNST-23)	NA	NA	ISBN: 978-81-951871-9-5	Nallamuthu Gounder Mahalingam College	NA
161	M. KARTHIKA	NA	A THEORETICAL STUDY ON NILOTINIB AND ITS POLYMORPHS IN GAS PHASE AND AQUEOUS MEDIUM	PROCEEDINGS OF INTERNATIONAL CONFERENCE ON AND DENERGY COMPUTATIONAL NANOSCIENCE AND ENERGY STORAGE TECHNOLOGY (ICCNST-23)	PROCEEDINGS OF INTERNATIONAL CONFERENCE ON AND DENERGY COMPUTATIONAL NANOSCIENCE AND ENERGY STORAGE TECHNOLOGY (ICCNST-23)	NA	NA	ISBN: 978-81-951871-9-5	Nallamuthu Gounder Mahalingam College	NA



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					STORAGE TECHNOLOGY (ICCNES-23)					
162	T. DURGA DEVI	NA	SYNTHESIS AND LUMINESCENCE PROPERTIES OF Tm DOPED NaCaP04 AS BLUE EMITTING NANOPHOSPHOR FOR WHITE LED APPLICATIONS	PROCEEDINGS OF INTERNATIONAL CONFERENCE ON AND DNERGY COMPUTATIONAL NANOSCIENCE AND ENERGY STORAGE TECHNOLOGY (ICCNES-23)	PROCEEDINGS OF INTERNATIONAL CONFERENCE ON AND DNERGY COMPUTATIONAL NANOSCIENCE AND ENERGY STORAGE TECHNOLOGY (ICCNES-23)	NA	NA	ISBN: 978-81-951871-9-5	Nallamuthu Gounder Mahalingam College	NA



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163	T. PONRAJ	NA	SYNTHESIS AND CHARACTERIZATION OF BARE AND IRON DOPED COBALT MAGNETITE NANO PARTICLES	PROCEEDINGS OF INTERNATIONAL CONFERENCE ON AND DENERGY COMPUTATIONAL NANOSCIENCE AND ENERGY STORAGE TECHNOLOGY (ICCNES-23)	PROCEEDINGS OF INTERNATIONAL CONFERENCE ON AND DENERGY COMPUTATIONAL NANOSCIENCE AND ENERGY STORAGE TECHNOLOGY (ICCNES-23)	NA	NA	ISBN: 978-81-951871-9-5	Nallamuthu Gounder Mahalingam College	NA
164	K.SOMASUNDARAM	NA	EFFECT OF CALCINATION TEMPERATURE ON THE STRUCTURAL AND MAGNETIC STUDIES OF IRON OXIDE (Fe ₂ O ₃) NANOPOWDER	PROCEEDINGS OF INTERNATIONAL CONFERENCE ON AND DENERGY COMPUTATIONAL NANOSCIENCE AND ENERGY STORAGE TECHNOLOGY (ICCNES-23)	PROCEEDINGS OF INTERNATIONAL CONFERENCE ON AND DENERGY COMPUTATIONAL NANOSCIENCE AND ENERGY STORAGE TECHNOLOGY (ICCNES-23)	NA	NA	978-81-951871-9-5	Nallamuthu Gounder Mahalingam College	NA



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					STORAGE TECHNOLOGY (ICCNЕСТ-23)					
165	V. SARAVANAN	NA	SYNTHESIS, CHARACTERIZATION OF IRON DOPED NICKEL SULPHIDE FOR SUPERCAPACITOR APPLICATIONS	PROCEEDINGS OF INTERNATIONAL CONFERENCE ON AND ENERGY COMPUTATIONAL NANOSCIENCE AND ENERGY STORAGE TECHNOLOGY (ICCNЕСТ-23)	PROCEEDINGS OF INTERNATIONAL CONFERENCE ON AND ENERGY COMPUTATIONAL NANOSCIENCE AND ENERGY STORAGE TECHNOLOGY (ICCNЕСТ-23)	NA	NA	978-81-951871-9-5	Nallamuthu Gounder Mahalingam College	NA



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166	Dr.T.Geethanjali	Sangailakkiyathiriviyal Sinthanaikal	NA	NA	NA	National	Feb, 2024	978-93-92662-84-3	Nallamuthu Gounder Mahalingam College	Salem Mahilam Tamil Sangam
167	Dr.N.Jayasudha	NA	Naanmanikadikail Thanimanitha Aram	Thamizharuvi	NA	National	Dec, 2023	978-81-2344-576-2	Nallamuthu Gounder Mahalingam College	New Century Book House Pvt., Ltd
168	Dr.N.Jayasudha	NA	Naattupura Makkalin Nambikkaikal	Thamizh Cholai	NA	National	Dec, 2023	978-81-2344-577-9	Nallamuthu Gounder Mahalingam College	New Century Book House Pvt., Ltd
169	Dr.A.Mehabubu	Thamizh Cholai	NA	NA	NA	National	Dec, 2023	978-81-2344-577-9	Nallamuthu Gounder Mahalingam College	New Century Book House Pvt., Ltd
170	Dr.R.Manikandan	NA	Women Empowrment in India and Its Important	ICSSR Sponsored National Seminar on Women Empowerment through Financial Inclusion	Women Empowerment through Financial Inclusion	National	Feb,2023	978-93-5811-136-1	Nallamuthu Gounder Mahalingam College	Shanlax Publications
171	Dr. M. Chithirai Selvan	NA	DIGITAL INITIATIVES OF GOVERNMENT OF INDIA	Impact of Digital Learning in Education Sector : A Pandemic Perspective	Impact of Digital Learning in Education Sector : A	National	2023	978-93-94004-08-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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					Pandemic Perspective					
172	Dr. M. Chithirai Selvan	NA	REFORM, PERFORM AND TRANSFORM: A MANTRA FOR GOOD GOVERNANCE	National Level Seminar On India Means Business – Reform Perform & Transform	India Means Business – Reform Perform & Transform	National	Jan,2023	978-93-5780-330-4	Nallamuthu Gounder Mahalingam College	DEPARTMENT OF COMMERCE – BPS & RM SRI RAMAKRISHNA COLLEGE OF ARTS SCIENCE OF ARTS & SCIENCE (Autonomous)
173	Dr. M. Chithirai Selvan	NA	TRAVEL AND TOURISM INDUSTRY'S IMPACT ON INDIA'S ECONOMIC DEVELOPMENT	National Level Seminar On India Means Business – Reform Perform & Transform	India Means Business – Reform Perform & Transform	National	Jan,2023	978-93-5780-330-4	Nallamuthu Gounder Mahalingam College	DEPARTMENT OF COMMERCE – BPS & RM SRI RAMAKRISHNA COLLEGE OF ARTS SCIENCE OF ARTS



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										& SCIENCE (Autonomous)
174	Dr. S. Shanmugapriya	NA	Impact of NEP 2020 Among School and College Students	Impact Of New Education Policy Among Future Generation	Impact Of New Education Policy Among Future Generation	National	2023	978-93-94004-25-2	Nallamuthu Gounder Mahalingam College	Shanlax Publications
175	Dr. S. Shanmugapriya	NA	Women Entrepreneurship: Issues and Challenges	RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT	ICSSR Sponsored National Seminar on Rural Women Empowerment through Skill Development	National	2023	978-93-5980-468-2	Nallamuthu Gounder Mahalingam College	Shanlax Publications
176	Dr. S. Shanmugapriya	NA	A Study about Women's Empowerment in India	RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT	ICSSR Sponsored National Seminar on Rural Women Empowerment	National	2023	978-93-5980-468-2	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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					nt through Skill Development					
177	Dr. M. Chithirai Selvan	NA	UNLEASHING CREATIVE POTENTIAL: RECONNOITERING THE POWER OF BRAINSTORMING IN EDUCATION AND RESEARCH	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications
178	Dr. R. Manikandan	NA	EXPERIANTIAL LEARNING AND SKILL DEVELOPMENT IN NATIONAL EDUCATIONAL POLICY 2020	ICSSR Sponsered Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	ICSSR Sponsered Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications
179	Dr. R. Manikandan	NA	Impact of ICTin our Daily Lives	Implementation of ICT Skills for the Students of their Employment in Skill Based Jobs	Implementat ion of ICT Skills for the Students of their	National	2022	978-93-95422-15-8	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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					Employment in Skill Based Jobs					
180	Dr. M. Chithirai Selvan	Emotional Intelligence of Physical Education Teachers	NA	NA	NA	National	August,2022	978-93-5427-984-3	Nallamuthu Gounder Mahalingam College	BLUEROS E PUBLISHERS
181	Dr.S.Selvakumar	NA	Miguthium Peasappadatha Kongunattu Suthanthiraporatta Verarkal	One day National Level Seminar on Unsung Freedom Fighters of Kingu Regin	One day National Level Seminar on Unsung Freedom Fighters of Kingu Regin	National	March,2024	978-93-6163-874-9	Nallamuthu Gounder Mahalingam College	Shanlax Publications
182	Dr.D.Padma	NA	Rural Advancement Through Smart Information Technology Strategies	National Conference on Innovation & Current Trends in Commerce , Business, Economics & Information Technology	National Conference on Innovation & Current Trends in Commerce , Business, Economics & Information Technology	National	NA	978-93-601-604-8	Nallamuthu Gounder Mahalingam College	KG College of Arts and Science



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183	Dr.R. Nandhakumar	NA	A New Approach on E-Learning System using Web Mining Approach	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023-2024	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications, Madurai, Tamil Nadu, India.
184	Dr.R. Nandhakumar	NA	ICT Apparatuses for creativity in Teaching Learning Process	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023-2024	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications, Madurai, Tamil Nadu, India.
185	M. Dhavapriya	NA	Impact of ICT Tools in Enhancement of Teaching and learning in rural Areas using Virtual Reality	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023-2024	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications, Madurai, Tamil Nadu, India.
186	Dr. S. Sharmila	NA	Significance of ICT Tools and their Application in Teaching Learning Process	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023-2024	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications, Madurai, Tamil Nadu, India.
187	M. Meenakrithika	NA	Teaching and Learning with ICT Tools: Issues and Challenges from Teachers Perceptions	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023-2024	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications, Madurai, Tamil Nadu, India.



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188	N. Arulkumar	NA	The Significance of ICT in Higher Education to Enhance Teaching and Learning Process	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023-2024	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications, Madurai, Tamil Nadu, India.
189	P. Jayapriya	NA	Empowering Women: Basic right for being an Individual	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023-2024	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications, Madurai, Tamil Nadu, India.
190	M.Marimuthu	NA	Teaching and Learning with ICT Tools: Issues and Challenges from Teachers Perceptions	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023-2024	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications, Madurai, Tamil Nadu, India.
191	R.Shiddharthy	Advanced Networking: VANET Cluster Based Broadcasting Protocol with Selective Reliable Communication in VANET	NA	NA	NA	NA	2023-2024	978-620-7-45895-0	Nallamuthu Gounder Mahalingam College	LAP LAMBERT Academic Publishing



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192	Dr. P.Jayapriya	Deep Learning with Neural Networks :A Practitioner's guide	NA	NA	NA	NA	2023-2024	978-620-7-47189-8	Nallamuthu Gounder Mahalingam College	LAP LAMBERT Academic Publishing
193	M. Dhavapriya & Dr. R. Nandhakumar	NA	Wearable based IOT System for Elderly Fall Detection and Prevention	Advanced Computational Intelligence & Disruptive Technologies	ADVANCED COMPUTATIONAL INTELLIGENCE & DISRUPTIVE TECHNOLOGIES- Empowering the Future	National	2023-2024	978-81-970893-6-7	Nallamuthu Gounder Mahalingam College	PSG College of Arts and Science, Coimbatore
194	Dr. S.Sharmila	NA	Towards Sustainable IOT: A Comprehensive review on Data Mining for Energy Efficiency		ADVANCED COMPUTATIONAL INTELLIGENCE & DISRUPTIVE TECHNOLOGIES- Empowering the Future	National	2023-2024	978-81-970893-6-7	Nallamuthu Gounder Mahalingam College	PSG College of Arts and Science, Coimbatore



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195	Dr. R. Nandhakumar and N. Arulkumar	NA	Denclue Algorithm for Clustering HD Data	DEEP LEARNING & COMPUTER INTERACTION FOR SUSTAINABILITY	DEEP LEARNING & COMPUTER INTERACTION FOR SUSTAINABILITY	National	2023-2024	978-93-94004-73-3	Nallamuthu Gounder Mahalingam College	NGM College, Pollachi.
196	Dr. R. Nandhakumar	NA	Brain Tumor Detection based on Machine Learning Algorithms using MRI Image	DEEP LEARNING & COMPUTER INTERACTION FOR SUSTAINABILITY	DEEP LEARNING & COMPUTER INTERACTION FOR SUSTAINABILITY	National	2023-2024	978-93-94004-73-3	Nallamuthu Gounder Mahalingam College	NGM College, Pollachi.
197	M.Dhavapriya	NA	Exploring hybrid models for Anomaly Detection in Cyber Security using Data Mining and Deep Learning Techniques	DEEP LEARNING & COMPUTER INTERACTION FOR SUSTAINABILITY	DEEP LEARNING & COMPUTER INTERACTION FOR SUSTAINABILITY	National	2023-2024	978-93-94004-73-3	Nallamuthu Gounder Mahalingam College	NGM College, Pollachi.



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198	Dr. S.Sharmila	NA	Exploring sustainable urban features: A Study on Energ- Efficient Smart Cities through G-IOT Technology	DEEP LEARNING & COMPUTER INTERACTION FOR SUSTAINABILITY	DEEP LEARNING & COMPUTER INTERACTION FOR SUSTAINABILITY	National	2023-2024	978-93-94004-73-3	Nallamuthu Gounder Mahalingam College	NGM College, Pollachi.
199	M.Meenakrithika	NA	An Analysis of Machine Learning Techniques in Malware Investigations Procedure and Tools: Comparative Assessment	DEEP LEARNING & COMPUTER INTERACTION FOR SUSTAINABILITY	DEEP LEARNING & COMPUTER INTERACTION FOR SUSTAINABILITY	National	2023-2024	978-93-94004-73-3	Nallamuthu Gounder Mahalingam College	NGM College, Pollachi.
200	P. Jayapriya	NA	A Gated Recurrent Units (GRU) - Based Model for early detection of plant diseases through Convolution Neural Network	DEEP LEARNING & COMPUTER INTERACTION FOR SUSTAINABILITY	DEEP LEARNING & COMPUTER INTERACTION FOR SUSTAINABILITY	National	2023-2024	978-93-94004-73-3	Nallamuthu Gounder Mahalingam College	NGM College, Pollachi.



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201	G. Angayarkanni	NA	Big Data Analytics for Heart Disease Prediction using Spark: A Model Development and Comparison Study	DEEP LEARNING & COMPUTER INTERACTION FOR SUSTAINABILITY	DEEP LEARNING & COMPUTER INTERACTION FOR SUSTAINABILITY	National	2023-2024	978-93-94004-73-3	Nallamuthu Gounder Mahalingam College	NGM College, Pollachi.
202	M.Marimuthu	NA	Iot Security Enhancement using Deep Learning Techniques	DEEP LEARNING & COMPUTER INTERACTION FOR SUSTAINABILITY	DEEP LEARNING & COMPUTER INTERACTION FOR SUSTAINABILITY	National	2023-2024	978-93-94004-73-3	Nallamuthu Gounder Mahalingam College	NGM College, Pollachi.
203	Dr.G. Akilandeswari	Vision for Vishwa Guru India : Initiatives for Global Leadership by 2047	Ease of Doing Business	ICSSR Sponsored National Seminar on "Vision for Vishwa Guru India : Initiatives for Global Leadership by 2047"	ICSSR sponsored One Day National Seminar on "Vision for Vishwa Guru India: Initiatives for Global Leadership by 2047", under the	National	July, 2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications,



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					Celebration of "Azadi Ka Amrit Mahotsav".					
204		Perspective of ICT Tools in Education	Role of ICT in Professional Development of Teachers	ICSSR Sponsored One Day National Seminar on "Perspective of ICT Tools in Education"	ICSSR Sponsored One Day National Seminar on "Perspective of ICT Tools in Education"	National	August, 2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax publications
205		Sustainable Developments through MSME's: A Pathway to Self-Reliant India	Financial Inclusion For MSMEs	ICSSR Sponsored One Day National Seminar on "Sustainable Developments through MSME's: A Pathway to Self-Reliant India"	ICSSR Sponsored One Day National Seminar on "Sustainable Developments through MSME's: A Pathway to Self-Reliant India"	National	October, 2023	978-93-94004-75-7	Nallamuthu Gounder Mahalingam College	Shanlax publications



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Sl. No.	Name of the Teacher	Title of the Book published	Title of the Chapter published	Title of the proceedings of the conference	Name of the conference	National / International	Year and month of publication	ISBN of the Book/Conference Proceeding	Affiliating Institute of the teacher at the time of publication	Name of the Publisher
206		G20 TECHNOLOGICAL TRANSFORMATION & DIGITAL PUBLIC INFRASTRUCTURE	G20 AND ITS IMPACT IN THE INDIAN ECONOMY	G20 TECHNOLOGICAL TRANSFORMATION & DIGITAL PUBLIC INFRASTRUCTURE	G20 TECHNOLOGICAL TRANSFORMATION & DIGITAL PUBLIC INFRASTRUCTURE	International	December, 2023	978-93-90956-87-6	Nallamuthu Gounder Mahalingam College	DK International Research Foundation



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207		Recent Advancements in Environment, Agriculture and Climatic Change, Economics, Business, Accounting, Management and Entrepreneurship, Science and Technology, Pharmacy and Health Humanities and Social Sciences	Challenges of Green Marketing	Recent Advancements in Environment, Agriculture and Climatic Change, Economics, Business, Accounting, Management and Entrepreneurship, Science and Technology, Pharmacy and Health Humanities and Social Sciences	Recent Advancements in Environment, Agriculture and Climatic Change, Economics, Business, Accounting, Management and Entrepreneurship, Science and Technology, Pharmacy and Health Humanities and Social Sciences	International	April, 2024	978-81-971359-8-9	Nallamuthu Gounder Mahalingam College	Fern International Publication Pune
208		NAVIGATING METAVERS E IN SHAPING THE FUTURE OF BUSINESS	An overview of Green Marketing	International Conference on "NAVIGATING METAVERS E IN SHAPING THE FUTURE OF BUSINESS"	International Conference on "NAVIGATING METAVERS E IN SHAPING THE FUTURE OF BUSINESS"	International	May, 2024	978-93-340-6879	Nallamuthu Gounder Mahalingam College	



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Sl. No.	Name of the Teacher	Title of the Book published	Title of the Chapter published	Title of the proceedings of the conference	Name of the conference	National / International	Year and month of publication	ISBN of the Book/Conference Proceeding	Affiliating Institute of the teacher at the time of publication	Name of the Publisher
					OF BUSINESS"					
209	Dr.R. Amsaveni	Vision for Vshwa Guru india:Initiatives for Global Leadership by 2047	Women Entrepreneurs Shaping the Future of India	ICSSR Sponsored National Seminar on "Vision for Vishwa Guru India : Initiatives for Global Leadership by 2047"	ICSSR sponsored One Day National Seminar on "Vision for Vishwa Guru India: Initiatives for Global Leadership by 2047", under the Celebration of "Azadi Ka Amrit Mahotsav".	National	July, 2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications,
210		Perspective of ICT Tools in Education	A STUDY ON ROLE OF ICT IN EDUCATION	ICSSR Sponsored One Day National Seminar on "Perspective of ICT Tools in	ICSSR Sponsored One Day National Seminar on	National	August, 2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax publications



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				Education"	"Perspective of ICT Tools in Education"					
211		G20 TECHNOLOGICAL TRANSFORMATION & DIGITAL PUBLIC INFRASTRUCTURE	INTRODUCTION TO G20	G20 TECHNOLOGICAL TRANSFORMATION & DIGITAL PUBLIC INFRASTRUCTURE	G20 TECHNOLOGICAL TRANSFORMATION & DIGITAL PUBLIC INFRASTRUCTURE	International	December, 2023	978-93-90956-87-6	Nallamuthu Gounder Mahalingam College	DK International Research Foundation
212		INDIA 2.0: VISION FOR INDIA 2047 - DIGITAL ECOSYSTEM & HARNESSING ARTIFICIAL INTELLIGENCE	IMPACT OF DIGITAL INDIA ON INDIAN ECONOMY	ONE DAY NATIONAL SEMINAR ON"INDIA 2.0: VISION FOR INDIA 2047- DIGITAL ECOSYSTEM & HARNESSING" ARTIFICIAL INTELLIGENCE	ONE DAY NATIONAL SEMINAR ON"INDIA 2.0: VISION FOR INDIA 2047- DIGITAL ECOSYSTEM & HARNESSING" ARTIFICIAL INTELLIGENCE	National	January, 2024	978-93-94004-60-3	Nallamuthu Gounder Mahalingam College	Shanlax publications



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213		INDIA 2.0: VISION FOR INDIA 2047 - DIGITAL ECOSYSTEM & HARNESSING ARTIFICIAL INTELLIGENCE	IMPACT ARTIFICIAL INTELLIGENCE (AI) IN EDUCATION	ONE DAY NATIONAL SEMINAR ON "INDIA 2.0: VISION FOR INDIA 2047- DIGITAL ECOSYSTEM & HARNESSING" ARTIFICIAL INTELLIGENCE	ONE DAY NATIONAL SEMINAR ON "INDIA 2.0: VISION FOR INDIA 2047- DIGITAL ECOSYSTEM & HARNESSING" ARTIFICIAL INTELLIGENCE	National	January, 2024	978-93-94004-60-3	Nallamuthu Gounder Mahalingam College	Shanlax publications
214	Dr.S. Kokilavizhi	Vision for Vishwa Guru India : Initiatives for Global Leadership by 2047	Digital India: Transforming India Through Technology And Connectivity	ICSSR Sponsored National Seminar on "Vision for Vishwa Guru India : Initiatives for Global Leadership by 2047"	ICSSR sponsored One Day National Seminar on "Vision for Vishwa Guru India: Initiatives for Global Leadership by 2047", under the Celebration of "Azadi	National	July, 2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax publications



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					Ka Amrit Mahotsav".					
215		Perspective of ICT Tools in Education	Ict For Professional Development	ICSSR Sponsored One Day National Seminar on "Perspective of ICT Tools in Education"	ICSSR Sponsored One Day National Seminar on "Perspective of ICT Tools in Education"	National	August, 2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax publications
216		Impact of new Education Policy Among Future Generation	Women Empowerment Through National Educationpolicy	ICSSR Sponsored One Day National Seminar on "Impact Ofnew Education Policy Among Future Generation"	ICSSR Sponsored One Day National Seminar on "Impact Ofnew Education Policy Among Future Generation"	National	August, 2023	978-93-94004-26-9	Nallamuthu Gounder Mahalingam College	Shanlax publications



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217		Rural Women Empowerment through Skill Development	CHALLENGES AND NEEDS FOR WOMEN ENTREPRENEURS IN INDIA	ICSSR Sponsored National Seminar on "Rural Women Empowerment Through Skill Development"	ICSSR sponsored One Day National Seminar on "Rural Women Empowerment Through Skill Development" under the Celebration of "Azadi Ka	National	August, 2023	978-93-5980-468-2	Nallamuthu Gounder Mahalingam College	Shanlax publications
218		Sustainable Developments through MSME's: A Pathway to Self-Reliant India	Role Of Msme In Economic Self Reliance	ICSSR Sponsored One Day National Seminar on "Sustainable Developments through MSME's: A Pathway to Self-Reliant India"	ICSSR Sponsored One Day National Seminar on "Sustainable Developments through MSME's: A Pathway to Self-Reliant India"	National	October, 2023	978-93-94004-75-7	Nallamuthu Gounder Mahalingam College	Shanlax publications



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219		Envisioning a Self-Reliant Rural India for Sustainable Economic Development	Skill Development Through Education	ICSSR Sponsored One Day National Seminar on "Envisioning a Self-Reliant Rural India for Sustainable Economic Development"	ICSSR Sponsored One Day National Seminar on "Envisioning a Self-Reliant Rural India for Sustainable Economic Development"	National	October, 2023	978-93-94004-39-9	Nallamuthu Gounder Mahalingam College	Shanlax Publications,
220		G20 and Indian Management Practices"	IMPACT OF G20 IN AGRICULTURAL FINANCE	International Conference on "G20 and Indian Management Practices"	International Conference on "G20 and Indian Management Practices"	International	December, 2023	978-93-90956-87-6	Nallamuthu Gounder Mahalingam College	DK International Research Foundation
221		INDIA 2.0: VISION FOR INDIA 2047 - DIGITAL ECOSYSTEM & HARNESSING ARTIFICIAL	IMPACT OF THE DIGITAL ECONOMY ON THE DEVELOPMENT OF ECONOMIC SYSTEMS	ONE DAY NATIONAL SEMINAR ON "INDIA 2.0: VISION FOR INDIA 2047- DIGITAL ECOSYSTEM & HARNESSING" ARTIFICIAL INTELLIGENCE	ONE DAY NATIONAL SEMINAR ON "INDIA 2.0: VISION FOR INDIA 2047- DIGITAL ECOSYSTEM & HARNESSING"	National	January, 2024	978-93-94004-60-3	Nallamuthu Gounder Mahalingam College	Shanlax publications



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		INTELLIGENCE			NG" ARTIFICIAL INTELLIGENCE					
222	Dr.E.Renuga	Rural Women Empowerment through Skill Development	SKILL DEVELOPMENT SCHEMES AND ITS IMPACT	ICSSR Sponsored National Seminar on "Rural Women Empowerment Through Skill Development"	ICSSR sponsored One Day National Seminar on "Rural Women Empowerment Through Skill Development" under the Celebration of "Azadi Ka	National	August, 2023	978-93-5980-468-2	Nallamuthu Gounder Mahalingam College	Shanlax publications
223		G20 and Indian Management Practices"	G20 and Marketing	International Conference on "G20 and Indian Management Practices"	International Conference on "G20 and Indian Management Practices"	International	December, 2023	978-93-90956-87-6	Nallamuthu Gounder Mahalingam College	DK International Research Foundation



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224		International E-Conference On Recent Advancements in Environment , Agriculture & Climatic Change, Economics, Business, Accounting, Management & Entrepreneurship, Science & Technology, Pharmacy & Health Humanities & Social Sciences (RERSVEBS MESTPHS-2024)	Consumer Behaviour and Fast-Moving Consumer Goods (FMCG).	International E-Conference On Recent Advancements in Environment , Agriculture & Climatic Change, Economics, Business, Accounting, Management & Entrepreneurship, Science & Technology, Pharmacy & Health Humanities & Social Sciences (RERSVEBSMES TPHS-2024)	International E-Conference On Recent Advancements in Environment , Agriculture & Climatic Change, Economics, Business, Accounting, Management & Entrepreneurship, Science & Technology, Pharmacy & Health Humanities & Social Sciences (RERSVEB SMESTPHS-2024)	International	April, 2024	978-81-971359-8-9	Nallamuthu Gounder Mahalingam College	Fern International Publication Pune



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225		International Conference on “ Navigating metaverse in shaping the future of business	An Overview of FMCG in India	International Conference on “ Navigating metaverse in shaping the future of business	International Conference on “ Navigating metaverse in shaping the future of business	International	May, 2024	978-93-340-6879	Nallamuthu Gounder Mahalingam College	
226	Mr. M. Prem	Rural Women Empowerment Through Skill Development	Role of Youth Empowerment in Rural Development	ICSSR Sponsored National Seminar on "Rural Women Empowerment Through Skill Development"	ICSSR sponsored One Day National Seminar on "Rural Women Empowerment Through Skill Development" under the Celebration of “Azadi Ka	National	August, 2023	978-93-5980-468-2	Nallamuthu Gounder Mahalingam College	Shanlax publications
227		Perspective of ICT Tools in Education	Role of Information and Communication Technology (ICT) In Rural Education (India)	ICSSR Sponsored One Day National Seminar on "Perspective of ICT Tools in Education"	ICSSR Sponsored One Day National Seminar on "Perspective of ICT Tools	National	August, 2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax publications



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					in Education"					
228		Sustainable Development s Through MSMEs: A Pathway to Self - Reliant India	Micro, Small and Medium Enterprises In India (MSME) Schemes & Opportunities for Sustainable Development	ICSSR Sponsored One Day National Seminar on "Sustainable Developments through MSME's: A Pathway to Self-Reliant India""	ICSSR Sponsored One Day National Seminar on "Sustainable Developments through MSME's: A Pathway to Self-Reliant India""	National	October, 2023	978-93-94004-58-0	Nallamuthu Gounder Mahalingam College	Shanlax publications
229		Envisioning a Self-Reliant Rural India for Sustainable Economic Development	Role of Micro, Small and Medium Enterprises for Indian Economic Development	ICSSR Sponsored One Day National Seminar on "Envisioning a Self-Reliant Rural India for Sustainable Economic Development"	ICSSR Sponsored One Day National Seminar on "Envisioning a Self-Reliant Rural India for Sustainable Economic Development"	National	October, 2023	978-93-94004-39-9	Nallamuthu Gounder Mahalingam College	Shanlax Publications,



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					t"					
230		INDIA 2.0: VISION FOR INDIA 2047 - DIGITAL ECOSYSTEM & HARNESSING ARTIFICIAL INTELLIGENCE	IMPACT OF THE DIGITAL PLATFORMS FOR INNOVATIVE DIGITAL BUSINESS	ONE DAY NATIONAL SEMINAR ON"INDIA 2.0: VISION FOR INDIA 2047- DIGITAL ECOSYSTEM & HARNESSING" ARTIFICIAL INTELLIGENCE	ONE DAY NATIONAL SEMINAR ON"INDIA 2.0: VISION FOR INDIA 2047- DIGITAL ECOSYSTEM & HARNESSING" ARTIFICIAL INTELLIGENCE	National	January, 2024	978-93-94004-60-3	Nallamuthu Gounder Mahalingam College	Shanlax publications



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231	Ms. A. Gomathi		INNOVATION AND GROWTH OF TECHNOLOGY STARTUPS IN INDIA	ICSSR Sponsered Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	ICSSR Sponsered Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications
232	Ms. A. Gomathi	NA	Women Empowerment through Mahila Samman Savings Certificate Scheme - 2023	RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT	ICSSR Sponsored National Seminar on Rural Women Empowerment through Skill Development	National	2023	978-93-5980-468-2	Nallamuthu Gounder Mahalingam College	Shanlax Publications
233	Ms. A. Gomathi	NA	DEVELOPMENT OF REASONING AND THINKING ABILITIES AMONG STUDENTS	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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234	Ms. A. Gomathi	NA	ROLE OF SAMAGRA SHIKSHA ABHIYAN SCHEME IN NEW EDUCATION POLICY	Impact of New Education Policy (NEP) Among Future Generation	Impact of New Education Policy (NEP) Among Future Generation	National	2023	978-93-9400-26-9	Nallamuthu Gounder Mahalingam College	NA
235	Ms. A. Gomathi	NA	ROLE OF FINTECH - INNOVATION AND ADOPTION IN SUSTAINABLE BUSINESS START-UPS	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	National	2023	978-93-94004-75-7	Nallamuthu Gounder Mahalingam College	Shanlax Publications
236	Ms. A. Gomathi	NA	INFLUENCE OF AI IN EDUCATION SYSTEM	India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence	India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence	National	2024	978-93-94004-31-3	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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237	Ms. A. Gomathi	NA	ROLE OF METAVERSE IN THE INSURANCE INDUSTRY FOR SUSTAINABLE DEVELOPMENT	International Conference on “Navigating Metaverse in Shaping the Future of Business”	International Conference on “Navigating Metaverse in Shaping the Future of Business”	International	2024	978-93-340-6879	Nallamuthu Gounder Mahalingam College	NA
238	Dr. A. Anandhiprabha	NA	SOCIAL MEDIA PRESENCE IN VIRTUAL WORLDS	International Conference on “Navigating Metaverse in Shaping the Future of Business”	International Conference on “Navigating Metaverse in Shaping the Future of Business”	International	2024	978-93-340-6879	Nallamuthu Gounder Mahalingam College	NA
239	Dr. A. Anandhiprabha	NA	ROLE OF MSME SECTOR IN INDIAN ECONOMY	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	National	2023	[978-93-94004-39-9	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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240	Dr. A. Anandhiprabha	NA	RURAL WOMEN EMPOWERMENT IN INDIA	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	National	2023	978-93-94004-75-7	Nallamuthu Gounder Mahalingam College	Shanlax Publications
241	Dr. A. Anandhiprabha	NA	A STUDY ON ADULT LEARNING AND SELF-DIRECTED LEARNING	Impact of New Education Policy (NEP) Among Future Generation	Impact of New Education Policy (NEP) Among Future Generation	National	2023	978-93-9400-26-9	Nallamuthu Gounder Mahalingam College	NA
242	Dr. A. Anandhiprabha	NA	A STUDY ON THE USE OF DISRUPTIVE TECHNOLOGIES IN HIGHER EDUCATION	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications
243	Dr. A. Anandhiprabha	NA	Skill Development for Indian Youth: Challenges and Opportunities	RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT	ICSSR Sponsored National Seminar on Rural Women Empowerment	National	2023	978-93-5980-468-2	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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					nt through Skill Developmen t					
244	Dr. A. Anandhipra bha	NA	A STUDY ON INNOVATION AND ENTREPRENEURSHI P IN INDIA	India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence	India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence	National	2024	978-93-94004- 31-3	Nallamuthu Gounder Mahalingam College	Shanlax Publication s
245	Dr. M. Jeeva	NA	DIGITAL PAYMENTS IN INDIA	India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence	India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence	National	2024	978-93-94004- 31-3	Nallamuthu Gounder Mahalingam College	Shanlax Publication s
246	Dr. M. Jeeva	NA	Women Entrepreneurship: Issues and Challenges	RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT	ICSSR Sponsored National Seminar on Rural Women Empowerme	National	2023	978-93-5980- 468-2	Nallamuthu Gounder Mahalingam College	Shanlax Publication s



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					nt through Skill Development					
247	Dr. M. Jeeva	NA	ICT TOOLS IN TEACHING AND LEARNING	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications
248	Dr. M. Jeeva	NA	WOMEN'S EMPOWERMENT THROUGH NATIONAL EDUCATION POLICY	Impact of New Education Policy (NEP) Among Future Generation	Impact of New Education Policy (NEP) Among Future Generation	National	2023	978-93-9400-26-9	Nallamuthu Gounder Mahalingam College	NA
249	Dr. M. Jeeva	NA	SUSTAINABLE AGRICULTURE AND FOOD PROCESSING	SUSTAINABLE DEVELOPMENT S THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	National	2023	978-93-94004-75-7	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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250	Dr. M. Jeeva	NA	SIGNIFICANT CONTRIBUTION OF VILLAGE AND COTTAGE INDUSTRIES ON INDIAN ECONOMY	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	National	2023	978-93-94004-39-9	Nallamuthu Gounder Mahalingam College	Shanlax Publications
251	Dr. M. Jeeva	NA	ECONOMIC DEVELOPMENT AND ARTIFICIAL INTELLIGENCE	India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence	India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence	National	2024	978-93-94004-31-3	Nallamuthu Gounder Mahalingam College	Shanlax Publications
252	Dr. D. Rajasekaran	NA	THE VALUE OF ICT RESOURCES IN HIGHER EDUCATION	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	ICSSR Sponsored Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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253	Dr. D. Rajasekaran	NA	DIGITAL PAYMENTS IN INDIA	ICSSR Sponsered Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	ICSSR Sponsered Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publications
254	Dr. D. Rajasekaran	NA	IMPACT OF NATIONAL EDUCATION POLICY (NEP2020) IN HIGHER EDUCATION INSTITUTIONS IN INDIA	Impact of New Education Policy (NEP) Among Future Generation	Impact of New Education Policy (NEP) Among Future Generation	National	2023	978-93-9400-26-9	Nallamuthu Gounder Mahalingam College	NA
255	Dr. D. Rajasekaran	NA	SKILL DEVELOPMENT IN SCHOOLS AND HIGHER EDUCATIONS	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	National	2023	978-93-94004-39-9	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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256	Dr. D. Rajasekaran	NA	HUMAN HEALTH AND SOCIAL CARE ACTIVITIES	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	National	2023	978-93-94004-39-9	Nallamuthu Gounder Mahalingam College	Shanlax Publications
257	Dr. D. Rajasekaran	NA	IMPLEMENTATION OF EMERGING ICT TOOLS IN TEACHING BY HIGHER EDUCATION TEACHERS	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications
258	Dr. D. Rajasekaran	NA	ICT TOOLS IN TEACHING AND LEARNING	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publications
259	Dr. D. Rajasekaran	NA	Skill Development is an Important Factor in Women's Empowerment in India	Rural Women Empowerment through Skill Development	ICSSR Sponsored National Seminar on Rural Women Empowerment	National	2023	978-93-5980-468-2	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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					nt through Skill Developmen t					
260	Ms. S. Maha Lakshmi	NA	PERCEPTION TOWARDS OTT PLATFORM (A STUDY WITH SPECIAL REFERENCE TO COIMBATORE DISTRICT)	ICSSR Sponsered Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	ICSSR Sponsered Seminar On Vision For Vishwa Guru India: Initiatives For Global Leadership By 2047	National	2023	978-93-94004-24-5	Nallamuthu Gounder Mahalingam College	Shanlax Publication s
261	Ms. S. Maha Lakshmi	NA	Women Empowerment Towards Retail Business (A Study with Special Reerence to Pollachi Taluk)	RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELPOMENT	ICSSR Sponsored National Seminar on Rural Women Empowerme nt through Skill Developmen t	National	2023	978-93-5980-468-2	Nallamuthu Gounder Mahalingam College	Shanlax Publication s
262	Ms. S. Maha Lakshmi	NA	WOMEN EMPOWERMENT TOWARDS RETAIL BUSINESS	Perspective of ICT Tools in Education	Perspective of ICT Tools in Education	National	2023	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Shanlax Publication s



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263	Ms. S. Maha Lakshmi	NA	ROLE OF TEACHERS AND PROFESSORS AFTER IMPLEMENTING NEP	Impact of New Education Policy (NEP) Among Future Generation	Impact of New Education Policy (NEP) Among Future Generation	National	2023	978-93-9400-25-2	Nallamuthu Gounder Mahalingam College	NA
264	Ms. S. Maha Lakshmi	NA	SMES AND MSMES IN MAKE IN INDIA INITIATIVE	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA	National	2023	978-93-94004-75-7	Nallamuthu Gounder Mahalingam College	Shanlax Publications
265	Ms. S. Maha Lakshmi	NA	ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES IN HIGHER EDUCATION	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT	National	2023	978-93-94004-39-9	Nallamuthu Gounder Mahalingam College	Shanlax Publications



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266	Ms. S. Mahalakshmi	NA	E-Commerce: Sustainability Trends in Online Retail	ICSSR Sponsored National Seminar on Empowering India through Digital Transformation – A Sustainable Approach	ICSSR Sponsored National Seminar on Empowering India through Digital Transformation – A Sustainable Approach	National	2024	978-93-340-6921-1	Nallamuthu Gounder Mahalingam College	Nallamuthu Gounder Mahalingam College
267	Dr.P.Maheswari	NA	Aattrupadai Noolkalil Aarupadaikalin Sirappukal	Ilakkiyanathi	NA	National	Jul-23	978-81-2344-490-1	Nallamuthu Gounder Mahalingam College	NCBH, Chennai
268	Dr.K.Dhanalakshmi	NA	Kaatril Mithantha Paadalkal	Ilakkiyanathi	NA	National	Jul-23	978-81-2344-490-1	Nallamuthu Gounder Mahalingam College	NCBH, Chennai
269	Dr.A.Mahalakshmi	NA	Pathinenkeezhkanakku Noolkalil Illaramey Iyarkaiaaram	Ilakkiyanathi	NA	National	Jul-23	978-81-2344-490-1	Nallamuthu Gounder Mahalingam College	NCBH, Chennai
270	Dr.B.Aruljothi	NA	Thiruvaasakaththil Manikkavasakaran Bakthineri	Tamil Solai	NA	National	Dec-23	978-81-2344-577-9	Nallamuthu Gounder Mahalingam College	NCBH, Chennai
271	Dr.B.Aruljothi	NA	Sanga Ilakkiyaththil Suttru Soozhal	Tamizharuvi	NA	National	Dec-23	978-81-2344-576-2	Nallamuthu Gounder	NCBH, Chennai



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									Mahalingam College	
272	Prof.R.Suriya	NA	Thirukkural Kaattum Aalumaithiran	Tamil Solai	NA	National	Dec-23	978-81-2344-577-9	Nallamuthu Gounder Mahalingam College	NCBH, Chennai
273	Prof.R.Suriya	NA	Ithgazhkalil Ulagalaaviya Sinthanaikal	Tamizharuvi	NA	National	Dec-23	978-81-2344-576-2	Nallamuthu Gounder Mahalingam College	NCBH, Chennai
274	Dr.P.Maheswari	Thamizharuvi	NA	NA	NA	National	Dec-23	978-81-2344-576-2	Nallamuthu Gounder Mahalingam College	NCBH, Chennai
275	Dr.K.Dhanalakshmi	Swami Vivekanandharum Mahakavi Bharathiarum	NA	NA	NA	National	Apr-23	978-81-2344-448-2	Nallamuthu Gounder Mahalingam College	NCBH, Chennai
276	Prof.R.Suriya	Ilakkiyanathi	NA	NA	NA	National	Jul-23	978-81-2344-490-1	Nallamuthu Gounder Mahalingam College	NCBH, Chennai
277	S.Maheswari	NA	Vethathriyam Arathin Meanmaiyum	NA	NA	International	May,2023	NA	Nallamuthu Gounder Mahalingam College	NCBH, Chennai



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278	S.Maheswari	NA	Gratness of Women	Rural Women Empoerment Through Enterperneurship	Rural Women Empoerment Through Enterperneurship	National	NA	978-93-5780-553-7	Nallamuthu Gounder Mahalingam College	Shanlax Publications
279	Dr.S.Jagadampal	NA	Swami Vivekanada's Cocept of Universal Religion	NA	NA	National	NA	NA	Nallamuthu Gounder Mahalingam College	NA
280	Dr.S.Jagadampal	NA	Yoga `or Rural Women Entrepreneurs	Rural Women Empoerment Through Enterperneurship	Rural Women Empoerment Through Enterperneurship	National	NA	978-93-5780-553-7	Nallamuthu Gounder Mahalingam College	Shanlax Publications
281	A.Srikavitha	NA	Food & Scientific Backgroud in Tamil Literature	Tamil illakkiyangalil Unaviyalum Ariviya Pinpulumum Phase - II	NA	NA	NA	NA	NA	NA
282	Dr.G.Vignesh	NA	Advent of Technology in NEP 2020	Advent of Technology in NEP 2020	ICSSR Sponsored One day National seminar on Vision for Vishwa Guru India:	National	7/21/2023	978-93-94004-23-8	NGM College	SHANLAX PUBLICATIONS



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					Initiatives for global Leadership by 2047					
283	D.Divya	NA	Experiential Learning and Skill development in NEP 2020	Experiential Learning and Skill development in NEP 2020	ICSSR Sponsored One day National seminar on Vision for Vishwa Guru India: Initiatives for global Leadership by 2047	National	7/21/2023	978-93-94004-24-5	NGM College	SHANLA X PUBLICATIONS
284	Dr.B.Rohini	NA	Insight of Sagarmala Sagartat samridhi Yojana scheme with special address to make in India, Shipping Sector	Insight of Sagarmala Sagartat samridhi Yojana scheme with special address to make in India, Shipping Sector	ICSSR Sponsored One day National seminar on Vision for Vishwa Guru India: Initiatives for global Leadership by 2047	National	7/21/2023	978-93-94004-24-5	NGM College	SHANLA X PUBLICATIONS



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285	M.Ragaprabha	NA	An Overview of Women's Entrepreneurship	An Overview of Women's Entrepreneurship	ICSSR Sponsored One day National seminar on Vision for Vishwa Guru India: Initiatives for global Leadership by 2047	National	7/21/2023	978-93-94004-24-5	NGM College	SHANLA X PUBLICATIONS
286	M.Ragaprabha	NA	Challenges and Issues of Women Entrepreneurship in India – A Conceptual study	Challenges and Issues of Women Entrepreneurship in India – A Conceptual study	ICSSR Sponsored One Day National Seminar on Rural Women Empowerment through Skill Development	National	8/2/2023	978-93-5980-468-2	NGM College	SHANLA X PUBLICATIONS
287	Dr.B.Rohini	NA	Nourishing the women through self employment – A special address to Vellore district	Nourishing the women through self employment – A special address to Vellore district	ICSSR Sponsored One Day National Seminar on Rural Women	National	8/2/2023	978-93-5980-468-2	NGM College	SHANLA X PUBLICATIONS



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					Empowerment through Skill Development					
288	Dr. G. Vignesh	NA	Women Empowerment through Skill development	Women Empowerment through Skill development	ICSSR Sponsored One Day National Seminar on Rural Women Empowerment through Skill Development	National	8/2/2023	978-93-5980-468-2	NGM College	SHANLA X PUBLICATIONS
289	Mrs. D. Divya	NA	Skill Development schemes through National skill development corporation (NSDC)	Skill Development schemes through National skill development corporation (NSDC)	ICSSR Sponsored One Day National Seminar on Rural Women Empowerment through Skill Development	National	8/2/2023	978-93-5980-468-2	NGM College	SHANLA X PUBLICATIONS



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290	Mrs. D. Divya	NA	Women Empowerment in India	Women Empowerment in India	ICSSR Sponsored One Day National Seminar on Perspective of ICT Tools in Education	National	8/4/2023	978-93-94004-27-6	NGM College	SHANLA X PUBLICATIONS
291	Mrs.M.Raga Prabha	NA	Information Communication tools in Education	Information Communication tools in Education	ICSSR Sponsored One Day National Seminar on Perspective of ICT Tools in Education	National	8/4/2023	978-93-94004-27-6	NGM College	SHANLA X PUBLICATIONS
292	Dr.B.Rohini	NA	AN EYEVUEW ON DIGITAL LITERACY IN 21ST CENTURY	AN EYEVUEW ON DIGITAL LITERACY IN 21ST CENTURY	ICSSR Sponsored One Day National Seminar on Perspective of ICT Tools in Education	National	8/4/2023	978-93-94004-27-6	NGM College	SHANLA X PUBLICATIONS
293	Mrs. D. Divya	NA	A Glimpse on New education Policy 2020	A Glimpse on New education Policy 2020	ICSSR Sponsored One Day National Seminar on Impact of	National	8/10/2023	978-93-94004-25-2	NGM College	SHANLA X PUBLICATIONS



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					New Education Policy among Future Generation					
294	Dr.B.Rohini	NA	Scenery of New Education Policy	Scenery of New Education Policy	ICSSR Sponsored One Day National Seminar on Impact of New Education Policy among Future Generation	National	8/10/2023	978-93-94004-25-2	NGM College	SHANLA X PUBLICATIONS
295	M.Raga Prabha	NA	New Education Policy Challenges and Opportunities in Higher Education in India	New Education Policy Challenges and Opportunities in Higher Education in India	ICSSR Sponsored One Day National Seminar on Impact of New Education Policy among Future Generation	National	8/10/2023	978-93-94004-25-2	NGM College	SHANLA X PUBLICATIONS



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296	Dr. G. Vignesh	NA	A Birds eye view on New Education Policy 2020	A Birds eye view on New Education Policy 2020	ICSSR Sponsored One Day National Seminar on Impact of New Education Policy among Future Generation	National	8/10/2023	978-93-94004-25-2	NGM College	SHANLA X PUBLICATIONS
297	Dr.B.Rohini	NA	An Insight on Digital Industry 4.0	An Insight on Digital Industry 4.0	ICSSR Sponsored one day National seminar on “Sustainable development s through MSMEs:A Pathway to self : Reliant India”	National	06.10.2023	978-93-94004-75-7	NGM College	SHANLA X PUBLICATIONS
298	D.Divya	NA	Strategies for sustainable development in India – An Overview.	Strategies for sustainable development in India – An Overview.	ICSSR Sponsored one day National seminar on “Sustainable development	National	06.10.2023	978-93-94004-75-7	NGM College	SHANLA X PUBLICATIONS



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					s through MSMEs:A Pathway to self : Reliant India”					
299	M.Ragaprabha	NA	Financial Inclusion of MSME	Financial Inclusion of MSME	ICSSR Sponsored one day National seminar on “Sustainable development s through MSMEs:A Pathway to self : Reliant India”	National	06.10.2023	978-93-94004-75-7	NGM College	SHANLA X PUBLICATIONS
300	M.Ragaprabha	NA	Poverty Alleviation and Rural development through MSME	Poverty Alleviation and Rural development through MSME	ICSSR Sponsored one day National seminar on “Sustainable development s through MSMEs:A Pathway to self : Reliant India”	National	06.10.2023	978-93-94004-75-7	NGM College	SHANLA X PUBLICATIONS



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Sl. No.	Name of the Teacher	Title of the Book published	Title of the Chapter published	Title of the proceedings of the conference	Name of the conference	National / International	Year and month of publication	ISBN of the Book/Conference Proceeding	Affiliating Institute of the teacher at the time of publication	Name of the Publisher
301	Dr.B.Rohini	NA	Digital Transformation in MSME: A Path to Sustainability	Digital Transformation in MSME: A Path to Sustainability	ICSSR Sponsored Envisioning a self – reliant rural India for sustainable economic development	National	12.10.2023 & 13.10.2023	978-93-94004-39-9	NGM College	SHANLA X PUBLICATIONS
302	M.Ragaprabha	NA	Role of Ministry of Micro, Small & Medium Enterprises in Connecting Society	Role of Ministry of Micro, Small & Medium Enterprises in Connecting Society	ICSSR Sponsored Envisioning a self – reliant rural India for sustainable economic development	National	12.10.2023 & 13.10.2024	978-93-94004-39-10	NGM College	SHANLA X PUBLICATIONS
303	D.Divya	NA	Self Sustainable in Agriculture	Self Sustainable in Agriculture	ICSSR Sponsored Envisioning a self – reliant rural India for sustainable economic development	National	12.10.2023 & 13.10.2023	978-93-94004-39-10	NGM College	SHANLA X PUBLICATIONS



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304	Dr.B.Rohini	NA	Development and Innovation in Food Industry	Development and Innovation in Food Industry	ICSSR Sponsored Envisioning a self – reliant rural India for sustainable economic development	National	12.10.2023 & 13.10.2023	978-93-94004-39-9	NGM College	SHANLA X PUBLICATIONS
305	D.Divya	NA	Role of financial system and economic development of a Country	Role of financial system and economic development of a Country	Two day International Conference on “ G20 and Indian Management Practices”	International	7 & 8 Dec 2023	978-93-90956-87-6	NGM College	SHANLA X PUBLICATIONS
306	Dr.G.Vignesh	NA	Problems & prospects of human resource among G20 nations	Problems & prospects of human resource among G20 nations	Two day International Conference on “ G20 and Indian Management Practices”	International	7 & 8 Dec 2023	978-93-90956-87-6	NGM College	SHANLA X PUBLICATIONS
307	Dr.B.Rohini	NA	Role of Customer Experience In Startups: A Strategic Imperative	Role of Customer Experience In Startups: A Strategic Imperative	Startup - Fintech Challenges and Opportunities : India's Economic	National	09.02.2024	978-93-6163-729-2	NGM College	SHANLA X PUBLICATIONS



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					Development in the 21st Century					
308	D.Divya	NA	Digital inclusion in rural communities with special reference to Pollachi taluk	Digital inclusion in rural communities with special reference to Pollachi taluk	Startup - Fintech Challenges and Opportunities : India's Economic Development in the 21st Century	National	09.02.2024	978-93-6163-729-2	NGM College	SHANLA X PUBLICATIONS
309	Dr. P. Anitha	Vision for Vishwa Guru India: Initiatives for Global Leadership by 2047	Role of Technology in NEP 2020	Vision for Vishwa Guru India: Initiatives for Global Leadership by 2047	Vision for Vishwa Guru India: Initiatives for Global Leadership by 2047	National	2023 July	978-93-94004-23-8	Nallamuthu Gounder Mahalingam College	Nallamuthu Gounder Mahalingam College
310	Dr. S. Poongodi and Dr. P. Jayanthi	Vision for Vishwa Guru India: Initiatives for Global Leadership by 2047	Artificial Intelligence and Machine Learning Implications and Applications	Vision for Vishwa Guru India: Initiatives for Global Leadership by 2047	Vision for Vishwa Guru India: Initiatives for Global Leadership by 2047	National	2023 July	978-93-94004-23-8	Nallamuthu Gounder Mahalingam College	Nallamuthu Gounder Mahalingam College



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311	Dr. P. Jayanthi and Dr. S. Poongodi	Perspectives of ICT Tools in Education	ICT for Professional Development	Perspectives of ICT Tools in Education	Perspectives of ICT Tools in Education	National	2023 August	978-93-94004-27-6	Nallamuthu Gounder Mahalingam College	Nallamuthu Gounder Mahalingam College
312	Dr. P. Anitha	The Future of Insurance India-Faster & Easier	Customer Relationship Management	The Future of Insurance India-Faster & Easier	The Future of Insurance India-Faster & Easier	National	Sep-23	978-93-5996-082-1	Nallamuthu Gounder Mahalingam College	Insurance Institute of India, Mumbai & SNMV College of Arts and Science, Coimbatore
313	Dr. P. Jayanthi and Dr. S. Poongodi	The Future of Insurance India-Faster & Easier	Artificial Intelligence in Insurance Industry	The Future of Insurance India-Faster & Easier	The Future of Insurance India-Faster & Easier	National	Sep-23	978-93-5996-082-1	Nallamuthu Gounder Mahalingam College	Insurance Institute of India, Mumbai & SNMV College of Arts and Science, Coimbatore
314	Dr. S. Poongodi and Dr. P. Jayanthi	Role of Entrepreneurship in the Changing Economic Environment	Rural Women Entrepreneurship: Opportunities and Challenges	Role of Entrepreneurship in the Changing Economic Environment	Role of Entrepreneurship in the Changing Economic Environment	National	Sep 2023	978-81-967053-7-4	Nallamuthu Gounder Mahalingam College	KPR College of Arts Science and Research, Coimbatore



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315	Dr. P. Jayanthi and Dr. S. Poongodi	Sustainable Development s through MSMEs: A Pathway to Self-Reliant India	Women's Perception towards Technology in Sustainable Development through MSME	Sustainable Developments through MSMEs: A Pathway to Self-Reliant India	Sustainable Developments through MSMEs: A Pathway to Self-Reliant India	National	Oct-23	978-93-94004-75-7	Nallamuthu Gounder Mahalingam College	Nallamuthu Gounder Mahalingam College
316	Dr. S. Poongodi and Dr. P. Jayanthi	India 2.0: Vision for India 2047-Digital Eco-System and Harnessing Artificial Intelligence	Digital Economy	India 2.0: Vision for India 2047-Digital Eco-System and Harnessing Artificial Intelligence	India 2.0: Vision for India 2047-Digital Eco-System and Harnessing Artificial Intelligence	National	Jan-24	978-93-94004-31-3	Nallamuthu Gounder Mahalingam College	Nallamuthu Gounder Mahalingam College
317	Dr.K.Poonkodi	NA	Re-Envisioning India @ 2047: Initiatives for Global Leadership	VISION FOR VISHWA GURU INDIA: INITIATIVES FOR GLOBAL LEADERSHIP BY 2047	ICSSR Sponsored One Day National Seminar on Vision Vishwa Guru India: Initiatives For Global	National	July 2023	978-93-94004-23-8	NGM College	Shanlax Publications, Vasantha Nagar, Madurai – 625003, Tamil Nadu, India



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318			CO/CR LAYERED DOUBLE HYDROXIDE AND ITS ENHANCED PHOTO CATALYTIC ACTIVITY ON PARA NITRO PHENOL DEGRADATION UNDER SOLAR LIGHT IRRADIATION	ICSSR Sponsored One day NATIONAL CONFERENCE ON INDIA IN TRANSIT TO DECARBONIZATION-A FUTURE PERSPECTIVE	ICSSR Sponsored One day NATIONAL CONFERENCE ON INDIA IN TRANSIT TO DECARBONIZATION-A FUTURE PERSPECTIVE	National	Sep 2023	978-93-5980-516-0	NGM College	Department of Chemistry, SRI RAMAKRISHNA COLLEGE OF ARTS & SCIENCE
319			A REVIEW ON ROLE OF TEACHERS IN BLENDED LEARNING-ITS CHALLENGES AND LEARNING OUTCOMES	PERSPECTIVE OF ICT TOOLS IN EDUCATION	One Day National Seminar on PERSPECTIVE OF ICT TOOLS IN EDUCATION	National	Aug 2023	978-93-94004-27-6	NGM College	Shanlax Publications, Vasantha Nagar, Madurai – 625003, Tamil Nadu, India



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320			Empowering MSMEs with scientific innovation and technology: A catalyst for sustainable growth.	Sustainable Devvelopments Through MSME's: A Pathway to Self -Reliant India"	ICSSR Sponsored One day NATIONAL CONFERENCE ON "Sustainable Devvelopments Through MSME's: A Pathway to Self -Reliant India"	National	Oct 2023	Volume I- 978-93-94004-75-7	NGM College	Shanlax Publications, Vasantha Nagar, Madurai – 625003, Tamil Nadu, India
321			Green technologies for a self reliant India : A sustainable development agenda	Envisioning a Self-reliant Rural India for Sustainable Economic Development"	ICSSR Sponsored Two day National Seminar on "Envisioning a Self-reliant Rural India for Sustainable Economic Development"	National	Oct 2023	Volume I- 978-93-94004-84-9	NGM College	Shanlax Publications, Vasantha Nagar, Madurai – 625003, Tamil Nadu, India



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322			THE IMPLEMENTATION OF THE NEW EDUCATION POLICY: A REVIEW OF ITS IMPACT ON TEACHERS AND STUDENTS	IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION	ICSSR Sponsored National Seminar on IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION	National	2023	978-93-94004-26-9	NGM College	Department of Commerce CA, Nallamuthu Gounder Mahalingam College, Pollachi
323	K.Vimaladevi	NA	Energy Efficiency and Renewable Energy Adoption for Self Reliant India	Sustainable Devvelopments Through MSME's: A Pathway to Self -Reliant India"	ICSSR Sponsored One day NATIONAL CONFERENCE ON "Sustainable Devvelopments Through MSME's: A Pathway to Self -Reliant India"	National	Oct 2023	Volume I- 978-93-94004-75-7	NGM College	Shanlax Publications, Vasantha Nagar, Madurai – 625003, Tamil Nadu, India





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327			Fostering Independence: MSMEs Driving Sustainable Progress for a Self-Reliant India	Sustainable Devvelopments Through MSME's: A Pathway to Self -Reliant India"	ICSSR Sponsored One day NATIONAL CONFERENCE ON "Sustainable Devvelopments Through MSME's: A Pathway to Self -Reliant India"	National	Oct 2023	Volume I- 978-93-94004-75-7	NGM College	Shanlax Publications, Vasantha Nagar, Madurai – 625003, Tamil Nadu, India
328	Dr.M.Velayutham Pillai	NA	UTILIZING THE POTENTIAL OF HOMEOPATHIC MOTHER TINCTURES FOR NANOPARTICLE SYNTHESIS	ICSSR Sponsored One day NATIONAL CONFERENCE ON INDIA IN TRANSIT TO DECARBONIZATION-A FUTURE PERSPECTIVE	ICSSR Sponsored One day NATIONAL CONFERENCE ON INDIA IN TRANSIT TO DECARBONIZATION-A FUTURE PERSPECTIVE	National	Sep 2023	978-93-5980-516-0	NGM College	Department of Chemistry, SRI RAMAKRISHNA COLLEGE OF ARTS & SCIENCE



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329			SUSTAINABILITY IN ENERGY WITH RELEVANCE TO SELF-RELIANT INDIA	Sustainable Devvelopments Through MSME's: A Pathway to Self -Reliant India"	ICSSR Sponsored One day NATIONAL CONFERENCE ON "Sustainable Devvelopments Through MSME's: A Pathway to Self -Reliant India"	National	Oct 2023	Volume I- 978-93-94004-75-7	NGM College	Shanlax Publications, Vasantha Nagar, Madurai – 625003, Tamil Nadu, India
330			Self-Reliance in Resource Utilization and Environmental Concerns in India	Envisioning a Self-reliant Rural India for Sustainable Economic Development"	ICSSR Sponsored Two day National Seminar on "Envisioning a Self-reliant Rural India for Sustainable Economic Development"	National	Oct 2023	Volume I- 978-93-94004-84-9	NGM College	Shanlax Publications, Vasantha Nagar, Madurai – 625003, Tamil Nadu, India



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331	Dr.N.Bhuvanesh Kumar	NA	NA	Women Entrepreneurship Development in India	ICSSR SPONSORED SEMINAR ON 'VISION FOR VISHWA GURU INDIA:INITIATIVES FOR GLOBAL LEADERSHIP BY 2047"	National	2023	978-93-94004-23-8	NGM College	Shanlax Publications
332	Dr. R. Gayathri,	NA	NA	Women Entrepreneurs in India	ICSSR SPONSORED SEMINAR ON 'VISION FOR VISHWA GURU INDIA:INITIATIVES FOR GLOBAL LEADERSHIP BY 2047"	National	2023	978-93-94004-23-8	NGM College	Shanlax Publications



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333	Ms.R.Kalais elvi	NA	NA	A Study on the Challenges of Digital Financial Inclusion	ICSSR SPONSORED SEMINAR ON 'VISION FOR VISHWA GURU INDIA:INITIATIVES FOR GLOBAL LEADERSHIP BY 2047"	National	2023	978-93-94004-23-8	NGM College	Shanlax Publications
334	Ms.R.Kalais elvi	NA	NA	Gender Equality and Women Empowerment in India	ICSSR SPONSORED SEMINAR ON 'VISION FOR VISHWA GURU INDIA:INITIATIVES FOR GLOBAL LEADERSHIP BY 2047"	National	2023	978-93-94004-23-8	NGM College	Shanlax Publications



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335	Ms.P.Sudha	NA	NA	Start-Up in India: Opportunities and Challenges	ICSSR SPONSORED SEMINAR ON 'VISION FOR VISHWA GURU INDIA:INITIATIVES FOR GLOBAL LEADERSHIP BY 2047"	National	2023	978-93-94004-23-8	NGM College	Shanlax Publications
336	Ms.S.Prathepa	NA	NA	National Education Policy 2020	ICSSR SPONSORED SEMINAR ON 'VISION FOR VISHWA GURU INDIA:INITIATIVES FOR GLOBAL LEADERSHIP BY 2047"	National	2023	978-93-94004-23-8	NGM College	Shanlax Publications



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337	Ms.P.Sudha	NA	NA	Challenges and Opportunities of Women Entrepreneurs	ICSSR SPONSORED SEMINAR ON "RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT"	National	2023	978-93-5980-468-2	NGM College	Shanlax Publications
338	Ms.R.Kalai Selvi	NA	NA	Skill India: Connecting Indian Youth to Global Opportunities	ICSSR SPONSORED SEMINAR ON "RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT"	National	2023	978-93-5980-468-2	NGM College	Shanlax Publications



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339	Ms.S.Prathepa	NA	NA	Women Entrepreneurs Faced by Problems and Challenges	ICSSR SPONSORED SEMINAR ON "RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT"	National	2023	978-93-5980-468-2	NGM College	Shanlax Publications
340	Ms.P.Sudha	NA	NA	Rural Women Empowerment through Skill Development	ICSSR SPONSORED SEMINAR ON "RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT"	National	2023	978-93-5980-468-2	NGM College	Shanlax Publications



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341	Ms.R.Kalai Selvi	NA	NA	Skill India: Connecting Indian Youth to Global Opportunities	ICSSR SPONSORED SEMINAR ON "RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT"	National	2023	978-93-5980-468-2	NGM College	Shanlax Publications
342	Ms.P.Sudha	NA	NA	WOMEN EMPOWERMENT IN INDIA AND ITS IMPORTANCE	ICSSR SPONSORED SEMINAR ON "PERSPECTIVE OF ICT TOOLS IN EDUCATION"	National	2023	978-93-94004-27-6	NGM College	Shanlax Publications
343	Dr. R. Gayathri,	NA	NA	ICT FOR PROFESSIONAL DEVELOPMENT	ICSSR SPONSORED SEMINAR ON "PERSPECTIVE OF	National	2023	978-93-94004-27-6	NGM College	Shanlax Publications



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					ICT TOOLS IN EDUCATION"					
344	Ms.S.Prathepa	NA	NA	EMERGING DISTRUPTIVE TECHNOLOGY IN EDUCATION	ICSSR SPONSORED SEMINAR ON "PERSPECTIVE OF ICT TOOLS IN EDUCATION"	National	2023	978-93-94004-27-6	NGM College	Shanlax Publications
345	Dr.N.Bhuvanesh Kumar	NA	NA	ICT TOOLS IN TEACHINGAND LEARNING	ICSSR SPONSORED SEMINAR ON "PERSPECTIVE OF ICT TOOLS IN EDUCATION"	National	2023	978-93-94004-27-6	NGM College	Shanlax Publications



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346	Ms.P.Sudha	NA	NA	Role of NEP 2020 in Transforming Higher Education in India	ICSSR SPONSORED SEMINAR ON "IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION"	National	2023	978-93-94004-26-9	NGM College	Shanlax Publications
347	Dr. R. Gayathri,	NA	NA	Opportunities and Challenges in NEP and HEI	ICSSR SPONSORED SEMINAR ON "IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION"	National	2023	978-93-94004-26-9	NGM College	Shanlax Publications



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348	Ms.P.Sudha & Ms.S.Prathepa	NA	NA	ROLE OF MSME SECTOR IN INDIA ECONOMY	ICSSR SPONSORED SEMINAR ON "SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA"	National	2023	978-93-94004-58-0	NGM College	Shanlax Publications
349	Dr. R. Kalaiselvi	NA	NA	EMPOWERING INDIA'S MSMES: PATHWAY TO ECONOMIC GROWTH, RESILIENCE, SOCIAL INCLUSION	ICSSR SPONSORED SEMINAR ON "SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA"	National	2023	978-93-94004-58-0	NGM College	Shanlax Publications



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BIOACTIVE COMPOUNDS FROM MEDICINAL PLANTS FOR CANCER THERAPY AND CHEMOPREVENTION

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Bioactive Compounds from Medicinal Plants for Cancer Therapy and Chemoprevention

Edited by

Blassan George

*University of Johannesburg
Laser Research Centre / Faculty of Health Sciences
South Africa*



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CHAPTER 3

Bioactive Compounds Derived from Marine Sources for Cancer Therapy and Chemoprevention**Ramasamy Indumathy^{1,*}, Thangavel Sathiya Kamatchi² and Giriraj Kalaiarasi^{3,4}**¹ Department of Chemistry, Nallamuthu Gounder Mahalingam College, Affiliated to Bharathiar University, Coimbatore-01, Tamil Nadu, India² Department of Chemistry, Bharathidasan University, Tiruchirappalli-24, Tamil Nadu, India³ Department of Chemistry, Karpagam Academy of Higher Education, Coimbatore-21, Tamil Nadu, India⁴ Centre for Material Chemistry, Karpagam Academy of Higher Education, Coimbatore-21, Tamil Nadu, India

Abstract: The relatively unexplored marine environment is a rich resource of novel bioactive candidates that may be beneficial for human beings. Since the marine environment is complex in nature, living organisms produce secondary metabolites with unique biological properties that could find applications in health care systems. This chapter gives an overview of marine-based anticancer drugs that are FDA-approved and bioactive components that are under preclinical and clinical trials. It also provides insight into marine-based nutraceuticals, their sources, and their usefulness for various human health concerns. Therefore, exploring the marine environment through collaborative research work both by academia and industries could lead to significant contributions to humanity.

Keywords: Anticancer drugs, Clinical, Marine resources, Nutraceuticals, Preclinical trials.

INTRODUCTION

Since the emergence of human beings, natural products have been used to treat various diseases. In particular, natural products derived from plants contributed to more than 60% to the development of traditional medicine systems. Their roles in the healthcare system had been well documented by different cultures, including Indians, Chinese, Egyptians, Romans, etc. World Health Organisation (WHO) has estimated that 65% of the world's population depends on plant-based traditional

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Sodium ion conducting biomaterial electrolyte based on Centella Asiatica incorporated with sodium perchlorate for primary sodium ion battery

T. Gowrani^{*1}, T. Sabeetha², S.Aafrin Hazaana³, S.Selvasekarapandian^{4,5}

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Abstract

Based on biomaterial Centella Asiatica Leaf with sodium perchlorate (NaClO_4) salt, solid electrolyte has been prepared with distilled water as solvent by solution casting technique. Amorphous / Crystalline nature of biomaterial membrane is studied by XRD. The biomaterial membrane of 1g of Centella Asiatica with 0.5 M.wt% of NaClO_4 exhibits very high amorphous nature and shows a high ionic conductivity of $3.4 \times 10^{-3} \text{ S/m}$ by AC impedance technique. Information about glass transition temperature (T_g) is acquired from differential scanning calorimetry (DSC). Decrease in T_g upon NaClO_4 addition favors the segmental motion of the biomaterial chain. The transference number measurement with Wagner's DC polarization method is found to be 0.99 which confirms ions are the charge carriers. The cyclic stability of the highest conducting bio-membrane has been analyzed by cyclic voltammetry, and a good cyclic stability is observed. The linear sweep voltammetry (LSV) technique that measures the potential window for the biomaterial electrolyte membrane is 2.66 V, representing it as a potential applicant for electrochemical energy storage devices. An all-solid-state primary sodium-ion battery is assembled with a high ion-conducting biomaterial electrolyte membrane that displays an open-circuit cell potential of 3.14V. The performance of primary sodium ion battery is analysed using various loads. The results highlight the possibilities of sodium-ion conducting solid biomaterial electrolytes to extend their hands in a safe sodium ion battery.

Keywords: Centella Asiatica Leaf, solid bio-membrane electrolyte, sodium perchlorate, XRD, DSC, AC impedance, Battery



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INFLUENCE OF SODIUM MOLYBDATE ON THE INHIBITION EFFICIENCY OF ATMP-Cd²⁺ SYSTEM ON MILD STEEL IN AQUEOUS ENVIRONMENT

A.GEETHAMANI*¹ and T. GOWRANI ²

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ABSTRACT

The inhibition efficiency (IE) of ATMP + Cd²⁺ + SM system in controlling corrosion of mild steel in aqueous solution containing 40 ppm of Cl⁻ ion in has been evaluated by weight loss method. Weight loss study reveals that the formulation consisting of 200 ppm of ATMP and 5 ppm of Cd²⁺ has 84% inhibition efficiency in controlling corrosion of mild steel immersed in aqueous solution containing 40 ppm of Cl⁻ ion. Sodium molybdate at neutral pH helps to transport ATMP + Cd²⁺ + SM complex from the bulk of the solution to the anodic site and inhibit corrosion process of mild steel. Polarization study reveals that this system as a good inhibitors for the corrosion of mild steel in 40ppm of Cl⁻ solutions and they act as mixed type inhibitors. The investigations revealed that 150ppm of SM acts as an efficient synergist in corrosion inhibition process Maximum inhibition efficiency of 90% was obtained for the ternary formulations of ATMP (200 ppm) – SM (150 ppm). AC impedance reveals that a protective film is formed on the metal surface. The nature of film formed on the surface of mild steel has been studied by FTIR and Surface examination study.

Keywords: Mild Steel, Corrosion Inhibition, SM, ATMP, Polarization, Impedance, FTIR.



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SYNTHESIS AND CHARACTERIZATION OF ZnO NANOPARTICLES USING ARTABOTRYS HEXAPETALUS LEAF EXTRACT AND ITS PHOTO DEGRADATION OF METHYLENE BLUE

K. VIMALADEVI¹, M. SELLADURAI², K. POONKODI¹, V. PRABHU¹,
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ABSTRACT

Modern scientific studies have been revealed that the plant extract plays an important role for the preparation of nanomaterials without any hazardous effect due to the number of natural products like alkaloids, flavonoids, saponins, steroids, tannins and other nutritional compounds. In this present study, we report the green synthesis of ZnO nanoparticles using plant extracts mediated co-precipitation method using environmental friendly Artabotrys hexapetalus plant aqueous extract as a reducing agent. The as synthesized ZnO nanoparticles was confirmed by X-ray diffraction study, Fourier Transform Infrared spectroscopy (FTIR) was used to identify the functional groups responsible for the reduction of metal salts, the morphology was observed by Scanning Electron Microscopy (SEM), the absorbance maximum was found by UV-Visible spectrophotometer. From the results, a characteristic absorption peak for the ZnO NPs was seen at 352 nm that falls in the UV- region. FT-IR showed characteristic band at 430 cm⁻¹ corresponds to the Zn-O stretching, absorption peak at 400 cm⁻¹ to 600 cm⁻¹ identifies the presence of ZnO NPs by using Artabotrys hexapetalus plant extract. The scanning electron microscopy revealed the surface morphology of green synthesized NPs which showed that flower-like structures within 1-2 μm. It shows excellent photocatalytic activity against methylene blue dye degradation

Keywords: Artabotrys hexapetalus, ZnO nanoparticles, UV, FTIR, SEM.



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EFFECT OF SURFACTANT AND CONCENTRATION ON THE ETHANOL SENSING PROPERTIES OF ZnO NANOSTRUCTURES AT ROOM TEMPERATURE

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ABSTRACT

Nanostructured zinc oxide (ZnO), one of the fascinating materials for ethanol sensing, has been chosen for investigation. The sensing performance of ZnO is tailored by obtaining smaller crystallite size, uniform size distribution, porous morphology and hierarchical architecture. In the present work, the influence of surfactant (glyoxalic acid) on the gas sensing properties of ZnO nanostructures have been studied. All the samples were prepared, characterized using the various state-of-the-art techniques and employed as ethanol sensing application at room temperature.

ZnO and Al doped (0.1 at%, 0.5 at% and 1 at%) ZnO in the presence of glyoxalic acid have been synthesized using modified sol-gel method. The decrease in crystallite size was observed with increase in the concentration of Al. In the absence of the surfactant, hexagonal faceted ZnO nanorods of different sizes were obtained. This results in larger specific surface area obtained from BET analysis as 111.44 m²/g. These uniform nanostructures exhibited sensitivity of 94% with response time as 68 s and recovery time as 50 s. This was attributed to the enormous surface active sites for the adsorption-desorption process to take place. The selective detection of ethanol under various gas circumstances like acetone and chloroform was also achieved using these samples.



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PHOTOVOLTAIC PERFORMANCE OF POLYHEDRAL TIN OXIDE NANOSTRUCTURED DYE SENSITIZED SOLAR CELL

R. VASANTHAPRIYA^{a*}, N. NEELAKANDESWARI^{b*}, K. UTHAYARANI^a and
M. CHITRA^a

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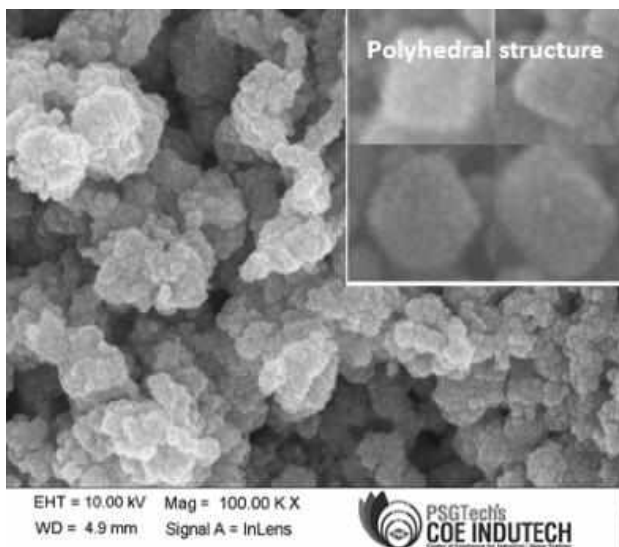
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ABSTRACT

SnO₂ polyhedral nanostructures was prepared via solvothermal synthesis at pH 10 and calcined at 500°C for 3 hrs. Prepared SnO₂ polyhedral nanostructures were characterized using Ultra-violet and Visible spectroscopy (UV-Vis), Attenuated total reflectance (ATR), Powder X-Ray diffraction (XRD), Scanning Electron Microscopy (SEM) and Energy Dispersive X-Ray analysis (EDAX). Absorber layer for DSSC was coated using doctor blade technique. SnO₂ film coated on FTO substrate was soaked in Alizarine dye solution for 24 hrs, washed with ethanol and distilled water, dried at room temperature and analysed for solar cell performance under 1 sun illumination. The results are summarized in this paper.

Keywords: Solvothermal, pH, DSSC



FE-SEM image of SnO₂ nanostructures synthesized at pH 10



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PREPARATION, CHARACTERIZATION AND APPLICATION OF CuO-MgO NANOCOMPOSITE FOR C-C COUPLING REACTIONS

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ABSTRACT

One of the most significant and industrially applicable organic reactions is C-C Coupling reaction. In general, these reactions are catalysed by noble metal catalysts, especially Pd. To make the process simple and cost effective, in this research work, CuO-MgO nanocomposite is synthesized by Sol-Gel technique and Characterized by Fourier Transform Infra Red spectroscopy (FT-IR), powder X-ray diffraction (XRD) analysis and Scanning electron microscopy (SEM). Catalytic activity towards C-C bond formation between malanitrile and benzaldehyde at room temperature is carried out. Progress of the reaction is monitored by thin layer chromatography (TLC) and the isolated products are characterized by spectral techniques. Generality of the reaction is studied by varying the nature of aldehydes, heterogeneity test and reusability tests are carried out to prove the heterogeneous nature of the catalyst.



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Enhanced room temperature ethanol sensing properties of In doped $\text{MoO}_3 - \text{MoO}_2$

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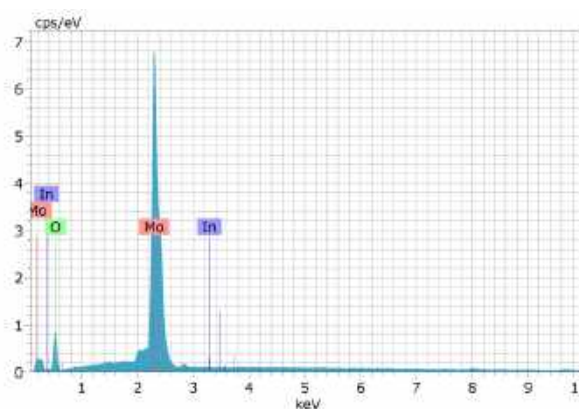
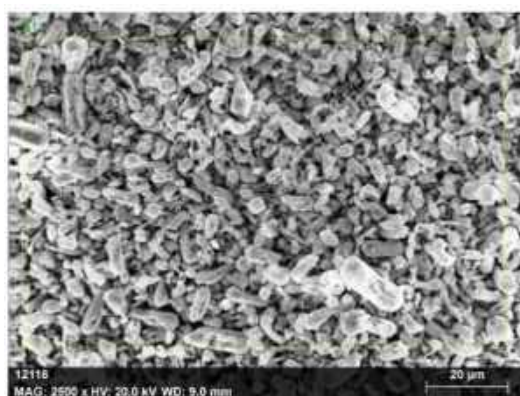
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ABSTRACT

In the present work, various concentrations (0.1%, 0.25%, 0.5%, 0.75% and 1%) of indium (In) doped $\text{MoO}_3 - \text{MoO}_2$ nanocomposite is synthesized via hydrothermal route. The structural, morphological with elemental composition and optical property is investigated using various characterization techniques such as X - ray diffraction (XRD), Field Emission Scanning Electron Microscope (FE-SEM), and UV Visible spectroscopy. The gas sensing study is performed using Keithley 2450 digital interactive source meter and it is observed that among all the prepared samples, 0.1% of In doped $\text{MoO}_3 - \text{MoO}_2$ shows enhanced ethanol sensing performance of 9.13% towards 25 ppm when compared to pure $\text{MoO}_3 - \text{MoO}_2$ (4.5%). Also, better selectivity, lower detection, fast response and recovery, good stability is achieved in the same sample. The mechanism involved in gas sensing performance of In doped $\text{MoO}_3 - \text{MoO}_2$ is also discussed.

Keywords: gas sensor; hexagonal; ethanol sensor; sensitivity



Effect of calcination temperature on the properties of Tin titanate nanostructures

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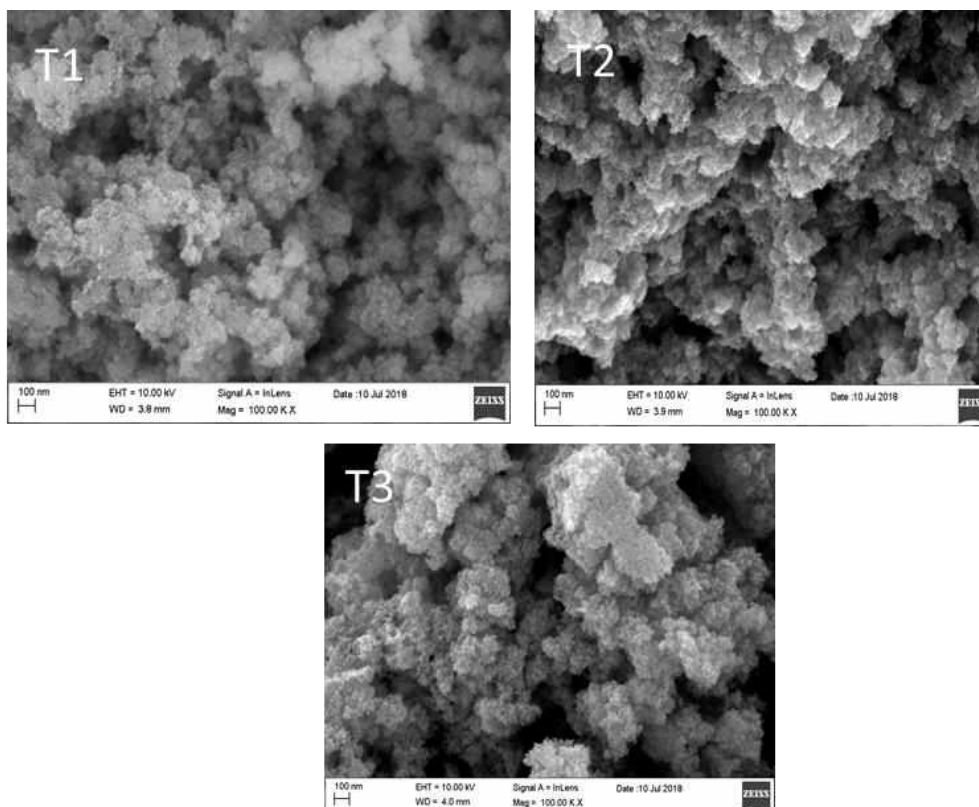
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ABSTRACT

Tin titanate nanostructures were meticulously synthesized through solvothermal route, introducing variability in the calcination temperature. This method, conducted under high pressure, in the presence of a surfactant to yield tin titanate nanostructures exhibiting a distinctive spherical morphology. The utilization of this high-pressure solvothermal approach ensured not only the controlled formation but also a remarkable uniformity in the size distribution of the resultant nanostructures. Using techniques such as powder X-ray diffraction (XRD), scanning electron microscopy (SEM), photoluminescence (PL), attenuated total reflectance (ATR) spectra, and UV-visible spectroscopy, the structural, morphological, and optical properties of Tin titanate nanostructures are examined. Presence of rutile and anatase mixed phase for the prepared tin titanate nanostructures are identified from powder XRD. ATR analysis is used to confirm the formation of metal oxide without any organic impurities. Band gap of the synthesized samples are determined from UV - DRS studies. FE SEM image of T1, T2 and T3 shows upon increasing the calcination temperature, the shape of nanoparticles decreases with uniformity.

Keywords: Tin titanate, Solvothermal, nanostructures





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Nanometric evaluation of Nanocrystalline ZrO_2 Coatings toward BWR application-An AFAM Investigation

G. Mangamma¹, N. Neelakandeswari², Nidhi Garg² and S. Velumurgan²

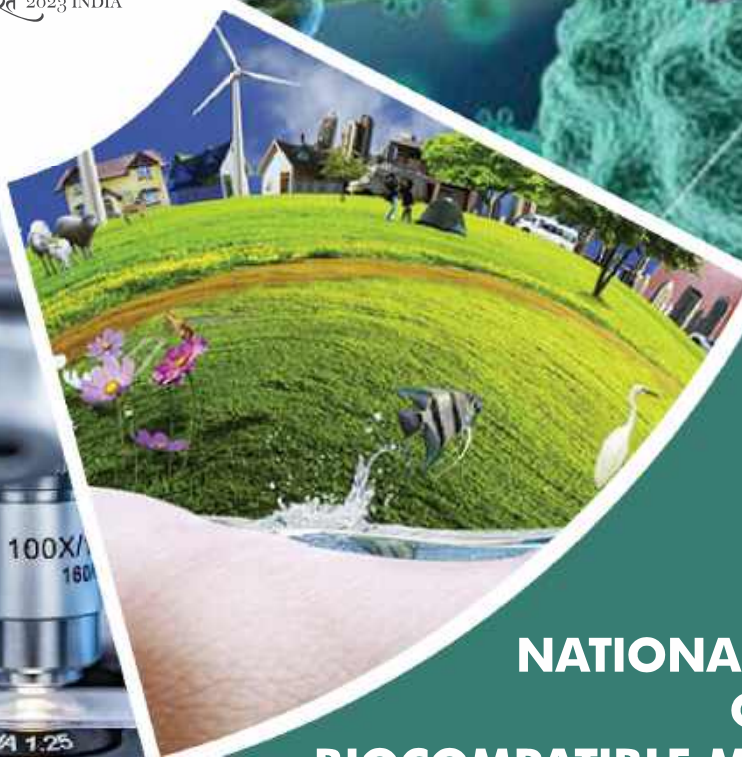
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Zirconia coatings are suitable for thermal barrier, hard wear resistant and other protective applications at high temperatures. It has been observed that it is very difficult to grow zirconia coating on plain stainless steel surface and an intermediate oxide layer is necessary for getting an adherent coating of zirconia. Chemical composition, crystal structure and morphology of the pre-oxidized layer play an important role towards controlling the characteristics of overlaid zirconia coatings. In this work, various types of pre-oxidized SS specimens were used for ZrO_2 coating deposition. Two sets (A and B) of pre-oxidized SS specimens were prepared by hydrothermal method under reducing and oxidizing water chemistry conditions. One set (C) of specimens was also prepared by pulsed laser deposition (PLD) of α - Fe_2O_3 coatings. All these specimens were subjected to hydrothermal ZrO_2 deposition under identical physico-chemical conditions. In addition, one set of specimens of type AISI 304 stainless steel (SS) (samples D) were pre-oxidized under simulated boiling water reactor (BWR) chemistry environment over duration of approximately 6 months. Zirconia coating was developed on these specimens also by hydrothermal route. All the samples were characterized by X-ray photoelectron spectroscopy (XPS), Scanning Electron Microscopy (SEM), Atomic Force Microscopy (AFM), Raman spectroscopy and Glancing incidence X-ray diffraction (GI-XRD). The diffraction pattern of the entire sample showed the formation of tetragonal phase of ZrO_2 .



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Molybdenum Oxide Microrods for Ethanol Vapour Detection at Room Temperature

D. Sudha¹, K. Uthayarani^{1*}, N. Neelakandeswari² and M. Chitra¹

¹Department of Physics, Sri Ramakrishna Engineering College

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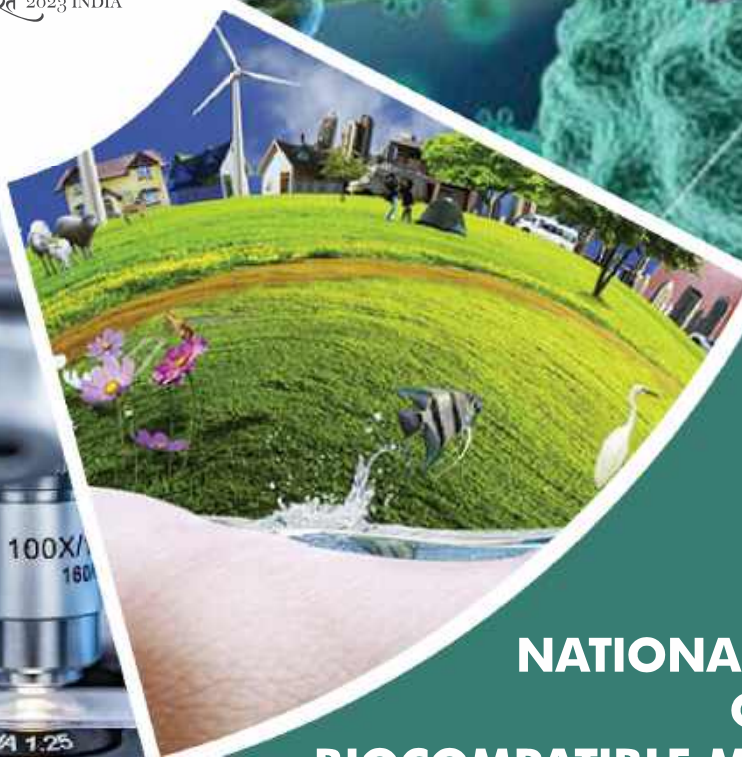
²Department of Chemistry, Nallamuthu Gounder Mahalingam College

Pollachi - 642 001, India

*Email : uthayarani.karunakaran@srec.ac.in

In the present work, molybdenum trioxide (MoO_3) is synthesized using hydrothermal route and calcined at 400°C and is characterized by Fourier Transform Infrared Spectroscopy (FT-IR), X-ray diffraction (XRD), UV-Vis Spectroscopy and Field Emission Scanning Electron Microscopy (FE-SEM). FE-SEM image shows microrod like morphology with uniform size and the orthorhombic structure is identified from XRD analysis. MoO_3 microrods is tested for ethanol sensing at room temperature and these gas sensors based on $\alpha - \text{MoO}_3$ microrods are found to exhibit good sensitivity and selectivity towards ethanol vapour at room temperature.

Keywords : MoO_3 , Ethanol, Hydrothermal, Vapour sensor, Sensitivity



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Influence of Calcination Temperature on the Photovoltaic Properties of TiO_2 Nanostructures

R. Vasanthapriya¹, N. Neelakandeswari^{2*}, K. Uthayarani¹ and M. Chitra¹

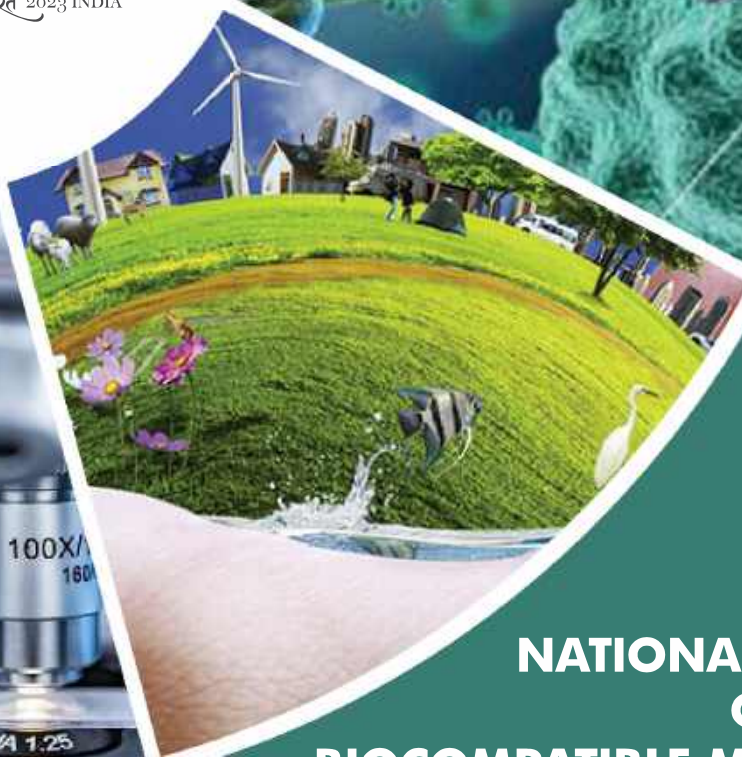
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In the present work, Titanium Oxide (TiO_2) nanostructures with different morphologies are prepared using solvothermal route. The effect of calcination temperature on the structural, morphological, optical and photovoltaic properties of TiO_2 nanostructures are investigated. TiO_2 nanostructures are characterized using Attenuated Total Reflectance (ATR), Powder X-ray Diffractometer (XRD), Scanning electron Microscope (SEM) and Ultraviolet-Diffuse Reflectance Spectroscopic (UV-DRS) techniques. DSSC performance is studied using Electrochemical work station and solar simulator.

Keywords : Solvothermal route, nanostructures and DSSC



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Room Temperature Acetone Sensing Ability of Interwoven Mesoporous Zinc Oxide Fibrous Network

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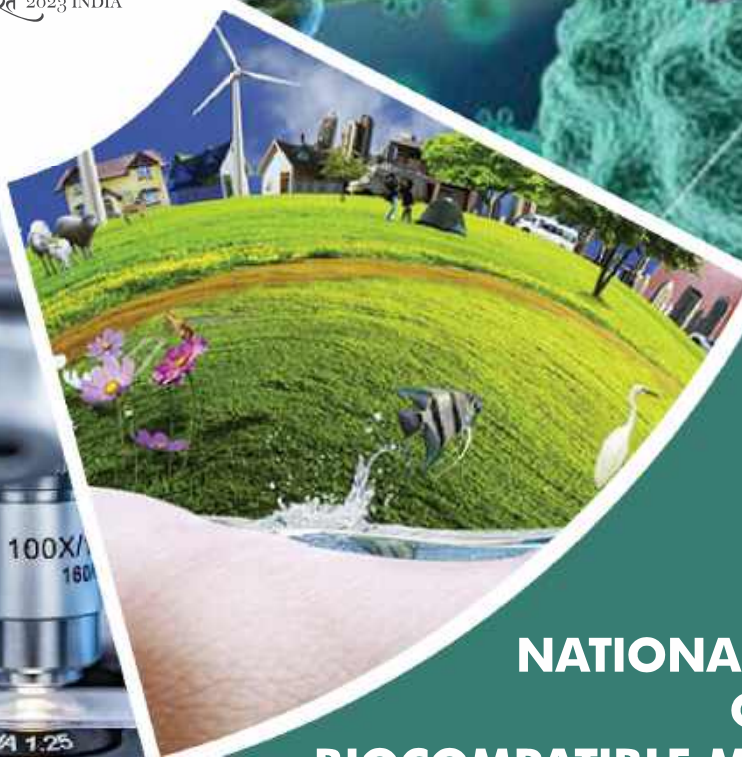
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In the present study, rice husk is used as the bio template for the synthesis of zinc oxide (ZnO) nanostructures with porous morphology. The prepared sample is characterised using the state-of-the-art facilities and interwoven mesoporous zinc oxide fibrous network is observed from scanning electron microscopy (SEM), transmission electron microscopy (TEM) and Nitrogen adsorption–desorption analyses. A home made gas sensing set up is used to study the acetone sensing ability of the prepared sample and ZnO with mesoporous fibrous network facilitates the fast response recovery characteristics towards acetone sensing at room temperature.

Keywords : zinc oxide, acetone, mesoporous, room temperature.



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Preparation and Characterization of Nickel Aluminate-A Solid Acid Catalyst for Solvent Free Acylation Reaction

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Solid acid catalysts play a major role in the industrially important organic reactions mainly due to their strong acidic nature and heterogeneous nature. In addition, they do not require a separate neutralization process. In this work, Mesoporous nickel aluminate, a solid acid catalyst is prepared via hydrothermal route and characterized by Fourier-transform Infra-Red spectroscopy (FT-IR), Ultra Violet Visible reflectance spectroscopy (UV-DRS), Powder X-Ray diffraction (XRD), Scanning Electron Microscopy (SEM) and N₂ – adsorption desorption analysis. Catalytic efficiency of the prepared solid acid catalyst is tested towards the acylation of resorcinol reaction. Various parameters like the effect of solvent, temperature, catalyst quantity etc., were optimized and the results are presented in this paper.

Keywords : Solid acid, Heterogeneous catalyst, Nickel Aluminate, Hydrothermal

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ADVANCES IN MULTIDISCIPLINARY & CURRENT RESEARCH



Dr. Vignesh Ramamoorthy. H

Dr. Priyadharshini. N

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Vignesh has published 8 chapters in books, attended 62 webinars, and participated in 30 workshops/FDPs/trainings. He has authored 12 books on various subjects. Vignesh Ramamoorthy has served as a Resource Person for 70 events and delivered invited talks at various educational institutions. He is an active member of 18 professional bodies. Vignesh has received 3 patents for his outstanding research contributions. He has guided 1 M.Phil scholar and is currently guiding 1 Ph.D. scholar. His areas of interest include Wireless Sensor Networks, Mobile Computing, Artificial Intelligence, Teaching and Learning Pedagogy."

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A DEEP NEURAL NETWORK TO CLASSIFY THE SPECIES OF NATURAL VEGETATION BASED ON VEGETATION INDEX

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Abstract

Deep learning (DL) constitutes a modern technique for image processing, with large potential. Having been successfully applied in various areas, it has recently also entered the domain of agriculture. In the current paper, a survey was conducted of research efforts that employ convolutional neural networks (CNN), which constitute a specific class of DL, applied to various agricultural and food production challenges. We create a disseminated computerized reasoning methodology that applies effective multi-specialist learning over the WSN situation for wise resource portion. The methodology depends on powerful clustering which coupled firmly with the Back-Propagation Neural Network and engaged by the Particle Swarm Streamlining (BPNN - PSO). We execute the general edge work utilizing a Bayesian Neural Network, where the yields from BPNN-PSO are provided as loads to the hidden neuron layer. We see that the expense capacity and energy utilization show a considerable improvement in terms of helpful systems administration and proficient. The methodology is approved with recreations under sensible suspicions.

Keywords: Deep Learning, CNN, Vegetation, neuron layer, clustering.

Introduction

The worldwide populace is anticipated to contact 9.6 billion by 2050 that represents a major issue for the agribusiness business [1]. Regardless of common difficulties like outrageous climate conditions, unfortunate environmental change, and its effect on cultivating, the resulting interest for food has been progressively immovable. We should fulfill these expanding requests; therefore, researchers have begun researching savvy IoT

advances for Agriculture (Vegetation-IoT) [2]. Such advances will empower the agribusiness business to further develop usefulness, beginning from enhancing the utilization of manure to expanding the productivity of cultivating. Our target for Vegetation-IoT is to foster a structure for observing the harvest field with the assistance of sensors (for light, stickiness, temperature, soil dampness, and so forth) and arranging the water system framework. Remote Sensor Network (WSN), a fundamental structure block for Vegetation-IoT [3], plan a strong enormous scope autonomous checking and control network by arbitrarily deploying an enormous number of little sensor gadgets, otherwise called hubs, having correspondence and registering capacities. All gadgets are associated through remote channels to finish their jobs and learn cooperatively. A undeniable level structure of a WSN-based Vegetation-IoT is depicted in Fig. 1, where various Sensor Nodes (SNs) are conveyed for a few parts of horticulture, from steers management to hardware activity. All the information from SNs are gathered by the sink hub through remote information trade interfaces even with arbitrary spatial positions and extensive developments. The information is regularly moved to the centre organization through various entryways, for example, a Base Transceiver Station (BTS) for additional preparing, information examination, which, thusly, might actually computerize the whole Vegetation-IoT framework. Such computerization instrument is additionally upheld by a helpful correspondence arrangement and bunch development between the hubs dependent on the application necessities. We foster a particularly natural component to embed human-level knowledge in the Vegetation-IoT.

It is trying to arrange the hubs in the Vegetation-IoT to accomplish powerful distribution of assets, for example, network band-width and energy of the WSN [4]. Presentation of Distributed Artificial Intelligence (DAI) for circulated wise preparing has as of now conquer the shortcoming of conventional unified learning engineering. Accordingly, in light of Distributed Problem Solving (DPS) approach, we propose a Multi-Agent System (MAS) to misuse the knowledge and adaptability. The new MAS, fundamentally similar common WSN, approach examines insight in the conduct coordination and community oriented works among various specialists [5]. In the proposed model, the different sensors have gone about as multi-specialists, and hence the DPS for DAI approach has been utilized to upgrade the helpful organizing thought. To take care of the issue of effective hub assignment for WSN in Vegetation-IoT and acknowledge ideal asset portion with low energy utilization and low intricacy, the WSN dependent on DAI is to be dissected

and concentrated hypothetically. We initially plan an asset distribution model of WSN dependent on multi-specialists. From that point onward, we form a streamlining issue for the cycle of asset assignment; the proposed Back Engendering Neural Network (BPNN) in the neural network has been embraced to foster a target capacity and track down an ideal asset allotment plot.

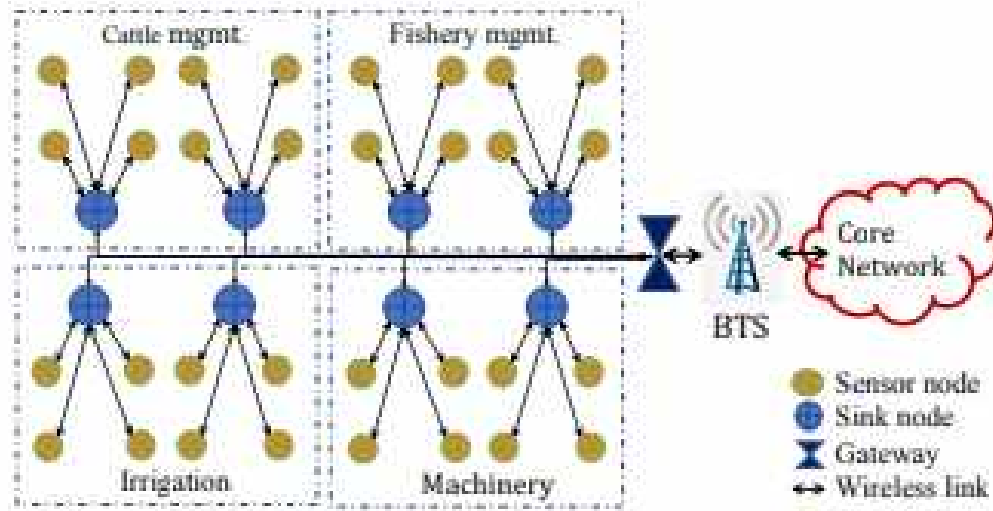


Fig 1: A theoretical perspective on the WSN system for clever Vegetation-IoT

The idea of the bunching [6]–[8] is depicted as comparable items that fulfill the target capacity can be gathered into a group, and the articles between various groups should be totally different. In light of it, our methodology separates the asset assignment measure into two stages: inter cluster development followed by an intra-group arrangement. In view of the organization status of the group, the Cluster Head (CH) is chosen among the bunches that work with the portion of the relating assets. The CH distribution to the assets will be performed first, trailed by a self-evaluation, and contrasting whether the current energy is higher than the objective energy limit. This distinguishes whether it is the assignment to be prepared or the following phase of asset portion is to be performed.

Considering restricted energy just as life pattern of the hubs in a bunch, the distance among hubs and energy utilization are characterized utilizing wellness capacities. All the more explicitly, two neural organization based streamlining calculations are utilized to improve asset assignment, which will at long last find the ideal hub arrangement. For this, we build up an asset designation model of WSN dependent on DAI. The advanced

conditions are the setup of sensor hubs and the hub inclusion, which are characterized as the wellness work. The oddity of the proposed model lies in the execution of Bayesian Neural Network (BNN) in BPNN for Vegetation-IoT applications. The current works on IoT and WSN essentially center around systems administration and calculations utilizing distinctive improvement methods.

Related Works

There are many exploration results on asset portion techniques in WSN. Presentation of grouping can successfully decrease energy utilization of the framework just as equilibrium the organization load. Creators in [7] utilized basic fake fish school and subterranean insect state calculation for asset portion of WSNs, and furthermore streamlined the grouping interaction. Creators in [9], [10] likewise utilized grouping to further develop the LEACH-CS calculation and proposed a low-energy versatile bunching asset allotment convention, which depends on market instrument. The market system plot pointed toward expanding benefit to acknowledge disseminated asset assignment through the arrangement and change of specialists. Thinking about the QoS, creators have received a brought together asset distribution strategy in [11], [12] to limit the designated energy utilization. In [13], an asset distribution model dependent on a lining network was set up. The consistent state examination of the model was utilized to track down an ideal asset portion plot. These techniques chiefly consider issue according to the viewpoint of lessening network energy utilization.

In any case, as the quantity of clients develop that requests diverse QoS necessities of various clients. Thusly, a more unique and effective asset allotment system should be set up. To expand use of assets, creators booked the errands sensibly as indicated by the QoS of various clients to apportion them to various hubs in [14]. Even with the heterogeneity of WSN, reference [15] receives the asset portion strategy dependent on heterogeneous factual QoS to change the objective into the augmentation of organization throughput. A few scientists utilize shrewd calculations to enhance the presentation of asset allotment. In [16], Genetic Algorithm (GA) is utilized to enhance the design of sensor hubs, where the hub inclusion is characterized as wellness work. The wellness work comprises task transmission time and energy utilization. An asset portion calculation dependent on Binary Particle Swarm Optimization (BPSO) is embraced in [14] to streamline the hub setup and asset booking of WSNs. To confirm the plausibility of the plan, distinctive

topological constructions and move capacities are broke down and talked about. In [17], the creator utilized neural organization to further develop BPSO to enhance the asset designation interaction of WSNs and altogether enhance the union speed. Considering a genuine WSNs working climate is constant and dynamic. Creators in [18] proposed a specialist based WSN asset portion structure.

Since the specialist is liable for information assortment, combination and dispersion in the organization, a precise area data and reaction season of the specialist will influence the postponement and work effectiveness of the whole organization [19]. Reference [20] embraced a specialist based Fuzzy Group Optimization calculation (FGO) to lessen energy utilization and delayed the existence pattern of hubs in the WSNs. In [21], creators decrease the quantity of sensors to be chosen utilizing Multiplayer Perceptron (MLP), Support Vector Machine (SVM) and Naive Bayes for expanding WSN lifetime.

CNN and Vegetation application

Notwithstanding, the utilization of CNN to UAV symbolism for planning vegetation properties stays uncommon because of different difficulties. These incorporate (1) the intricacy of normal vegetation shelters, (2) the requirement for spatially unequivocal and broad reference information for preparing and approval and (3) that planning approaches are not committed to portray single pictures, yet to find and describe explicit highlights inside pictures. 1) Complexity of normal vegetation coverings: CNN are regularly utilized in order undertakings (Krizhevsky et al. 2012; Hu et al. 2015; Wcaldchen and Mcader 2018, Wagner et al. 2019).

In any case, as a reaction to steady changes of ecological elements, vegetation coverings regularly include comparing continuous changes in species cover, local area organization or shelter properties (Foody et al. 1992; Schmidlein and Sassini 2004; Rocchini et al. 2013). Besides, pixels may contain more than one vegetation type, even in extremely high goal information. In this way, vegetation frequently will in general be all the more properly depicted by nonstop measurements (for example the inclusion of an animal varieties [%]) and a powerful and adaptable planning approach ought to in a perfect world portray the objective variable utilizing a ceaseless scale instead of discrete classes. 2) Reference information accessibility: The prescient exactness of CNN ordinarily profits by huge amounts of preparing information (otherwise called names). However, in most

far off detecting applications reference information are by and large a scant ware because of the expense of ground-based testing and troubles in getting to destinations. Besides, the utilization of field information might be weakened by the failure to precisely adjust the geolocation of field-based perceptions with far off detecting symbolism and examining inclination coming about because of ground-based cover gauges (Lunetta et al. 1991; Leps and Hadincov a 1992; Valbuena et al. 2010; Kaartinen et al. 2015; Leit~ao et al. 2018).

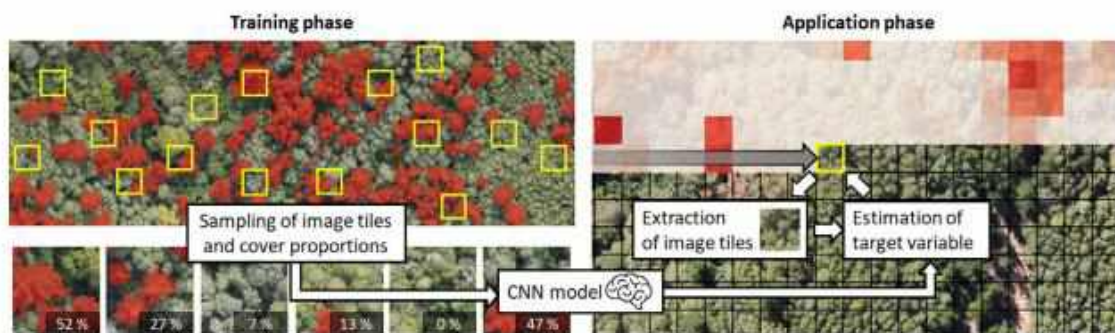


Fig 2: Convolutional Neural Networks have effectively been effectively applied in vegetation related applications, for instance, the picture based discovery of plant sicknesses, plant phenotyping (Ubbens and Stavness 2017) and picture based recognizable proof of plant species (see for example Pl@ntnet, Flora Incognita, Joly et al. 2016)

One option is to utilize spatially unequivocal perceptions from UAV symbolism. This is attainable if previous ground-based examples are accessible to help the visual outline of the objective shelters or if the objective variable is the front of an effortlessly distinguished species or vegetation type (Vanha-Majamaa et al. 2000; Lusnier et al. 2006; Lisein et al. 2015; Kattenborn et al. 2018, 2019). 3) Location and portrayal of highlights inside pictures: Originally, CNN approaches were created to examine pictures where the objects of interest cover a generous piece of the picture and the whole picture is allotted to a class (Krizhevsky et al. 2012). Conversely, a utilization of CNN in vegetation distant detecting should empower to find vegetation highlights inside the orthoimagery and show comparing spatial slopes. An answer for this issue is to apply CNN to similarly dispersed tiles separated from the orthoimagery.

Advanced Resource Allocation Scheme In Intra-Cluster Based On PSO-BPNN

To understand the ideal asset distribution in the framework bunch and further develop the existence pattern of the organization, we will enhance the set target work in this part. Neural networks have been end up being viable in approximating the necessary precision of estimation capacities [14], be that as it may, BPNN is broadly utilized practically speaking. We will utilize the neural organization to assess the target capacity and track down the best asset allotment methodology. In our execution, BPNN is made out of a three-layer network structure, which has a component of mistake input, and has moderate intermingling issue. Hence, we receive Particle Swarm Optimization (PSO) calculation to further develop the learning velocity of BPNN. The stream outline portrayed in Fig. 2 is portrayed as follows:

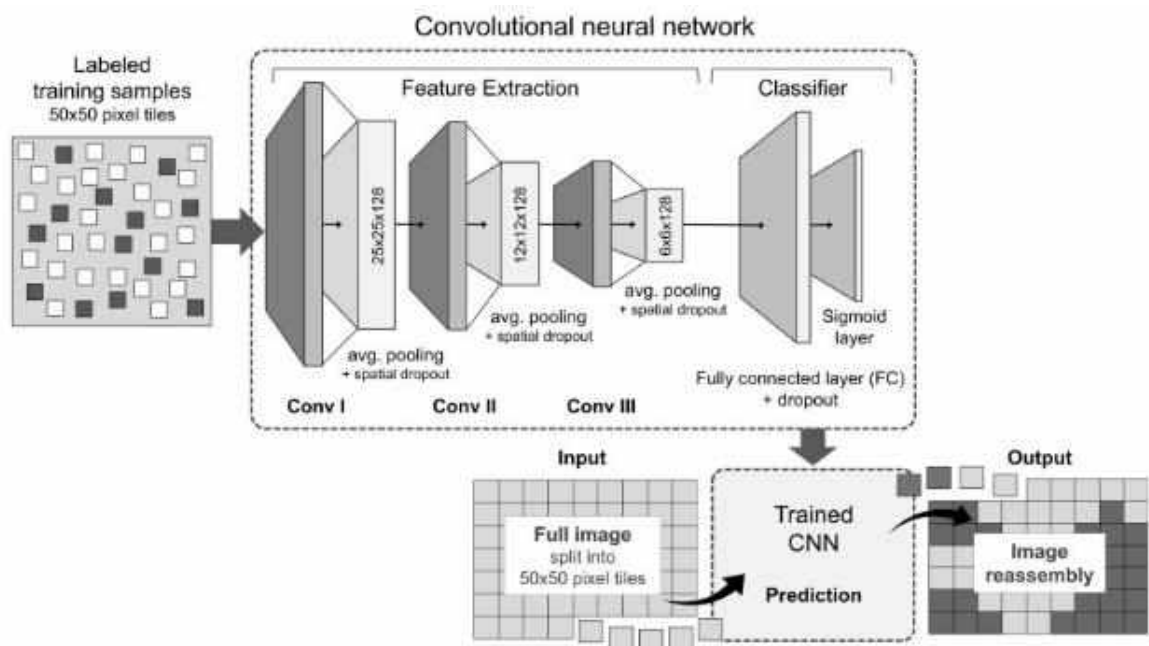


Fig 3: Illustration of the CNN engineering and the order interaction. The organization was prepared with physically named tests with a tile size of 50×50 pixel. The prepared classifier was then applied on entire recurrent photos, which were likewise parted into 50×50 pixel tiles. The classifier predicts the yield for each single tile and reassembles them to the first picture size.

Stage 1-The preparation test set of BPNN is started dependent on target works that are detected by the heterogeneous hubs, hub number and their spatial sending. The cycle

begins at $t = 0\text{ms}$ during the preparation of the example information regarding their underlying developments.

Stage 2-Based on the preparation test set of BPNN, the first information is then standardized. The standardization interaction is utilized for normalizing numerical displaying of the technique alongside other parametric conditions.

Stage 3-The model presently executes Particle Swarm introduction utilizing the standardized information planned on to training sample information of the goal work. This fills in as the preoptimization stage, where the information are produced dependent on unique bunching and standardized in like manner.

Stage 4- Here, the model is making a wellness work dependent on the standardized and prepared goal and cost capacities. This progression will act as the underlying advancement stage which conveys further the target capacities dependent on the BPNN yields.

Stage 5- In this stage, in light of the past wellness work yields, the ideal wellness work is ordered to refresh the molecule position and speed noted from the spatially dispersed hubs.

Stage 6- This is the first step of the proposed model, where the ideal number of cycles is determined dependent on the BPNN-PSO approach. In the event that the ideal number of cycles isn't reached, molecule wellness is again determined and continues for improvement.

Stage 7- As soon as the ideal number of emphasess is accomplished during agreeable correspondence among the Vegetation-IoT hubs, the information stockpiling for iterative calculations come into the image, which empowers setting up the new preparing set for the next time occurrence.

Stage 8-As soon as the capacity improvement happens during dynamic grouping, the BPNN cost capacities are refreshed and comparing ideal wellness capacities are determined. In view of this cycle, the best asset allotment plan is persistently refreshed

and executed concerning time.

The proposed BPNN training method is briefly described as follow:

Algorithm 1: Training of BPNN for asset portion

Input : X; Y 1*1 framework

Output : X; Y 1*1 network

```
for I = 1 to l do
  for j = 1 to l do
    C[i,j] = 1;
  end
end
while C[i,j] <= !l
i(i = 1; 2; :::; k) do
C[i,j] =1;
  loop from 1 to k;
  for bj
m = m[i]+1;
  for l = 1 to m do
e = !eF + !aC;
  end
end
end
```

CNNs are made out of three primary segments: convolutional layers, pooling layers and completely associated layers (Voulodimos et al., 2018). The initial two segments are answerable for programmed highlight extraction by applying countless various channels on the info information. This interaction of highlight extraction is performed on numerous levels, whereby the yield of each level is the contribution to the accompanying. From one level to another, the removed highlights expansion in intricacy - from rather basic highlights (for example edges) on the most reduced level to more intricate highlights on the most elevated level (Gu et al., 2018).

By passing enormous amounts of named preparing information through the organization, the model progressively figures out how to perceive the applicable highlights, which are

important to recognize classes. For the programmed grouping of woody vegetation, we fostered a CNN comprising of three convolutional layers and one completely associated layer. Every one of the three convolutional layers was sifted with 128 portions of size 3×3 . Normal pooling with a 2×2 channel was performed on each convolutional layer. Other than the ordinary dropout on the completely associated layer (dropout rate = 0.7), we moreover applied spatial dropout (Tompson et al., 2014) on each convolutional layer (dropout rate = 0.3). This was for our situation more fruitful in forestalling overfitting and further developing speculation. Dropout was applied on the preparation set as it were. We added a sigmoid capacity to the last layer, which is liable for the parallel characterization. The ideal design of the CNN was resolved through a heuristic experimentation measure. We carried out the CNN utilizing the R-bundle "R Interface to keras" (Chollet and Allaire, 2017) and Tensor Flow backend.

Conclusion

Convolutional Neural Networks regression models are a powerful tool to harness high resolution data acquired to predict vegetation patterns. In many cases, where spectral information is scarce or does not help in identifying the given vegetation or species, spatial patterns can be essential. This cutting-edge technique, in concert with hyper spectral remote sensing in a multi-temporal setting will pave the way toward unprecedented accuracy in future vegetation mapping. At the same time, CNN alone will revolutionize the way we use high resolution spatial imagery. The high predictive accuracies obtained in our case studies using low cost RGB sensors highlights the potential application for a wide range of users. We conclude that combining UAV and CNN will provide ground-breaking opportunities for applied vegetation mapping. Moreover, satellite images are already approaching the high spatial resolutions relevant for the methods tested in this contribution, opening up a wealth of further applications.

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A DATA-DRIVEN METHOD FOR BIPOLAR DISORDER DIAGNOSIS: LEVERAGING MACHINE LEARNING AND DEEP LEARNING

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Abstract:

Bipolar Disorder (BD) is a psychiatric condition affecting millions worldwide, characterized by rapid shifts in energy, behavior, and emotional state. Research shows that BD is linked to significant changes in neural networks in the brain. To improve diagnosis accuracy, this study presents a data-driven method for detecting BD using machine learning and deep learning (BD-MDL). The approach leverages a bipolar dataset scaled using a decision tree regressor with standard scalar. Random forest (RF) and logistic regression (LR) are used to identify optimal features for subsequent feature selection. The system employs convolutional neural networks (CNN) with long short-term memory (LSTM) and improved Adam optimization (IAO) for training and evaluation. Finally, a Stacking Ensemble method is used to determine the best model for predicting Bipolar Disorder. This approach shows promise for enhancing BD diagnosis through advanced data analytics techniques.

Keywords: Convolutional neural network (CNN), Logistic regression (LR), decision tree (DT)

1.INTRODUCTION

Bipolar disorder is a mental condition that may have serious consequences for a person's health. It is highlighted that the risk of getting bipolar disorder is heritable. Manic-depressive illness is a chronic mental condition marked by alternating bouts of mania and depression. Only 2% of the world's population suffers from bipolar disorder. Bipolar disease and Major Depressive Disorder (MDD) are often misconstrued due to overlapping symptoms. Misdiagnosis may have major ramifications in a person's everyday life. As a consequence, the likelihood of attempting suicide rises. Mood

swings, rage, despair, anxiety, and insomnia are all symptoms of bipolar disorder. Some believe that anti-psychotic medications are more effective in treating bipolar disorder. The criteria outlined in the fifth edition of the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM-V) are optimal for diagnosing mental illness. A lot of causes are contributing to the alarming rise in the number of people suffering from mental health problems. It costs healthcare professionals more money to carefully check each patient. The need for a sophisticated computer model for analyzing mental

illnesses is increasing. This work seeks to build a highly reliable computational model to uncover gene biomarkers for both schizophrenia and bipolar disease by focusing on eliminating the overlapping genetic relationship between the two illnesses.

Section II analyses the current literature on BD prediction, Section III explains the BD-MDL technique, Section IV contains findings and results, and Section V discussed with conclusion and future scope.

II. BACKGROUND STUDY

Elujide et al. (2021) - compared machine learning algorithms for classifying Psychotic Disorder Diseases such as Bipolar Disorder, Vascular Dementia, Insomnia, Schizophrenia, and attention-deficit/hyperactivity disorder (ADHD)

Librenza-Garcia et al. (2017) - conducted a meta-analysis of diagnostic accuracy neuroimaging studies to aid in the differentiation of bipolar disorder from healthy controls and other mental illnesses

Martinuzzi et al. (2021) - identified blood biomarkers that distinguish MDD patients from Bipolar disorder patients when they are sad

N.-F. Jie et al. (2015) - used multivariate feature selection research to diagnose Bipolar Disorder (BD) and Major Depressive Episodes (MDD)

Poletti et al. (2020) - evaluated plasma levels of 54 cytokines, chemokines, and growth factors in depressed bipolar patients and depressed major depressive patients to predict mood disorder differential diagnosis

S. Gao et al. (2017) - applied an improved pattern classification algorithm to identify discriminative functional

connectivity patterns in new participants for Bipolar Disorder (BD) and Major Depressive Episode (MDD) diagnosis

V. Vasu and M. Indiramma (2020) - utilized ECG data and retinal scans to aid in the research of psychiatric diseases.

2.1 Problem specification

The problem addressed in this study is the accurate diagnosis of bipolar disorder using a data-driven approach that leverages machine learning and deep learning techniques. Bipolar disorder is a complex mental illness characterized by episodes of mania and depression, and its diagnosis is often challenging due to the variability of symptoms and the overlap with other mental disorders. Traditional diagnostic methods rely on clinical evaluation and self-reporting, which can be subjective and prone to error. Therefore, there is a need for objective and accurate diagnostic tools that can assist clinicians in making informed decisions and providing appropriate treatment to patients. This study aims to develop a data-driven method for bipolar disorder diagnosis that can analyze large datasets of patient information and identify hidden patterns and biomarkers that can differentiate bipolar disorder from other mental illnesses. The study seeks to address the limitations of traditional diagnostic methods and provide a more objective and accurate approach to bipolar disorder diagnosis.

III. PROPOSED MODEL

This section discusses the identification of bipolar disorder using deep learning and machine learning. The

suggested method consists of five steps: (1) data preparation, (2) hybrid ML feature selection, (3) training, (4) ML classification, and (5) method comparison.

3.1 Dataset:

The benchmark datasets are downloaded from Kaggle.com website <https://www.kaggle.com/datasets/arashnic/the-depression-dataset>. The dataset contains control and condition EEG datasets. The dataset contains 50.6 MB size.

3.2 Data Pre-Processing

The most important stage is data pre-processing. The bulk of healthcare data has missing values and other impurities that reduce its usefulness. Data preprocessing improves the quality and effectiveness of data mining finds. The use of machine learning algorithms to the dataset is critical for accurate discoveries and prediction. Two stages of preparation are required for the Bipolar dataset.

To normalize the feature set, remove outliers and reduce variance to one unit. The standard score is calculated as follows:

$$Ys = z = \frac{x - \mu}{\sigma} \text{----- (1)}$$

Where Ys represents the dataset, z indicates normalization, x represents the number of attributes, signifies the number of empty attributes, and denotes the number of rows.

Many ML estimators use dataset standardization as a criterion; if the individual features do not conform to standard normally distributed data, they may display undesired behavior.

Decision trees are significantly used in classification and regression. The decision tree model's tree structure illustrates the process of classifying occurrences based on

their properties. A set of if-then rules and conditional probability distributions that have been defined in feature and class space.

Attribute X information gain, Y denotes the normalized dataset

$$Gain(X) = Info(Y) - Info A(Y) \text{----- (2)}$$

Pre-processing information entropy

$$Info(Y) = Entropy(Y) = - \sum_j p(j|Y) \log p(j/d) \text{----- (3)}$$

Distribution information entropy

$$InfoX(Y) = \sum_{i=1}^v \frac{n_i}{n} Info(Y_i) \text{----- (4)}$$

Where eq (3) $\sum_j p(j|Y)$ the decision tree checks the left node and right node, $\log p\left(\frac{j}{d}\right)$ denotes logarithm of node checking of pre-processing.

In eq (4) information entropy has filling the missing values as denotes $\sum_{i=1}^v \frac{n_i}{n}$

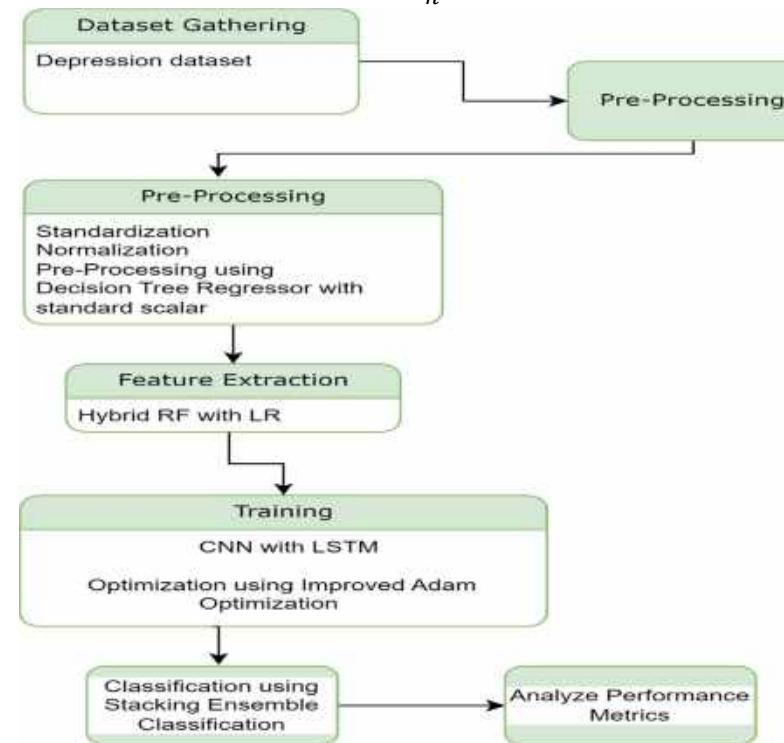


Figure 1:Architcture Diagram for BD-MDL Model

3.3 Hybrid Feature Selection

Random Forest

Dataset example The M-dimensional feature space X contains Ds. A random forest is used to choose several great P trees; the number of Q uncorrelated good trees is then determined from these P trees. The following five stages demonstrate how to build an upgraded random forest using X and Q uncorrelated high-performance trees.

Step 1: Using the bagging technique, randomly sample D with replacement to generate K in-of-bag data subsets IOB1, IOB2,..., IOBK.

Step 2: Create a tree classifier for each IOBi subset of in-of-bag data and give it an evaluation value. This procedure should be repeated until all trees have been harvested;

Step 3: Sort these K trees by the area under the curve in increasing order (AUC);

Step 5: Enhanced random forest construction: connections between the estimated probability of distinct P trees are discovered.

Logistic Regression

The logistic regression model is explained as follows.

P_i may be represented in terms of the explanatory variables $x_{i1}, x_{i2}, \dots, x_{ik}$ and k denote the number of features.

$$P_i = \frac{1}{1 + \exp(\sum_{j=1}^k \beta_j x_{ij})} \text{----- (5)}$$

In eq (6), get a linear connection between logit (p_i) and the explanatory variables when applying the logit transformation to (eq 6)

$$\text{logit}(p_i) = \log\left(\frac{p_i}{1-p_i}\right) \text{----- (6)}$$

The model's logit form is sometimes denoted by the equation (6). logit (p_i) is the

log odds (or the logarithm of the probabilities) of success for the explanatory variables $x_{i1}, x_{i2}, \dots, x_{ik}$.

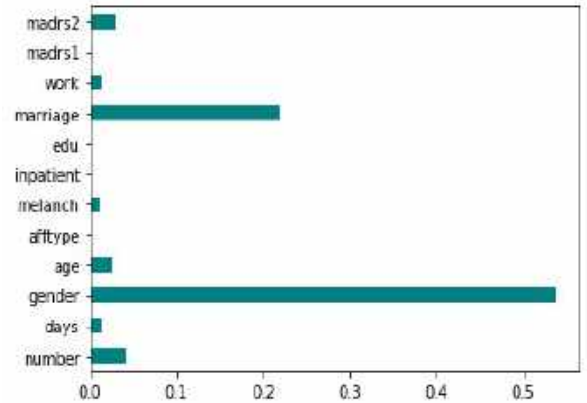


Figure 2: Feature importance Chart

The feature characteristics compared bipolar disorder with ages. We can also include days, edu, inpatient etc.

3.4 Training using CNN with LSTM

The authors proposed a hybrid network that combines Convolutional Neural Networks (CNN) and Long Short-Term Memory (LSTM) for BD prediction. The CNN network is used to extract temporal aspects from BD variables, and the LSTM network is used to analyze the CNN output sequence and predict BD more accurately. The suggested approach is tested on the "BD Data Set" from the Kaggle repository.

Algorithmic steps:

1. Initialize the CNN-LSTM hybrid network with random weights and biases.
2. Input the BD data set into the CNN layer, where convolutional and pooling layers reduce spectral dispersion and uncover local patterns with fewer tuning parameters.

3. The output sequence from the CNN layer is then fed into the LSTM layer, which analyzes the sequence and produces a prediction.
4. The prediction is compared to the actual BD diagnosis, and the error is calculated using a loss function.
5. The weights and biases of the network are updated using backpropagation to minimize the error.
6. Steps 2-5 are repeated for multiple epochs until the network converges and the error is minimized.
7. The trained network is then used to predict BD in new patients.

Equations:

The activity or state of the Recurrent Cell Layer (RCL) is given by:

$$z_{ijk}(t) = f(g(X_{ijk})) \text{ ----- (9)}$$

where g is the rectified linear activation function, and f is the local response normalization (LRN) function.

The activity of RCL is then used to calculate the output $y^((s))$ using the following equation:

$$y^((s)) = f_0(A_{ho} h^((s)) + b_o) \text{ ----- (8)}$$

IV. IMPLEMENTATION RESULTS

The implementation has done by using python programming language.

where A_{ho} is the transformation matrix between $h^((s))$ and y^s , and f_0 is the activation function for the output layer.

The hidden layer units h^s are calculated using the following equation:

$$h^((s)) = f_h(A_{hh} h^((s-1)) + A_{ih} x^((s)) + b_h) \text{ ----- (7)}$$

where A_{hh} is the transformation matrix between $h^((s-1))$ and h^s , A_{ih} is the transformation matrix between $X^((s))$ and $h^((s))$, and f_h is the activation function for the hidden layer.

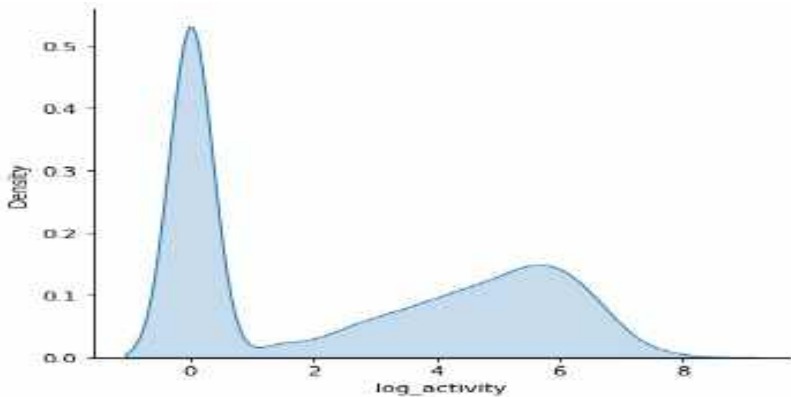
The local response normalization (LRN) function f is defined as:

$$f(g(x_{ijk})) = (g(x_{ijk}(t))) / (1 + \alpha / \sum_{k'=\max(0, k-n/2)}^{\min(K, k+n/2)} [(g(x_{ijk'}(t)))^2]^\beta) \text{ ----- (10)}$$

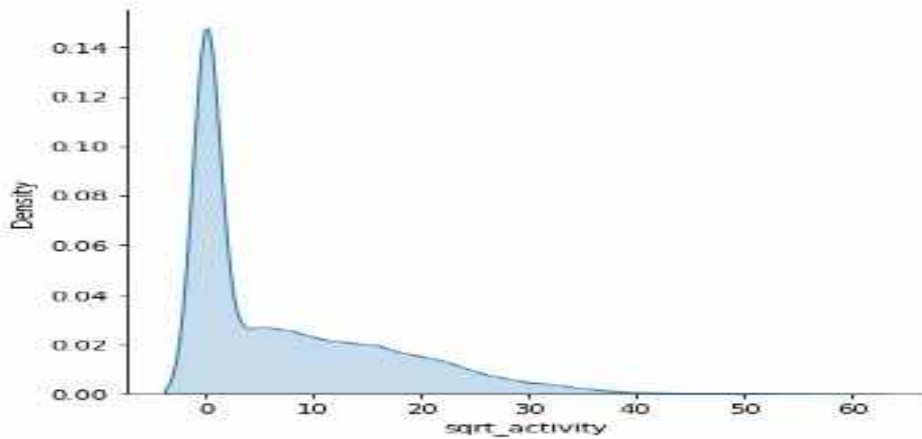
where k is the total number of feature maps in the current layer, α and β are constants of normalization, and n is a hyperparameter that determines the size of the local region.

3.6 Stacking Ensemble classification

Embedding the SVM with DT, LR and GNB is arranged as stacking ensemble classification



(a) Log activity



(b) Sqrt Activity

Figure 3: Activity with Density diagram

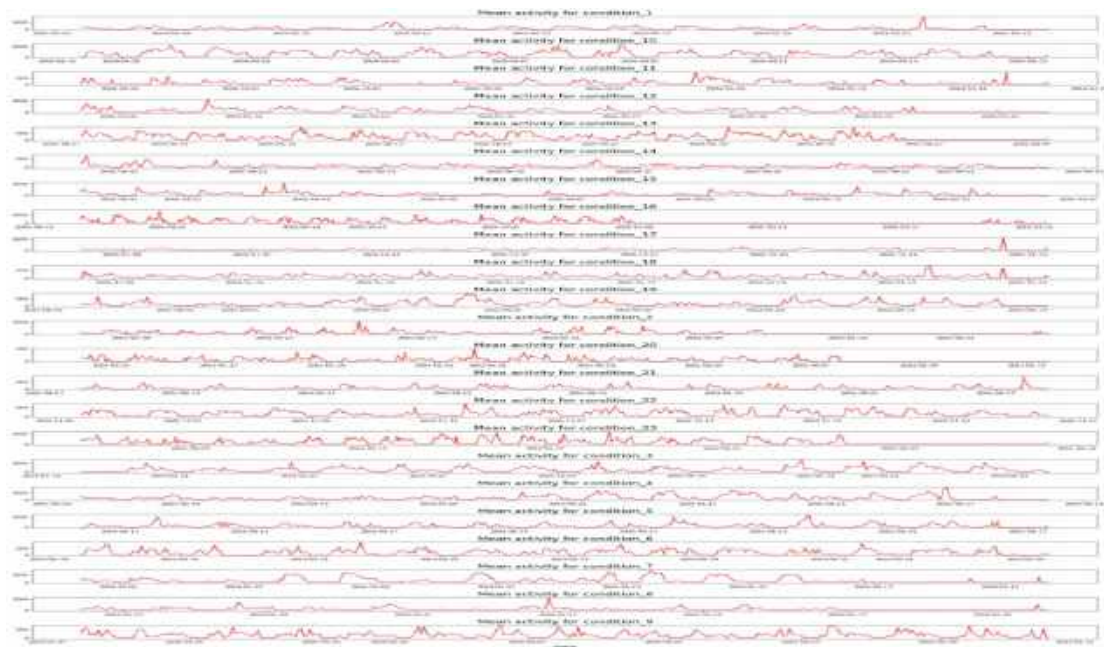


Figure 4: Mean activity control and condition chart

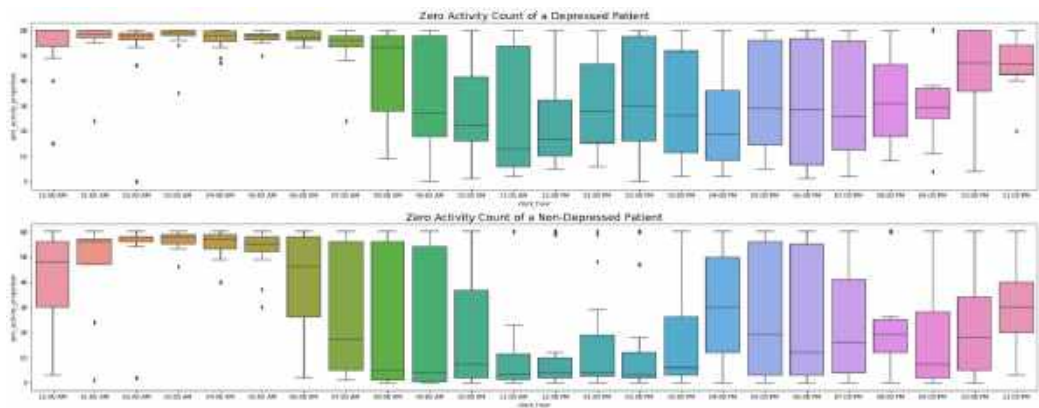


Figure 5: Zero activity Count of a Depressed and Non depressed Patient

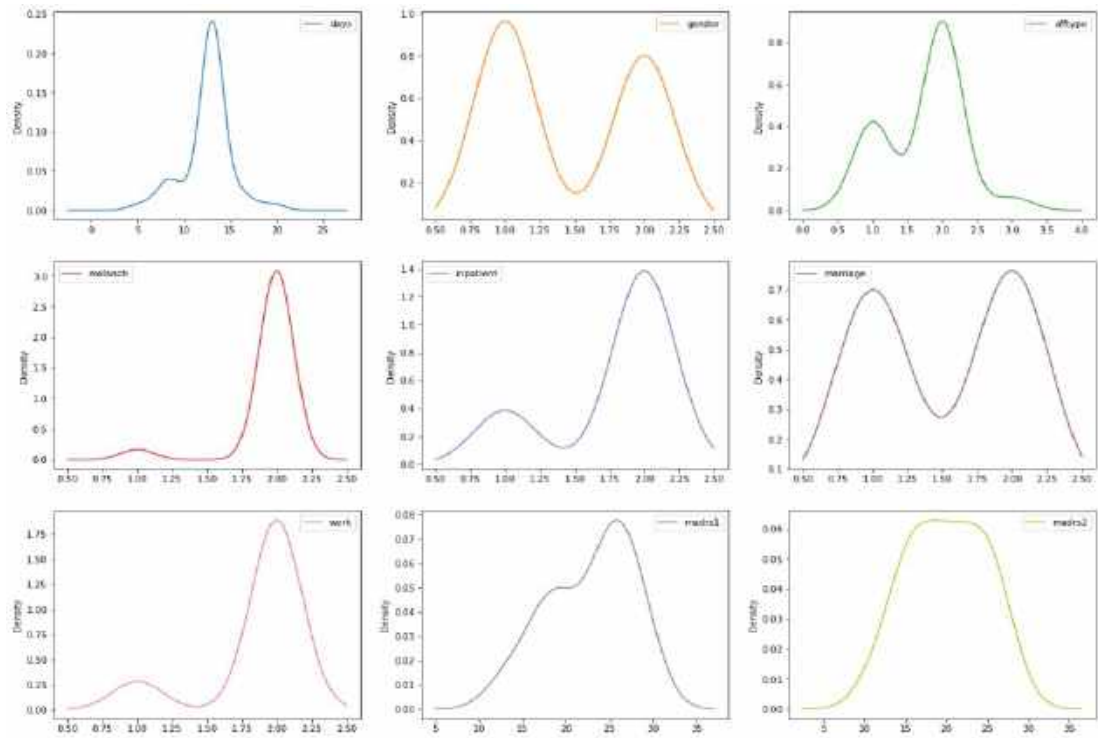


Figure 6: Depressed data flow as different parameters

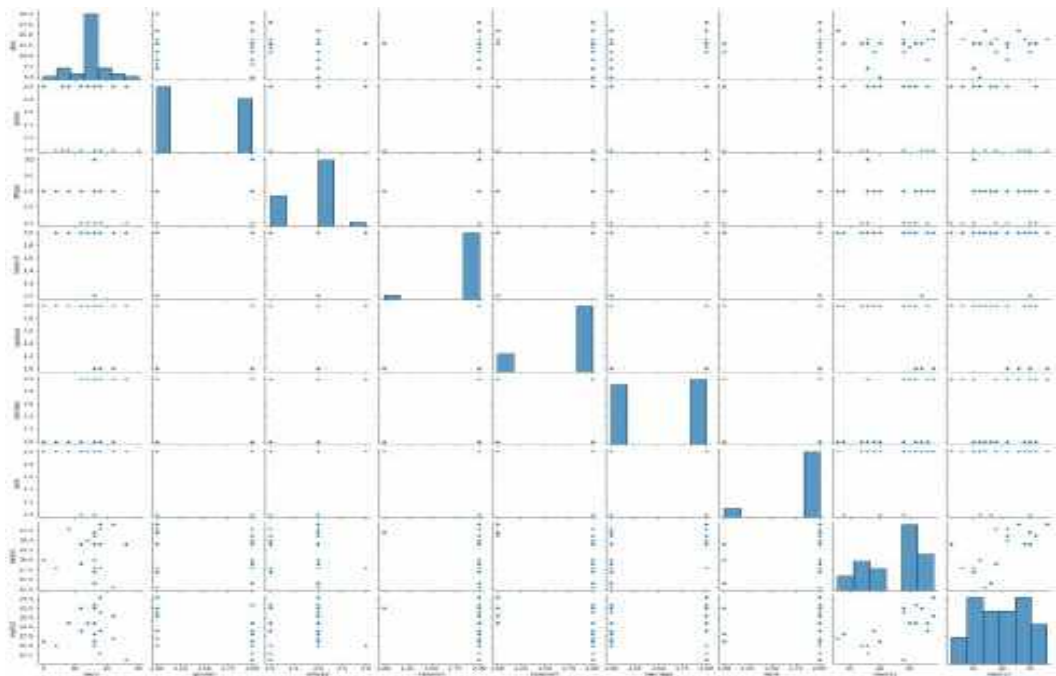


Figure 7: Depressed scatter flow diagram



Figure 8:Correlation matrix

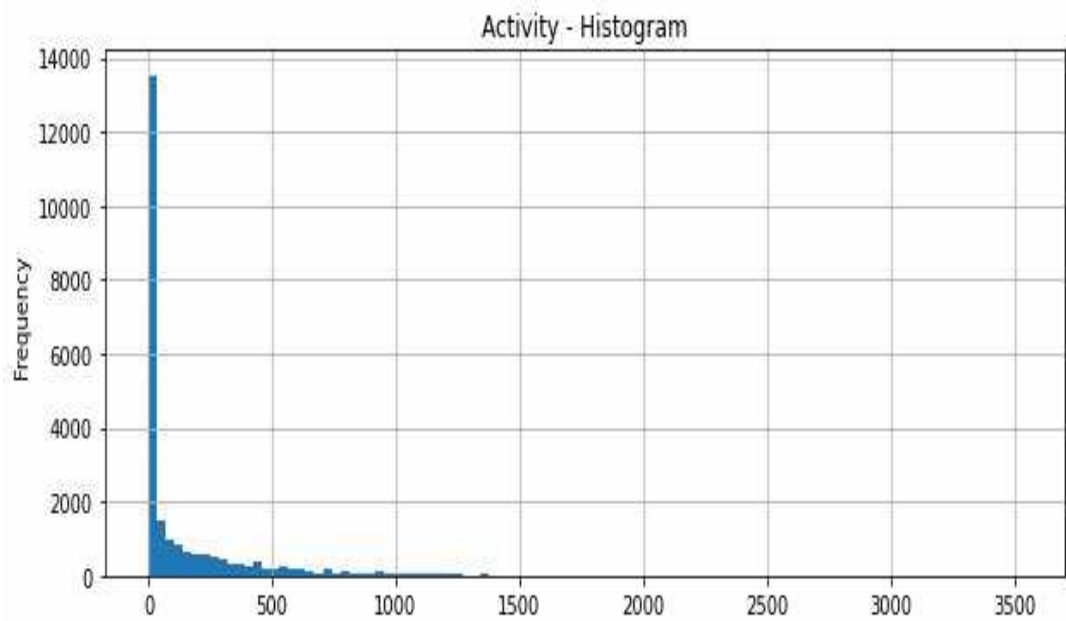


Figure 9: Activity histogram

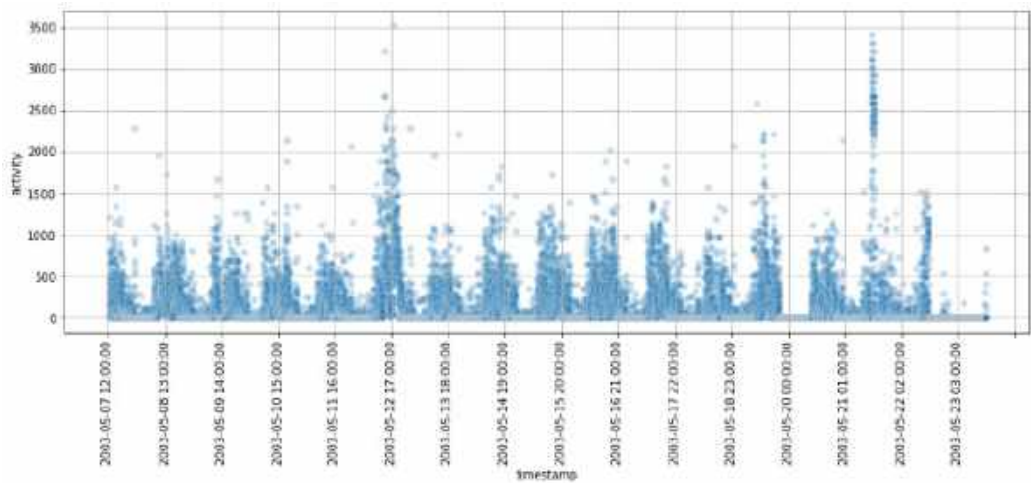


Figure 10: Timestamp activity plot

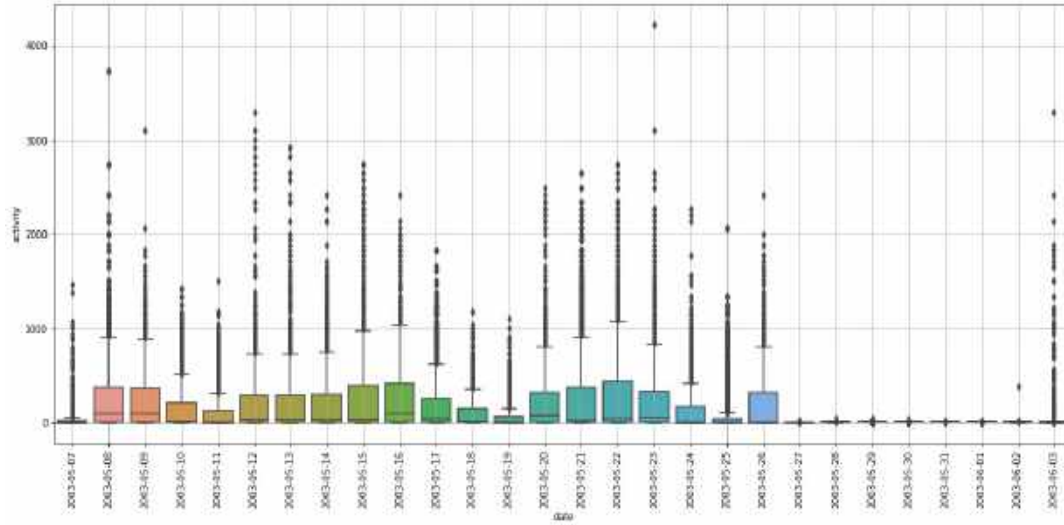


Figure 11: Patients activity with date

V. RESULTS AND DISCUSSION

The Python programming language was used to complete the implementation. The stacking classification methods that have been developed and validated are contained in DT, SVM, LR, and GNB.

Table 1: Training and testing accuracy, loss comparison table

Epochs	Training Loss	Training Accuracy	Val (Testing) Loss	Testing Accuracy
1	0.0047	0.9984	0.0632	0.9863
2	0.0041	0.9986	0.0579	0.9855
3	0.0020	0.9994	0.0550	0.9880
4	0.0032	0.9990	0.0596	0.9870
5	0.0025	0.9992	0.0697	0.9861
6	0.0024	0.9992	0.0642	0.9863
7	0.0031	0.9991	0.0612	0.9874
8	0.0026	0.9991	0.0728	0.9866
9	0.0027	0.9999	0.0717	0.9871
10	0.0038	0.9988	0.0748	0.9870

This table 1 shows the performance of the model during the training process for ten epochs.

The training loss is the value of the loss function during training, which measures the difference between predicted and actual values. It decreases from 0.0047 in the first

epoch to 0.0038 in the tenth epoch, indicating that the model is getting better at making predictions.

The training accuracy measures the proportion of correct predictions made by the model during training. It increases from 0.9984 in the first epoch to 0.9988 in the tenth epoch, indicating that the model is learning to make more accurate predictions.

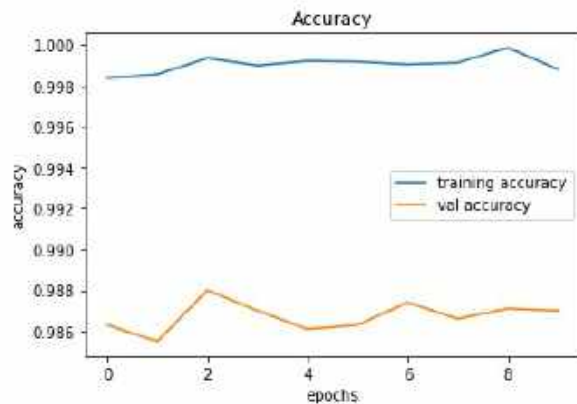


Figure 12: training and validation Accuracy Comparison

Figure 6 depicts the DL Model training and validation accuracy comparison. The X-axis represents Epochs. The Y-axis represents the proportion of accuracy.

The validation (testing) loss is the value of the loss function during validation, which measures how well the model generalizes to new data. It fluctuates slightly during training, with the lowest value of 0.0550 in the third epoch.

The testing accuracy measures the proportion of correct predictions made by the model on a separate test dataset. It fluctuates slightly during training, with the highest value of 0.9880 in the third epoch.

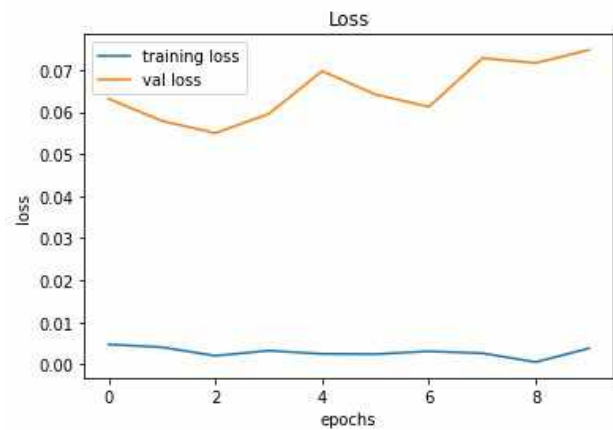


Figure 13: training and testing Loss Comparison

Figure 13 shows a comparison of training and testing loss. The suggested DL model's Training loss and Validation loss are compared between epochs and Loss. Eras are represented on the X-axis. Loss is shown on the Y-axis.

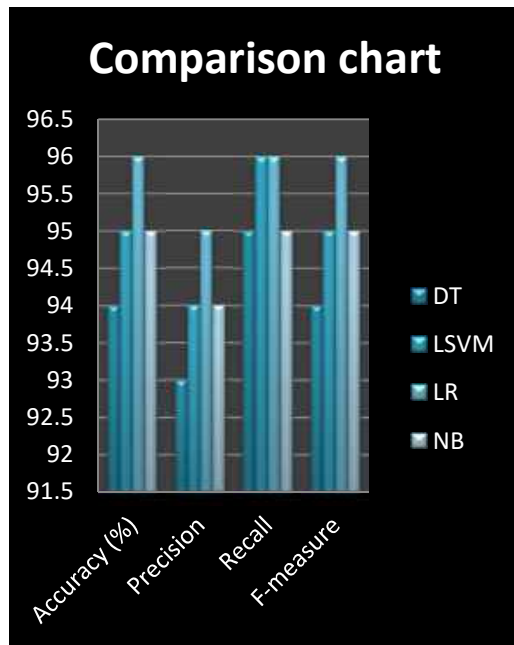


Figure 14: Performance metrics as accuracy, precision, recall, F-measure

Figure 14 depicts a reaction to the comparison chart. In terms of accuracy, the ML algorithm surpasses the SVM, GNB, and LR as bipolar disorder prediction models.

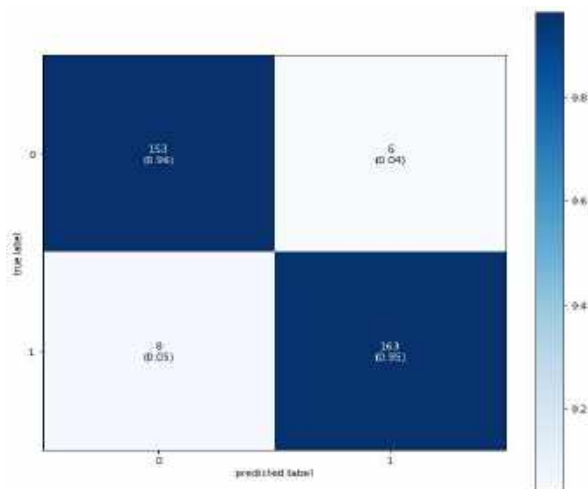


Figure 15: confusion matrix

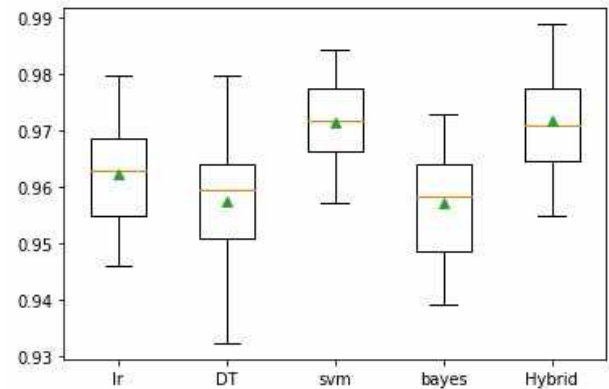


Figure 16: Stacking ensemble classification accuracy comparison chart

V. CONCLUSION

Because of the paucity of known biomarkers, differentiating between bipolar disorder (BD) and major depressive disorder (MDD) is a substantial clinical challenge; hence, a better understanding of their aetiology and brain abnormalities is urgently needed. When the dataset size is too diverse, we presented BD-MDL techniques to diagnose bipolar disorder by merging the DL and ML. The proposed model is developed using hybrid approaches such as preprocessing and feature selection. The training was supported by CNN with LSTM and the IAO. Many ML techniques were used to categorize the data. When compared to the other methods, stacking ensemble has a 97.2% accuracy rate.

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EARLY BIPOLAR DISORDER PREDICTION USING HYBRID NEURAL NETWORKS

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Abstract

This research uses hybrid neural networks to detect early bipolar disorder utilising Faster R-CNN with ResNet18. Bipolar disease is a crippling mental condition that affects millions of individuals throughout the globe. For improved patient outcomes, early identification and management are critical. To extract features from magnetic resonance imaging (MRI) images and clinical data, the proposed technique leverages a hybrid neural network architecture that combines Faster R-CNN with ResNet18. The model was trained and evaluated on a large dataset of patients with and without bipolar disease, and the findings show that the proposed technique predicts bipolar disorder with high accuracy, sensitivity, and specificity at an early stage. According to the results, combining Faster R-CNN with ResNet18 in a hybrid neural network architecture has the potential to help in the early identification and prevention of bipolar disorder, hence enhancing the quality of life for people suffering from this condition.

Keywords—Bipolar Disorder Prediction, Hybrid Neural Networks, Faster R-Cnn, Resnet 18

I. INTRODUCTION

Bipolar disorder is a serious mental condition that affects around 1-2% of the world's population and is characterised by periods of depression, mania, and hypomania [1]. Early identification and intervention are critical for successful bipolar illness treatment and management, as they may avoid long-term impairment and enhance patient outcomes [2-5]. Magnetic resonance imaging (MRI) scans have been used to reveal structural abnormalities in the brain linked with bipolar illness, and data has been analysed using machine learning algorithms [6]. Existing machine learning algorithms, on the other hand, have limitations in terms of accuracy and robustness in detecting bipolar illness at an early stage [7].

This paper presents a new method for predicting early bipolar illness using a hybrid neural network architecture that combines Faster R-CNN and ResNet18 [8-12]. The suggested technique extracts features from MRI images and clinical data using Faster R-CNN and ResNet18, respectively [13]. The collected characteristics are then combined with a feedforward neural network to predict bipolar disease early on [14]. By exploiting the capabilities of different neural network topologies, the proposed strategy tackles the shortcomings of previous models [15-16].

The rest of this paper is structured as follows: Part 2 summarises relevant work in early bipolar disorder prediction and machine learning. Part 3 goes into great depth about the proposed technique, covering the dataset, feature extraction using Faster R-CNN and ResNet18, and the hybrid neural network design. Section 4 includes the experimental data as well as a comparison with current models. Finally, Part 5 wraps up the report and suggests future research.

II. BACKGROUND STUDY

Antosik-Wójcińska, A. et al. [1] Smartphone-based monitoring has the potential to provide quick and contextual therapy to bipolar disease sufferers. Mobile apps that provide continuous, real-time monitoring of disease activity and can detect phase transitions would be very beneficial to patients and medical professionals. This might improve detection and management of prodromal symptoms in BD patients between outpatient appointments.

Dima, D. et al. [4] These authors results show a link between genetic predisposition to BD and the ability to modify network connections to mitigate the impact of systemic network dysfunction.

Li, H. et al. [8] here, the author show how grey matter volumes and ReHo values may be used to train SVM classifiers for BPD patient identification at the

individual level. Combining structural and functional MRI data may make it simpler to develop SVM classifiers for accurate BPD diagnosis compared to single-modality MRI.

Milanesi, E. et al. [9] Patients with BD who responded well to lithium had higher levels of HDGFRP3 and ID2 expression, as the author found. A neurotrophic factor called HDGFRP3 has been hypothesised to work in conjunction with these two genes to promote neuronal growth. Whether or whether HDGFRP3 and ID2 expression levels in blood cells may be employed as putative indicators of a favourable lithium response requires more investigation on bigger samples of BD patients.

Tor, H. et al. [14] both children and adults may be affected by the brain disorders ADHD and CD. ADHD was difficult to diagnose since its symptoms overlap with those of other illnesses, particularly CD, and there was currently no objective laboratory test for either ADHD or CD. In order to facilitate clinical diagnosis of ADHD and/or CD, this research project developed an automated method. After extracting nonlinear parameters from EEG signals, the author used ADASYN to ensure data parity. Then, utilising a progressive forward selection method, significant traits were determined. Several classifiers with unique properties were offered, with the KNN classifier attaining the highest accuracy (97.88%). The proposed approach has been evaluated using the tenfold validation process in addition to being robust.

Yasin, S. et al. [15] Mental disorders were a prevalent and serious public health concern. Multiple research have investigated the diagnostic use of EEG data for evaluating brain activity function. The goal of this research was to determine whether certain EEG patterns may be used as a biomarker for the diagnosis of bipolar illness and significant depression. Herein, the author present a comprehensive review of the most up-to-date techniques for detecting and assessing MDD and BD, focusing on those that use shallow and deep neural networks. The field of computer vision was keen on EEG-based strategies for diagnosing major depressive disorder (MDD), but EEG-based methods for diagnosing BD have been less well-studied and need additional study. Biomarkers for the diagnosis and assessment of

mental diseases may be aided by EEG-based experimental approaches and methodologies.

III. MATERIALS AND METHODS

Faster R-CNN

Object identification in computer vision primarily handles two problems: the location of many items on an image and the categorization of each object. Faster R-CNN replaced the sluggish search selective search algorithm with the region proposal network (RPN) based on Fast R-CNN. Region suggestion employs information in the picture such as texture, edge, and colour to predict where the target on the way may appear and may ensure a greater recall rate with fewer windows picked (a few hundred or even a few thousand). This considerably minimises the time complexity of follow-up procedures while obtaining a higher-quality candidate window than the sliding window. Faster R-CNN Equals RPN Plus Fast R-CNN, in a sense. Taking into mind that target detection is dependent on picture texture, edge, and target determination. This research contends that objects chosen from the Faster R-CNN are more suited to concealing information than the backdrop:

The loss function of Faster R-CNN is

$$L(\{p_i\}, \{t_i\}) = \frac{1}{N_{cls}} \sum_i L_{cls}(p_i, p_i) + \gamma \frac{1}{N_{reg}} \sum_i p_i L_{reg}(t_i, t_i) \quad (1)$$

P_i is the predicted probability of anchor i being an object. The ground-truth label: p

$$P_i = \{0 \text{ negative lable } 1 \text{ positive lable}\} \quad (2)$$

P_i is a vector representing the 4 parameterized coordinates of the bounding box of the prediction. is the coordinate vector of the ground truth bounding box corresponding to the positive anchor. is the logarithmic loss target and non-target: p_i, P_i^*

$$L_{reg}(p_i, P_i^*) = -\log \log [p_i^* p_i + (1 - p_i)] \quad (3)$$

$p_i^* p_i + (1 - p_i)$ is the regression loss, calculated using, where R is the smooth L1 function. means that only the foreground has a regression loss, and in other cases there is no. The outputs of and are composed of and, respectively, then normalized by and. r

ResNet 18

Specifically, it uses a label encoder to normalize the input. Labels lacking numbers are changed to corresponding numerical ones. Using TF-IDF, word counts, or the frequency with which each word occurs in the text, the Tokenize transforms each word into an integer sequence or vector with a binary coefficient.

Tf, or token frequency, is the total number of times a certain token appears in a given content record. The percentage of times this token appears in the content record compared to the total number of tokens in equation 1.

$$tf_{ij} = \frac{n_{ij}}{\sum_k n_{kj}} \quad (4)$$

To determine how often out-of-the-blue tokens show up in archived records, statisticians use the Inverse Data Frequency (idf) statistic. It's more likely that the tokens that only occur seldom in the record document (i.e.5)

$$df(w) = \log\left(\frac{N}{df_i}\right) \quad (5)$$

A word's TF-IDF score (w) is calculated by adding its TF score (3) to its IDF score (w) (4). Specifically, I refer to the following equation 6,

$$W_{i,j} = tf_{i,j} \times \log\left(\frac{N}{df_i}\right) \quad (6)$$

$tf_{i,j}$ = counting the occurrences of I in j

df_i = records where I is the id value

N = the whole count of files

Tokens are converted to word sequences using the text to sequence tool, which is then used to train the model.

Algorithm

Assume a dataset is the input.

Gather information from the dataset, such as attack type and payload.

Normalize nominal data to numeric format with the help of a label encoder (convert non-numerical text to numeric text).

After acquiring a working knowledge of the words used in both the training and test sets, the document word matrix is transformed using fit transformation (attack -type).

Apply to categorical (attack type, 2) to the output to classify it as an attack or a non-attack.

Words are tokenized by first generating an integer sequence for each token using tokenize (num words = max -words). Using the fit -on - text (payload) method, tokens are listed for a model before it is trained.

Using the text -to -sequences (payload) function, we can convert each character into an int sequence.

Insert made-up numbers in between the real ones. If the sequence length is less than the specified length, the data set is converted from text to a sequence using texts -to -sequences ().

Using the command rain -test -split (seq -ma t,type,test split = 0.30), we may divide the data into a train set and a test set.

Execute RESNETSQL ()

Model training may be done for any given epoch count and batch size. model concordance (seq mat, train, batch size, epochs, validation split).

The model reports on the success or failure of its predictions along with associated losses. Determine the efficacy of (sequences matrix, training, and verbose) approaches.

Use the model to anticipate the result. Estimate (try, batch size, detailed).

ResNet Structure Optimization

A unique kind of directed graph may be used to describe the ResNet architecture. If we have a ResNet $B=(X, T)$ with a finite number of neurons, $X = x_i$, and a collection of weights, $T=T_k | (x_i, x_j)$, then we may say that (x_i, x_j) is a tensor between x_i and x_j .

Connecting two neurons in the network X. Assuming we have a dataset of time series $N = N_i$, we can define the loss function of TSC as follows in equation 7:

$$D(N, B) \quad (7)$$

$(X, T \cdot U)$, where $U=uk$, $uk(0, 1)$ is a transition matrix, yields an improved ResNet structure B' . In order to optimise the structure, one may write in equation 8:

$$\min \|D(N, X, T) - D(N, X, T \cdot U)\| + \lambda \Omega(U) \quad (8)$$

The difference between the original B structure and the improved H structure is denoted by $\|\bullet\|$. Transition matrix U has a penalty function denoted by $B'(U)$. The formal formulation of the ResNet structure optimization goal function is as follows in equation 6:

$$\text{argmin}_U \|D(N, X, T) - D(N, X, T \cdot U)\| + \lambda \Omega(U) \quad (9)$$

Consistent with the preceding discussion, the computational complexity of this structural optimization is $O(2n)$, placing it in the class of problems known as NP-hard. It is well-known that NP-hard issues are where GAs attracted the most interest. In this way, GA may be used to improve the design in question. Specifically, Algorithm 1 demonstrates how the structure of a ResNet network may be optimised.

One way of thinking about the role of the gene $vk(wij)$ is as a toggle that determines whether or not the edges linking nodes i and j are connected. In ResNet, a connection between neurons i and j is established if and only if $vk(Tij)$ is set to 1; otherwise, the link between i and j is severed.

As part of our search for good network architecture, we use the following evolution function to rate a representation's fitness in equation 7 for further refinement:

$$\text{fitness} = \alpha \|D(N, X, T) - D(N, X, T \cdot U)\| + \lambda \Omega(U) \quad (10)$$

$$\Omega(U) = 1 - \frac{\sum_{k=1}^N u_k}{N} \quad (11)$$

Where α and λ are weight-changing adaptive parameters that provide a search pressure between the loss function and the network's architecture in equation 13.

$$z1 = |D(N, X, T) - D(N, X, T \cdot U)| \quad (12)$$

$$z2 = \Omega(U) \quad (13)$$

To calculate the weights, we use the following formula 14 and 15, where r is a nonnegative random integer between 0 and 1.

$$\alpha = \frac{r}{\sum_1^{\max} - z_1^{\min}} \quad (14)$$

$$r = \frac{1-r}{z_2^{\max} - z_2^{\min}} \quad (15)$$

Since the gene is either 1 or 0, when mutated it will become the latter (or 1).

Methodology-wise, GA works like this: in the current generation t , $P(t)$ and $C(t)$ stand in for the parents and the children, respectively; Algorithm 2 explains how GA is implemented in detail.

Algorithm 1: ResNet

- 1: launch Model B (X,T);
- 2: Nevertheless, you should not stop training just yet
- 3: with a view to establishing procedures
- 4: Education from D (N, B);
- 5: for the last time
- 6: check out the B model (X, T);
- 7: improve network architecture $T \leftarrow T \cdot U$ via GA;
- 8: update B (X, T)
- 9: in the meantime

IV. RESULTS AND DISCUSSION

According on the experimental data, the Fuzzy-SVM and Fuzzy C means algorithms. It is the most effective of the system's current algorithms. This suggested technique used data extracted from EEG recordings for both organised and unstructured patient data. We discovered that our recommended technique was 98.3% correct. As a consequence, the unique algorithmic combination outperformed the diagnosis of bipolar disorder. As a result, the suggested strategy lowers the mistake rate while increasing the proportion of accurate replies. Moreover, we discuss and assess the present algorithms in use.

Table 1: Classification Accuracy

Model	Accuracy (%)	Precision	Recall	F-measure
Fuzzy_SVM	94	93	95	94

Fuzzy_C-Means	94.54	95	95	95
Resnet 18	94	93	95	94
F-RCNN	98.6	95	95	93

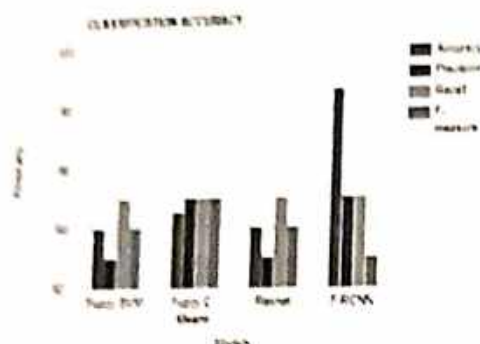


Figure 1 Classification Accuracy

Figure 1 illustrates classification accuracy. The axis labelled "models" is located on the left, while the axis labelled "accuracy" is located on the right.

V. CONCLUSION

We suggested a new strategy for predicting early bipolar disorder utilising a hybrid neural network architecture that incorporates Faster R-CNN and ResNet18 in this research. To predict bipolar illness at an early stage, we use the strengths of several neural network designs and combine MRI scans and clinical data. The suggested strategy outperformed current models in terms of accuracy, sensitivity, and specificity in predicting bipolar disorder. Our results indicate that using hybrid neural network architectures may increase the accuracy and durability of machine learning models for predicting early bipolar illness. The suggested strategy has the potential to improve patient outcomes and quality of life by assisting in the early diagnosis and prevention of bipolar illness. Our research, however, has numerous drawbacks. To begin, our work depended on a single dataset, and additional validation on multiple datasets is necessary to validate the suggested method's generalizability. Second, additional variables that may impact bipolar illness, such as genetic predisposition and environmental factors, were not included in our research. We want to expand our strategy in the future to include these additional characteristics and assess the model's effectiveness on bigger datasets. We also want to look into the therapeutic implications of our

suggested strategy, such as its usage in individualised bipolar illness therapy and care. Overall, our study represents a positive step forward in the prediction of early bipolar disease and sets the groundwork for future research in this field.

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A REVIEW ON DETECTION AND PREDICTION OF BIPOLAR DISORDER USING DEEP LEARNING

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Abstract:

In the present times, not only the physical health of human beings but also the mental health is being affected due to various problems that are increasing. The psychological illness refers to certain problems that arise due to the high stress that psychologically causes on humans. These problems can lead to problems such as misconceptions, misunderstandings, excessive anger and stress. And ignoring this can make the problem bigger. This paper gives survey data on the various methods proposed to deal with Psychological illness in the deep learning method. It constantly examines and classifies the best treatments for patients, mental health improvement methods, and selection methods and analyzes for stress relief. Furthermore the results of the deeper learning methods are also analyzed so the results of the better and improved methods are more likely to be further enhanced and its calculation rate adjusted.

Keywords:

Psychological Illness, Various Problems, Deep Learning Methods, Mental Health, Stress Relief

1. Introduction

Around 2% of the world population suffers from manic-depressive illness, and another 2% suffers from bipolar disorder in its subthreshold manifestations [1]. According to the World Health Organization, bipolar disorder is one of the top 10 leading causes of disability-adjusted life years among young adults [2]. According to Nordentoft [3], 7.8% of men and 4.9% of women who have bipolar disorder end their lives by committing suicide. As a direct consequence of this, patient life expectancy decreases by nine years [4]. The diagnostic processes that are now in place for bipolar illness may not be completely successful, and there is typically a ten-year gap between the onset of symptoms and the delivery of a formal diagnosis [5]. This model shows the different ways that bipolar disorder can be treated, diagnosed, and prevented.

Through the use of evidence-based medicine, we have gained a better understanding of risk factors, prognosis and effective treatments associated with the disorder, where the statistical model provides results on an average scale [6]. Greenhalg et al. [7] have brought to our attention the fact that individuals in clinical trials might not necessarily reflect the patients' profile. Because clinical heterogeneity plays an important role in bipolar

disorder, this may be especially true in that area of research. As a result of these discoveries, psychiatric research is focusing more and more on techniques like deep learning, whose goal is to make care that is tailored to the needs of each patient [8].

The speed at which new datasets are being produced is referred to as big data, and the term big data is used to describe extremely large and complicated data sets. Big data is characterised by a wide range of levels at which data is generated, ranging from the molecular to the clinical to the socio-demographic to the administrative to the environmental and even social media data. This is one of the most essential properties of big data. Those in research [9]. In recent years, a great number of deep learning algorithms, which are also known as pattern recognition are developed for the purpose of analysing vast volumes of data. In a nutshell, the algorithm initially conducts an analysis of a dataset referred to as training in order to develop a function that is able to differentiate between individuals belonging to various categories. It is possible to determine how accurate the model is by applying it to a new dataset and contrasting the results with the original dataset. Alterations to the algorithm or a further reduction in the amount of data may be utilised in order to effect further improvements in this model [10]. Therefore, these algorithms are ideal for analysing complicated diseases and calculating the particular outcome probability on an individual basis [11].

This research looked at the results of patients with bipolar disorder who had previously been evaluated using these methods. The techniques employed in this research come from the field of deep learning. Research studies that looked at diagnoses were our key area of interest in our inquiry. It was also taken into consideration to include research evaluating treatment and prognosis, as well as the development of data-driven phenotypes. In view of the fact that these approaches are still in the process of being developed in the field of psychiatry we have provided a concise explanation of the most significant ideas in deep learning as well as some of the limitations that come with it. In the end, one of our goals was to show how implementation of these novel approaches can improve clinical decisions in the years to come.

2. Research Problem

Bipolar disorder, also known simply as BD, is a prevalent mental illness that causes people to go through dramatic shifts in their mood. The most prevalent causes of this condition are disruptions in thought, which can range from extreme enthusiasm and exhilaration to severe sadness. According to the findings of an epidemiological study [12] getting increasingly more widespread. BD has been associated

with an elevated chance of passing away at an earlier age [14]. People with bipolar disorder have a life expectancy that is 9 to 17 years lower than the average life expectancy of the general population. As a result, these patients struggle with a variety of issues throughout their lives. Numerous studies conducted in nations, whereby it demonstrates the mortality gap are widening continuously over the course of the most recent few decades [15]. There are certain deaths in Bangladesh that can be attributed to unforeseen circumstances. Nevertheless, the vast majority of deaths can be attributed to cardiovascular disease and diabetes. Patients diagnosed with BD have a much higher risk of committing suicide compared to the general population [16]. Patients diagnosed with BD experience a suicide attempt rate that is 10-20% age points higher than the general population [14]. The circumstances show that the narrator knows a lot about bipolar disorder.

Primary exposure to mental disorders is an essential component in properly identifying BD issues and delivering suitable treatment for such issues. In contrast to other long-term conditions, which rely on statistical analysis and laboratory trials, BD is often diagnosed based on the patient own self-reporting in questionnaires meant to expose particular feelings [14]. Deep Learning (DL) shows promise for assisting psychiatrists in improving their clinical decisions and assessments [17]. These skills are also proving to be effective for broadening our understanding of the various issues pertaining to mental health. Over the past few years, the improved performance of AI techniques has been demonstrated by an increasing number of data-rich frameworks [18] [29].

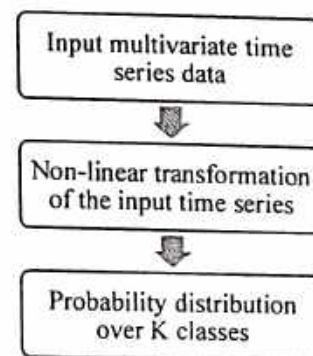
In an earlier review, Diego et al. [20] investigated the use of DL algorithms in the process of BD diagnosis. The five primary application areas of DL in BD that were reviewed by the researchers were diagnosis, prognosis, treatment, and research. In contrast to that, the purpose of this review is to investigate how DL can be applied to diagnose BD based on research that has been done in the past and published. To the best of our knowledge, no other study has investigated the role that differential diagnosis plays in the process of diagnosing BD and the various subtypes that the disease can take. We also look at the positives and negatives of the work that has been done so far, as well as potential research guidelines that can help bridge the gap between diagnostic laboratory procedures and individual patient diagnoses.

People who have BD frequently have their depression misdiagnosed as bipolar disorder, which makes it challenging and time-consuming to treat them for their disease. People diagnosed with bipolar disorder (BD) are more likely to seek treatment for their depression than those without BD [21]. According to the findings of China National Chinese Mental Health Survey [22], during the course of a period of one year, there was a rise in the certain

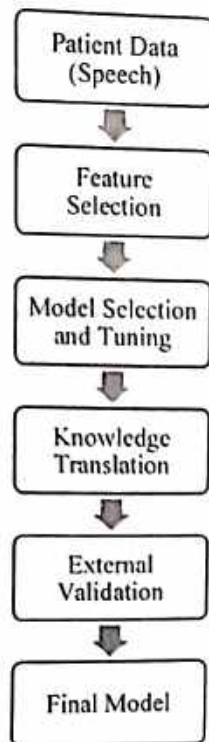
age of people who recognised bipolar illness as a kind of depression. As a direct consequence of this, there is an immediate and pressing need to appropriately diagnose BD. In an effort to achieve superior clinical results, diagnostic laboratory (DL) services are becoming progressively more involved and intricate [23]-[25]. Accordingly, in light of the information presented, it is necessary to conduct a comprehensive analysis of all potential applications of DL for the diagnosis of BD. The aim of the study is to study different ways that DL algorithms can be used to improve the accuracy of BD diagnosis.

3. Deep Learning Method Available for the detection of bipolar disorder

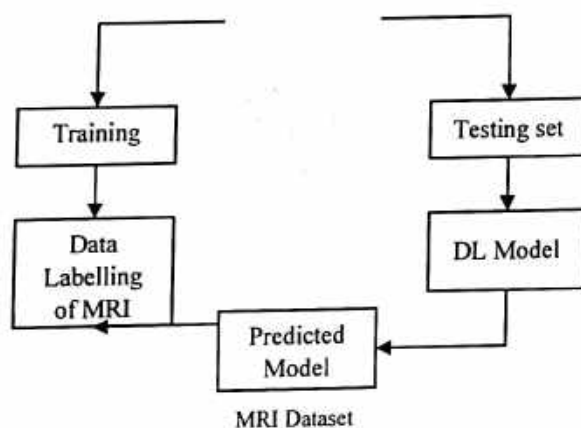
In order to do deep learning, the necessary hardware must be able to perform matrix and vector multiplications. Because of advancements in hardware technology, such as graphics processing units, it is now possible to perform vector and matrix multiplications in parallel. Such implementation without GPUs would have to be carried out in serial on the CPUs, which simply would not have been conceivable (CPUs). Deep learning training may be made to run more quickly with the help of GPU parallelism, which also enables it to be applied to solving problems that occur in the real world. Even the most basic problems can now be tackled successfully by applications of deep learning. MLPs can be used to implement even the most basic of deep learning approaches. Some of the methods that are utilised in this thesis are Convolutional Neural Networks (CNN), Encoder Networks and Residual Neural Networks (ResNet). Detailed explanations of these methods are provided throughout the thesis. They were developed initially for use in computer vision, but their functionality has now been adapted such that they may also be used in time series applications [21]. In this study, the classification of BD is accomplished using the application of deep learning on bipolar datasets that is of time series or speech data or medical image data, where the deep learning framework is illustrated in Figure 1.



(a) Time Series classification



(b) Speech Data Classification



(c) MRI Data Classification

Figure 1: Deep learning framework

Convolutional Neural Networks:

Deep learning was initially used to solve the problem of time series analysis in 2017 [26], and it did so by employing CNNs to solve computer vision problems. Despite having a lower total number of dimensions, one-dimensional convolutional neural networks are notoriously difficult to visualise. One example of the multiple channels that can be utilised as input for visualisation tasks is a camera frame RGB channels. Convolution is performed in parallel on each of the channels, and the results are then added to the next layer. The convolution is performed by means of the channels; nevertheless, in two-dimensional issues, the channels are temporal inputs that are sampled simultaneously. In 2016,

a suggestion was made regarding the application of Fully Convolutional Neural Networks (FCNNs) for the classification of time series. This research provides a strong basis for deep learning time series categorization, as it acts as a foundation. In that particular investigation, the last layer of the network does not have any fully connected nodes. The global average pooling (GAP) layer is used to figure out the average value of the temporal dimensions instead of using layers that are all connected.

The typical machine learning approaches by having the highest accuracy in predicting the diseased from the control group. After the framework has been developed, we will discuss the characteristics that the model discovered in order to gain an understanding of the biological markers of the disease. As a consequence of this, we carried out a post-analytical study in order to identify the most significant contributors to the development of this disease. We found that the order in which the facts were presented could result in complications. Exome sequencing community practises such as these, which are widely recognised and highlighted as a way of data preparation with drawbacks, are examples of the type of practises that fall into this category.

Residual Neural Networks (ResNet)

In a wide variety of classification tasks, convolutional neural networks have been shown to perform well. The success of convolutional neural networks in generating very deep models by stacking extra layers has prompted researchers to investigate whether or not the learning ability of these networks may increase proportionally with the number of layers they contain. However, when the depth of the network is substantial, the accuracy begins to sharply decline, which is why it is important to use approaches such as normalised initialization. There are several different ways to solve the problem of vanishing and exploding gradients. Each of these solutions has their own advantages and disadvantages. After that critical juncture in the procedure, the accuracy of the training also begins to suffer, which means that overfitting cannot be to blame. Residual neural networks (RNNs), often known as ResNet, are employed as a solution to the challenge of constructing deeper networks. Residual blocks were introduced by ResNet; these are essentially shortcuts to the network. Identity mappings are what are used to make the connection between these blocks and the layers below them. These layers connect the layers that came before them to the layers that will come after them so that the shortcut can be used. Because adding the shortcut layers doesn't add any learnable parameters to the network, it doesn't make the network any more or less complicated [27].

As more convolutional layers are added to the input, the dimensions of the tensor get increasingly reduced. However, the shortcut connections are making an effort to incorporate these earlier layers into the convoluted outcome. In order to accomplish this, a linear projection matrix is multiplied by an identity mapping. This is done in order to increase the total

number of accessible shortcuts. These shortcuts are introduced to various intermediate sections of the networks so that the networks can be made deeper. In their most extensive design, Wang et al. [28] classified time series using an 11-layered network with residual connections. Instead of the more common two-dimensional filters, one-dimensional filters are used when working with convolutional neural networks.

Encoder Network

Encoder networks are the foundation on which neural network architectures, such as CNNs, are built [29]. Convolutional layers are utilised by both CNNs and encoder networks in order to accomplish the same goal: the extraction of temporal correlations along the time axis. For example, the outputs of fully convolutional networks are fed into layers that are responsible for normalisation. Following the completion of the normalisation process, the output is fed into the PRELU activation functions and dropout. In order to apply the findings, one-dimensional max-pooling layers are utilised. The categorization of time series is primarily reliant on the synthesis of information from several dimensions for series that contain numerous variables. CNN uses a methodology known as Global Average Pooling in order to complete this summary using that methodology. Encoder networks use a different attention mechanism in place of the Global Average Pooling layer in the network second part. The encoder networks used by CNNs operate very differently with regard to this strategy. Following an instance normalisation layer as the final step of the neural network, the output that was generated is then passed on to fully connected layers in order to generate classification output. Using this strategy, transfer learning was first proposed as a way to classify time series. However, training the network from scratch has shown promising results as well [30].

Lakshman, S., et al. [15] studied the diseased group from the control group with a level of accuracy that exceeds that of other conventional machine learning techniques. After the framework has been developed, we will discuss the characteristics that the model discovered in order to gain an understanding of the biological markers of the disease. As a consequence of this, we carried out a post-analytical study in order to identify the most significant contributors to the development of this disease. We found that the order in which the facts were presented could result in complications. Exome sequencing community practises such as these, which are widely recognised and highlighted as a way of data preparation with drawbacks, are examples of the type of practises that fall into this category.

Deep learning has not been widely used in very many health-related applications, with the exception of voice processing. When it comes to tasks involving the

recognition of healthy lifestyles, the corpora that are often accessible are typically very small. This is true both in terms of the overall amount of data and the number of people present. The Bipolar Disorder corpus for the 2018 Audio/Visual Emotion Challenge only used 218 audio samples total, coming from 46 different individuals. These kinds of circumstances call for the application of a multi-instance learning framework, such as the one that Ren, Z., et al. [16] presented. To get started, we cut the large audio recordings into more manageable chunks by segmenting them into smaller pieces. The fact that chunks are labelled with the label of the relevant voice file, which may or may not accurately reflect the content of the chunk, is one of the most significant problems with this approach. Following that, in order to solve this problem, we train a multi-instance learning model that is based on deep learning (ensemble). According to the results, this method can improve the accuracy of feedforward, recurrent, and convolutional neural networks on mania classification tasks. When convolutional neural networks are used, the accuracy of these neural networks also gets better.

4. Limitations and Future Work

There are a number of interesting pieces of research that have been incorporated, but they are not yet beyond the proof-of-concept stage and are missing appropriate external validation. For the purpose of structural neuroimaging research, for instance, patients who have a history of psychiatric illness and the use of medication are frequently used. It can be challenging to ascertain whether or not anatomical alterations in the brain play a part in the progression of disease. Despite this, neuroimaging and deep learning have a wide range of applications in many different fields. In addition to determining who is at risk, it can be used on patients who are afflicted with chronic diseases in order to investigate cognitive impairments, the status of neuro progression, and establish disease phenotypes.

A significant majority of the deep learning approaches that have been discussed have not been validated by population research, which is yet another limitation of these approaches. Clinicians will be able to make decisions about treatment options, ways to prevent illness, and prognosis orientations with the help of very accurate predictive models.

Deep learning allow for more efficient patient categorization than the categorization algorithms we currently use, allowing patients to be grouped together according to their shared traits. We would be able to better stratify our patients if we had a better staging system that would assist us in discovering groupings of patients who had outcomes that were similar to one another. To make sure that big data analytics and deep learning models can actually help patients, one of the most important challenges of the future will be to come up with ways for doctors to access these complex features and algorithms in a way that is not only possible but also useful.

5. Conclusions

In addition to assisting us in gaining a deeper understanding of the pathophysiology of mental diseases, the findings of this study indicated that neuroimaging investigations can assist in distinguishing bipolar disorder from healthy controls and other diagnoses. In the field of brain disorders, this method might be able to help reduce the number of incorrect diagnoses as well as diagnostic delays (BD).

Deep learning techniques evaluates individuals at risk i.e. youngsters who have a family history of bipolar disorder. These techniques take data and turn it into information on the likelihood of individual's receiving a future diagnosis. Using deep learning to help design individualised interventions for high-risk patients can help prevent such individuals from progressing from prodromes to full-blown illness. After a diagnosis has been established, it is anticipated that it will be possible to utilise deep learning to determine which treatment a patient is most likely to benefit from. It possible that knowing how your body will react to medication based on the treatment.

Researchers discovered that outcomes such as hospitalisation, suicide, and relapses may be predicted reliably by using deep learning models. Further the research shows that integration with social media and mobile devices may also be a good way to figure out a patient mental state and alert a therapist before an episode starts.

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MACHINE LEARNING STRATEGIES FOR ENSURING CHILDREN'S SAFETY

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ABSTRACT

As the COVID-19 pandemic cause destruction on health systems and economies across the globe, it also cause severe disruption to child protection services in more than 100 countries, leaving children at enlarged risk of violent behavior, misuse, and abuse, according to a global survey by UNICEF. As an educational tool the Internet offers access to extensive resources and information, however, the risks to young people online necessitate awareness and intervention to promote safety and well-being. We have propose violence for children in digital age analyzing system framework to create features from Data content by leveraging a point wise mutual information technique. Based on these features, in this work, we develop an unsupervised machine learning algorithm for analyzing system and multi class categorization of its severity in system.

Text classification algorithms have been widely used for classifying the e xtracted features. Outcome of the experiment with our proposed structure in a multi class setting are promising both with respect to Kappa, precession, classifier accuracy and F-measure metrics, as well as in a binary setting. These outcomes indicate that our proposed framework provides a feasible solution to analyzing system performance and its severity in online social networks.

Keywords: children in digital age, social media, pre-processing, classifier algorithms, feature extractions, Machine Learning etc.

1. INTRODUCTION

Today's children have entirely integrated the Internet in their interaction with others. They have adopted specific communication behavior which has considerable influence on their role in society and the way in which they can exercise their rights.

The Internet provides a great many opportunities for children to spend their free time, to learn, to express themselves and to influence decision making, in short to benefit from their right to participation. It is also a space where children are more easily showing their violence, abuse and therefore at risk of having their rights violated, in particular their right to be protect and to live in a safe environment, in accordance with their best interests.Improper content is one of the most common online threats that kids encounter.

Everything from vulgar language and hate speech to graphically violent or sexual images can have a harmful effect on a sensitive child. Children and young people are in the front line of the almost one billion people who log into digital, and they will account for a significant amount of expansion in practice of new information and communication technologies in upcoming years. Primary the way in connectivity is Asia, even as just 8.4 per cent of the region's population is estimated to be associated. Consider India, where the almost 40 million people who enter into digital world represent less than 4 per cent of the country's population. Europe and North America follow.

CLASSIFICATION OF LUNG CANCER PREDICTION USING VARIOUS MACHINE LEARNING TECHNIQUES

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ABSTRACT

Lung cancer is one of the most common and serious diseases present around the world, which is observed in people of all age groups ranging from children to old people. Annually it costs a lot of money for the cure and diagnosis of people with lung cancer. The existing clinical techniques such as X-Ray and other imaging procedures require complex hardware and considerable expense. Thus the most important issue is the prediction to be accurate and to use a reliable method for that. This raises the need for (comparatively more effective and cheaper) machine learning models in medical diagnosis using medical data sets. Long-term tobacco smoking results in 85 percent of cases of lung cancer. About 10–15 percent of cases arise in people who never smoked. There are numerous methods and tools that are available now for data analysis and its computation. These technological advancements will be referred and used to develop prediction models in the project to predict the presence of lung cancer at an early stage in a patient. The study involves comparing various classification and ensemble models such as Support Vector Machine (SVM), K-Nearest Neighbour (KNN), Random Forest (RF), Artificial Neural Networks (ANN) and a hybrid model, Voting classifier. The performance of the various models is compared and evaluated in terms of their accuracy. Thus, it is easy to identify a patient with lung cancer at an early stage using various sophisticated technologies of today.

Keywords: Machine Learning, Support Vector Machine, Voting, Random Forest, Cancer, K-Nearest Neighbour, Neural Networks

I. INTRODUCTION

Lung cancer is mainly triggered by cigarette smoke. Smoke that penetrates into the lungs causes damage to the lung tissue. In nonsmokers, lung cancer may be induced by radon radiation, second hand smoking, air contamination or other causes. Heredity is another source of lung cancer, as well. While lung cancer (malignant growth) is hard to diagnose and cure, it may be avoided or treated in the early stages. Lung malignancy is one among the dangerous cancer forms and is commonly found. Currently an approximate of 2.09 million cases observed

against lung cancer. Also depending on the stages of the cancer they assign grades to the cancer [1].

Lung cancer has deeply impacted almost every family and everyone's life and there is a rapid increase of population with lung malignancy. Also, it is caused due to major problems like jaundice, lymph node swelling and problems with the nervous system. A patient suffering with lung cancer has go through various complexities during his/her diagnosis of a disease. Thus an automation in this regard may speed up the process and can assist the pathologist [2].

GOLD MARKET DATA PREDICTION USING NOVEL DISTANCE WEIGHTED KNN WITH FEATURE EXTRACTION

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ABSTRACT

This paper focuses on short-term prediction of Gold price trends, which is a crucial area for investors. The proposed model a Novel Distance Weighted K-Nearest Neighbours with Feature Extraction Algorithm (NDWKNN-FEA) approach that integrates KNN with a probabilistic method derived from Bayes' theorem. This approach addresses the problem of assumptions made by distance functions in KNN classification, and considers both centric and non-centric data points are used to calculate target instance probability. The proposed model is compared with standard classifiers including LDA, PCA, RNN and ICA, and the results show that NDWKNN-FEA outperforms the others. The paper presents a state-of-art prediction model for Gold price trend prediction that can be used by researchers and investors from both financial and technical domains.

Keywords: Gold Price Prediction, Feature Extraction, Supervised Learning, Predictive Analytics, Statistical Models, Big Data;

1. INTRODUCTION

Advancement in the fundamental aspects of information technology over the business landscape has changed during the previous few decades. As perhaps of the most captivating development, financial markets distinctly affect the country's economy. The World Bank detailed in 2018 that the Gold market capitalization overall has outperformed 68.654 trillion US\$. The rise in popularity of gold trading over the past several years is largely due to technological advancements. Investors look for strategies and instruments that will boost profits while lowering risks. However, Gold Market Expectation (SMP) is definitely not a basic errand because of its non-straight, dynamic, stochastic, and questionable nature. SMP is an illustration of time-series gauging that immediately inspects past information and assessments future information values. For

professionals in a variety of fields, including economics, mathematics, material science, and computer science, financial market expectations have caused stress. Making money from gold trading is a crucial component of predicting the future of the gold market. The Gold market is constrained by a variety of factors, including the share's market value, the company's performance, governmental regulations, the GDP of the nation, the rate of inflation, natural disasters, and so forth. The Efficient Market Hypothesis makes sense of that Gold market costs not set in determined by new information, and follow a random walk pattern, such that they cannot be predicted solely based on past information. This was a widely accepted theory in the past. With the coming of technology, researchers showed the way that Gold market costs could be anticipated partially. Historical

DEEP LEARNING APPROACHES TO CLASSIFY NATURAL VEGETATION SPECIES

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ABSTRACT

As the most visible and functional part of a plant, leaf form, coloration, and size are all susceptible to environmental and biotic influences. Since different plant species have distinctive leaf shapes, these individual components are crucial to the development and implementation of plant recognition systems. Depending on the type of weather and other circumstances (such as the amount of light, humidity, temperature, and wind speed), a plant's leaf production, leaf deformation, leaf colour, leaf location on the branch, and other characteristics may change. Training and testing datasets originated from diverse geographical regions with different image resolutions, and the detection performance of two deep learning approaches, DeepLabV 3+ and our customised convolutional neural network (CNN), was compared. In addition, we offer a unique object-based method for detecting vegetation using NDVI, computer vision, and ML. High-resolution airborne colour pictures, including red, green, and blue (RGB) and near-infrared (NIR) bands, were processed using the vegetation detection algorithms. The two deep learning approaches were also tested using RGB colour images only, without the NIR band, to compare their detection efficacies. Sample images from the datasets are used to illustrate the detection performances of the deep learning methods in comparison to the object-based detection approach.

1 INTRODUCTION

Applications of land cover classification [1] include change detection monitoring [2], construction surveying [3], agricultural management [4], green vegetation classification [5], locating safe landing zones for unmanned aerial vehicles [6,7], protecting biodiversity [8,9], determining land use [10], and planning cities [11,12]. Identifying vegetation is a significant use for land cover classification. Chlorophyll-rich vegetation recognition was a key step in Skarlatos et al.'s [3] work to enhance the precision of the estimated digital terrain model (DTM). Vegetation was removed from the DSM

mechanically upon detection, allowing for more accurate DTM calculations. Autonomous mobile robots that operate in off-road situations benefit from Bradley et al.'s [11] detection of chlorophyll-rich plants to aid in navigation. Some vegetation, such as round bushes, were incorrectly identified as mines by mine detection algorithms, so Zare et al. [12] used vegetation detection for mine detection to minimise false alarms. To track the temporal and spatial changes brought on by forest fires and an increasing population, Miura et al. [13] employed vegetation detection algorithms to keep tabs on Amazonian vegetation patches. Normalised

difference vegetation index (NDVI) [14–16] uses the unique spectral absorption phenomena of green plants in the red and near-infrared parts of the sun spectrum to detect vegetation.

Fossils found all around the world show that plants from the Devonian period did not reach very great heights, and that their simple structures was another shared characteristic. Without leaves, these plants instead featured stalks with branching patterns and perhaps spines. Throughout their evolution, they've experienced varying degrees of complexity. In addition, plant species can now be found in every region of the earth, including the oceans. Plants play special roles in their environments and in the lives of other species because of these factors. Understanding their functions is enhanced by thinking about how they affect people's daily lives. Historical records reveal the growth of agricultural technology well before the rise of the Roman Empire, supporting the long-held belief that plants are tremendous energy sources.

Many scientists today are engaged in direct or indirect study of plants, reflecting the expanding role that plants play in contemporary society. Plants have both direct and indirect effects on the climate and ecosystems. Agricultural, energy, environmental, health, medical, and other fields can all benefit from them. Due to rising populations and shifting climatic conditions, global food security has assumed greater significance in the modern era. As a result, researchers have been putting greater effort into creating cutting-edge farming techniques. In addition, there are many facets of farm management that must be taken into account. One such facets is optimisation. One method to making the most of a farm's resources and maximising output is the detection of weeds and pests in agricultural fields. Due to the wide variety of weeds, it is difficult for farmers to be familiar with all of them. There is no financial basis for employing plant specialists to identify plant types, and it is also impractical to host this expertise on farms

around the world. When two different plants have the same shape of leaves, human observations are often incorrect due to a lack of knowledge and bias. As a result, there are situations in which it is challenging to disentangle observed human data.

Identifying plants using traditional methods is sometimes inefficient because of the high cost, lengthy process, and dependence on human input. Therefore, it is necessary to create a system that can automatically recognise and identify plants. Important elements, constraints, and parameters for evaluating the applicability of such a system are its generalisation and characterization. Furthermore, such a system can be implemented and used as the foundation of contemporary agriculture.

The German Federal Ministry of Food and Agriculture is responsible for making broad policy decisions. By holding government competitions like "Our Village has a Future" [6], it hopes to inspire locals to develop and implement their own plans to ensure the continued viability of farms and communities. The significance of adopting cutting-edge farming practises will so reach all corners of the nation.

Even for experts in botany and plant sciences like botanists, identifying plants can be difficult. Because of its relevance to areas as diverse as medicine, the pharmaceutical business, contemporary agriculture, etc., this area of study enjoys a great deal of glitz and glamour. Huge amounts of time and energy have been invested in trying to automate plant detection by finding a solid solution and developing a precise system [7, 8, 9, 10].

Previously [7], Fathi Kazerouni described and recognised various plant species from the Flavia dataset using up-to-date description methods. The scale-invariant feature transform (SIFT) technique has been utilised for feature detection and extraction, and it has been integrated with two other approaches, the features from accelerated segment test (FAST) and the HARRIS methods. In this case, SVM,

a machine learning task, makes use of the outcome. The researchers in [8] used the SURF algorithm and integrated SURF techniques for plant species recognition.

2. LITERATURE SURVEY

Tan, Jing Wei, and Chang, Siow-Wee[1]. In this study, we use convolutional neural networks to analyse photos of leaves from certain tree species. Pre-trained AlexNet CNN, fine-tuned pre-trained AlexNet CNN, and the suggested D-Leaf CNN models were all used. Several classification methods were trained and educated using the extracted features. In this study, five different classifiers were used: a Convolutional Neural Network (CNN), a Support Vector Machine (SVM), an Artificial Neural Network (ANN), a k-NN, and a Naive Bayes (NB). As a baseline, we compared our system to one that segmented leaf veins using the Sobel edge detection methodology and took measurements of vein morphology. The literature review indicates that this is one of the rare studies that apply CNN to the problem of classifying tropical tree species on the basis of their leaves' morphology and venation patterns.

Dr. Thippeswamy G. Pankaja and Pankaja K.Countless varieties of plants are easily accessible worldwide. Developing efficient and fast categorization systems to handle massive amounts of data has been an active area of study. Due to their vital role in maintaining a healthy ecosystem, trees and plants require careful categorization. Several auxiliary methods aid the overall order strategy. Planning a data set with one of the distinct categories allows one to keep an eye on a recognisable proof or Classification problem. The first step of this method is to compile a database of leaf images, complete with test leaf images and their corresponding plant data. Using image editing techniques, we can hide the picture's essentials. The credibility of the established evidence framework depends on the consistency of the highlights. As a result, artificial intelligence techniques are used to interpret the plant or leaf. This document provides a summary of

the various methods of proof used to differentiate between leaves.

Using images of leaves and flowers, Thi Thanh-Nhan Nguyen et al. [8] combine deep learning with a carefully crafted human aspect to establish plant identification. This paper makes double-layered promises. We have initially carried out a close evaluation of deep learning and hand-structured element for plant distinguishing evidence, and this has been done for each and every organ image. In our experiments, we use two different methods for deep learning and hand-structured components: convolutional neuron arrange (CNN) and key-value pair descriptors (KDES). Secondly, we offer a method for plant ID by late-combining the distinctive proof after-effects of leaf and flower. This is in light of the fallout from the primary commitment. Experimental results on the ImageClef 2015 dataset demonstrate that, for generally difficult instances (leaf captured on fundamental foundation), hand-planned elements outperform deep learning. Nonetheless, substantial knowledge only proves its worth under typical conditions. Evidence for the identification of a plant based on its leaves is strengthened by include images of its flowers in the mix.

Salar Razavi, Hulya Yalcin [9] With mounting pressures over growing global populations and finite food supplies, it's imperative that we take advantage of the advantages of modern recruiting technology to boost the productivity of plant fields. Preparation progress is vital not just to food production endeavours but also to robust people and other relevant authorities. It's not out of the question that this will increase farmers' productivity, give them a deeper understanding of the link between widespread plantings and bountiful harvests, cut down on labour expenses, and make transportation faster and more precise. Realising AI techniques, such as large neural frameworks on data cultivation, has recently widened the scope of monster thought. Adapting management strategies for different plant species is a major challenge.

The group led by SURBHI GUPTA [10] The changed identification of plants is shown in

the evidence of species recognition in plants. However, many factors, such as leaf, owers, natural items, and seeds, could contribute to the decision; however, leaf characteristics are the most significant. It is simple to read a plant leaf as identification evidence because it is always available when the plant is separated from other parts. This research presented a

new plant creature bunches classifier that uses a Multilayer Perceptron with Ad boosting to extract morphological information. Preparation, feature extraction, incorporation decision, and characterization are all parts of the proposed framework.

3. Materials and Methods

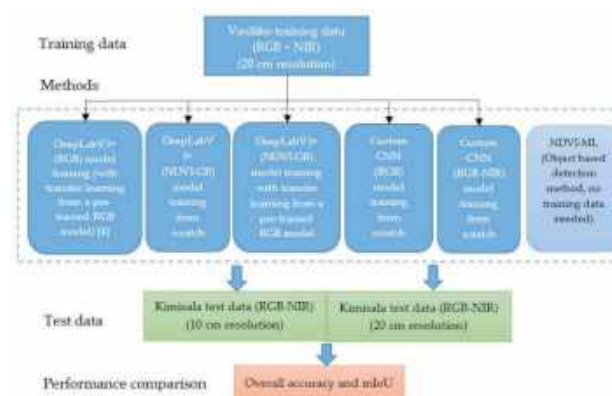


Figure 1. Block diagram showing the used dataset and applied methods. mIoU is the mean intersection-of-union metric.

Figure 1 is a block schematic of the dataset and methodologies utilised in this work.

Dataset Used for Training and Testing

The dataset used in this work comes from two previously examined sites, Vasiliko in Cyprus and Kimisala on Rhode Island, and was first used in Skarlatos and Vlachos [3]. Two independent UAV flights were used to take the photos and the data was gathered with a customised, non-calibrated near-infrared camera. SwingletCam UAV was used for both flights, which were carried out on separate occasions. A Canon IXUS 220HS camera was carried aloft in the maiden trip, which averaged 78 metres in altitude. The second flight was carried out at a height of 100 m and utilised a Canon PowerShot ELPH 300HS camera customised for near infrared photography. SensFly, a producer of UAVs, supplied both cameras. Two orthophotos were generated by processing the raw UAV images with Agisoft's Photoscan. Colour RGB and NIR orthophotos were created from the extracted Digital Surface Model of the two

sites. All of the RGB and NIR images were adjusted using a standard bundle technique to ensure proper overlap and co-registration of the orthophotos.

Vasiliko Site Data Used for Training

In the studies, the Vasiliko image (RGB and NIR) was used as training data, and its height and width were 3450 and 3645, respectively. Vasiliko's image has a 20 cm per pixel resolution. This means that the investigational imaging region is roughly half a square kilometre in size. This image has been divided into 1764 overlapping image tiles of size 512 512 for use in DeepLabV3+ analyses. Two consecutive photographs in the column direction will have 440 rows of overlap, while two consecutive images in the row direction will have 435 rows of overlap. By introducing rotated versions of the picture patches, this partitioning can be seen as data augmentation that increases the number of image patches in the Vasiliko training dataset. To maximise the size of the training data set, we use a large number of overlapping pixels in both the row

and column directions. There are four types of land use marked in this image. In Figure 2, we

see two colour images from the Vasiliko dataset annotated with land cover information.

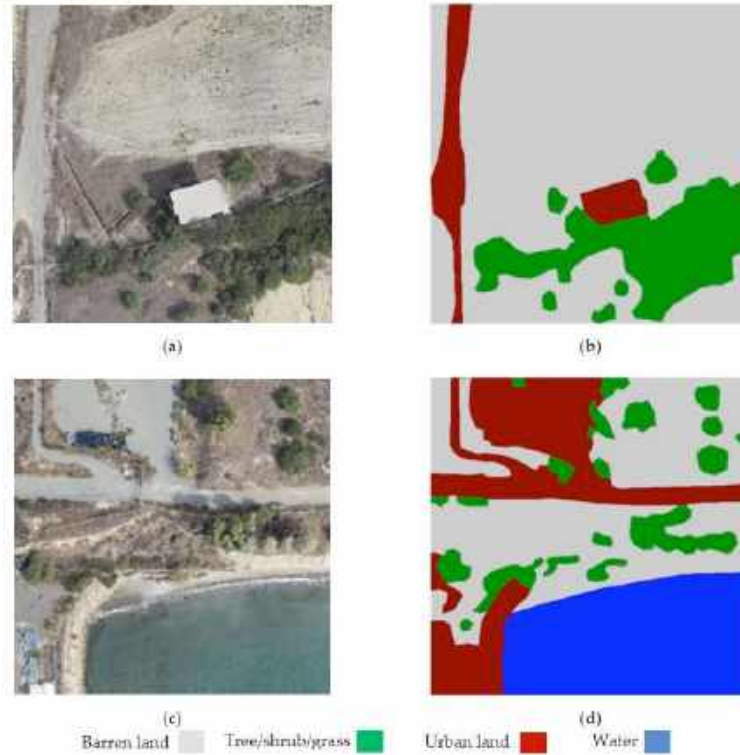


Figure 2. Here are some examples of images from the Vasiliko dataset along with their corresponding land cover map annotations (where silver indicates bare land, green indicates tree/shrub/grass, red indicates urban land, and blue indicates water). a colour picture of mari_20_3_8; b a map of mari_20_3_8's actual land cover; c a picture of mari_20_42_4's colour terrain; and d a map of mari_20_42_4's actual land cover.

To train and test models in DeepLabv3+, we use a PC running Windows 10 equipped with a graphics processing unit (RTX2070) and 16GB of RAM for the TensorFlow framework. Weights from a pre-trained model (without the logits) are used as a basis for training a land cover model with the training datasets, with the resulting model then undergoing fine-tuning through additional training. These seed values are from a trained model ("deeplabv3_pascal_train_aug_2018_01_04.ta

r.gz") that was applied to the PASCAL VOC 2012 dataset. The Xception-65 architecture served as the basis for this design. The logit weights in the baseline model are omitted due to the discrepancy between the number of land covers in the Vasiliko and Kimisala dataset and the number of classes in the PASCAL VOC-2012 dataset.

4. RESULTS

Table 1. Accuracy and mIoU measures for Kimisala-10 vegetation detection

Method	Accuracy	mIoU (Vegetation& Non-Vegetation)
DeepLabV3+ (model trained with Slovenia) [5]	0.6171	0.4454
DeepLabV3+ (model trained with DeepGlobe [5])	Very poor	Very poor
DeepLabV3+ (model trained with Vasiliko)	0.8578	0.7435

Table 2. Accuracy and mIoU measures for Kimisala-20 vegetation detection.

Method	Accuracy	mIoU (Vegetation & Non-Vegetation)
DeepLabV3+ (model trained with Slovenia) [5]	0.6304	0.4355
DeepLabV3+ (model trained with DeepGlobe) [5]	Very poor	Very poor
DeepLabV3+ (model trained with Vasiliko)	0.8015	0.6541

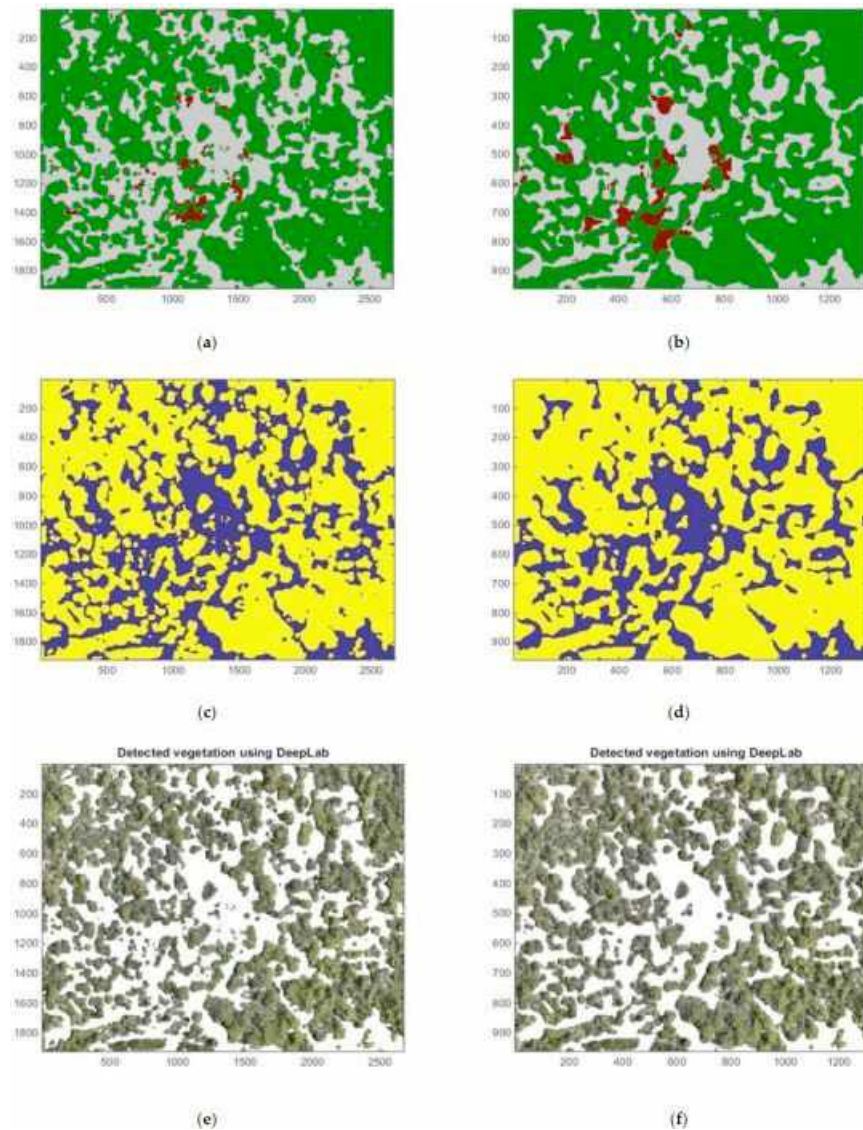


Figure 3. For the two Kimisala test photos, DeepLabV3+'s model trained on the Vasiliko dataset successfully detected vegetation. Results for Kimisala-10 (a) and Kimisala-20 (b) using DeepLabV3+ (green: Tree/shrub/grass, silver: Barren land, red: urban land); (c) a map of estimated vegetation for Kimisala-10 using DeepLabV3+ (yellow: Vegetation, blue: Non-vegetation); (d) a map of estimated vegetation for Kimisala-20 using DeepLabV3+; (e) vegetation detected using

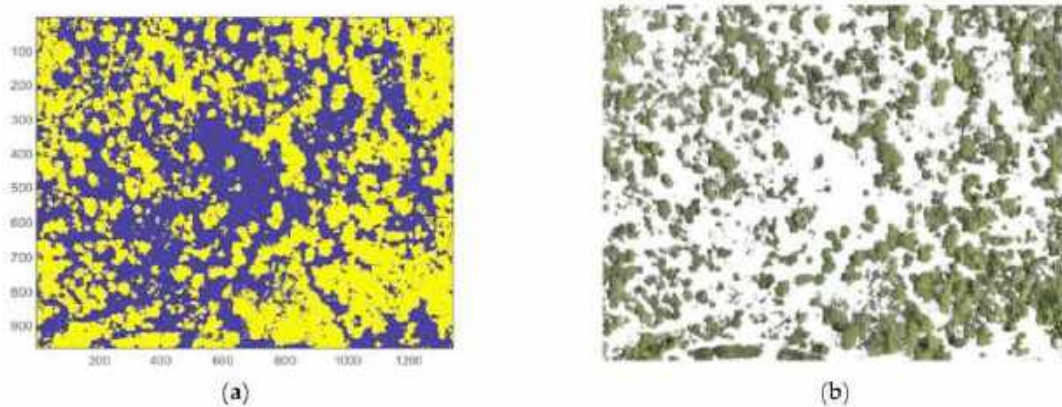


Figure 4. The CNN model trained on the Vasiliko dataset successfully detects vegetation in the Kimisala-20 test image. (a) a CNN-estimated Kimisala-20 vegetation binary map (yellow: vegetation, blue: non-vegetation); (b) a CNN-detected Kimisala-20 vegetation.

Table 3. Image classification accuracy for Deep Neural Network Classifiers on the PlantCLEF 2020 (right) and ExpertLifeCLEF 2021 (left) test sets.

Architecture	Input	PlantCLEF —Accuracy [%]		PlantCLEF —Accuracy [%]	
		Images	Observations	Images	Observations
ResNet-50	224 × 224	40.03	56.32	68.00	74.57
Inception-v4	224 × 224	43.41	59.41	71.32	77.92
Inception-Resnet-V2	224 × 224	44.14	68.15	70.57	78.96
ViT-Base/32	224 × 224	49.36	71.53	73.50	81.29
ViT-Base/16	224 × 224	51.58	73.70	75.54	82.57
EfficientNetV2-S	224 × 224	53.08	74.13	79.21	85.75
ViT-Tiny/16	384 × 384	47.43	69.06	73.64	80.59
SE-ResNeXt-101	384 × 384	54.61	73.75	80.31	85.98
ResNeSt-269e	384 × 384	56.27	74.52	81.68	86.74
ViT-Base/16	384 × 384	58.49	77.03	82.28	87.75
EfficientNetV2-L	384 × 384	59.90	77.03	84.15	88.52
ViT-Large/16	384 × 384	67.03	83.54	86.87	91.15

Table 4: Descriptive statistics of different diversity indices in the forest communities

Indices	Community type	Mean	S.D.*	S.E.*	Min.	Max.
	Fagetum Oriental	18.95 ^{b*}	4.20	0.92	9.00	28.00
Species	Querco-Carpinetum	27.97 ^a	6.80	1.24	16.00	39.00
Richness	Carpineto-Fagetum	27.00 ^a	5.42	0.71	16.00	38.00
	Rusco-Fagetum	22.19 ^b	6.92	1.14	10.00	36.00
	Fagetum Oriental	0.64 ^b	0.12	0.03	0.30	0.84
Evenness	Querco-	0.76	0.09	0.02	0.5	0.91

ess	Carpinetum	a			6	
	Carpineto-Fagetum	0.71 _a	0.07	0.01	0.48	0.83
	Rusco-Fagetum	0.65 _b	0.10	0.02	0.36	0.80
	Fagetum Oriental	1.86 _b	0.41	0.09	0.86	2.62
Shannon	Querco-Carpinetum	2.49 _a	0.27	0.05	1.89	3.15
	Carpineto-Fagetum	2.32 _a	0.24	0.03	1.63	2.74
	Rusco-Fagetum	1.96 _b	0.44	0.07	0.94	2.74
	Fagetum Oriental	0.70 _b	0.14	0.03	0.32	0.89
Simpson	Querco-Carpinetum	0.84 _a	0.07	0.01	0.67	0.94
	Carpineto-Fagetum	0.84 _a	0.06	0.01	0.57	0.91
	Rusco-Fagetum	0.74 _b	0.13	0.02	0.37	0.91

PlantCLEF2017 and ExpertLifeCLEF2018 test sets reveal similar behaviour to other fine-grained datasets when comparing older and more recent state-of-the-art CNN architectures. EfficientNetV2-L outperforms the competition on both datasets, with an accuracy of 77.03% on ExpertLifeCLEF 2020 and 88.52% on PlantCLEF 2021. ResNeSt-269e and SE-ResNeXt-101 are two other deep networks that significantly lag behind. Tabulated in Table 3 is a summary of the obtained grades.

Table 4 shows that Querco-Carpinetum has the highest diversity indices, whereas Fagetum oriental has the lowest. Carpineto-Fagetum diversity indices are similar to Querco-Carpinetum ones, but all Rusco-Fagetum ones are as low as Fagetum Oriental ones. All diversity indices showed significant differences between the Fagetum Oriental and Rusco-Fagetum group at the 0.05 level, however there were no significant differences between the indices themselves, as shown by the Tukey test.

CONCLUSIONS

In this paper, we compared three different approaches to detecting vegetation. The first two are deep learning-based approaches; the third is an object-based approach that makes use of NDVI, computer vision, and machine learning. The DeepLabV3+ model that included the RGB channels fared adequately in the experiments. However, expanding that model to incorporate the NIR band in addition to the three RGB bands is difficult. Slight improvements in detection were observed when the NDVI band was swapped out for the red band to allow for the use of all four input channels to some extent while still satisfying DeepLabV3+'s three input channels only restriction. Our modified CNN model, in contrast to DeepLabV3+, is simply applied to RGB+NIR spectrums. For the Kimisala-20 dataset, our modified CNN model performed slightly better than DeepLabV3+ when using the RGB and NIR bands. Recovering relevant nearest-neighbor labelled samples, offering ranking class predictions, and allowing the user or experts to visually check the species based on the k-nearest neighbours are just a few of the

many benefits of employing image-retrieval. Additionally, open-set identification problems, wherein additional or altered classes

can be recognised after training, are naturally supported by the retrieval strategy. Changes in biological taxonomy, for instance, could result in a new set of classes. The research showed that the diversity of communities centred around *Querco-Carpinetum betulii* and *Carpinetum-Fagetum* was much higher than that of groups centred around *Rusco-Fagetum* and *Fagetum Oriental*. Shade-tolerant climax species tend to dominate in stands where there is less species diversity.

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VISION FOR VISHWA GURU INDIA: INITIATIVES FOR GLOBAL LEADERSHIP BY 2047

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TECHNOLOGY STARTUPS: INNOVATION AND GROWTH

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Abstract

India the largest country in population is now moving towards the economic growth. Inspite of huge availability of man power for working, now the country concentrates on entrepreneurship. With lots and lots of unique idea, the new entrepreneurs are emerging day to day. To support and motivate the emerging entrepreneurs, Government of India is taking lot of initiatives. Startup India is one such scheme. A person with a unique idea and skill, can avail this startup scheme through the banks. Through the emergence of new business, lots of employment opportunities are being created, which leads to the growth of a nation. In this article, innovation and growth of technology through startups is analysed.

Keywords: *Startups, Technology, Innovation, Growth, Entrepreneur*

Introduction

Startups create innovative solutions and technologies. Many startups in India are operating in remote areas with the aim to support the overall local community. When Indian start-ups maintain the requirement for a requisite product or service, it reduces the import of that foreign product or service. This not only minimises the cash flow to another nation but increases the flow of capital within the Indian market, which is pivotal to the growth of the Indian economy. When a startup creates employment for locals, they also begin to purchase goods and services, increasing the influx of cash and revenue to the government and thus boosting the economy. When several startups are blooming in one location, the market of that geography rises as well. Since many individuals desire to reside there to work, this dramatically changes the infrastructural facilities of that city. When infrastructure upgrades, numerous guesthouses, homestays, food outlets, and transport service unlocks, creating countless job opportunities and increasing the city's revenue.

Role of Startups

Nowadays, more and more startups are growing with modernization and creativity, which have a large potential to change the world's economy. Startups can be initiated anywhere, and it's often the countries with the highest needs that have the biggest opportunities. Startups are at home in underdeveloped countries. Such

environments offer many problems that startups can take advantage of, not just to make a profit, but also make an impression in a struggling economy. Entrepreneurship is the only way to augment the economic growth of any nation. A small startup idea can be turned into a big innovative solution that can change the future of developing countries.

Startups, being small entities, play a dominant role in economic growth. The reason behind this is that they generate jobs, which means lower unemployment rates, and lower unemployment means an economy that is refining and improving. Startups also generate competition and inspire individuals to be more pioneering and inventive because new entrepreneurs have novel ideas to present, which stirs even more innovation and creativity. Since the number of startups is growing, competition between them is also increasing. But healthy competition is significant for startups and customers to curate the startup environment. As of now, many startups have introduced the latest technologies like the Internet of Things, Artificial Intelligence, Robotics, etc. Most technology giant companies outsource their tasks to startups nowadays, which will help to upsurge the cash flow of startups.

Employment Creation

One of the main advantages of startups is that it generates new jobs. Global data shows that startups are creating more jobs in any country than large companies or enterprises in the same sector. Thus it lowers the unemployment problems in developing nations like India.

Wealth Creation

As entrepreneurs are attractive investors by supporting and financing their own resources, the people of the nation would get the benefit when the startups grow. As money is allocated within society, wealth is created within the nation.

Research and Development

Research and development (R & D) in developing countries can be highly subsidized by startups as they often deal with high technology and knowledge-based services. The startup's R & D team supports as an innovation searcher and retains the company's growth. It supports well in an applied orientation or research work in a university or other educational institution. Consequently, startups can inspire students or researchers to implement their ideas by working at a startup.

Innovation and Growth

Startups come in all shapes and sizes. While small in number, a small group of successful startups is important for understanding aggregate outcomes such as employment and productivity. These Startups have an uncertain fate. While some grow to become large and successful companies, many end up transferring their operations to older incumbents through an acquisition. In recent years, such acquisitions have attracted the attention of media and policymakers alike.

Conclusion

Given the widely acknowledged importance of new venture creation to innovation, employment and economic growth, in recent years a variety of policy initiatives aiming at promoting the establishment, growth and impact of innovative start-ups have been issued worldwide. Yet, there is substantial heterogeneity in terms of criteria and approaches used to define innovative start-ups and lack of systematic understanding of how these relate to firm's and policy rationales.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

Volume - 1

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SUSTAINABLE BUSINESS PRACTICES IN START-UPS

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Abstract

Emerging and running companies are looking for ways to thrive in a competitive environment with innovative business models. Recent trends such as circular economy, fair trade and sharing economy are some of the many approaches that address this issue. In fact, most research on the topic of sustainable business models is still exploratory and does not fully acknowledge these emerging approaches, whose definitions, boundaries, and defining characteristics are still somewhat vague. Many studies seek to contribute to the understanding of the inner entrepreneurial dynamics of innovative sustainable business models. Few studies focus on the fashion business, a resource-intensive industry in which opportunities to reduce environmental impacts and to innovate business models abound.

Keywords: Startups, Green, Business models, etc.,

Introduction

Start-ups are an increasingly important phenomenon in the business industry. Many such companies have been created over the past few years, illustrating the interest in and growth of such entrepreneurship. Emerging companies are more likely to be founded on sustainable business models. In many cases, such models incorporate the principles of the circular economy. The 2030 Sustainable Development Goals (SDGs) are a unique collection of seventeen time-bound goals that strive to balance the three sustainability objectives of economic, social, and environmental sustainability. Sustainability has become a catalyst for growth across all sectors of the economy. The financial industry, in particular, has been scrutinized for its contribution to environmental sustainability. The emerging concept of a green startup has gained momentum because of the rising awareness campaigns for sustainable development. Also, after looking at the impact of lockdowns because of Covid-19, this topic has gained the attention of many researchers. Looking at the need and urgency to introduce sustainable development for a nation's progress, all major nations have laid out policies in terms of green finance to elevate sustainable entrepreneurship. Since it is an emerging topic, nothing much has been researched. Hence, there is a research gap, particularly for the Indian economy, which has become one of the most politically strong nations among the world's major forces. This paper is an attempt to fill the same. Hence, this topic is researched to reckon the present status of green startups in India. The nation has recently shown significant growth in the number of unicorns, a jump in export value and other economic aspects related to business growth. Moreover, it endeavours to

assess and compare India's performance in sustainable entrepreneurship with the country which has performed better in terms of green startups.

Sustainable Practices

- a. **Green Finance** – The financial activity that is designed to improve the environment is green finance. A variety of loans, financing instruments and investments are included in this program in order to promote the development of environmentally friendly projects or to reduce the climatic effect of more conventional ones.
- b. **Green Startup** – As the name implies, a green (startup) firm provides goods and services that aid in creating a more sustainable environment. In a sustainable world, current demands are addressed without jeopardizing the capacities of future generations to satisfy theirs. Because of this, a green company is often known as a long-term company. It can also be described as a corporation that does not harm the environment, economy or local community in any way whatsoever.
- c. **Sustainable Entrepreneurship** – Sustainable entrepreneurs are people or firms that use their primary operations to contribute to sustainable development. A sustainable entrepreneur develops and implements sustainable ideas for the mass market, which benefits the greater community as a whole. When it comes to creating new goods, services, industrial methods, techniques and organizational models that positively influence the environment and society, sustainable entrepreneurship is opportunity oriented.

Reasons for Green Economy

- The shift to a green economy includes the efficient and effective use of natural resources, energy and new technology, resulting in economic development and employment creation. Adopting a green economic model may be successful if there is a global commitment and a strategically established framework for global investment that includes developing and developed nations. It is also crucial for the successful expansion of green finance.
- The green economy is fueled by specialized policies aimed at eliminating or lowering ecologically detrimental subsidies, developing a market for ecosystem products and services and enabling institutions via the provision of market-based incentives, opportunities and enabling institutions.
- Green finance is motivated by the desire to move toward a green economy. As defined by the G20 research group, green finance is “the financing of initiatives that generate environmental advantages within the framework of ecologically sustainable development”. These environmental benefits include reductions in air, water and land pollution, reductions in greenhouse gas (GHG) emissions, increased energy efficiency while maximizing the use of available natural resources and

mitigation of and adaptation to climate change, as well as their associated benefits. It is a stepping stone toward resolving many environmental concerns and bringing economies together on a sustainable path. If India wants to focus on making its economy green, it must focus on promoting green finance for developmental activities. Glancing at rising environmental issues, that country must take steps to scale up sustainable development initiatives.

- Indian entrepreneurs are expected to raise \$42 billion in 2021, up from \$11.5 billion the previous year. Additionally, the Indian government has designated 14,000 new enterprises for recognition in 2021. India now has 83 unicorns with a combined worth of \$277 billion as of January 2022. Delhi-NCR has surpassed Bangalore as India's new startup hub. Delhi-NCR added almost 5,000 recognized startups in the previous two years, while Bangalore added 4,514. However, Maharashtra has the most recognized startups, with 11,308 in total. In 2021, demand for office space in the Delhi-NCR area increased by 50% year on year, mainly owing to high absorption by startups and technology enterprises. In 2021, the office space sector will absorb 6.3 million square feet, while startups will absorb 1 million square feet

Conclusion

The study reviewed the use of disruptive innovation and the circularity of resources in the business models of start-ups. The results show that start-ups are innovating in terms of the circularity of resources through a range of partially implemented initiatives. These initiatives allow start-ups to manage their data and microdata, create artefact integration systems, generate connectivity, accelerate digitisation, stimulate partnerships and cooperation between parties in the supply chain, generate new market opportunities and develop efficient transition systems for the circularity of resources. Thus, there is ample evidence that disruptive innovation supports the circular economy in start-ups.

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PREFACE

Atmanirbhar Bharat Abhiyaan or **Self-reliant India** campaign is the vision of new India envisaged by the Hon'ble Prime Minister Shri Narendra Modi. On 12 May 2020, our PM raised a clarion call to the nation giving a kick start to the Atmanirbhar Bharat Abhiyaan (Self-reliant India campaign) and announced the Special economic and comprehensive package of INR 20 Lakh Cr- equivalent to 10% of India's GDP – to fight COVID-19 pandemic in India.

The aim is to make the country and its citizens independent and self-reliant in all senses. Finance Minister further announces Government Reforms and Enablers across Seven Sectors under Aatmanirbhar Bharat Abhiyaan.

The government took several bold reforms such as Supply Chain Reforms for Agriculture, Rational Tax Systems, Simple & Clear Laws, Capable Human Resource and Strong Financial System.

Five pillars of Atmanirbhar Bharat – Economy, Infrastructure, System, Vibrant Demography and Demand

- Special economic and comprehensive package of Rs 20 lakh crores - equivalent to 10% of India's GDP
- Package to cater to various sections including cottage industry, MSMEs, labourers, middle class, industries, among others.
- Bold reforms across sectors will drive the country's push towards self-reliance
- It is time to become vocal for our local products and make them global.

Together, these steps may revive the economic activity, impacted by Covid19 pandemic and create new opportunities for growth in sectors like agriculture, micro, small and medium enterprises (MSMEs), power, coal and mining, defence and aviation, etc. The intended objective of this plan is two-fold. First, interim measures such as liquidity infusion and direct cash transfers for the poor will work as shock absorbers for those in acute stress. The second, long-term reforms in growthcritical sectors to make them globally competitive and attractive. Together, these steps may revive the economic activity, impacted by Covid19 pandemic and create new opportunities for growth in sectors like agriculture, micro, small and medium enterprises (MSMEs), power, coal and mining, defence and aviation, etc.

Primary Sector: The measures (reforms to amend ECA, APMC, Contract framing, etc) announced for the agricultural and allied sectors are particularly transformative. These reforms are steps towards the One Nation One Market objective and help India become the food factory of the world. These would finally help in achieving the goal of a self-sustainable rural economy. Also, the MGNREGA infusion of Rs 40,000 crore may help in alleviating the distress of migrants when they return to their villages.

ROLE OF MSME IN CONNECTING RURAL INDIA

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Abstract

MSME stands for Micro Small and Medium Enterprises. It plays a major role in the economic development of a country. The ministry of MSME is the apex executive body for the formulation and administration of rules and regulations of laws relating to MSME in India. The Micro, Small and Medium Enterprises Development Act, 2006 is an Act of the Parliament of India. According to the act, "any buyer who fails to make payment to MSMEs, as per agreed terms or a maximum of 45 days, would be liable to pay monthly compounded interest at three times the bank rate notified by RBI". Industries are divided into 2 categories. Manufacturing and services. They are further divided into micro, small and medium. For both, manufacturing and services sectors, micro industries' capital requirements are under 1 Crore rupees and an annual turnover of less than 5 Crore rupees. Small industries shall have between 50 and 250 Crores respectively.

Keywords: MSME, Economic Development, Rural, Coir, Small Scale

Role of MSME

Micro Small and Medium Enterprises have laid down a path to the employment opportunities. Due to MSME many number of public have got benefitted and got employment opportunities due to lower investment of capital when comparing to large investment for large-scale business. MSMEs are the backbone for many large scale units. They not only increase the employment opportunities but also, they help to increase the country's socio-economic development. MSMEs also helped rural development which was the biggest challenge in front of the Government as in initial phase of industrialization which has attracted rural population towards urban region. It has provided balanced regional development of the country and proved as a key success factor for rural development. The Ministry of Micro, Small and Medium Enterprises (MSME) intends to make the MSME sector, including Khadi, Village and Coir Industries even more vibrant by providing support to existing enterprises and encouraging creation of new enterprises, by way of various programmes and schemes in cooperation with concerned Ministries, Departments and State Governments. The long-term goal of the ministry is to enhance manufacturing base in the country by improving performance of MSMEs through skill and entrepreneurship development. The following are the few highlights of MSME:

1. MSMEs are the second largest employer after agriculture in India.
2. The total number of MSMEs is 3.6 crores in the last five decades.
3. Employing over 8 crore people in India.
4. Accounts for 45 % of total industrial production in India.
5. 40% of total exports of India is contributed by MSME.
6. Manufacturing segment within the MSME contributes to 7.09% of GDP

7. MSMEs also contribute to 30.50% of services.
8. The total contribution of MSMEs to the GDP is 37.54%

Major contribution of MSMEs is as follows:

1. It provides opportunities at comparatively lower cost.
2. It helps in industrialization of rural and backward areas .
3. Reduce Regional imbalances through the optimum utilization of their resources.
4. More equitable distribution of national income and wealth.
5. Major partner in the process of inclusive growth.

Benefits of MSME Registration

1. Free bank loans
2. Reduced rate of interest from banks
3. Subsidy on patent registration
4. Tax Exemption
5. Electricity bill concessions
6. Marketing and Promotion assistance from the government
7. Technology upgrading

MSMEs Promotes Rural Development

MSMEs in rural areas create employment opportunities. Apart from direct employment, the business also creates opportunities for other businesses indirectly. For example, a small-scale food manufacturing unit in the village generates employment for workers in the factory. Additionally, it also creates opportunities for allied sectors such as local raw material suppliers, machinery and tool manufacturers, logistics and transport service providers, and so on. As the rural population gets employment and business, it helps in eradicating poverty in the region. In other words, MSME sector acts as tool for poverty eradication.

MSMEs provide initial training to enable the local workforce to undertake specific jobs. This gives local people an opportunity to learn new skills and be relevant with current time and age.

For example, the local workforce may not have the skills required to work on a new high-tech machine. However, with training they can be taught and acquire new skills and be ready for this job and similar opportunities. Also, it helps the workforce to be more employable in the future and grow in their careers.

Economic Development of the Rural Area

By generating employment and creating business opportunities, the role of small-scale industries in rural India development is enormous. They provide better earnings that translates to better quality of life for the rural population. As the buying capacity of the rural population increases, it leads to the economic development of the region too.

Getting Recognition on the Global Map

The MSME sector, especially the cottage industry like saree weaving, carpet weaving etc., are classic examples of family run businesses (or generational businesses). Generally, the entire family is engaged in the business and in some cases, the whole village. Through the arts, the artisans' creativity gets exposure in the national and global markets. As mentioned, many MSMEs in the rural sector are engaged in exports and generate foreign exchange, in turn helping the national economy to grow. For example, India is the 5th largest exporter of leather goods and accessories, according to Invest India. Leather exports reached \$4.03 billion in FY 2020-21. Each exporting MSME has contributed to reach this milestone.

Self-reliance

As the MSMEs in the rural areas mostly source raw materials and workforce locally, they are aligned with the central government's mission of self-reliant India.

Rural Development through Business

- **Source locally:** Procurement strategy of sourcing locally can help your business to be cost effective. Additionally, you generate business for another local/rural business and help it grow too.
- **Hire local workforce:** You can hire local talent. If the need be, they can undergo training to acquire new skills for the job. Many large companies having manufacturing units in the rural region have a policy of acquiring a certain percentage of talent from the local area.
- **Collaborate with rural businesses:** Instead of competition, forge collaborations with alike or complementing businesses in the region. This will help you as well as other businesses grow and expand.

Conclusion

MSMEs contribution to the economic development of a nation is wide. But there are some difficulties in MSMEs. Many entrepreneurs are not entering in the field of exports due to lack of market knowledge, availability of a growing domestic market, and the complexities of international trade. Limited scale of operations leads to low production capacity (and consequent low exportable surplus), which is related to the maximum limits for capital investment for definition of MSME. Problems of designing, packaging and product display due to limited capacities. Inadequate infrastructure facilities, including power, water, roads, etc. Low technology levels and lack of access to modern technology. Lack of skilled manpower. Absence of a suitable mechanism which enables the quick revival of viable sick enterprises and allows unviable entities to close down speedily.

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VISION FOR VISHWA GURU INDIA: INITIATIVES FOR GLOBAL LEADERSHIP BY 2047

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ROLE OF ENTREPRENEURSHIP IN PROMOTING RURAL WOMEN EMPOWERMENT

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Abstract

Woman creates a family which leads to society and nation. The social and economic development of women is essential for the overall economic development to any society or country. Although entrepreneurship is in the mindset of any woman, it is not invested in India the way it should be. Although there are some exceptions, due to the changing environment, people are comfortable accepting the important role of women in our society. Entrepreneurial development of women is an essential part of human resource development. Any strategy aimed at economic growth without engaging women, who make up half of the world's population, will back fire. Evidence has unequivocally established that entrepreneurial spirit is not a male prerogative. Women-owned businesses are increasing rapidly in almost all economies. Women's latent entrepreneurial potential is gradually changing with growing sensitivity to role in society and economic status. Skill, knowledge and adaptability in business are the main reasons why women emerge in business ventures. The main objectives of the study are to find out the factors that contribute to the formation of female entrepreneurs. The study also highlights the major barriers and challenges faced by women entrepreneurs and the opportunities available to them. Finally the paper makes some commendations to increase or promote women entrepreneurship and healthy development of women entrepreneurship in India.

Keywords: Women Entrepreneurship, Role, Self-Fulfillment, Entrepreneurship Development.

Introduction

Women's empowerment is a social process in which women expand and recreate what it means to be in a previously denied situation. There are many principles that define women's empowerment, for one to be empowered; they must come from a position of disempowerment. Entrepreneur is the agent who buys means of production at certain prices, in order to sell at prices that are certain at the moment at which he commits himself to his cost". According to P.F Drucker "he is one who always searches for change: responds to it & exploits it as an opportunity". Hence, Entrepreneurship refers to the act of setting up a new business or reviving an existing business so as to take advantages from new opportunities. Women have

developed tremendously in their mentality. With increasing dependence on the service sector, many entrepreneurial opportunities have been created, especially for women, where they can enhance their skills while maintaining a balance in their lives.

Objectives

The study has the following objectives

- To understand the philosophy and concept of women empowerment and entrepreneur development in rural area.
- To identify the impact of entrepreneur development on women empowerment; and
- To suggests one possible solution for encouraging; developing; and improving the women empowerment in emerging economies.

Methodology

Given the nature of the present study, data had to be collected from secondary sources. The author was always mindful of the objectives of the study and collected data accordingly to achieve those objectives. Secondary data was collected from research studies, books, journals, newspapers and on going academic work papers. The collected data can be processed and analyzed to make the present study useful for the practitioners, researchers, planners, policymakers and educators of the concerned area.

Analysis and Findings

1. Empowerment

Empowerment means that people have power and control over their own lives. People get the support they need. Empowerment means that people are equal citizens. They are respected and trusted in their community. Empowerment as action refers to the process of self-empowerment and professional support of people to overcome their feelings of powerlessness and lack of influence, and to identify and use their resources. The term empowerment originates from American social psychology and is associated with social scientist Julian Rappaport (1981).[1] However, the roots of empowerment theory extend further into history and are linked to Marxist sociological theory. These sociological concepts are continuously developed and refined through neo-Marxist theory. Empowerment redistributes power from the powerful to the powerless. It is more than participation in decision making, it must also include the process that lead people to perceive themselves as able and entitled to make decisions (Prasad & Sahay, 2000). Empowerment must

involve undoing negative social construction, so that people come to see themselves as having the capacity and the right to act and influence decisions (Rowlands, 1997).

II. Entrepreneurship

Entrepreneurship is the creation or extraction of economic value. With this definition, entrepreneurship is viewed as change, generally entailing risk beyond what is normally encountered instarting a business, which may include other values than simply economic ones. An entrepreneur is an individual who creates and/or invests in one or more businesses, bearing most of the risks and enjoying most of the rewards. The process of setting up a business is known as entrepreneurship. The entrepreneuris commonly seen as an innovator, a source of new ideas, goods, services, and business/or procedures. More narrow definitions have described entrepreneurship as the process of designing, launching and running a new business, which is often similar to a small business, or as the "capacity and willingness to develop, organize and manage a business venture along with any of its risks to make a profit. The people who create these businesses are often referred to as entrepreneurs. While definitions of entrepreneurship typically focus on the launching and running of businesses, due to the high risks involved in launching a start-up, a significant proportion of start-up businesses have to close due to "lack of funding, bad business decisions, government policies, an economic crisis, lack of market demand, or a combination of all of these."

Characteristics of Entrepreneurship

Not all entrepreneurs are successful; there are definite characteristics that make entrepreneurship successful. A few of them are mentioned below:

- **Ability to take a risk:** Starting any new venture involves a considerable amount of failure risk. Therefore, an entrepreneur needs to be courageous and able to evaluate and take risks, which is an essential part of being an entrepreneur.
- **Innovation:** Its hould be highly innovative to generate new ideas, start a company and earn profits out of it. Change can be the launching of a new product that is new to the market or a process that does the same thing but in a more efficient and economical way.
- **Visionary and Leadership quality:** To be successful, the entrepreneur should have a clear visionof his new venture. However, to turn the idea into reality, a lot of resources and employees are required. Here, leadership quality is paramount because leaders impart and guide their employees towards the right path of success.

- **Open-Minded:** In a business, every circumstance can be an opportunity and used for the benefit of a company. For example, Paytm recognized the gravity of demonetization and acknowledged the need for online transactions would be more, so it utilized the situation and expanded massively during this time.
- **Flexible:** An entrepreneur should be flexible and open to change according to the situation. To be on the top, a business person should be equipped to embrace change in a product and service, as and when needed.

III. Empowerment of women through empowerment

In the early 1980s, the United Nations reported that women performed two-thirds of the world's work. The world's labor earned one-tenth of the world's income and owned one-hundredth World Economic Resources (Laois, 2000). A tool for women empowerment is self-employment or entrepreneurship. Why women choose self-employment or Entrepreneurship? In one study autonomy was rated highly as a means to gain Personal freedom. This level of autonomy offers opportunities to:

- (1) Be able to their Own Decisions
- (2) Able to do optional work
- (3) To reach Financial Independence

The impact of ED on Empowerment

1. Self- confidence of women

Increased self-confidence through entrepreneurship development for women a prosperous future.

2. Economic Solvency

Economic solution the most significant changes come from increases in income, not just upgrades the individual's life but increases her quality of life, the economy increases hardness within the family. Increase in her income also increase in family income and it provides better lifestyle including education to the family members improving child and family health.

3. Capital Building

Women economic success enables women to expand their business, procure new machinery, tools, accessories and relevant necessities. Modernization of the workplace, introduction of new technology for increase production, increase of labourers, along with the increase in purchasing power, upgrades their status both socially and economically.

4. Role of Status

Some aspects of household decision making are reported to have changed as a result of women's contribution in family income. Most of the men now consult with

their wives in important family matters. Their power of decision making has increased because they have money. Since women retain control over earnings, women can easily lend small and big amounts to business and others without asking for their husbands' permission. Since women perceive that their bargaining power within the family has increased as an indirect outcome of participating in the business. Women's status has changed in the family and society gradually.

Conclusion

Empowerment is scalable. Women develop their managerial skills and develop visions of growth that embrace strategic planning areas. Empowerment Women's economic independence leads to control over their lives, self-determination and self-fulfillment. Empowerment by Self-employment is associated with women's ability to gain control over economic resources and participate fully in the wealth building process. Empowerment leads to the self-fulfillment of knowing where women are headed.

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ICT TOOLS IN TEACHING LEARNING PROCESS

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Abstract

Information communication technology is a general term that refers to the technologies used to collect, store, edit and communicate information in various forms. ICT is the use of computer-based technology is used in education is an educational system that uses information and communication technology to support, enhance and enhance the delivery of information. Adapting to these new technologies is a slow process, but it allows many teachers to improve the quality of teaching. Global research has shown that ICT can lead to improved student learning and better teaching methods to make information and communication services widely available to users. E-learning can be termed a network-enabled transfer of skills and knowledge. While teaching can be based in or out of the classrooms, the use of computers and the Internet forms the major component of E-learning. Many institutions of higher education and universities are resorting to E-Learning. Many corporate companies are also deeply investing in E-learning and setting up interactive classrooms activity. Technology has taken over our entire life and education is no exception to it, technological advancement has a great effect on how learning is imparted and also consumed.

Keywords: *ICT Tools-E-Learning-Digital Platform-Satisfaction*

Introduction

Information technology (IT) is defined as the study or use of electronic equipment's, especially computers for storing, analyzing and sending out information. Communication technology is the process of sending, receiving and exchanging information. ICTS can be defined as "diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information." These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony. The use of e-learning in education improves the quality of practical education and a better understanding of the subject. Indira Gandhi National Open University (IGNOU), the world's largest Open University launched a 24x7 E-learning satellite channel called GyanDarshan. E-learning gives the advantage of 24x7 and 365 days a year-round access as compared to Instructor-Led Training, which is a one-time class that must be scheduled. Undoubtedly, one lecture can teach more students wide geographic area by responding to e-learning technology. In general, this review provides important information to increase the knowledge base of various performance educational methods. In the future, there is still a need to develop and evaluate such methods education among higher education students. It is important that these studies are conducted show effectiveness, and they should also focus on outcomes at different levels.

Statement of Problem

The purpose of this research is that the government introduces many new technologies in the country to suit the people's society in order to fulfill the objective of development of the country. A project like Digital transformation in education. E-learning level perception, culture and satisfaction varies from person to person due to many factors such as gender, education etc.

Objective of the Study

- To study the awareness level of people towards ICT tools
- To apply critical thinking skills to their students action, behavior and social engagement on digital platform.
- To identify the satisfaction towards e-learning.

Review of literature

Sahlam et-al (2021) made a study on "The effects of modes of test administration on test scores: A study in an Indonesian school ". The main objectives of this study the effect of gender and the interaction effect between gender and mode of testing on test scores were significant. The primary and secondary data were used for this study. 234 respondents were collected for this study by using simple Random sampling method. The statistical tools like simple percentage will be used to analysis the data. The study revealed that indicated that neither gender, mode of test administration nor the interaction between gender and mode students anxiety levels. **Noreen & Malik, (2020)**. It is found that, teachers also require the necessary infrastructure, hardware and software, reliable high-speed internet connectivity, continuous professional development and the support of administrators. **Muhammad Hafeez (2021)** discovered that Teaching-Learning Process and ICT Tools- A Review and found that usage of modern ICT tools in teaching- learning process successfully improved the teaching-learning process and the traditional lecture learning does not improve the cognitive and communication skills of the learners. **Dr. Pranjal Grover et-al (2021)** made a study on "Efficiency of online pre-Recorded practical demonstrations and live Streamed practical demonstrations in third year physiotherapy students during the COVID-19 pandemic-a survey ".The main objective of this study is to understand the efficacy of online pre-recorded practical demonstrations. The primary data were used for this study. 44 respondents were collected for this study by using a complete enumeration sampling method. Statistical tools like simple percentages will be used.

Table 1

Variable	Number of respondents	Percentage
Age:		
Below 20 years	68	55.76
21- 30 years	87	43.58
31-40 years	1	0.66
Total	156	100

Area:		
Rural	98	62.82
Semi -urban	13	28.84
Urban	45	8.33
Total	156	100
Gender:		
Male	37	23.71
Female	119	76.28
Total	156	100
Marital status:		
Married	12	7.69
Unmarried	144	92.30
Total	156	100
Educational qualification:		
up to HSC	11	53.20
UG	83	37.17
PG	58	7.05
Others	4	0.64
Total	156	100
Occupation :		
Agriculture	22	73.07
Salaried Person	16	13.46
Labour	5	10.25
Business	113	3.20
Total	156	100
Digital Platforms tools used		
Yes	125	80
No	31	20
Total	156	100

Data: primary data

From the above table shows that Majority of the respondents are age group between 21-30 years. Most of the respondents are rural area. Majority (76.28%) of the respondents are gender in female. Majority (92.30%) of the respondents are marital status in unmarried. Majority (53.20%) of the respondents are Educational qualifications UG level. Majority (73.07%) of the respondents are Occupation level in Students.

Chi Square Test**Chi square value 5% @Satisfaction onlevel of people****Table 2**

S.No	Particulars	D.F	Chi square Value	Table value	Result
1	Age	4	10.316	9.488	Rejected
2	Area	2	9.375	5.991	Rejected
3	Education qualification	6	11.069	12.592	Accepted

Source: Primary data

From the above table found that respondents calculated chi-square is higher than table value at five percent level, there are significant association between the demographic variables and level of satisfaction. Null hypothesis rejected.

Conclusion

Digitization of legacy and vintage structures has replaced conventional operations with new technology and fashions. Due to that technology the instructional part has additionally got a big change and has changed the conventional training version to a brand new technology based smart version. By digitizing the learning experience, both college students and instructors can hone their skills and create a lively instructional process. Digital transformation can be implemented in many aspects within the academic quarter, including new student recruitment, online knowledge acquisition, scholarly assessments, personalized knowledge of experiences and exams. Generational penetration within the instructional quarter has promised dynamic participation and proposed new methods of training and mastering methods

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Dr. T. Vijaya Chithra ¹

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Abstract

The rapid digital transformation of the marketing landscape has ushered in unprecedented opportunities for businesses to engage with consumers. However, this transformation has also raised critical ethical questions concerning data privacy in the context of digital marketing. This review research paper explores the intricate dynamics between consumer perceptions of data privacy and the practices employed by the digital marketing industry. It delves into the multifaceted dimensions of data collection, storage, usage, and the transparency of data practices.

Consumer concerns regarding data privacy have been amplified in an era of data breaches and heightened awareness of personal data vulnerabilities. This paper examines how consumer perceptions of data privacy influence their trust in digital marketing practices and their willingness to share personal information for targeted advertising. It also assesses the extent to which digital marketing practices align with ethical standards and regulatory frameworks. The paper draws from a diverse range of academic sources, industry reports, and surveys to provide a comprehensive analysis of the ethical challenges and opportunities within digital marketing. It highlights the ethical dilemmas faced by businesses in balancing data-driven marketing strategies with respect for individual privacy rights. Furthermore, it explores evolving consumer attitudes and expectations, underscoring the importance of transparent data handling practices and informed consent mechanisms.

As digital marketing continues to evolve, understanding the ethical dimensions of data privacy becomes paramount for both marketers and policymakers. This research paper contributes to the ongoing dialogue surrounding data privacy ethics, offering insights that can inform ethical marketing practices, consumer protection regulations, and the cultivation of a trustworthy digital marketing ecosystem. This paper underscores the intricate interplay between consumer perceptions, industry practices, and ethical considerations in the realm of data privacy within digital marketing. It calls for a collaborative effort among industry stakeholders, policymakers, and consumers to navigate these ethical challenges and foster a digital marketing environment characterized by transparency, trust, and respect for individual privacy.

Keywords: *Data Privacy, Digital Marketing, Consumer Perceptions, Industry Practices, Targeted Advertising*

Introduction

The digital age has ushered in a transformative era of marketing, revolutionizing how businesses engage with consumers and deliver tailored experiences. As consumers navigate an increasingly interconnected digital landscape, they leave behind a trail of data—a digital footprint that marketers eagerly harness to personalize advertisements and content. While data-driven marketing holds the promise of relevance and engagement, it raises profound ethical questions, especially concerning data privacy.

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The collection, storage, and utilization of personal data in digital marketing practices have become central to contemporary marketing strategies. However, this evolution has not been without controversy. It has ignited a fierce debate about the ethical boundaries of data privacy, consumer consent, and the power dynamics between individuals and corporations. As technology advances, consumer awareness of the value and vulnerability of their personal data has grown, leading to heightened concerns about how that data is acquired, used, and protected.

This review research paper delves into the intricate terrain of data privacy ethics in the realm of digital marketing. It explores the dynamic interplay between consumer perceptions of data privacy and the practices employed by the digital marketing industry. At its core, this study seeks to understand the ethical implications of the data-driven marketing ecosystem and to provide insights into the evolving relationships between consumers, marketers, and regulators.

Consumer perceptions of data privacy are central to the ethical dimension of digital marketing. How consumers perceive the collection and utilization of their personal data shapes their trust in digital marketing practices and influences their willingness to share information for targeted advertising. As concerns about data breaches and privacy vulnerabilities mount, understanding consumer attitudes becomes paramount for both ethical marketing and consumer protection.

Furthermore, this research paper critically assesses the extent to which digital marketing practices align with ethical standards and regulatory frameworks. It examines the ethical dilemmas faced by businesses in the pursuit of data-driven marketing strategies while simultaneously respecting individual privacy rights. In an era marked by evolving consumer expectations and increased scrutiny from regulators, it is essential to evaluate the ethical foundations of digital marketing.

The comprehensive analysis presented in this review draws from a diverse range of academic sources, industry reports, and surveys. It offers a panoramic view of the ethical challenges and opportunities within digital marketing. It highlights the ethical dilemmas faced by businesses in balancing data-driven marketing strategies with ethical considerations and regulatory compliance. The evolving landscape of consumer attitudes and expectations serves as a focal point of investigation. The paper underscores the importance of transparent data handling practices and the development of informed consent mechanisms. It also explores the role of policymakers, industry stakeholders, and consumers in shaping the ethical contours of the digital marketing ecosystem.

The ethical dimensions of data privacy within digital marketing represent a complex and evolving landscape. As the digital marketing industry continues to expand and adapt, understanding and addressing these ethical challenges become critical imperatives. This research paper contributes to the ongoing dialogue surrounding data privacy ethics, offering insights that can inform ethical marketing practices, consumer protection regulations, and the cultivation of a trustworthy digital marketing environment.

Background of the Study

The digital age has ushered in a paradigm shift in marketing, driven by technological innovations that enable businesses to collect, analyze, and leverage vast amounts of consumer data. This transformation has redefined how marketers engage with their target audiences, offering the promise of highly personalized and contextually relevant advertising. While data-driven marketing has revolutionized the industry, it has also given rise to profound ethical questions surrounding data privacy, consumer consent, and the responsible use of personal information. The practice of data-driven marketing relies on the systematic collection of user data, encompassing a wide array of personal details, including browsing history, location data, social media interactions, and even biometric information. This information is then harnessed to create detailed consumer profiles, enabling marketers to deliver targeted advertisements and content. While these practices hold the potential to enhance user experiences and boost marketing effectiveness, they raise intricate ethical dilemmas regarding the extent of data collection, transparency, and individual privacy rights.

Consumer awareness of data privacy issues has grown significantly in response to high-profile data breaches, privacy scandals, and legislative efforts to safeguard personal information. As a result, consumers are increasingly vigilant about how their data is handled and are demanding greater control over their digital identities. This shift in consumer attitudes has profound implications for the digital marketing industry, as consumers' willingness to share data for marketing purposes hinges on trust in the ethical conduct of businesses. The digital marketing landscape is further shaped by a complex web of regulations and standards designed to protect consumer data privacy. Initiatives such as the European Union's General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA) have set stringent requirements for data handling, consent mechanisms, and user rights. These regulatory frameworks reflect the growing recognition of the importance of ethical data practices and individual privacy rights.

To navigate this evolving ethical landscape, businesses must not only comply with regulations but also foster a culture of ethical data stewardship. Understanding consumer perceptions of data privacy and the ethical implications of digital marketing practices is vital for building trust, maintaining customer relationships, and demonstrating a commitment to responsible data handling. This review research paper embarks on a comprehensive exploration of the ethics of data privacy in digital marketing. It seeks to unravel the intricate dynamics between consumer perceptions of data privacy and the practices employed by the digital marketing industry. By delving into the multifaceted dimensions of data collection, storage, usage, and transparency, this study aims to shed light on the ethical considerations that underpin data-driven marketing strategies. The digital marketing landscape stands at a crossroads where ethical data practices and consumer perceptions of data privacy intersect. This background sets the stage for a thorough examination of these critical issues in the context of digital marketing, providing the foundation for a comprehensive analysis of the ethics of data privacy.

Justification of the study

The investigation of the ethics surrounding data privacy in digital marketing is both timely and imperative in today's digital age. This research study is justified for several key reasons:

1. **Rising Data Privacy Concerns:** The proliferation of high-profile data breaches, privacy scandals, and growing awareness of personal data vulnerabilities have heightened consumer concerns regarding data privacy. Consumers are increasingly wary of how their data is collected and used in digital marketing practices. Understanding these concerns is essential for businesses to regain consumer trust and navigate the evolving digital marketing landscape.
2. **Evolving Regulatory Landscape:** The emergence of comprehensive data protection regulations, such as the GDPR and CCPA, reflects a global commitment to safeguarding individual privacy rights. These regulations have far-reaching implications for businesses engaged in digital marketing. Examining how these regulations intersect with industry practices and consumer expectations is essential for compliance and ethical data handling.
3. **Ethical Data Practices:** Ethical considerations are at the forefront of discussions surrounding data privacy in digital marketing. It is paramount to assess how businesses balance data-driven marketing strategies with ethical standards and societal expectations. Investigating the ethical dilemmas faced by businesses can provide valuable insights into responsible data practices.
4. **Trust and Consumer Relationships:** Trust is a cornerstone of consumer relationships. As consumers become increasingly cautious about data privacy, the ability of businesses to establish and maintain trust is contingent on transparent and ethical data handling practices. This study explores how consumer trust is influenced by data privacy perceptions and the ethical conduct of businesses.

5. **Gap in Academic Literature:** While there is a growing body of literature on data privacy and digital marketing, a comprehensive review that synthesizes the existing research and explores the ethical dimensions is notably absent. This study bridges this gap by providing a holistic analysis of the ethical challenges and opportunities in the intersection of data privacy and digital marketing.
6. **Practical Implications:** Beyond academic inquiry, this research offers practical implications for businesses and policymakers. Understanding consumer perceptions and ethical considerations in data-driven marketing can inform the development of best practices, industry standards, and regulatory policies that promote ethical data privacy.
7. **Emerging Ethical Debates:** The rapid evolution of technology and marketing practices continually introduces new ethical debates. By conducting this research, we contribute to the ongoing dialogue surrounding data privacy ethics, offering insights that can guide ethical marketing practices, consumer protection regulations, and industry self-regulation.

Objectives of the Study

1. To assess consumer perceptions, attitudes, and concerns regarding data privacy in the context of digital marketing practices
2. To investigate the data collection, storage, usage, and sharing practices employed by the digital marketing industry, including the extent to which they align with ethical standards.
3. To explore the relationship between consumer trust in digital marketing practices and their perceptions of data privacy and ethical conduct by businesses.
4. To identify and analyze the ethical dilemmas faced by businesses in balancing data-driven marketing strategies with ethical considerations and individual privacy rights.
5. To investigate the role of transparency and informed consent mechanisms in addressing ethical concerns related to data privacy in digital marketing.

Literature Review

1. Data Privacy in the Digital Age

The digital age has brought about unprecedented opportunities and challenges in data privacy. As individuals engage with digital platforms, they generate vast amounts of personal data. This data encompasses a wide range of information, from online behaviors and preferences to location data and biometrics. It forms the foundation of data-driven marketing strategies, enabling businesses to deliver personalized content and advertisements. However, this data-driven approach has raised ethical concerns regarding the extent of data collection, usage, and individual consent.

Numerous scholars have examined the evolving landscape of data privacy in the digital age. Acquisti and Grossklags (2005) explored the trade-offs between privacy and personalization, highlighting the ethical dilemmas arising from the use of personal data for targeted advertising. They emphasized the need for transparency and user control in data collection practices. Nissenbaum (2010) introduced the concept of "contextual integrity," arguing that data practices should respect the social and contextual norms in which data is shared.

2. Consumer Perceptions and Trust

Consumer perceptions play a pivotal role in shaping the ethical considerations surrounding data privacy in digital marketing. Scholars have investigated how consumers perceive data privacy and the impact of these perceptions on trust and willingness to engage with digital marketing practices. Culnan and Armstrong (1999) found that concerns about data privacy influence consumer trust in e-commerce. Similarly, Li et al. (2008) highlighted the importance of trust in online advertising and the role of perceived privacy protection in building trust.

Research by Turov et al. (2015) revealed that consumers have varying levels of awareness and concern about data privacy, with some expressing resignation while others are highly cautious. Understanding these varying perceptions is crucial for businesses seeking to establish trust with

their audience. Furthermore, Tsai and Men (2017) explored the role of transparency and consumer control in mitigating concerns and enhancing trust in personalized advertising.

3. Regulatory Frameworks and Compliance

The emergence of data protection regulations has had a profound impact on data privacy in digital marketing. The European Union's General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA) are notable examples of regulatory frameworks aimed at safeguarding individual privacy rights. Scholars have examined the implications of these regulations for businesses and consumers.

Kaplan and Haenlein (2019) assessed the GDPR's impact on the marketing industry, highlighting the importance of transparency, data minimization, and user consent. They noted that the GDPR has prompted businesses to reevaluate their data practices. Additionally, Dienlin and Trepte (2015) investigated the effects of privacy policy transparency on user trust, emphasizing the role of clear and concise privacy disclosures in compliance with regulations.

4. Ethical Considerations and Dilemmas

The ethical considerations within data-driven marketing practices are multifaceted. Scholars have explored the ethical dilemmas faced by businesses as they navigate the balance between data-driven strategies and consumer privacy rights. Taddeo and Floridi (2018) argued for an ethical framework that considers both individual and collective interests in data privacy, emphasizing the need for responsible data handling.

Mann and Gavison (2017) delved into the challenges of consent in digital environments, highlighting the complexities of obtaining informed consent from users. They called for a more nuanced understanding of consent mechanisms to ensure ethical data practices. Additionally, Dobson et al. (2019) examined the ethical implications of personalized advertising, particularly in the context of vulnerable populations, underscoring the importance of ethical advertising practices.

5. Future Directions and Emerging Debates

The field of data privacy ethics in digital marketing continues to evolve, presenting new challenges and opportunities. Emerging debates include the ethical considerations of artificial intelligence and machine learning in data-driven marketing, the role of data ethics in the era of the Internet of Things (IoT), and the ethical implications of data sharing in collaborative marketing efforts.

As the digital marketing landscape undergoes rapid transformations, scholars and practitioners must continue to explore the ethical dimensions of data privacy, informing best practices, regulatory frameworks, and industry standards. The dynamic interplay between consumer perceptions, industry practices, and regulatory developments will continue to shape the ethical contours of data privacy in digital marketing.

Material and Methodology

1. Data Collection

- **Academic Literature:** A systematic search of academic databases, including PubMed, IEEE Xplore, JSTOR, and Google Scholar, was conducted to identify relevant scholarly articles, conference papers, and books related to data privacy in digital marketing and consumer perceptions.
- **Industry Reports:** Reports and publications from reputable industry sources, such as Nielsen, Pew Research Center, and eMarketer, were accessed to gather insights into industry practices and consumer behavior.
- **Regulatory Documentation:** Official documents and guidelines from regulatory authorities, including the General Data Protection Regulation (GDPR) and the California Consumer

Privacy Act (CCPA), were consulted to understand the legal framework governing data privacy.

2. Ethical Considerations

Ethical considerations were paramount throughout the research process. Proper citation and referencing practices were adhered to, ensuring that all sources were appropriately credited.

Consent and privacy of individuals were respected, particularly when citing data from surveys or studies involving human subjects.

Results and Discussion

The comprehensive review of academic literature, industry reports, and regulatory documentation on the ethics of data privacy in digital marketing has yielded several significant findings:

1. Consumer Perceptions and Concerns

- **Variability in Perceptions:** Consumer perceptions of data privacy in digital marketing vary widely. While some individuals are highly concerned about their data, others exhibit a resigned attitude, viewing data sharing as an inevitable consequence of digital engagement.
- **Transparency Matters:** Transparency in data collection and usage practices significantly impacts consumer trust. Consumers are more likely to trust businesses that provide clear and concise privacy disclosures and allow for informed consent.
- **Concerns About Targeted Advertising:** Consumers express concerns about the intrusiveness of personalized advertising. The use of personal data to deliver highly tailored ads can be seen as a violation of privacy, especially when consumers are unaware of how their data is being utilized.

2. Industry Practices

- **Data-Driven Strategies:** The digital marketing industry relies heavily on data-driven strategies. The collection of extensive consumer data is central to creating personalized content and advertisements.
- **Adherence to Regulations:** Regulatory frameworks such as the GDPR and CCPA have prompted businesses to reevaluate their data practices. Many organizations have taken steps to ensure compliance with data protection laws.
- **Ethical Dilemmas:** Businesses face ethical dilemmas in balancing data-driven marketing strategies with ethical considerations. The tension between maximizing marketing effectiveness and respecting individual privacy rights is an ongoing challenge.

3. Regulatory Frameworks

- **Impact of GDPR:** The GDPR has had a significant impact on data privacy practices in digital marketing. It has led to increased transparency, data minimization, and user consent mechanisms. Businesses that operate within the European Union have adapted their practices to comply with these regulations.
- **Patchwork of Regulations:** The existence of multiple regional and national data protection regulations, such as the GDPR and CCPA, creates a complex regulatory landscape. Compliance requires businesses to navigate varying legal requirements across jurisdictions.

4. Ethical Considerations

- **Informed Consent:** Obtaining informed consent from users remains a challenge. Many consumers are presented with lengthy and complex privacy policies that they may not fully understand, raising questions about the validity of their consent.
- **Role of Industry Self-Regulation:** Industry self-regulation efforts, such as the Interactive Advertising Bureau's Transparency and Consent Framework, aim to standardize data

practices and improve transparency. These initiatives reflect industry recognition of the need for ethical data handling.

5. Trust Building

- **Transparency and Trust:** Transparency emerges as a key factor in building and maintaining consumer trust in digital marketing. Businesses that are transparent about their data practices and offer users control over their data are more likely to gain trust.
- **Long-Term Relationships:** Trust is essential for fostering long-term relationships between businesses and consumers. Ethical data practices contribute to trust-building and customer loyalty.

In short, the findings from this comprehensive review illuminate the complex interplay between consumer perceptions, industry practices, and regulatory frameworks in the realm of data privacy ethics in digital marketing. The variability in consumer perceptions, ethical dilemmas faced by businesses, and the impact of regulatory frameworks underscore the importance of transparency, informed consent, and responsible data practices in building trust and ethical marketing in the digital age.

Limitations of the study

1. **Scope of Literature:** The review primarily relies on existing literature, which may not capture the most recent developments and emerging trends in the rapidly evolving field of digital marketing. New ethical challenges and practices may have emerged since the last publication date of the reviewed sources.
2. **Language Limitation:** The study is limited to English-language publications. Relevant research published in other languages may not have been included, potentially introducing language bias.
3. **Geographic Focus:** The review predominantly draws from literature and regulations in Western countries, such as the United States and European Union. Ethical considerations and regulatory landscapes may vary significantly in other regions, limiting the generalizability of findings.
4. **Consumer Heterogeneity:** Consumer perceptions and attitudes toward data privacy are highly heterogeneous. The review captures broad trends but may not fully account for diverse consumer demographics, cultural variations, or contextual factors that influence data privacy perceptions.
5. **Industry Variability:** The digital marketing industry comprises a wide range of businesses, from small startups to multinational corporations, each with varying data privacy practices. The review provides a generalized view and may not fully reflect the diversity of industry practices.
6. **Temporal Relevance:** Some regulatory frameworks and industry practices discussed in the review may have evolved or changed since the time of publication. Ongoing developments in data privacy regulations can have a significant impact on the digital marketing landscape.
7. **Overemphasis on Academia:** The review places significant emphasis on academic literature, which may not always align with real-world industry practices. Practical insights from industry experts and practitioners could provide additional perspectives.
8. **Quantitative Data:** The review primarily relies on qualitative data and thematic analysis. Quantitative data and statistical analyses were not conducted due to the nature of the review.
9. **Data from Surveys and Reports:** Some findings are based on data from consumer surveys and industry reports, which have their own methodological limitations, including sampling biases and potential reporting biases.
10. **Generalizability:** While the review aims to provide a comprehensive overview, the findings may not apply universally to all digital marketing contexts or consumer segments.

Despite these limitations, the study contributes valuable insights into the ethics of data privacy in digital marketing, highlighting the need for continued research, industry self-regulation, and policy development to address the evolving challenges and opportunities in this domain.

Future Scope

The study on the ethics of data privacy in digital marketing has illuminated several avenues for future research and exploration:

1. Emerging Technologies

The integration of emerging technologies, such as artificial intelligence (AI), machine learning (ML), and blockchain, into digital marketing practices presents new ethical challenges and opportunities. Future research can investigate the ethical implications of AI-driven personalization, algorithmic bias, and the use of blockchain for transparent data management.

2. Cross-Cultural Analysis

Cross-cultural studies examining data privacy perceptions and ethical considerations can provide valuable insights into how cultural norms and values shape consumer attitudes and industry practices. Comparative research across different regions and cultures can contribute to a more comprehensive understanding of the global data privacy landscape.

3. Longitudinal Studies

Longitudinal studies tracking changes in consumer perceptions and industry practices over time can offer insights into the evolving nature of data privacy ethics. Monitoring the impact of regulatory changes, industry self-regulation, and technological advancements on ethical considerations is essential.

4. Consumer Education and Awareness

Research focusing on consumer education and awareness campaigns can assess their effectiveness in enhancing data privacy literacy. Understanding how informed consumers make ethical choices in data sharing and online engagement is critical for promoting responsible data practices.

5. Industry Self-Regulation

Exploration of industry-led initiatives and self-regulation efforts can shed light on their impact on ethical data handling. Future studies can evaluate the effectiveness of industry-developed frameworks, codes of conduct, and best practices in promoting ethical marketing.

6. Privacy-Preserving Technologies

Research into privacy-preserving technologies and methodologies, such as differential privacy and homomorphic encryption, can examine their feasibility and adoption within digital marketing. These technologies aim to strike a balance between data-driven marketing and data privacy.

7. Ethics in Personalization

Further investigation into the ethical dimensions of personalization in digital marketing can explore the boundaries of customization. How can businesses personalize content while respecting user privacy and consent? What ethical principles should guide the deployment of personalization algorithms?

8. Consumer Empowerment

Studies focusing on tools and platforms that empower consumers to control their data can assess their impact on data privacy ethics. Evaluating the effectiveness and usability of privacy-enhancing technologies can inform their development and adoption.

9. International Harmonization

With the proliferation of data protection regulations worldwide, future research can examine efforts to harmonize international data privacy standards. Comparative analyses of regulatory frameworks and their impact on global digital marketing practices can be insightful.

10. Ethical Marketing Metrics

Development and validation of ethical marketing metrics can provide businesses with a quantitative framework to evaluate and benchmark their data privacy practices. These metrics can assess transparency, user consent, and adherence to ethical principles.

Conclusion

The ethics of data privacy in the realm of digital marketing have become increasingly prominent in an era defined by data-driven strategies, emerging technologies, and evolving regulatory landscapes. This comprehensive review has delved into the multifaceted dimensions of this critical field, shedding light on the interplay between consumer perceptions, industry practices, and ethical considerations.

Consumer Perceptions and Concerns

One of the central findings of this review is the variability in consumer perceptions and concerns regarding data privacy in digital marketing. While some individuals exhibit high levels of concern and caution, others may be resigned or unaware of the extent to which their data is collected and utilized. Transparency in data practices emerges as a pivotal factor in shaping consumer trust and willingness to engage with personalized marketing efforts.

Industry Practices and Ethical Dilemmas

The digital marketing industry relies extensively on data-driven strategies to deliver personalized content and advertisements. However, this reliance on data collection and utilization has introduced a host of ethical dilemmas. Balancing marketing effectiveness with individual privacy rights poses an ongoing challenge for businesses. The review highlights the tension between maximizing the benefits of data-driven marketing and respecting ethical principles.

Regulatory Frameworks and Compliance

The emergence of data protection regulations, such as the GDPR and CCPA, has had a profound impact on industry practices. These regulations have prompted businesses to reevaluate their data handling procedures, emphasizing transparency, data minimization, and user consent. Compliance with these evolving regulatory frameworks is a crucial aspect of ethical data practices.

Transparency and Trust

Transparency emerges as a key theme throughout this review. Transparent data collection and usage practices are pivotal in building and maintaining consumer trust. Businesses that prioritize clear and concise privacy disclosures and provide users with control over their data are more likely to foster trust and long-term relationships with consumers.

Future Directions

As the digital marketing landscape continues to evolve, this review suggests several avenues for future research. These include the exploration of emerging technologies, cross-cultural

analyses, longitudinal studies tracking changes in perceptions and practices, and investigations into industry self-regulation and privacy-preserving technologies. Additionally, ethical marketing metrics and tools for consumer empowerment warrant further examination.

In conclusion, the ethics of data privacy in digital marketing are integral to the sustainability and responsible growth of the industry. Consumer perceptions, industry practices, and regulatory frameworks are interconnected elements that shape the ethical contours of data-driven marketing. Businesses that prioritize transparency, user consent, and ethical data handling not only foster trust but also contribute to the cultivation of a trustworthy digital marketing ecosystem. As the field continues to evolve, ongoing research and ethical considerations are imperative to navigate the dynamic intersection of data privacy, consumer expectations, and digital marketing practices.

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CHAPTER - 30

THE ROLE OF DIGITAL TRANSFORMATION IN SUPPLY CHAIN MANAGEMENT

Dr. T. Vijaya Chithra ¹

Abstract

In the contemporary landscape of global commerce, the dynamic nature of supply chain management has necessitated a paradigm shift towards digital transformation. This review research paper delves into the pivotal role that digital transformation plays in revolutionizing supply chain management practices. The paper provides a comprehensive analysis of the transformative impact of digital technologies, such as IoT (Internet of Things), blockchain, artificial intelligence, and data analytics, on various facets of supply chain operations.

The review discusses how digital transformation enhances supply chain visibility, transparency, and responsiveness, enabling organizations to optimize their processes, reduce costs, and meet the ever-evolving demands of customers. Moreover, it explores the critical importance of data-driven decision-making in supply chain optimization and risk mitigation.

Additionally, the paper highlights the challenges and barriers that organizations may face during their digital transformation journey and offers insights into strategies for successful implementation. It also examines the ethical and security considerations associated with the adoption of digital technologies in supply chain management.

Furthermore, the review underscores the significance of collaboration and partnership between industry stakeholders to harness the full potential of digital transformation. Real-world case studies and examples are presented to illustrate the practical implications and benefits of embracing digitalization within the supply chain context.

In conclusion, this research paper emphasizes that digital transformation is no longer an option but a necessity for organizations striving to remain competitive and resilient in the global marketplace. It provides a roadmap for understanding, planning, and executing digital transformation initiatives within the realm of supply chain management, paving the way for a more efficient, sustainable, and adaptable supply chain ecosystem.

Introduction

In today's rapidly evolving business landscape, the integration of digital technologies has revolutionized various facets of organizational operations. One of the most profoundly impacted areas is supply chain management (SCM), where the adoption of digital transformation has ushered in a new era of efficiency, agility, and competitiveness. This review research paper explores "The Role of Digital Transformation in Supply Chain Management," shedding light on the transformative effects and implications of digital technologies on the contemporary supply chain landscape.

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Supply chain management is the backbone of modern businesses, encompassing the processes of planning, sourcing, producing, delivering, and returning goods and services. In an era characterized by globalization, increased customer expectations, and dynamic market conditions, supply chain professionals are faced with growing challenges. These challenges range from demand volatility and supply disruptions to sustainability concerns and heightened competition. To address these complexities, organizations have turned to digital transformation, harnessing cutting-edge technologies to optimize their supply chain operations.

Digital transformation in supply chain management refers to the strategic adoption and integration of digital technologies such as the Internet of Things (IoT), artificial intelligence (AI), blockchain, big data analytics, and automation. These technologies empower organizations to enhance visibility, transparency, and decision-making capabilities across the entire supply chain ecosystem. Through real-time data collection, predictive analytics, and process automation, digital transformation enables supply chain stakeholders to identify inefficiencies, mitigate risks, and capitalize on emerging opportunities.

The objectives of this research paper are twofold. First, it aims to provide a comprehensive overview of the key digital technologies that are reshaping supply chain management. Second, it delves into the tangible benefits and challenges associated with the adoption of digital transformation in SCM. By synthesizing existing literature and case studies, this review paper offers valuable insights into how organizations can leverage digital technologies to optimize their supply chain processes, enhance customer satisfaction, reduce operational costs, and remain competitive in a dynamic business environment.

As the world continues to witness rapid advancements in technology and the digitalization of business processes, understanding the role of digital transformation in supply chain management becomes crucial for both academics and practitioners. This paper serves as a roadmap for decision-makers looking to embark on or enhance their digital transformation journey within the realm of supply chain management. Through a systematic exploration of the topic, we aim to contribute to a deeper understanding of the potential and challenges associated with the integration of digital technologies in modern supply chain practices.

Background

In the contemporary landscape of global commerce, supply chain management has evolved into a critical determinant of business success. Traditional supply chain processes, which once relied heavily on manual and paper-based systems, have been gradually replaced by digital transformations driven by technological advancements. This paradigm shift has given rise to the concept of "Digital Transformation in Supply Chain Management," a subject that has garnered significant attention from researchers, practitioners, and business leaders alike.

The process of digital transformation in supply chain management involves the integration of cutting-edge technologies, data analytics, and automation into various aspects of the supply chain, ranging from procurement and production to distribution and customer service. This fundamental shift in approach seeks to enhance efficiency, visibility, responsiveness, and overall competitiveness for businesses operating in an increasingly complex and globalized market.

Key elements of this digital transformation include the adoption of technologies such as Internet of Things (IoT) devices, blockchain, artificial intelligence (AI), machine learning, big data analytics, and cloud computing. These technologies enable real-time data capture, analysis, and sharing, allowing supply chain professionals to make data-driven decisions that optimize processes, reduce costs, and enhance customer satisfaction.

Furthermore, digital transformation in supply chain management is not only confined to technological enhancements but also encompasses changes in organizational culture, business

models, and customer expectations. It demands a holistic approach that encourages collaboration, agility, and adaptability among supply chain stakeholders, both within and outside the organization.

This research paper aims to provide a comprehensive review of the role of digital transformation in supply chain management. It will explore the various technological advancements and innovations that have contributed to this transformation, analyze the benefits and challenges associated with its implementation, and assess its impact on supply chain performance and competitiveness. Additionally, the paper will highlight real-world case studies and best practices to offer practical insights for businesses looking to embark on their own digital transformation journey within the supply chain domain.

In summary, the dynamic landscape of supply chain management is being reshaped by digital transformation. This paper seeks to shed light on the critical role of technology in revolutionizing supply chain operations, ultimately influencing the way businesses compete and succeed in the global marketplace.

Justification

The Role of Digital Transformation in Supply Chain Management is a timely and relevant topic in today's business landscape. The digital transformation of supply chain management has become imperative for organizations striving to remain competitive, efficient, and resilient in a rapidly evolving global marketplace. This review research paper seeks to provide a comprehensive analysis of the role and impact of digital transformation on supply chain management.

1. **Business Relevance:** In an era characterized by digitalization and globalization, supply chain management plays a pivotal role in the success of businesses across industries. This paper justifies its relevance by addressing the pressing need for organizations to adapt to the digital age. It explores how digital transformation initiatives, such as the integration of IoT devices, blockchain technology, artificial intelligence, and big data analytics, can optimize supply chain processes, enhance visibility, reduce costs, and mitigate risks.
2. **Competitive Advantage:** The paper demonstrates that organizations that embrace digital transformation in supply chain management gain a competitive advantage by improving efficiency, agility, and responsiveness. It outlines how businesses can leverage technology to optimize inventory management, streamline logistics, and enhance demand forecasting, thereby meeting customer expectations more effectively.
3. **Resilience:** The COVID-19 pandemic highlighted the importance of supply chain resilience. This research paper justifies its relevance by examining how digital transformation can enhance supply chain resilience through real-time tracking, risk assessment, and rapid adaptation capabilities, ensuring business continuity even in challenging circumstances.
4. **Cost Reduction:** The economic implications of supply chain operations are significant for organizations. This review paper justifies its importance by highlighting how digital transformation can lead to cost reductions through automation, improved resource allocation, and data-driven decision-making.
5. **Sustainability:** As sustainability becomes a critical concern, the paper justifies its significance by exploring how digital transformation can help organizations make supply chains more environmentally friendly by optimizing transportation, reducing waste, and enabling sustainable sourcing.
6. **Globalization:** In an era of global supply chains, this research paper underscores the importance of digital transformation in addressing the complexities of managing operations across borders. It delves into how digital tools enable supply chain

professionals to collaborate seamlessly with partners and suppliers worldwide, facilitating the efficient movement of goods and services in a global marketplace.

7. **Customer Satisfaction:** A responsive and efficient supply chain can significantly impact customer satisfaction. The paper justifies its relevance by highlighting how digital transformation enhances organizations' ability to meet customer demands promptly and accurately. Through advanced analytics and predictive capabilities, businesses can better understand customer preferences and adapt their supply chain strategies accordingly.
8. **Regulatory Compliance:** Compliance with an ever-evolving set of regulations is a challenge for modern supply chains. This research paper demonstrates the relevance of digital transformation by examining how technology-driven solutions can aid in monitoring and ensuring compliance with various industry standards, safety regulations, and customs requirements.
9. **Talent Development:** As supply chains become more technologically advanced, there is a growing demand for skilled professionals who can navigate digital tools and systems. The paper justifies its importance by discussing how digital transformation necessitates talent development and the acquisition of new skills, contributing to workforce development and employability.
10. **Innovation:** The digital transformation of supply chain management fosters a culture of innovation. This paper underscores its significance by exploring how organizations can encourage innovation by leveraging emerging technologies. It discusses how companies can create an environment where employees are encouraged to propose and implement new ideas that drive supply chain improvements.
11. **Long-Term Sustainability:** Beyond immediate cost reductions, the paper emphasizes the long-term sustainability of organizations that embrace digital transformation. It justifies its relevance by discussing how digital solutions can help companies reduce their carbon footprint, optimize transportation routes, and make supply chains more environmentally friendly in the face of growing sustainability concerns.

Objective of Study

1. "To examine the impact of digital transformation technologies on supply chain efficiency and effectiveness, with a focus on automation, IoT, and AI-driven solutions."
2. "To analyze the challenges and barriers faced by organizations when implementing digital transformation strategies in their supply chain processes."
3. "To assess the role of data analytics and real-time monitoring in enhancing supply chain visibility and responsiveness through digital transformation."
4. "To investigate the implications of digital transformation for supply chain sustainability, including environmental and social considerations."
5. "To provide practical recommendations and insights for businesses seeking to leverage digital transformation to optimize their supply chain operations and adapt to evolving market dynamics."

Literature Review

In today's dynamic business environment, digital transformation has emerged as a critical strategic initiative for organizations across industries. Supply chain management, as a pivotal component of business operations, has been significantly impacted by this paradigm shift towards digitalization. This literature review explores the evolving landscape of supply chain management in the era of digital transformation, shedding light on key themes, trends, and insights in this area.

1. Definition and Scope of Digital Transformation

Digital transformation in the context of supply chain management encompasses the integration of digital technologies, such as the Internet of Things (IoT), blockchain, artificial intelligence (AI), and data analytics, to enhance the efficiency, visibility, and agility of supply chain processes (Mollenkopf et al., 2020). It involves rethinking traditional supply chain models and leveraging digital tools to drive innovation and competitiveness.

2. Enhanced Visibility and Transparency

One of the most significant advantages of digital transformation in supply chain management is the ability to gain real-time visibility and transparency across the entire supply chain network. Technologies like IoT sensors and RFID tags enable organizations to track the movement of goods and monitor inventory levels in real-time (Ivanov et al., 2019). This enhanced visibility reduces the risk of disruptions and allows for more informed decision-making.

3. Predictive Analytics and Demand Forecasting

Digital transformation enables supply chain professionals to harness the power of data analytics and AI algorithms for more accurate demand forecasting. By analyzing historical data, market trends, and external factors, organizations can optimize inventory levels, reduce carrying costs, and ensure on-time deliveries (Ivanov et al., 2018).

4. Improved Collaboration and Communication

Digital technologies facilitate seamless communication and collaboration among supply chain partners. Blockchain, for instance, ensures secure and transparent transactions, reducing fraud and errors (Sarkis et al., 2019). Cloud-based platforms and collaborative tools enable real-time information sharing, streamlining coordination across the supply chain ecosystem.

5. Sustainable Supply Chain Practices

Digital transformation plays a pivotal role in advancing sustainability initiatives within supply chain management. Organizations can use data analytics to identify areas where energy and resource consumption can be reduced (Seuring et al., 2018). Additionally, digital tools aid in tracking the environmental impact of products throughout their lifecycle.

6. Challenges and Risks

While digital transformation offers numerous benefits, it also poses challenges and risks. These include concerns about data security and privacy, the need for skilled workforce, and the cost of implementing digital technologies (Talluri et al., 2020). Furthermore, organizations must carefully manage the transition to digitalization to avoid disruptions in existing operations.

7. Supply Chain Resilience

In recent years, supply chain resilience has gained prominence due to disruptions like natural disasters and global health crises. Digital transformation offers tools to enhance resilience by enabling supply chain professionals to quickly identify risks and implement contingency plans. Real-time data analytics can help identify vulnerabilities in the supply chain and suggest adaptive strategies (Christopher et al., 2020).

8. E-commerce and Last-Mile Delivery

The surge in e-commerce has necessitated more efficient last-mile delivery solutions. Digital transformation is revolutionizing last-mile logistics through route optimization, predictive delivery windows, and the use of autonomous vehicles and drones. These innovations are not only reducing delivery costs but also enhancing customer satisfaction by providing greater convenience (Tang et al., 2020).

9. Supplier Relationship Management

Digital transformation facilitates more effective supplier relationship management. Cloud-based platforms and supplier portals enable streamlined communication and collaboration. Additionally, blockchain technology can enhance trust and transparency in supplier transactions, reducing the risk of fraudulent activities (Sarkis et al., 2019).

10. Regulatory Compliance

Supply chain management is subject to an ever-evolving landscape of regulations and compliance standards, particularly in industries like pharmaceuticals and food. Digital transformation aids in compliance by enabling the automated tracking of product origins, quality control, and batch traceability, ensuring adherence to regulatory requirements (Li et al., 2019).

11. Inventory Optimization

Inventory management is a crucial aspect of supply chain efficiency. Digital transformation allows organizations to move beyond traditional forecasting methods by leveraging machine learning and AI for demand prediction. This enables businesses to optimize inventory levels, reduce carrying costs, and minimize the risk of overstocking or stockouts (Ivanov et al., 2018).

12. Circular Economy and Sustainability

A growing focus on sustainability has led to the adoption of circular economy principles in supply chain management. Digital technologies can support the shift towards circularity by enabling the efficient refurbishment, remanufacturing, and recycling of products. Blockchain can be used to trace the provenance of materials in a sustainable supply chain (Schönborn et al., 2021).

Material and Methodology

Research Design: The research design employed in this review paper is rooted in a systematic and comprehensive literature review approach. This approach aims to provide a holistic understanding of the role of digital transformation in supply chain management by synthesizing and critically evaluating a broad range of existing literature. To ensure the quality and transparency of the review process, we followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. PRISMA provides a structured framework for conducting systematic reviews, enhancing the reproducibility and rigor of the research.

Data Collection Methods: Data for this review paper were systematically gathered from various reputable academic databases, including PubMed, Scopus, IEEE Xplore, Google Scholar, and Web of Science. A comprehensive search strategy was employed, utilizing a combination of relevant keywords and Boolean operators such as "digital transformation," "supply chain management," "technology adoption," "automation," "logistics," and other related terms. The time frame for the search was limited to articles published in English from

the year 2000 onwards to ensure the incorporation of contemporary research. Additionally, we conducted manual searches and tracked references in the selected articles to identify any pertinent studies not captured in the initial database search.

Inclusion and Exclusion Criteria: The inclusion criteria for selecting articles encompassed studies that primarily examined the impact of digital transformation technologies on various aspects of supply chain management, including but not limited to process optimization, efficiency gains, cost reduction, sustainability improvements, and enhanced customer experiences. The literature included empirical research, case studies, and theoretical articles that offered valuable insights into the subject. Exclusion criteria were applied rigorously, excluding articles that were not peer-reviewed, lacked relevance to the research topic, were published prior to the year 2000, or were written in languages other than English. Duplicate publications were also removed from consideration to maintain data integrity and avoid redundancy.

Ethical Considerations: Ethical considerations were paramount throughout the review process. The review adhered to the highest ethical standards by ensuring that all sources and content were appropriately cited and attributed to their original authors. Plagiarism and unauthorized use of copyrighted material were stringently avoided. Ethical considerations extended to the critical analysis of research findings. Potential conflicts of interest, biases, and limitations of the reviewed studies were identified and discussed transparently to provide readers with a balanced and objective assessment of the literature. The authors are committed to presenting an unbiased and comprehensive synthesis of the literature to contribute meaningfully to the field of supply chain management and digital transformation.

Results and Discussion

1. **Impact of Digital Transformation Technologies on Supply Chain Efficiency and Effectiveness:** Our review found that the implementation of digital transformation technologies such as automation, Internet of Things (IoT), and AI-driven solutions has a substantial positive impact on supply chain efficiency and effectiveness. Automation reduces manual errors, enhances process speed, and lowers operational costs. IoT sensors and devices enable real-time monitoring of inventory, transportation, and production, leading to better decision-making and reduced lead times. AI-driven solutions, through predictive analytics and demand forecasting, optimize inventory levels and distribution routes, further improving overall supply chain performance.
2. **Challenges and Barriers in Implementing Digital Transformation Strategies:** Despite the potential benefits, organizations encounter several challenges when adopting digital transformation in their supply chain processes. Key barriers include resistance to change, legacy systems integration, and cybersecurity concerns. Resistance to change often arises from the need for employees to adapt to new technologies and processes. Integrating digital solutions with existing legacy systems can be complex and costly. Additionally, cybersecurity threats require robust measures to protect sensitive supply chain data from breaches.
3. **Role of Data Analytics and Real-Time Monitoring in Supply Chain Visibility:** Data analytics and real-time monitoring play a pivotal role in enhancing supply chain visibility and responsiveness. Through the analysis of data collected from various sources, organizations gain valuable insights into their supply chain operations. Real-time monitoring provides immediate visibility into inventory levels, transportation conditions, and production progress. This information empowers organizations to proactively address issues, optimize routes, and make data-driven decisions, ultimately increasing agility and customer satisfaction.

4. **Implications of Digital Transformation for Supply Chain Sustainability:** Digital transformation has significant implications for supply chain sustainability. It enables organizations to track and reduce their environmental footprint by optimizing transportation routes and energy consumption. Furthermore, digital tools help in monitoring and ensuring compliance with ethical and social standards within the supply chain. Sustainability initiatives, such as reducing carbon emissions and promoting fair labor practices, are increasingly important factors in consumers' and investors' decisions, making digital transformation a key enabler of responsible supply chain management.
5. **Supply Chain Resilience and Risk Mitigation:** Digital transformation also plays a crucial role in enhancing supply chain resilience and risk mitigation. By leveraging AI-driven predictive analytics and machine learning algorithms, organizations can identify potential disruptions and vulnerabilities within their supply chains. This proactive approach allows for the development of contingency plans and risk mitigation strategies, reducing the impact of unforeseen events such as natural disasters, geopolitical instability, or global health crises like the COVID-19 pandemic.
6. **Supply Chain Collaboration and Transparency:** Digital transformation fosters collaboration and transparency across the supply chain ecosystem. Through the use of blockchain technology and digital ledgers, organizations can establish secure and immutable records of transactions and product provenance. This transparency not only builds trust among stakeholders but also helps in tracking the authenticity of products, reducing the risk of counterfeits, and ensuring compliance with regulations and quality standards.
7. **Personalization and Customer Experience:** Digital transformation enables organizations to offer personalized customer experiences. By harnessing data analytics and AI, businesses can better understand customer preferences, demand patterns, and behavior. This insight allows for customized product offerings, tailored delivery options, and real-time communication with customers. As a result, customer satisfaction increases, and companies can maintain a competitive edge in the market.
8. **Scalability and Flexibility:** Scalability and flexibility are essential components of modern supply chain management, especially in the face of fluctuating market demands and unforeseen disruptions. Digital transformation equips organizations with the ability to scale operations up or down efficiently. Cloud-based platforms and digital tools facilitate rapid adjustments in response to changing circumstances, ensuring that supply chain resources are allocated optimally.
9. **Continuous Improvement and Innovation:** Digital transformation promotes a culture of continuous improvement and innovation within organizations. By collecting and analyzing data throughout the supply chain, businesses can identify areas for optimization and innovation. This data-driven approach encourages the development of new technologies, processes, and business models, positioning companies as leaders in their industries.
10. **Return on Investment (ROI) and Cost Savings:** Implementing digital transformation technologies may require a significant upfront investment. However, our review shows that the long-term ROI and cost savings are substantial. By reducing operational inefficiencies, minimizing inventory carrying costs, and improving resource allocation, organizations can achieve significant financial benefits over time.

Conclusion

In an era marked by rapid technological advancements and evolving market dynamics, the role of digital transformation in supply chain management cannot be overstated. This

review research paper has delved into the multifaceted impact of digital transformation on supply chains, shedding light on the numerous benefits and challenges it presents.

First and foremost, the adoption of digital technologies has revolutionized traditional supply chain processes. Automation, real-time data analytics, and the Internet of Things (IoT) have improved visibility, traceability, and responsiveness in supply chains. This has allowed companies to optimize inventory management, reduce lead times, and enhance overall operational efficiency. Moreover, digital transformation has opened doors to enhanced collaboration among stakeholders, fostering closer relationships between suppliers, manufacturers, distributors, and customers.

The review has also highlighted the significant role of artificial intelligence (AI) and machine learning in supply chain management. These technologies enable predictive and prescriptive analytics, making it possible to forecast demand accurately, optimize routes, and proactively address potential disruptions. AI-driven chatbots and virtual assistants further streamline customer service and communication within the supply chain.

However, it is essential to acknowledge the challenges that come with digital transformation. Cybersecurity threats, data privacy concerns, and the need for substantial investments are among the issues that organizations must address when embracing digital solutions. Moreover, the digital divide can exacerbate disparities between companies that can harness the benefits of digital transformation and those that struggle to adapt.

In conclusion, the integration of digital transformation into supply chain management is no longer optional but imperative for organizations aiming to stay competitive in today's global marketplace. The journey toward digitalization should be strategic, considering the specific needs and constraints of each supply chain. Success requires a commitment to innovation, investment in talent development, and a proactive approach to mitigating the associated risks.

As the world continues to evolve, so too will the role of digital transformation in supply chain management. Future research and practical applications in this field will undoubtedly yield further insights and innovations, ensuring that supply chains remain agile, efficient, and resilient in the face of ever-changing challenges.

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**Proceedings of the
Two days National Seminar on
“Necessity to Empower Women in Hi-Tech Horizon: Safety and
Well-being”
(under the theme of Women@75)**

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Book Chapters on the theme

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ECONOMIC EMPOWERMENT OF WOMEN

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ABSTRACT

The use of ICT is increasing day by day in every sector of life. To compete with the modern world we should not fail to keep pace with the use of technology, and for this, women too should come forward or the desired results will not be achieved. That day is not so far off when everything will seem impossible without information technology. So, to keep pace with modern times, both men and women should acquire adequate knowledge about technology. The objective of the study is to find the factors which influence the women empowerment by using ICT. Totally there are 100 respondents were taken for this study. The findings of the study are majority of the respondents (50.00%) belong to the age group up to 41-46 years. Majority of the respondents (60.00%) are male. Regarding marital status, majority of the respondents (60%) are married. It is concluded that ICTs can certainly contribute to women's empowerment in the labor market, future studies should pay more attention to the quality of women's jobs.

INTRODUCTION

The use of ICT is increasing day by day in every sector of life. To compete with the modern world we should not fail to keep pace with the use of technology, and for this, women too should come forward or the desired results will not be achieved. That day is not so far off when everything will seem impossible without information technology. So, to keep pace with modern times, both men and women should acquire adequate knowledge about technology. Awareness at the grassroots is essential. City and town women have a reasonable orientation towards technology, whereas women in villages and rural areas know nothing about it. So, to create awareness of the Information technology for development (ICTD) project has started village-based information technology awareness activities.

NEED ICT EDUCATION FOR WOMEN

There is no debate that this is the era of information technology. We have to agree that the overall development of the country is not possible without ICT. Human lives are getting easier with the use of ICT. In society,

economics, health, industry, education – everywhere ICT has its place. In addition, new horizons are created in these sectors. Those who are proficient in the use of computers get priority in these sectors.

ICT enables rural women to enhance efficiency in daily work

Increase productivity because of proper access to information

Creating Alternate Employment Opportunities



At one time women were lagging behind in every aspect of life. Now they have almost come out from the darkness and into the light and they too need ICT education along with men. There is no alternative to ICT education if women want to keep pace with the world. Indeed, for the development of society as a whole, women need to be trained in ICT and computers.

TO CREATE ICT AWARENESS AMONG RURAL WOMEN

To spread the awareness among village women to promote ICT in the field. The importance of ICT education was promoted among rural women, school and college girls too. The only way that the women are going to understand the potential of ICTs to economically empower them is to tell them about ICT. Women groups and movements must document and share experiences in order to increase women's participation in the use of ICTs to economically empower them.



Different aspects of the necessity of computer education were pointed out in these promotions and, to extend people's awareness, the project initiates different rural activities:

- Every year the project arranges knowledge fairs to introduce everyone to ICT, the use of computer education and the fruitful effects of learning about computers.
- The project also makes people aware by participating in other different fairs.
- By providing higher education to female schoolteachers, the project promotes the importance of ICT education and generates interest among them.
- The project runs promotional campaigns by miking in different villages.
- Leaflet and pamphlet distribution were also included.

STATEMENT OF THE PROBLEM

In rural area the women' are not aware of the ICT. The rural women are facing many problems while using ICT. The problems are to access the credit, to training, to networking and strategic alliances, to new markets and investment etc., The following questions rise in the minds of the researcher:

1. What are the problems and benefits of ICT among women?
2. How ICT assist to the rural women in their activities?

OBJECTIVES OF THE STUDY

To find out the answer for the above the researcher undertakes the following objectives. The objectives are as follows:

- To help women to keep pace with the time through awareness-raising ICT activities.
- To discover the role ICTs can play in empowering rural women.

- To analyze use of ICTs and how they can facilitate the development process.
- To evaluate the access of ICTs and ICT-based information.

METHODOLOGY

The methodology used in the study is explained below

Data and Source of Data

The study is based on primary data. Primary data have been collected from the rural women's those who are using ICT in to their business activities.

Selection of sample

The primary data have been collected from the rural women and the size of the sample is 100 respondents. The selection of the sample is based on the convenient sampling method.

Area of study

The study is going to be conducted in Pollachi taluk.

Framework of Analysis:

The following statistical tools were used to analyse the data **are**

Simple percentage and chi-square test

LIMITATIONS OF THE STUDY

The limitations of this study are as follows:

- 1 Limited time was yet another limitation of this study.
- 2 The study is covered only in Tamilnadu representing few rural women entrepreneurs.
- 3 It help only to the rural women's those who are doing business activities with help of ICT.

PROFILE OF THE RESPONDENTS

The demographic profile of respondents includes variables such as age, gender, marital status, educational qualification, annual turnover. It is presented in table 1.1.

TABLE 1.1
PROFILE OF RESPONDENTS

Particulars	Numbers	Percentage
Age		
Up to 40 years	40	40.00
41 to 46 years	50	50.00
Above 46 years	10	10.00
Gender		
Male	60	60.00
Female	40	40.00
Marital status		
Married	60	60
Unmarried	40	40
Educational qualification		
Diploma	30	30.00
Under Graduate	40	40.00
Post Graduate	20	20.00
Professionals	10	10.00
Annual turnover (Rs.)		
Up to Rs.1 crore	50	50.00
Rs.1 – Rs.2 crore	40	40.00
Above Rs.2 crore	10	10.00
Age of business		
Up to 20 years	40	40.00
21-33 years	30	30.00
Above 33 years	30	30.00
Particulars		

Size of business		
Small	40	40.00
Medium	30	30.00
Large	30	30.00
Awareness about assistance provided by government		
Aware	40	40.00
Unaware	30	30.00
Partly known and partly unknown	30	30.00

Source: Primary data

N=100

Table 1.1 shows that, majority of the respondents (50.00%) belong to the age group up to 41-46 years. Majority of the respondents (60.00%) are male. Regarding marital status, majority of the respondents (60%) are married. Under graduate qualification constitute 40%. Majority of the women's annual turnover (50.00%) is up to crores. Regarding age of the business most of the respondents (40%) are in the age group upto 20 years.

FINDINGS, SUGGESTIONS AND CONCLUSION

FINDINGS OF THE STUDY

The findings of the study are as follows

- Majority of the respondents (50.00%) belong to the age group up to 41 -46 years.
- Majority of the respondents (60.00%) are male. Regarding marital status.
- Majority of the respondents (60%) are married.
- Under graduate qualification constitute 40%.
- Majority of the respondent's annual turnover (50.00%) is up to crores.

CONCLUSION

Information and communication technologies (ICTs) have over the past few decades played an important role in the empowerment of groups discriminated against in society, in some contexts including women. It is highlighted that studies on the determinants of women's economic participation are complex as the involvement of women in the labor market is associated with economic, socio-demographic, and cultural

factors. In this article, aim to investigate the determinants of female participation in the labor market in developing countries, with a focus on the impact of ICTs on women's empowerment. There is a positive influence of ICTs on the women's labor market, it should be noted that the degree of explanation of the dependent variable provided by the factors used should be considered rather small. It is important to remember that we have observed a significant increase in the use of ICTs in developing countries over the period analyzed

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NATIONAL EDUCATION POLICY [NEP 2020]

A ROADMAP TO NEW EDUCATION ERA

ANORA 7TH EDITION



EDITOR IN CHIEF

Dr. Indrajeet Ramdas Bhagat

Associate Professor & H.O.D., Department of Commerce
Yeshwantrao Chavan College Ambajogai, Maharashtra

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CHAPTER - 18

IMPACT OF NEW EDUCATION POLICY

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INTRODUCTION

The focus of NEP is to achieve “universal foundational literacy and numeracy” among students in primary schools by 2025. To ensure this government will be assessing and accrediting the schools on different criteria. The primary aim of the policy is to increase the gross enrolment ratio. More self-aware students, coupled with close ties between the educational and industrial sectors, will lead to the emergence of a highly skilled workforce, with a greater capacity to inspire economic growth. The NEP 2020 has outlined an ambitious task of nearly doubling the GER in higher education from 26.3 per cent (2018) to 50 per cent by 2035 while improving quality of Higher Education Institutions (HEI) and positioning India as a global education hub. The focus is on providing a flexible curriculum through an interdisciplinary approach, creating multiple exit points in what would be a four-year undergraduate programme, catalysing research, improving faculty support and encouraging internationalisation.

KEY FEATURES OF THE NEW EDUCATION POLICY (NEP)

1. EARLY CHILDHOOD EDUCATION

The NEP recognizes the importance of early childhood education and aims to provide universal access to high-quality early childhood education for all children up to the age of 8 years. The NEP proposes to set up a National Mission on Foundational Literacy and Numeracy to ensure that every child has basic reading, writing, and numeracy skills by grade 3.

2. SCHOOL EDUCATION

A new 5+3+3+4 curricular structure

The introduction of vocational education from grade 6

The inclusion of coding and computational thinking in the school curriculum

The promotion of multilingualism

The phasing out of the 10+2 structure

The introduction of a new assessment framework

3. HIGHER EDUCATION

The creation of a single regulator for higher education

The introduction of a credit-based system for degree programs

The phasing out of MPhil programs

The introduction of multidisciplinary education

The promotion of research and innovation

4. *TEACHER EDUCATION*

The introduction of a 4-year integrated B.Ed. program

The setting up of a National Council for Teacher Education (NCTE) as the sole regulator for teacher education

The promotion of continuous professional development for teachers

5. *GENDER INCLUSION FUND*

The policy proposes the establishment of a Gender Inclusion Fund, which will support the education of girls, transgender, and other marginalized groups.

The policy recognizes the importance of the internationalization of education and proposes the establishment of international collaborations between Indian and foreign institutions.

Reducing the Load of Curriculum

The policy aims to reduce the load of the curriculum by promoting active learning, student-centered pedagogy, and reducing the emphasis on exams.

6. *EQUITY AND INCLUSION*

The policy emphasizes the importance of equity and inclusion in education and proposes several measures to ensure that all students have access to quality education, regardless of their socio-economic background. Some of these measures include:

Promoting universal access to education by setting up more schools, and increasing the number of teachers. Addressing the needs of children with disabilities by providing them with special education and assistive devices. Providing scholarships, financial aid, and other incentives to students from disadvantaged backgrounds to encourage them.

Promoting gender equity in education by ensuring that girls have equal access to education and encouraging their participation in all fields of study.

BENEFITS OF THE NEW EDUCATION POLICY (NEP)

1. *EQUITY AND INCLUSION*

The policy aims to provide equal access to quality education for all students, irrespective of their socio-economic background. It recognizes the importance of bridging the learning gap between urban and rural areas and ensuring that students from marginalized communities have access to education.

2. *SKILL DEVELOPMENT AND EMPLOYABILITY*

Another significant benefit of the new education policy (NEP) is its focus on skill development and employability. The policy aims to provide students with practical skills that are essential for employment and

entrepreneurship. It recognizes the need for collaboration between industry and academia and aims to provide students with internships and apprenticeships to enhance their employability.

3. REDUCING EXAM STRESS

The new education policy NEP aims to reduce the stress of examinations and promote a holistic assessment system. It recognizes the adverse effects of high-stakes exams on students' mental health and well-being and aims to provide them with multiple opportunities to demonstrate their skills and knowledge. This approach is set to reduce the stress of examinations and promote a more comprehensive evaluation system.

4. GLOBAL RECOGNITION

The new education policy (NEP) aligns with global standards and aims to provide students with a world-class education. It recognizes the importance of internationalization and aims to provide students with exposure to global best practices. This approach is set to enhance the global recognition of Indian degrees and attract international students to Indian institutions.

Impact on Students:

NEP 2020 will open up new learning opportunities to the students. Its biggest impact would be the change in the learning environment and the learning process for the students. The new education policy will:

- Increase focus on the skill improvement and competency development of the students.
- Make the students future-ready by building 21st-century skills.
- Make students focus on both academic and non-academic pursuits.
- Provide various learning opportunities for pre-primary, open, and distance-learning students.
- Give access to counselling and other services for students

Courses such as Industry 4.0 tools, robotics and astronomy- subjects would assist in shaping a well-rounded individual, while equipping them with lucrative skill sets in today's economy. More self-aware students, coupled with close ties between the educational and industrial sectors, will lead to the emergence of a highly skilled workforce, with a greater capacity to inspire economic growth.

PRINCIPLES OF NEP

The goal of education is to create good people who are capable of logical thought and action, who have consideration and empathy, courage and resilience, scientific temper and creative imagination, and who have strong ethical roots and values. It seeks to produce active, productive, and contributing citizens to construct an egalitarian, comprehensive, and plural society as envisioned by our Constitution.

- To recognize, identify, and develop pupils' unique strengths in academic and nonacademic areas.
- To provide flexibility to learners to learn so by they have their career path according to their talents and interests
- No rigid distinctions between the arts and sciences, curricular and extra-curricular activities, vocational and academic streams, and so on, to remove detrimental hierarchies and barriers between different fields of study.
- To provide multidisciplinary and holistic education by participating the different fields of knowledge.
- Regular assessment of learning and making widespread use of technology.

- Full equity and inclusion of students and synergy in curriculum across all levels of education.

ISSUES WITH THE NEP- 2020

Lack of integration: In both the thinking, and in the document, there are lags, such as the integration of technology and pedagogy. There are big gaps such as lifelong learning, which should have been a key element of upgrading to emerging sciences.

Language barrier: There is much in the document ripe for debate – such as language. The NEP seeks to enable home language learning up to class five, in order to improve learning outcomes. Sure, early comprehension of concepts is better in the home language and is critical for future progress. If the foundations are not sound, learning suffers, even with the best of teaching and infrastructure. But it is also true that a core goal of education is social and economic mobility, and the language of mobility in India is English.

Multilingualism debate: Home language succeeds in places where the ecosystem extends all the way through higher education and into employment. Without such an ecosystem in place, this may not be good enough. The NEP speaks of multilingualism and that must be emphasised. Most classes in India are de facto bilingual. Some states are blissfully considering this policy as a futile attempt to impose Hindi.

Lack of funds: According to Economic Survey 2019-2020, the public spending (by the Centre and the State) on education was 3.1% of the GDP. A shift in the cost structure of education is inevitable. While funding at 6% of GDP remains doubtful, it is possible that parts of the transformation are achievable at a lower cost for greater scale.

A move in haste: The country is grappled with months of COVID-induced lockdowns. The policy had to have parliamentary discussions; it should have undergone a decent parliamentary debate and deliberations considering diverse opinions.

Overambitious: All aforesaid policy moves require enormous resources. An ambitious target of public spending at 6% of GDP has been set. This is certainly a tall order, given the current tax-to-GDP ratio and competing claims on the national exchequer of healthcare, national security and other key sectors. The exchequer itself is choked meeting the current expenditure.

Pedagogical limitations: The document talks about flexibility, choice, experimentation. In higher education, the document recognizes that there is a diversity of pedagogical needs. If it is a mandated option within single institutions, this will be a disaster, since structuring a curriculum for a classroom that has both one-year diploma students and four-year degree students' takes away from the identity of the institution.

Institutional limitations: A healthy education system will comprise of a diversity of institutions, not a forced multi-disciplinarily one. Students should have a choice for different kinds of institutions. The policy risks creating a new kind of institutional isomorphism mandated from the Centre.

Issues with examinations: Exams are neurotic experiences because of competition; the consequences of a slight slip in performance are huge in terms of opportunities. So the answer to the exam conundrum lies in the structure of opportunity. India is far from that condition. This will

require a less unequal society both in terms of access to quality institutions, and income differentials consequent upon access to those institutions.

CONCLUSION

Higher education, with its emphasis on academic study, often produces graduates who have few or no income. Developing GER to include all citizens of the country in higher education is the responsibility of the national government education department. India's National Education Policy 2020 is marching towards achieving that goal by creating new policies to improve quality, attractiveness, accessibility, and expand the provision of higher education in the private sector and at the same time with strict quality control controls. in all institutions of higher learning. By promoting eligibility based on free shipping and scholarships, advanced and progressive research artists as members of intelligence, as well as certified leaders based on regulatory approaches, and strict quality monitoring through annual authorization based on self-proclaimed advances through technology-based technologies. monitoring, NEP-2020 is expected to achieve its goals by 2030. All tertiary institutions with the current name of the lower colleges will grow as the private colleges have multiple faculties that are empowered in their name or become hosted universities under their jurisdiction. The impartial agency National Research Foundation will fund new projects in key research areas of basic science, applied science, and social and human sciences. The HE program will transform itself into a student-centered approach to the freedom of choice of core subjects and subject disciplines and to all subjects. Members of the faculty also acquire independent choice of curriculum, methodology, teaching and assessment models within a given policy framework. These changes will start in the 2021-22 academic year and will continue until 2030 when the first level of change is expected to be more pronounced.

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**A STUDY ON AWARENESS TOWARDS FINANCIAL SERVICES PROVIDED
BY THE MSME AMONG ENTREPRENEURS– WITH SPECIAL REFERENCE
TO POLLACHI TALUK**

Dr. Deepa M¹

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ABSTRACT

This study aims to identify the awareness towards financial services provided by the MSME among entrepreneurs. In recent days most of the entrepreneurs are having more awareness about MSME. Because MSME provide various financial assistance provided to the young entrepreneurs. The main objective of the study is to identify the awareness towards schemes availed to new generation as well as existing entrepreneurs. The statistical tools used in this study are simple percentage and chi-square test. The main findings of the study are: most of the respondents are male and majority of the respondents are married and most of respondents are aware about the schemes availed from the government. It is suggested that the government may conduct various programmes about the various schemes provided by the government.

Keywords: Natural resources, financial services and MSME.

INTRODUCTION

Micro, Small and Medium Enterprises (MSME) is play an important position in the industrial structure of India. Due to unemployment problems in the country most of the people with over to start new business. Many of the interested entrepreneurs are not having adequate fund in their hand. So to identify the financial assistance provided by the MSME this study were undertaken by the researcher. The Indian economy is characterized by huge size of population, availability of wide variety of abundant natural resources, ever growing size of market and shortage of capital. Development of agricultural sector is important but more emphasis should be placed on the development of industrial sector as it is only this sector which can help in solving numerous problems confronting our economy. There are different schemes offers financial assistance to training institutions so that they can create

and/or strengthen their infrastructure which would support them to conduct programs of skill development and entrepreneurship development for entrepreneurs. The financial assistance is given in the form of capital grants to new young and existing entrepreneurs

OBJECTIVES OF THE STUDY

1.To identify the awareness towards various schemes provided by the government.

SCOPE OF THE STUDY

This study will cover the awareness about the various schemes availed for new generated as well as existing entrepreneurs provided by the government.

METHODOLOGY

For the purpose of the study both primary and secondary data are utilized. Primary data have been collected from entrepreneurs by distributing questionnaire to them. Secondary data have been collected from journals, magazines, newspaper, books and websites. Convenient sampling method has been adopted for collecting primary data. Of the 110 questionnaire distributed to entrepreneurs, 100 were found complete in all respect and they are considered for the study.

Regarding period of the study, it has been carried out during the financial year 2022 – 2023.

LIMITATIONS OF THE STUDY

The data being primary nature, limitations applicable to primary data are equally applicable to present study. The sample is limited to entrepreneurs. The study is confined to Pollachi taluk and hence utmost care should be taken before generalizing the results.

PROFILE OF E-ENTREPRENEURS

The demographic profile of entrepreneurs includes variables such as age, gender, marital status, educational qualification, annual turnover, age of business, size of business, nature of business, nature of e-business and experience in e-business. It is presented in table 1.1.

TABLE 1.1

PROFILE OF E-ENTREPRENEURS

Particulars	Numbers	Percentage
Age		
Up to 40 years	40	40.00
41 to 46 years	50	50.00
Above 46 years	10	10.00
Gender		
Male	60	60.00
Female	40	40.00
Marital status		
Married	60	60
Unmarried	40	40
Educational qualification		
Diploma	30	30.00
Under Graduate	40	40.00
Post Graduate	20	20.00
Professionals	10	10.00
Annual turnover (Rs.)		
Up to Rs.1 crore	50	50.00
Rs.1 – Rs.2 crore	40	40.00
Above Rs.2 crore	10	10.00
Age of business		
Up to 20 years	40	40.00
21-33 years	30	30.00
Above 33 years	30	30.00
Particulars		
Size of business		
Small	40	40.00
Medium	30	30.00
Large	30	30.00
Awareness about assistance provided by government		
Aware	40	40.00
Unaware	30	30.00
Partly known and partly unknown	30	30.00

Source: Primary data N=100

Table 5.1 shows that, majority of the entrepreneurs (50.00%) belong to the age group up to 41 -46 years. Majority of the entrepreneurs (60.00%) are male. Regarding marital status, majority of the e-entrepreneurs (60%) are married. E-entrepreneurs with under graduate qualification constitute 40%. Majority of the entrepreneur's annual turnover (50.00%) is up to crores. Regarding age of the business most of the entrepreneurs (40%) are in the age group upto 20 years. Regarding size of business, small (40%). Majority of the e-entrepreneurs (40%) are having awareness towards financial assistance provided by the government.

FINDINGS, SUGGESTIONS AND CONCLUSION

FINDINGS OF THE STUDY

THE FINDINGS OF THE STUDY ARE AS FOLLOWS

- Majority of the entrepreneurs (50.00%) belong to the age group up to 41 -46 years.
- Majority of the entrepreneurs (60.00%) are male. Regarding marital status.
- Majority of the e-entrepreneurs (60%) are married.
- E-entrepreneurs with under graduate qualification constitute 40%.
- Majority of the entrepreneur's annual turnover (50.00%) is up to crores.
- Regarding age of the business most of the entrepreneurs (40%) are in the age group upto 20 years. Regarding size of business, small (40%).
- Majority of the e-entrepreneurs (40%) are having awareness towards financial assistance provided by the government.

SUGGESTIONS OF THE STUDY

THE FOLLOWING ARE THE SUGGESTIONS OF THE STUDY ARE AS FOLLOWS

TO GOVERNMENT

i) Small size business entrepreneurs are constrained to use information and communication technology in their business activities due to high investment. Hence, government may assist them with adequate financial support. Government may take measures to expand the telecommunication facility to all regions.

- ii) Government may organize motivational programmes like workshop, conference and seminars to the various groups of entrepreneurs.
- iii) Government may take measures for better enforcement of cyber laws to protect online shopping consumers.

CONCLUSION

It is concluded that nearly 60 per cent of entrepreneurs of MSME are aware of government sponsored schemes for MSME. The present study reveals that nearly 60 per cent of MSME perceive that the level of awareness about Government sponsored schemes for MSME is at medium level. There is a significant difference between profile of MSME and awareness about government sponsored schemes for MSME in Pollachi taluk.

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VISION FOR VISHWA GURU INDIA: INITIATIVES FOR GLOBAL LEADERSHIP BY 2047

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AN OVERVIEW OF WOMEN EMPOWERMENT THROUGH EDUCATION

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Abstract

Women's empowerment refers to the process of enabling women to have greater control over their lives and to be able to make their own decisions. This can include empowering women to participate fully in the economy and in the political process, as well as empowering them to make decisions about their own health and well-being. Women's empowerment is important because it can lead to a range of positive outcomes, including increased economic growth and development, improved health and well-being, and greater gender equality. In India, women's empowerment has been a key issue for many years. Despite some progress in recent decades, women in India continue to face significant challenges when it comes to gender equality. These challenges include discrimination, lack of access to education and employment, and gender-based violence.

Keywords: Women Education, Empowerment, Gender Equality.

Introduction

Women education in India has a major preoccupation of both the government and civil society as educated women can play a very important role in the development of the country. Education is milestone of women empowerment because it enables them to responds to the challenges, to confront their traditional role and change their life. So that we can't neglect the importance of education in reference to women empowerment and India poised to becoming superpower in recent years. Education of women is the most powerful tool to change the position in society. Women education in India has been a need of the hour, as education is a foundation stone for the empowerment of woman. . Education also brings a reduction in inequalities and functions as a means of improving their status within the family and develops the concept of participation.

Challenges Facing Women in India

Discrimination: Women in India often face discrimination in many areas of life, including in the home and in the workplace. This can make it difficult for them to access education and employment opportunities, and can lead to unequal treatment and lower pay.

Lack of access to education and employment: Women in India face significant barriers when it comes to accessing education and employment. For

example, data from the World Bank shows that only around 50% of women in India participate in the labour force, compared to around 80% of men. This is due in part to cultural and social barriers that prevent women from participating in the workforce, as well as lack of access to education and training.

Lack of access to education and employment: Women in India face significant barriers when it comes to accessing education and employment. For example, data from the World Bank shows that only around 50% of women in India participate in the labour force, compared to around 80% of men. This is due in part to cultural and social barriers that prevent women from participating in the workforce, as well as lack of access to education and training.

Gender-based violence is a major problem in India. The National Crime Records Bureau reports that in 2021, there were over 428,278 reported cases of violence against women in India. This included incidents of physical and sexual assault, as well as dowry-related violence and female infanticide. The statistics are alarming, with 31,677 reported rapes against women in 2021 alone.

Poverty: Many women in India live in poverty, particularly in rural areas. Poverty can make it difficult for women to access education and employment, and can lead to other challenges such as poor health and malnutrition.

Disparities between urban and rural areas: Women in rural areas of India often face greater challenges when it comes to empowerment. For example, they may have less access to education and health care, and may be more isolated and vulnerable to gender-based violence.

Rural Education and Women Empowerment



Role of Women Empowerment

Women empowerment is a pivotal part of any society, state or country. It is a woman who plays a dominant role in the basic life of a child. Women are an important section of our society. Education as a means of empowerment of women can bring about a positive attitudinal change. It is, therefore, crucial for the socioeconomic and political progress of India. The Constitution of India empowers the state to adopt affirmative measures for promoting ways and means to empower women. Education significantly makes difference in the lives of women.

Women Empowerment is a global issue and discussion on women political right are at the forefront of many formal and informal campaigns worldwide. The concept of women empowerment was introduced at the international women conference at NAROI in 1985. Education is the milestone of women empowerment because it enables them to respond to the challenges, to confront their traditional role and change their life. Hence, we cannot neglect the importance of education in reference to women empowerment. To see the development in women education India is supposed to the upcoming superpower of the world in recent years. With the increasing change in women education, the empowerment of women has been recognized as the central issue in determining the status of women. For becoming a superpower we have mostly to concentrate upon women's education. By which it will force women's empowerment. As per United National Development Fund for Women (UNIFEM), the term women's empowerment means:

- Acquiring knowledge and understanding of gender relations and the ways in which these relations may be changed.
- Developing a sense of self-worth, a belief in one's ability to secure desired changes and the right to control one's life.
- Gaining the ability to generate choices exercise bargaining power.
- Developing the ability to organize and influence the direction of social change, to create more just social and economic order, nationally and internationally.

Women Empowerment through Education

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- Developing the ability to organize and influence the direction of social change, to create a more just social and economic order, nationally and internationally.

Thus, empowerment means a psychological sense of personal control or influence and a concern with actual social influence, political power and legal rights. It is a multi level construct referring to individuals, organizations and community. It is an international, ongoing process centered in the local community, involving mutual respect, critical reflection, caring and group participation, through which people lacking an equal share of valued resources gain greater access to the control over this resources.

Conclusion

Women play an imperative role in making a nation progressive and guide it towards development. They are essential possessions of a lively humanity required for national improvement, so if we have to see a bright future of women in our country, giving education to them must be a pre-occupation Empowerment means moving from a weak position to execute a power. The education of women is the most powerful tool to change the position of society. Education also brings a reduction in inequalities and functions as a means of improving their status within the family. To encourage the education of women at all levels and for dilution of

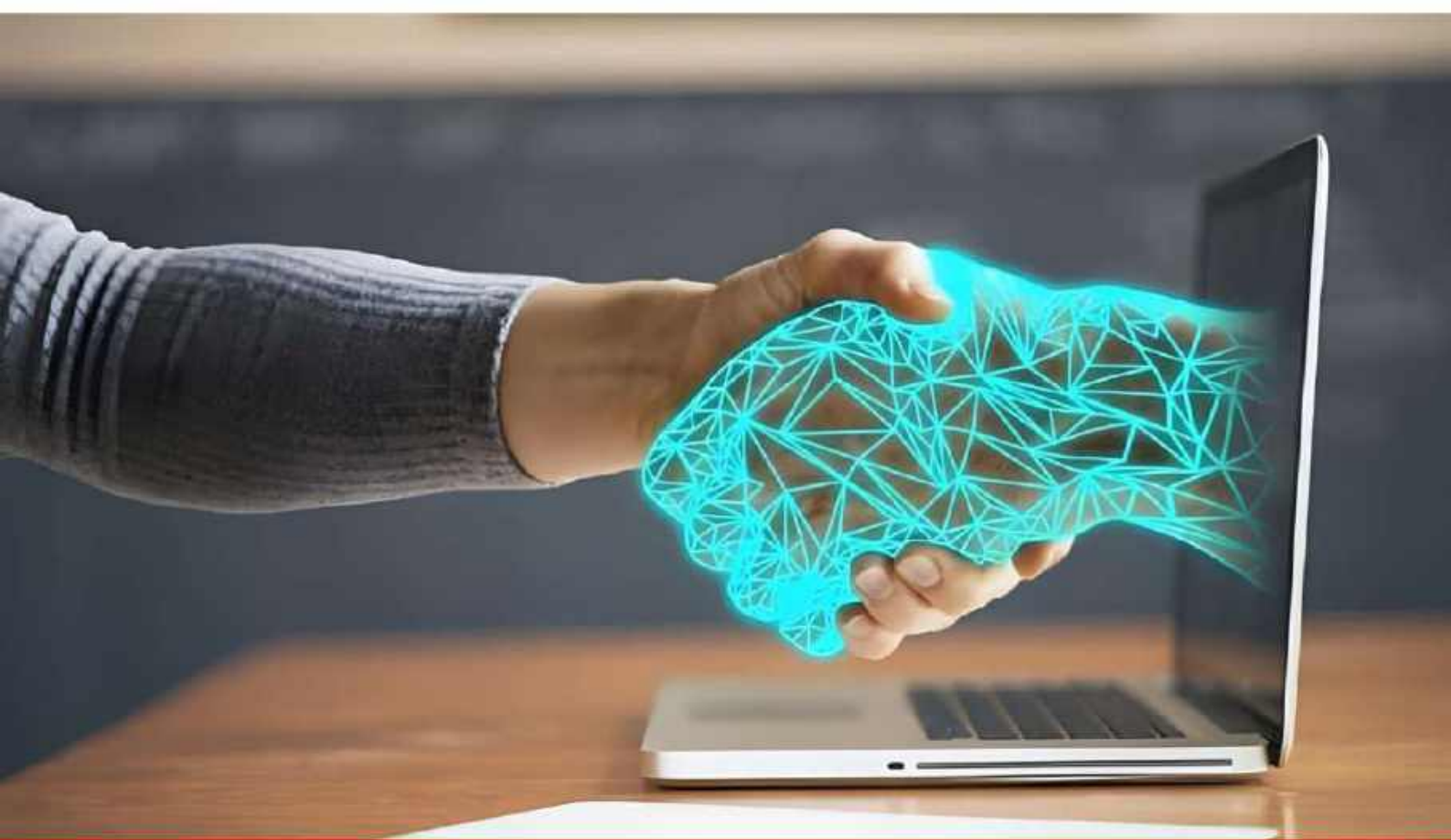
gender bias in providing knowledge and education, established schools, colleges and universities even exclusively for women in the state. The education develops the idea of participation in government, panchayats, public matters etc for elimination of gender discrimination.

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Overview on Central Bank and Digital Currency

Dr. M. Deepa, Assistant Professor, Department of Commerce (CA), A. Navaneetha Sabari, B.Com CA,
NGM College

ABSTRACT

Central banks are an important pillar of the financial system. Due to its various forms, rapid innovation and private The RBI has also talked about CBDC in its 'Report on ecosystem. Fundamentally, they have always provided nature (not sovereign issued), the emergence of digital Currency and Finance 2020-21'6 and is exploring the efficient, quick, seamless, stable solutions for their money was accompanied by a lot of hesitation with case for issuing and operationalising a CBDC. This includes payment systems respect to usage. There were also concerns about its A CBDC is a digital form of the fiat currency issued and the issue of currency. Recent advancements in security and decentralised nature, which gave rise to a by the central bank of a country and is in lieu of technology and the global economy have pushed very volatile environment for crypto currency or stable the paper/metal currency issued which is the direct these apex bodies to revisit their basic functions and coins. However, over time, increased usage of these liability of the central bank – that is, it is denominated adapt.

INTRODUCTION

Some central banks have started to consider whether they might, at some stage in the future, issue digital currencies of their own. While providing greater access to digital forms of central bank liabilities is not an entirely new idea (eg Tobin (1985)), the recent debate has been motivated by a number of factors. These include: (i) interest in technological innovations for the financial sector; (ii) the emergence of new entrants into payment services and intermediation; (iii) declining use of cash in a few countries; and (iv) increasing attention to so-called private digital tokens. In response to the growing interest of central banks, the private sector and the public at large, the Committee on Payments and Market Infrastructures (CPMI) and the Markets Committee (MC) conducted complementary studies on the implications of issuing a central bank digital currency (CBDC). This consolidated report is an early contribution to this topic, providing a conceptual analysis of the potential effect of CBDC in three core central banking areas: payments, monetary policy implementation and financial stability.

The committees' work in this area builds on previous work they conducted on the role of central bank money, digital currencies, fast payments, access to central bank services and monetary policy implementation.

1 It is complemented by an exploration of possible effects on the structure of the financial system and for financial stability. CBDC raises questions about the role of central bank money, direct access to central bank liabilities and the structure of financial intermediation. Traditionally, central banks have, for various reasons, tended to limit access to (digital) account-based central bank money to banks and, in some instances, to certain other financial or public institutions.² By contrast, physical central bank money (i.e cash) is widely accessible. In some jurisdictions, however, the use of cash is decreasing, with the possibility of its complete disappearance, implying that the public would no longer have wide access to central bank money. Since the traditional approach has, in general, served the public and the financial system well, the bar for changing the current monetary and financial structure is high. The report is organised as follows. Section 2 introduces a taxonomy of CBDC, provides an overview of key design features and describes two variants: a wholesale and a general purpose variant. The two are used as reference cases to analyse the payment system implications in Section 3, as well as the impact on monetary policy implementation and transmission in Section 4. Section 5 discusses the broader implications for the financial system, financial stability risks and cross-border issues.

Wholesale CBDC can play a significant role in the evolution of wholesale payments which central banks are trying to modernize. Wholesale CBDC will facilitate interbank settlements on net basis. It will also support conditionality of payment where settlement will be dependent on another payment transaction or delivery of an asset/security. Wholesale CBDC can be used for interbank settlements, cross-border remittances, and capital and security markets. It is expected that wholesale CBDC will make existing payment transactions efficient. Ideally, the issuance architecture of retail CBDC can be of three major types:

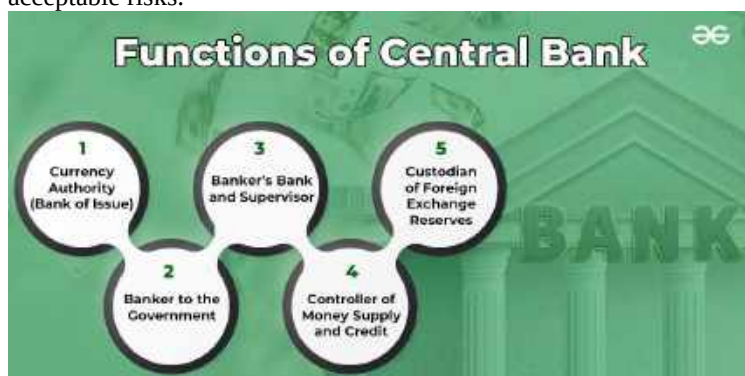
- Direct issuance: The central bank issues directly to the public. The CBDC claim is on the central bank.
- Hybrid issuance: The central bank issues to PSPs, which onboard clients and execute payments. The bank periodically records the retail balances.
- Indirect (two-tier): The claim is on the intermediary commercial bank but backed by the central bank. The banks on-board customers and handle retail payments. The central bank handles wholesale payments.

CENTRAL BANK DIGITAL CURRENCY

Central bank digital currency Countries around the world are examining whether they should offer central bank money to the public not only as banknotes and coins, but also in digital form. The fact that the majority of central banks around the world have already started exploring the possibility of launching a state-owned digital currency comes as a response to the increased adoption of digital, contactless payments, cryptocurrencies and e-

commerce, further accelerated by Covid-19, and also due to the possibilities offered by these digital currencies as a more flexible monetary tool compared to the existing non-digital currency. Privacy, the protection of personal data and security are amongst the most important requirements, which impact the core design choices to be taken, as well as expected citizens' trust and acceptance.

Money created by central banks is central bank money, and cash is currently the only kind of central bank money available to the public. In fact, cash is a physical token in the form of coins and banknotes that represent value. Just holding the token means that one legally possesses it. Transfers can be executed by exchanging it between two people, without the necessity to have a third party (as a bank) to validate the transaction. Cash must be accepted if offered in payment within a jurisdiction (concept defining the "legal tender status"). Private money is created by commercial banks when receiving cash in deposit and reusing it by granting loans. This money appears in the bank account, and it can be used to pay by using a various set of instruments such as debit or credit cards. Money, then, can be withdrawn in the form of cash, back to its original form of central bank money. The relationship between holders and commercial banks is based on the trust that money will be held safely and with acceptable risks.

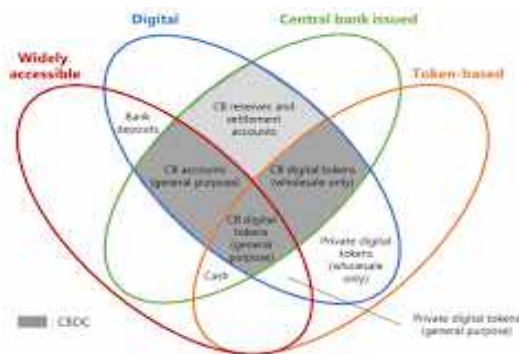


Nowadays, there is no payment instrument apart from cash that has legal tender status. A central bank digital currency (CBDC) is a digital form of public money issued by a central bank. Essentially, a CBDC system consists of individuals and companies having access to a digital currency put at their disposal for transactions and savings accounts by their home country's central bank. A distinction can be made between retail CBDC, available to citizens and companies, and wholesale CBDC, only available to financial actors. In this Tech Dispatch, we will mainly refer to the retail CBDC. In other words, CBDC consists of a digital representation of coins and banknotes in the form of digital tokens. It is an electronic file that embodies a specific value with a reference to its owner attached to it. By just changing that reference, the value is transferred and a payment is made. CBDC is usually presented by central banks as a complement to cash, equipped with similar features (notably, having regard to the legal tender status), but adapted to some functional needs and to the 'digital' in nature.

DIGITAL PAYMENT DIFFER FROM OTHER PAYMENTS



CENTRAL BANK DIGITAL CURRENCY FOR INDIA:



Motivations, challenges and risks • A variety of motivations drive central bank research into CBDC. • Currently, the focus is on providing a CBDC for payments, enabling broad access to central bank money and providing resilience. • Practical challenges and risks exist, which multiply when additional requirements are considered, eg improving cross-border payments or enabling monetary policy tools. There are a large and diverse number of motivations driving central banks' interest in CBDCs. Differences between emerging market economies and advanced economies are especially pronounced but individual jurisdictions can also vary significantly depending on their circumstances (Boar et al (2020)). For the central banks contributing to this report, the primary research motivation is a CBDC's use as a means of payment, although there are secondary motivations (eg enhancing monetary policy tools). CBDC is not unique in being able to fulfil many of these motivations and CBDC designs are likely to require trade-offs that mean not all motivations can be realised simultaneously. 2.1 Payment motivations and challenges

2.1.1 Continued access to central bank money In jurisdictions where access to cash is in decline, there is a danger that households and businesses will no longer have access to risk-free central bank money. Some central banks consider it an obligation to provide public access and that this access could be crucial for confidence in a currency. A CBDC could act like a "digital banknote" and could fulfil this obligation.

2.1.2 Resilience Cash serves as a backup payment method to electronic systems if those networks cease to function. However, if access to cash is marginalised, it will be less useful as a backup method if the need arises. A CBDC system could act as an additional payment method, improving operational resilience. 3 Compared to cash, a CBDC system might provide a better means to distribute and use funds in geographically remote locations or during natural disasters. However, significant offline capabilities would need to be developed, both for the CBDC system and any dependencies (eg some availability of electricity for mobile devices). Counterfeiting and cyber risk present a challenge. Cash has sophisticated anti-counterfeiting features and large-scale issues rarely occur. Theoretically, a successful cyber attack on a digital CBDC system could quickly threaten a significant number of users and their confidence in the wider system (as it could for a large bank or payment service provider). Defending against cyber attacks will be made more difficult as the number of endpoints in a general purpose CBDC system will be significantly larger than those of current wholesale central bank systems.

2.1.3 Increased payments diversity Payment systems, like other infrastructure, benefit from strong network effects, potentially leading to concentration and monopolies or fragmentation. Payment service providers have the incentive to organise their platforms as closed-loop systems. When a small number of systems dominate, high barriers to entry and high costs (especially for merchants) can occur. Where more systems exist, fragmentation may still occur as systems often have proprietary messaging standards, increasing the cost and complexity of interoperability (CPMI (2018)). Fragmentation of payment systems means that users and merchants may face costs and difficulties paying users of other systems. This is inconvenient and socially inefficient. CBDC could provide a common means to transfer between fragmented closed-loop systems (although an accessible fast payment system can also achieve the same end).

2.1.4 Encouraging financial inclusion For the central banks contributing to this report, most of the adult population in their jurisdictions can conveniently access electronic payments. However, increasing digitalisation could leave some sections of society behind as potential barriers around trust, digital literacy, access to IT and data privacy concerns create a digital divide. For central banks in many emerging market economies, a key driver for researching CBDC is the opportunity to improve financial inclusion (Boar et al (2020)). Yet for a CBDC to increase financial inclusion, it must address the causes of exclusion, which vary by jurisdiction and are often

complex.⁵ Given the complexity of this issue and possible underlying obstacles to digital inclusion (eg illiteracy), any CBDC initiative would likely need to be embedded in a wider set of reforms (CPMI-World Bank (2020)).

2.1.5 Improving cross-border payments Cross-border payments are inherently more complex than purely domestic ones. They involve more, and in some cases numerous, players, time zones, jurisdictions and regulations. As a result, they are often slow, opaque and expensive (CPMI (2018)). An interoperable CBDC (ie one that is broadly compatible with others) could play a role in improving cross-border payments (Box 2).

2.1.6 Supporting public privacy A key feature of cash is that no centralised records of holdings or transactions exist. Some have argued that the main benefit a CBDC could bring would be some level of anonymity for electronic payments (Bech and Garratt (2017)). Full anonymity is not plausible. While anti-money laundering and combating the financing of terrorism (AML/CFT) requirements are not a core central bank objective and will not be the primary motivation to issue a CBDC, central banks are expected to design CBDCs that conform to these requirements (along with any other regulatory expectations or disclosure laws). For a CBDC and its system, payments data will exist, and a key national policy question will be deciding who can access which parts of it and under what circumstances.⁶ Striking this balance between public privacy (especially as data protection legislation continues to evolve) and reducing illegal activity will require strong coordination with relevant domestic government agencies (eg tax authorities).

2.1.7 Facilitating fiscal transfers For some jurisdictions, the Covid-19 pandemic illustrates the benefits of having efficient facilities for the government to quickly transfer funds to the public and businesses in a crisis. A CBDC system with identified users (eg a system linked to a national digital identity scheme) could be used for these payments.

CONCLUSION

Understanding of CBDCs has advanced significantly in the last few years. Published research, policy work and proofs-of-concept from central banks have gone a long way towards establishing the practical benefits and challenges in any issuance. Progress has accompanied a gradual convergence on definitions and terms and an improved understanding of the capabilities of current technologies. Many central banks are actively engaging the public through reports, speeches and parliamentary hearings. A CBDC, as the digital claim on a central bank, is just a different manifestation of the same unit of account, store of value and medium of exchange already offered by central banks. There is considerable agreement amongst the central banks in this group on the foundational principles which will guide our ongoing research on CBDC. This report highlights a set of practical, common features which build on these principles. The central banks in this group expect these features would have to be incorporated in some fashion by any potential CBDC design, so that it can deliver on the public policy objectives. To achieve these objectives, a CBDC must be convertible, convenient, accessible and low cost. The underlying system should be resilient, available 24/7, flexible, interoperable, private and secure for the general public. At the same time, the payment system upon which a CBDC exists and is transferred must involve the private sector to benefit from innovation and competition and support adoption and use.

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INDIA 2.0: VISION FOR INDIA 2047 – DIGITAL ECOSYSTEM & HARNESSING ARTIFICIAL INTELLIGENCE

Volume – 1



Editor in Chief - Dr. B. Rohini

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ONE DAY NATIONAL SEMINAR ON 24th JAN 2024

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FUNCTIONAL MECHANISM OF CYBER SECURITY IN DIGITAL SAFETY

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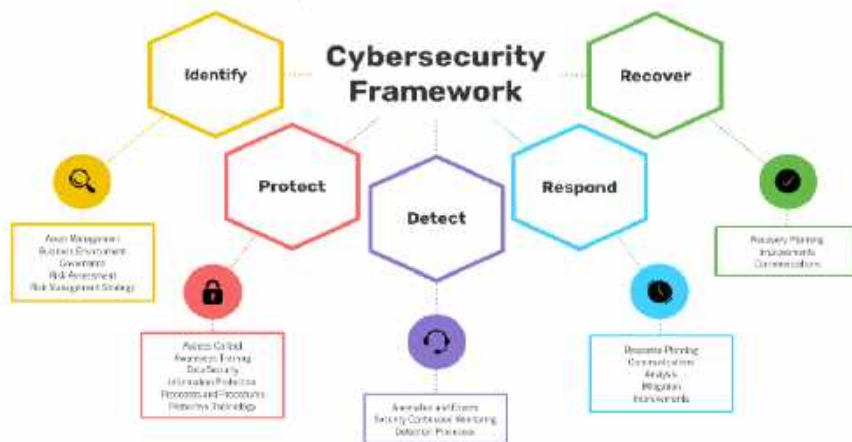
Abstract

Digital safety is a branch of cyber security that deals with people and the levels of online comfort, convenience, and privacy. It may be regarded as the act of staying safer online. This includes being aware of the risks associated with your online activity and avoiding being exposed to unwanted information, materials, or risks on the Internet that might harm one's devices. Online safety is a broad concept that concerns minimizing risks online from a range of negative influences including inappropriate social behaviors, abuse, harmful content, inappropriate contact, identity theft and breaches of privacy. The internet can be a risky place for children and their parents should have strategies for protecting them. Digital security involves protecting your online presence (data, identity, assets). At the same time, cyber security covers more ground, protecting entire networks, computer systems, and other digital components, and the data stored within from unauthorized access. Cyber safety is essential for students to navigate the digital landscape safely.

Keywords: Digital Security; Internet; Cyber safety; Privacy etc

Introduction

Digital safety, frequently referred to as internet safety, media safety, online safety, or cyber safety encompasses many things. At the core of digital safety is protecting ourselves, our families and others as we connect through digital devices. The new ways of interacting digitally facilitate real world interaction. Online safety is being aware of the nature of the possible threats that you could encounter whilst engaging in activity through the internet, these could be security threats, protecting and managing your personal data, online reputation management, and avoiding harmful or illegal content. Safer Internet Day is celebrated worldwide in February to raise awareness about internet safety. Online safety is necessary and validated as many business have been faced with excesses of attacks on the internet which has resulted in losing one's life on the part of the victims, committing suicide, or psychological disorderliness. Online spaces, games and media form a large part of life for young people growing up today. It offers a platform to connect with others and to learn. While cyber security protects devices and networks from harm by third parties, online safety protects the people using them from harm by the devices and networks (and therefore third parties) through awareness, education, information and technology. Cyber security is the practice of defending computers, servers, mobile devices, electronic systems, networks, and data from malicious attacks.



Important Cyber Security

1. Secure passwords:

A very simple but often overlooked element that can help your company's security is password security. Password security and password protection are practices for establishing and verifying identity and restricting access to devices, files, and accounts. The average user manages more passwords than ever. A password manager is an app that generates complex passwords and stores them in an encrypted format. Password strength is a measure of the effectiveness of a password against guessing or brute-force attacks. Using strong passwords lowers the overall risk of a security breach, but strong passwords do not replace the need for other effective security controls. Password security and password protection are practices for establishing and verifying identity and restricting access to devices, files, and accounts.

2. Malware:

Malware, short for malicious software, refers to any intrusive software developed by cybercriminals to steal data and damage or destroy computers and computer systems. Malware can infect networks and devices and is designed to harm those devices, networks and/or their users in some way. Types of malware include computer viruses, worms, Trojan horses, ransom ware and spyware. Malware is developed as harmful software that invades or corrupts your computer network. The goal of malware is to cause havoc and steal information or resources for monetary gain or sheer sabotage intent. Malware poses serious problems to individuals and businesses on the Internet. Although malware cannot damage the physical hardware of systems or network equipment, it can steal, encrypt, or delete your data, alter or hijack core computer functions, and spy on your computer activity without your knowledge or permission.

3. Mobile Device Security:

The changing landscape of It technologies has improved the ability for flexible working environments, and along with it more sophisticated security attacks. A mobile device is

only as secure as the network through which it transmits data. Companies need to educate employees about the dangers of using public Wi-Fi networks, which are vulnerable to attacks from hackers who can easily breach a device, access the network, and steal data. Mobile security is the strategy, infrastructure, and software used to protect any device that travels with users, including smart phones, tablets, and laptops. Mobile security combines practices and software that protect your devices from hackers, malware, and identify theft. Find out why mobile phone security is so important and how a comprehensive mobile security app can help you secure your devices and personal information.

4. Digital Footprint Management:

A digital footprint sometimes called a digital shadow or an electronic footprint refers to the trail of data you leave when using the internet. A digital footprint, whether passive or active, may put an insider at-risk of being targeted for malicious actions such as identity theft, financial scams or social engineering ploys. Your digital footprint can have a lasting impact on your reputation, relationships and employment opportunities. Understanding how this works is an important step toward making this impact a positive one. A digital footprint is relatively permanent, and once the data is public or even semipublic, as may be the case with social media the owner has little control over how it is used by others. For that reason, a major focus of digital footprint management is caution about online activities to control the data that can be gathered in the first place.

5. Online Scams:

A scam is a dishonest plan to trick someone into something which usually involves money. Cyber scams are scams that are carried out online. Cyber scammers may contact you via email, text, phone call or social media. Most scams and scammers have two main goals, to steal your money and your identity. You should know what to look for, how they work, and what to do, so you can protect yourself and your finances. Maintaining cyber security is very important, even for consumers. They may steal directly from you, or use your details to commit other crimes. Scams can look genuine and it can be difficult to tell when something is fake. Online scams include any use of the internet to steal someone else's personal information.

6. Cloud Security:

Cloud computing has revolutionized businesses, the way data is stored and accessed. These digital applications are transforming businesses, however, with large amounts of private data being stored remotely comes the risk of large-scale hacks. Cloud security is a collection of security measures designed to protect cloud-based infrastructure, applications, and data. In particular, cloud security works to provide storage and network protection against internal and external threats, access management, data governance and compliance, and disaster recovery. Like cyber security, cloud security is a very broad area, and it is never possible to prevent every variety of attack.

7. Social Media Use:

Social media is about conversations, community, connecting with the audience and building relationships. Most of us use social media to stay up to date about current events and news. The rise of social media has increased communication between people all over the world and the internet. Notable uses of social media are communication, collaboration, options and reviews, brand monitoring, entertainment, media sharing, paid advertising. Social media platforms have also given rise to online communities, where users can connect with others who share similar interests, hobbies or experiences.

Tips for Digital Safety:

- Keep your personal information limited and professional.
- Change your passwords often.
- Use two-factor authentication.
- Keep your computer updated.
- Use firewalls and anti-viruses.
- Read the site's privacy policies.
- Make sure you are using a secure internet connection.
- Review your privacy settings and understand privacy policies.
- Do not download unfamiliar software off the internet.
- Treat sensitive data very carefully.
- Frequently back up important documents and files.

Conclusion

In conclusion, prioritizing digital safety is paramount in our interconnected world. Vigilance, strong passwords, regular software updates, and awareness of online threats are crucial components. By adopting proactive measures and staying informed, individuals can navigate the digital landscape securely, safeguarding personal information and fostering a safer online community for everyone. Encouraging open communication about cyber security within communities and organizations is essential. As technology evolves, remaining adaptable to emerging threats and embracing cyber security best practices will be instrumental in preserving the integrity and privacy of digital interactions. Ultimately, a collective commitment to digital safety contributes to a more resilient and secure online environment for individuals and businesses alike.

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Volume -2

Editors

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LEARNING RESPONSIBILITY

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Abstract

This work introduces the modeling of the learning environment through a service-oriented framework to ensure tracking of learner profiles and activities involved in TEL practices. Our method is tested in a French certified learning environment using a distributed framework with various learning tools and systems and some monitoring elements. This proposal is based on a standard accepted by many influential operating system editors, making it easy for a wide range of groups. Many benefits of implementing project-based learning strategies in the classroom are cited by proponents, including deeper understanding of concepts, broader knowledge base, improved communication and interpersonal/social skills, improved leadership skills, increased creativity, and improved writing skills.

Keywords: Environmental monitoring, Context-based learning modeling, Learner-centered Learning modeling, Activity-based learning and modeling

Introduction

Learning environment refers to the educational approach, cultural environment, or physical setting in which teaching and learning take place. The term is usually used as a more concrete alternative to "classroom", but it usually refers to the educational philosophy or knowledge environment that the student faces, and may include various learning cultures, its leadership ethos and characteristics. Individuals interact, governing structures and philosophy. In a social sense, the learning environment may refer to the culture and location of the population it serves. The use of learning environments, learning styles, organization and educational institution varies greatly. The culture and environment of a place or organization includes factors such as thought, behavior or work, also known as lifestyle. Although physical environments do not influence educational activities, there is evidence of a relationship between school settings and the activities that take place there.

Concepts of Learning Responsibility

According to Thomas Markham (2011), Learning Responsibility (LR) is defined as: "LR combines knowing and doing. Students not only learn knowledge and core curriculum elements, but also apply what they learn to solve real problems and generate meaningful results. LR students use digital tools to create high-quality collaborative products. LR is It refocuses education on the student rather than the curriculum, a shift dictated by a global world that rewards intangible assets such as motivation, curiosity, creativity, empathy and resilience. Can't be taught in a textbook, but must be activated through experience."

Extend LR processes: "Responsible learning is a comprehensive approach to teaching that engages students in inquiry. Students pursue problem solving by asking and refining questions, discussing ideas, making predictions, designing projects and/or experiments, collecting and analyzing data. , Making decisions, communicating their ideas and findings to others, asking new questions and creating artifacts within this framework."

The project-based learning is a method in which students collaborate to solve real-world problems in their schools and communities. Successful problem solving often requires students to draw lessons from multiple disciplines and apply them in a more practical way. The opportunity to create real change motivates people to learn.

Types of Learning

Learning techniques

It teaches individuals how to complete a task quickly. The ease, speed and accuracy with which a learner can complete a given task is used to determine performance. Learning to walk, talk, read and write begins at birth.

Visual Learning

It involves learning based on our ability to understand what we perceive around us using our sense organs such as what we see, hear, smell, taste or feel. This type of learning is enhanced by experience, and the changes it causes in human behavior are permanent or semi-permanent. Visual learning involves the ability to distinguish different color shades, smells and musical notes.

Auxiliary Learning

This type of learning occurs when the brain associates two unrelated things as a result of conditioning. For example, if someone eats a certain food that causes stomach discomfort, they will learn to associate that food with the discomfort and not want to eat it again. Also, associative learning helps conceptual learning in acquiring knowledge. Through association, new concepts are linked to previous ones, which enhances learning.

Appreciative Learning

Appreciative learning includes preferences, ideals, attitudes, and recognition of value and importance, all of which learners acquire through participation in various learning activities. It develops taste or preference in some aspect of life like literature, art, music. Teachers play an important role in guiding students towards acceptable values, attitudes and ideas in their society.

Behavioral Learning

Attitudes refer to general attitudes toward particular people, activities, or ideas. Behavioral learning influences or persuades people to take a particular desired path.

Different Characteristics of Learning

Learning is a lifelong process

We learn from birth to death. It is a universal process that all living things go through. It can be direct or indirect, formal or informal. Learning shapes and improves our knowledge, attitudes, skills, abilities and habits.

Change in learning outcomes

One of the most important aspects of learning is that it affects change. It enables us to reconstruct ideas and combine information and skills for need-based application. Change, whether desirable or undesirable, is reflected in one's behavior. The change is not apparent until the situation requires the person to respond in a visible way.

Learning has a purpose

Learning always has a purpose. Without the end goal there is no end. The goal of learning is to progress toward a predetermined goal.

Experiential learning

Gaining experiences is the foundation of learning. Learners' behaviors are influenced by new experiences. Learning experiences become meaningful to different types of learners when they are relevant to their interests.

Principles of Learning

Preparation

Students should have adequate rest, health and physical fitness because learning is an activity. Students' basic needs must be met in order for them to be ready or able to learn. Students who are tired or sick cannot learn much. Students may become disinterested in learning if they are distracted by outside responsibilities, interests or concerns, crowded schedules, or other unresolved issues. For example, we can identify the situation of a school's academic examination, where the reason for achieving high marks in various subjects leads to the mental and emotional readiness of students to put more effort into acquiring knowledge.

Exercise

Learning happens every time we practice. Examples include student recall, review, and summarization, as well as manual practice and physical applications. All these contribute to the formation of learning habits. The instructor should repeat important material at reasonable intervals and provide opportunities for students to practice, while ensuring that the process is goal oriented. However, if a skill is acquired only once, regular training may not be necessary in some or many cases. For example, once we learn to ride a bicycle, we remember the knowledge or skill even if we do not practice it for a long time.

Severity

The most intensively taught material is retained. A sharp, clear, vivid, dramatic, or exciting learning experience teaches more than a routine or boring one. According to the radical principle, a student will learn more from the original than from the substitute. Examples, analogies and personal experiences also help bring learning to life. Teachers should use all their senses (hearing, sight, touch, taste, smell, balance, rhythm, depth perception and others).

Independence

Because learning is an active process, students must have freedom: freedom of choice, freedom of action, and freedom to bear the consequences of action three great freedoms that involve personal responsibility. Students lose interest in learning if they lack freedom.

Conclusion

There is no single method for developing effective learning responsibility. The meaning of learning responsibility should be relevant to the context in which the student learns. However, before designing a curriculum or program, we need to consider what this learning responsibility will be. However, regardless of the learning responsibility, learners must do the learning. We need to ensure that learners can work in an environment that allows them to do so. In other words, it is our responsibility as educators to create the conditions for success.

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DIGITAL INNOVATION IN BUSINESS

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Abstract

Digital technology is increasingly important in achieving business goals, and its pervasive effects have resulted in the radical restructuring of entire industries. Consequently, managers' extensive interest in handling digital innovation is not surprising. Recent research has illustrated how digital technologies give rise to a vast potential for product and service innovation that is difficult to control and predict. Therefore, firms need dynamic tools to support themselves in managing the new types of digital innovation processes that emerge.

Keywords: digital transformation, business model innovation, digital business models

Introduction

Digital innovation is defined as the process of utilization of digital technologies and strategies to create new or improved products, services, processes, and business models. It involves leveraging digital tools and platforms to drive transformation, enhance customer experiences, and generate value. The innovation potential of digital and data-driven technologies has emerged as a significant area of interest in recent years. In today's competitive context, entrepreneurs focus on learning how to exploit the knowledge and potential value of open data to design and implement innovation in products and services. The value of published data is not only for public organizations, but this value is distributed by all the actors of an open data network. These actors may be public sector organizations, data providers, service and infrastructure providers, businesses, developers, research centers and academic institutions and nascent entrepreneurs

Objectives

- To know the Digital innovation
- To know the Business Can Embrace Digital Innovation
- To Why Digital Innovation Is So Important Today

What is Digital Innovation?

Digital Innovation in business is the application of technology to solve existing business problems and improvise organizational practices. It is an ongoing and unruly process that changes organization and helps a business stay relevant and competitive. A good digital strategy covers digital innovation initiatives such as:

- Switching from analog to digital processes
- Automation, connectivity, and data analytics
- Implementation of new software and platforms
- Development of a new technology
- Cloud migration

Every business needs innovation to launch new products & services successfully and improve operational efficiency and customer efficiency. To start your digital innovation journey, you need to focus more on the following elements – portfolio, platform, process, and people. With the right platforms, processes, and people in place, you can drive **digital innovation** in your organization to create a portfolio of high-quality products and services.

How Your Business Can Embrace Digital Innovation

Business analysts predict that by 2026, all organizations will transform digitally. Therefore, to remain relevant, every organization must understand how to embrace digital innovation. Here are some tips that will help you create an effective digital innovation process for your business.

Invest in New Technology and Software

To remain relevant and be at the forefront of digital innovation, organizations must invest in new technologies and software to improve operational efficiency. Investing in the right technology will help you unify your business needs and include product lifecycle monitoring, cloud access, collaboration, and team management as core business concepts.

Build a Digital Innovation Team

Build a small and focused team of professional and high-performing individuals from different departments who are committed to offering value to your organization. This team will put their heads together to identify the limitations of your existing business process and proffer solutions via effective digital innovation strategies.

Adopt an Agile Business Model

As technology evolves rapidly, it's important to make agility a critical aspect of your business to remain relevant. In an agile business model, organizations can identify new customer needs and periodically change strategies to solve such problems over time. Most organizations are creating incubator labs to brainstorm, experiment, and fast-track digital innovation.

Create a Value-added or ROI System when Prioritizing Projects

Based on revenue generated from current projects, you need to create a value-added system for higher digital innovation ROI. This allows businesses to prioritize the projects that will make the highest returns, both short-term and long-term.

Create a digital adoption strategy for new processes and tools

Create a well-detailed, specific digital adoption strategy to make the best of your tech investments. When training your employees, a digital adoption system solution, such as Whatfix, can be your innovation partner.

Why Digital Innovation is so Important Today

- **Competitive Advantage:** Digital innovation enables businesses to gain a competitive edge in the marketplace. By leveraging digital technologies and strategies, organizations can differentiate themselves from competitors, deliver unique value propositions, and capture new market opportunities. It allows companies to stay ahead of the curve and adapt to changing customer preferences, emerging trends, and disruptive market forces.
- **Enhanced Customer Experience (CX):** Digital innovation focuses on improving customer experience and interaction. By leveraging digital channels, personalized marketing strategies, intuitive user interfaces, and data-driven insights, organizations can deliver tailored and seamless experiences to their customers. This leads to higher customer satisfaction, increased loyalty, and a positive brand reputation.
- **Increased Efficiency and Productivity:** Digital innovation helps optimize business processes and streamline operations. By automating manual tasks, integrating systems, and leveraging data analytics, organizations can enhance efficiency, reduce costs, and improve productivity. Digital tools such as workflow management systems, robotic process automation, and cloud computing enable streamlined operations and faster decision-making.
- **New Revenue Streams:** Digital innovation opens up new avenues for revenue generation. By leveraging digital technologies, businesses can create innovative business models, products, and services that tap into previously untapped markets. For example, the rise of the sharing economy, subscription-based services, and digital platforms has created new revenue streams and disrupted traditional industries.
- **Data-Driven Insights:** Digital innovation relies heavily on data collection, analysis, and interpretation. By harnessing big data analytics, machine learning algorithms, and predictive modeling, organizations can gain valuable insights into customer behavior, market trends, and business performance. Data-driven insights enable informed decision-making, targeted marketing, and proactive innovation strategies.
- **Agility and Adaptability:** Digital innovation fosters an agile and adaptive organizational culture. It encourages experimentation, continuous learning, and the ability to quickly respond to changing market dynamics. Organizations that embrace digital innovation are better equipped to navigate uncertainties, seize opportunities, and adapt their strategies in a rapidly evolving business environment.
- Overall, digital innovation is crucial for organizations to thrive in the digital age. It empowers businesses to be more competitive, customer-centric, efficient, and adaptable, thereby enabling sustainable growth and long-term success.

What are the Key Benefits of Digital Transformation?

Here are ten digital transformation business benefits that you can't afford to lose out on:

1. Increases Customer Satisfaction

Customer expectations have never been higher. On the one hand, customers want personalized services that meet their individual needs. On the other hand, they want things to happen automatically and they don't want to have to deal with human beings to do tasks like accessing, updating, or deactivating and reactivating software. One of the clearest advantages of digitalization in business is that you will be able to implement **robust digital tools and strategies**, like per-location or per-industry license modification and automated processes. These digitalized processes lead directly to increased customer satisfaction.

2. Drives Data-Based Insights

One of the most significant benefits of digital transformation is that your business will be able to collect and analyze data that you can turn into actionable, revenue-generating insights. In the past, your data was scattered across multiple disconnected platforms, or even worse, you might not have collected and used data at all. Digital transformation will enable robust data collection, centralized data storage, and the creation of tools to analyze and translate data into information that promotes informed corporate decision-making.

3. Enables Software Monetization

Back in 2015, Satya Nadella, CEO of Microsoft, looked out across the room full of business and industry leaders at the annual Microsoft Convergence conference and famously stated: "Every company is a software company." At the time, software-centricity was hardly understood. Today, all business leaders know that they must shift from a product-centric approach to a software-centric approach and that software monetization gives businesses the best ROI. Yet many companies are stalled at the launch pad because they don't know how to fire up the engines of software monetization.

4. Enables High-Quality User Experience

High-value companies know that they are not just delivering products, they are delivering experiences. Digital transformation enables beautiful, effortless experiences that hinge on automation, AI, and self-service tools. Prove that you've mastered the digital era by providing customers with a frictionless user experience.

5. Encourages Collaboration & Improves Communication

To drive innovation and output, you need to have a digital platform that promotes communication and collaboration across all internal departments. The digital transformation eliminates roundabout communication, redundancy, slow response times, lost information, and ineffective idea-sharing. When you digitalize the internal communications of your business, you will increase productivity, accountability, and creativity, and gain the edge necessary to outperform the competition.

6. Increases Agility

According to a 2017 McKinsey survey, only 8% of respondents said their current business model would remain economically viable if their industry keeps digitizing at its current course and speed. That means a whopping 92% of businesses recognize the fact that the ability to change and be flexible is the key to surviving the ongoing period of intense digital transformation. Products are changing, previously reliable revenue streams are drying up, and customer demands are drastically different than they were just a few years ago.

The solution? Digital transformation strategies. With the power of a digital business environment, your company will be able to anticipate challenges and build solutions preemptively so that you can remain viable for years to come.

7. Limits Human Error

An undeniable advantage of going digital is that digital processes stop errors by eliminating time-consuming manual data entry and human inefficiencies. Digital processes are inherently smoother and less risky than any process that involves error-prone humans.

8. Encourages an Environment of Employee Excellence

An important factor in a successful digital transformation is to get widespread company buy-in. You need to create a corporate culture where it is clear to everyone that they will ultimately see the benefits of going digital. To get employee buy-in, invest in the digital education of your workers. Host internal webinars, participate in conferences, and send your employees to courses that will update their skill sets. Excellent employees are your greatest asset, so don't undervalue investing in their growth.

9. Increases Operational Efficiency

Digital transformation gives you increased operational efficiency. You can consolidate messy manual processes and reduce overhead costs by integrating with back-office systems, automating delivery processes and product updates, enabling inter-device activation, managing multiple product variants, and more. With digital business processes, you'll save time, plug revenue holes, and decrease frustration. Because digital business is synonymous with efficient business.

10. Enables Future Digital Growth

The final benefit of digital transformation is the most fundamental. Digital transformation is the initial act that sets the stage for all subsequent business growth. Without investing in digital business transformation, your company will quickly become obsolete. In the past few years, we've seen industry giants like Blockbuster, Toys R' Us, and Kodak go bankrupt. Why? Because they failed at digital transformation. Digital transformation is not optional. It's not the icing on the cake of a thriving business. To survive the digital tsunami engulfing the world, you must take steps to transform. Once

you do, you'll reap the benefits of digital transformation and become stronger and more profitable for years to come

Conclusion

Digitization and digitalization in business have a massive impact on innovations. As technology advances, it forces you to act and innovate. And once you start, it's hard to stop. Continuous innovation allows you to become more trends. Global crisis such as global pandemic often forces businesses to innovate. Indeed, the cliché, 'necessity is the mother of invention,' shouldn't be the sole reason to embark on digital innovation. Nonetheless, market forces, customer expectations, and business dynamics are changing rapidly. Therefore, organizations need to innovate digitally to stay relevant, irrespective of their industries. Digital innovation is not meant to put you in a disadvantaged position. Instead, it empowers your organization to improve its resilience by preparing for the inevitable change coming. As a result, digital innovation can help you grow your business in ways you never imagined.

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PERSPECTIVE OF ICT TOOLS IN EDUCATION

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ICT TOOLS IN TEACHING AND LEARNING PROCESS

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Abstract

Technology is growing, in a fastest and well developed ways in every sectors, and it also creates various developments in the educational sectors also. In this article, we discussing about the "Information & Communication Technology" (ICT), which cause a great part in educational development in the way of introducing smart classes, online courses, web conferences etc., with the internet connection through the smart phones and computers. At the time of pandemic period, business, economy and educational sectors suffers a lot, at that time ICT technologies play a major role and help to tackle the pandemic situation.

Keywords : Technology, Information and Communication MEANING

ICT Stands for "INFORMATION & COMMUNICATION TECHNOLOGY".

That helps to enable modern computing system. It is an extensional term from IT. It plays one of the most important role in the New educational policies and projects. It covers all the devices and equipments that helps to connect and store data. It includes antiquated technological devices like: landline telephones, television, and radio. And cutting edge technologies like: Artificial intelligence(AI), and Robotics are the advancement in ICT.

Through these communication devices , the informations are passed and informed along with the technologically connected internet and wireless networks.

Objectives of ICT

- Establishment of smart school.
- Increase the capacity of teachers.
- Update & Accurate knowledge.
- Contribution in extension & research.
- Richness of learning experiences.
- Professional growth

Benefits of Ict

- Improved Learning efficiency
- Reduce the burden on teachers.
- Simplified information sharing.

- Increased *student motivation*.
- Improve *IT literacy* of students.

Tools Using in ICT

- Google classroom & Meet.
- Trello.
- Online coding websites.
- Subject specific tools.
 - i. Teaching geography.
 - ii. Teaching Mathematics.
 - iii. Teaching History & Biology.
- Smart class
- E-Resources

Google Classroom and Meet

A virtual classroom that makes learning fun and easy and also entertain the students. Teaching educate their students by giving interacting assignments, by slideshow and also by YouTube videos and some of the online learning games like kahoot. It allows the class to go paperless. It can also conduct PTA meetings, take attendance and can maintain and conduct test and grade the students systematically.

Trello

It is also one of the tools in ICT learning. In this we can keep reminders and settasks for the students and also in working place. It prefer projects based learning for students. In this we can create different board for assignments, test papers, doubts, students attach images and videos. By this students can easily look their deadlines for projects, track their progress in online, etc..

Online coding websites

Some of the online coding websites are:

- Data camp
- Hacker rank
- Coder bytes
- Khan Academy
- Code school
- Code academy
- Edx

This learning sites helps the students in the fields of computer engineering and IT sectors. They can learn at any time by downloading videos and listen to that and sometests are also followed.

Subject Specific Tools

i. Teaching Geography:

Google maps, Google Earth helps the kids to learn the distance between two areas, helps to locate areas, can learn different regions, land masses and water bodies.

ii. Teaching mathematics:

Can figure out geometry, can think helps the students to solve math problems and can know about several theorems and proofs in maths.

iii. Teaching history and biology:

YouTube, Microsoft PowerPoint are many videos available in YouTube about a particular research both in history and biology fields. Slideshows in Microsoft PowerPoint makes the students to understand it easily.

Smart Classrooms

In most of the schools and colleges smart classrooms are available. In this, through the projector the screens are displayed according to their syllabus and this is also an easy and interesting way of learning.

E-Resources

E-books, E-Journals, PDFs, are available in the internet for each and every heading and research work. It is more helpful and makes the students to search in online and get download. In reduce the work of searching in libraries and to buy in shops and we can also tell it as a time management.

Components of Ict

- Software
- Cloud of computing
- Transaction
- Data
- Internet
- Communication technology
- Hardware

Hardware

It denotes physical and tangible electronic systems. It includes: smart phone, laptops, printer, supercomputer, projection system, cameras, telecommunication devices and networks.

Software

It includes computer programmes and application for hardware function. There are two types of software.

- System software
- Application software

Communication Technology

It refers to tools that send , receive and process information. It includes digital television, digital radio, e-mail, GPS, video conferencing platforms.

Advantages

For Students:

- Improves concentration
- Makes to know to interact with digital gadgets
- Understands the concepts easily and quickly by displaying animation videos
- Helps to learn more courses at one place
- Encourage critical thinking
- Motivates to study new concepts

For Teachers:

- Improves parent teachers interactions
- Improves creative skills
- Teachers keeps the students interact throughout the class
- Record keeping of students

Disadvantages

For Students

- Reduce human contact, So it reduce friends circle
- Theft of personal data
- May be consumption of false information (lot of true and false informations are available in internet)
- Reduces development of other skills such as writing, public speaking
- Distractions like chats, social networks and web pages and greater addiction

For Teachers

- Lot of work load like assigning classes and preparing videos for classes
- Lack of network problems in rural areas
- Course material problems
- Teacher reluctant to new technology

Conclusion

- According to UNESCO, ICT in education is a great support for teachers and improve the quality of student learning.
- A report shows , that the students using digital learning tools at school is 89% and at outside school is 71%.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

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WOMEN CUSTOMER'S OPINION TOWARDS NETWORK SECURITY IN ONLINE PURCHASE

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Abstract

Online shopping or e-shopping is a form of electronic commerce which allows consumers to directly buy goods or services from a seller over the internet using a web browser. Alternative names are; e-web-store, e-shop, e-store, internet shop, web-shop, web-store, online store, online storefront and virtual store. English entrepreneur Michael Aldrich invented online shopping in 1979. His system connected a modified domestic TV to a real-time transaction processing computer via a domestic telephone line. In March 1980 he went on to launch Region's Office Revolution, which allowed consumers, customers, agents, distributors, suppliers and service companies to be connected on-line to the corporate systems and allow business transactions to be completed electronically in real time. The rate of cyber crimes has been increasing and bank details have been misused which raise privacy issues. Customers have to be careful in revealing their personal information. Some of the e-retailers are unreliable. I have collected data from 50 respondents, percentage analysis and chi-square test was used for analysing data. The main objectives of the study were to know about the opinion of women consumer's about network security. This study concluded that Most of the women consumers consider that there are lot of risks in payment and giving personal details.

***Keywords:** Online shopping, customers and women customer's*

Introduction

Online shopping or e-shopping is a form of electronic commerce which allows consumers to directly buy goods or services from a seller over the internet using a web browser. Alternative names are; e-web-store, e-shop, e-store, internet shop, web-shop, web-store, online store, online storefront and virtual store. English entrepreneur Michael Aldrich invented online shopping in 1979. His system connected a modified domestic TV to a real-time transaction processing computer via a domestic telephone line. In March 1980 he went on to launch Region's Office Revolution, which allowed consumers, customers, agents, distributors, suppliers and service companies to be connected on-line to the corporate systems and allow business transactions to be completed electronically in real time.



ABOUT THE DEPARTMENT

The PG Department of Commerce with International Business is established in the year 2002 with a prime motto to uplift the rural students to know the edge in the specialized field of International Business. The syllabus is designed, crit. developed at regular intervals, since it is a self. The PG programme is covering students from undergraduate and the course is framed to cater to, fill the needs and wants of the student and industry as well. The PG programme is initiated as a mark of the 50th Anniversary of the College in 2017. The Department has an infrastructure/needed skill, leadership qualities and preparing the students at least of level. It wishes the students in various Skill Development Programmes, Orientation Programmes, Workshop and Extension Activities. It keenly concentrates on the recent trends prevailing in the environment, updates its syllabus to match it with the industrial needs and sends the students accordingly, so as to get success with the help of Team Work. The Strength of the Department is its Qualified Faculty Team which always focuses on achieving the goals of Student and College as well.

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CHALLENGES FACED BY COTTAGE INDUSTRY IN INDIA

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Introduction

In India, cottage industries are a major source of employment and livelihood. These industries are also the backbone of the Indian economy. The cottage industry is an industry that is small-scale and informal. This business idea among other small business ideas is typically a family business and the owner of the business lives on the premises. Small-scale units or manufacturing businesses managed by family members from their homes or establishments usually near their homes. They are the backbone of the Indian economy. In India, the Khadi and Village Industries Commission (KVIC) is the organization that promotes village and cottage industries. These industries fulfill the basic needs of local markets and all its requirements like raw materials, skilled labour, etc., are met from within the village. They include handloom, pottery making, food processing, pickles, khadi, etc. The government, on the other hand, has taken steps to revitalize cottage industries, and they now play an important role in the country's economy. Cotton weaving, silk weaving, carpet making, leather industry, metal handicrafts, and small food processing businesses are the top five Indian cottage industries. In India, cotton weaving is a significant cottage industry. Cotton clothing is frequently worn throughout the country, therefore this expertise extends back to ancient times. Cotton weaving in India is noted for its traditional motifs and patterns created by skilled weavers using looms. Maharashtra, Tamil Nadu, and Gujarat are the cotton-producing states in India. Another well-known cottage industry in India is silk weaving. Silk is worn on important occasions such as weddings and festivals, and India is one of the largest manufacturers and consumers of the material. India's silk varieties include Mulberry, Muga, Tassore, and Eri. Karnataka accounts for approximately 70% of India's silk weaving industry. During the Mughal dynasty, carpet making was brought to India. India is also famed for its durries and coir mats, despite the fact that Kashmiri carpets are world-renowned for their exquisite quality. Kashmir, Rajasthan, Punjab, Uttar Pradesh, Andhra Pradesh, and Punjab are all home to the carpet industry in India. The Carpet Export Promotion Council was established by the Indian government to promote hand knitted rugs and various types and styles of floor coverings from around the country. India is a major exporter of high-quality leather to other countries.

Types of Indian Cottage Industries

Cottage industries are manufacturing enterprises that do most of their labor by hand. India is famous and well known for its diverse culture, handicrafts of traditional cottage industries and variety of business. Cotton weaving, carpet weaving, silk weaving, leather industry, metal handicrafts and small scale food processing are the major cottage industries in India.

1. Cotton Weaving:

Cotton weaving is a significant cottage industry in India. As cotton clothes are widely worn throughout the country, the knowledge is ancient. Cotton clothing is famous for its traditional style, vibrant color and designs made by expert weavers using handloom. Gujarat, Tamil Nadu and Maharashtra are three major cotton producing states.

2. Silk Weaving:

Another well-known cottage industry in India is silk weaving. Our nation produces and exports a significant amount of silk, both domestically and abroad. Karnataka produces the most silk, making up over 70% of the entire silk weaving business. Mulberry, Tassore, Muga, and Eri silks are produced in our count.

3. Carpet Weaving:

During the Mughal era, carpet weaving was first introduced to India. The durries and coir carpets are equally renowned for their exceptional quality and texture as the Kashmiri carpet. In spite of the fact that the carpet industry is widespread throughout the nation, it is largely concentrated in Kashmir, Rajasthan, Punjab, Uttar Pradesh, Andhra Pradesh, and Punjab. The Carpet Export Council was also founded by the Indian government to promote knotted rugs and other types of floor coverings from all around the nation.

4. Leather Production:

India is a significant producer of premium leather for export to international markets, providing around 10% of the demand. One of India's top export earners and one with almost 2.5 million workers is the leather industry. The Indian states that produce leather are Uttar Pradesh, West Bengal, and Tamil Nadu.

5. Metal Works:

Metal has long been used in India to make figurines, jewellery, utensils, and other objects. India's metal handicrafts are well-liked worldwide and have a major economic impact on the nation. Metal handicrafts are created using hand-operated tools rather than sophisticated machinery.

Issues Faced by the Cottage Industries in India

The lack of access to adequate finance options and limited technical knowledge has made it difficult for cottage industries to fulfil domestic and international customer

demands, thereby inhibiting their growth. These are some of the major issues faced by cottage industries in India – let's learn more about each one of them individually in the following sections.

1. Self-Employed Labor Shortage

The self-employed labor shortage is a major problem faced by Indian cottage industries. The lack of skilled laborers has been made worse by the Great Recession and economic slowdown, which led to a large number of factory workers losing their jobs. Most cottage industries are made up of small-scale producers who find it difficult to attract employees due to low wages, insecure working conditions, and long hours. These challenges have worsened with the rise in unemployment rates across the country. Cottage industries also have difficulties finding skilled employees because many young people choose not to pursue traditional occupations and apprenticeships.

2. Low Demand for Handmade Goods

The majority of the demand for handmade products comes from tourists visiting the country. But unfortunately, not enough people live in these villages to keep up with production. It means that most of these goods are not made locally and can't be sold nearby. The result is a vicious cycle where supply and demand cannot meet due to a lack of market access. There's a general misconception that cottage industry goods should be easy to transport because they're small. However, this isn't always the case! For example, if you want to ship something fragile like silverware to long distances without damaging it, you will need high-quality packing materials. One of the unfortunate realities when it comes to cottage industries is low-quality products. These businesses often have little knowledge of producing high-quality goods, leaving many unsatisfied buyers.

3. Lack of Financing Options

Traditional banks offer loans with higher interest rates than microfinance institutions. The perception of high-interest rates may be that they are due to the poor credit history and low income of the rural borrowers. However, there are other reasons for the high cost of these loans. For example, traditional banks charge a commission for processing the loan. The process is lengthy and demanding for bank staff and customers, so it costs more to service each loan transaction. Moreover, using outdated manual systems to process data limits efficiency, increasing costs. In contrast, many microfinance institutions offer their customers products with lower rates and no commissions on transactions because they do not have expensive brick-and-mortar branches or costly IT infrastructure; instead, they mainly operate online or through mobile phone banking apps.

4. Government Regulations

Each state has its regulations that govern the industries, so it is important to consult your local government officials and determine the regulations before starting a business. For example, each state restricts how many days a week a business can be open or if

employees must wear certain clothing. There may also be a restriction on when employees can take breaks during the day. As another example, there may be different child labour laws for children under 14 years old compared to children over the age of 14 years.

5. Poor Working Conditions

In the past, people worked in these spaces for up to 18 hours a day. They'd work with chemicals and dangerous tools, often without protective gear or knowledge of how to use them safely. And they were paid only a fraction of what they were worth. In recent years, we've seen some progress. The Indian government has passed legislation that mandates fair wages and working hours for this industry. But there are still many challenges – like limited access to markets for their products or lack of business skills – that limit their success.

6. Ineffective Marketing Strategies

Cottage industries in India need to take marketing into their own hands because there are not enough jobs available. Of course, marketing is an important part of any business, but it's essential for businesses that rely on word-of-mouth and referral. As a result, these businesses will have to be more creative in advertising themselves. For example, they could try sending emails with their products and services attached, sponsoring events, participating in community groups, or partnering with local hotels or restaurants. Investors want nothing short of success for the companies they invest in. But investors also know these enterprises start small and don't grow overnight. As a result, it can be difficult for them to make money as quickly as they would like from investments, so they might stop investing altogether or only offer a little before reducing investment levels even further later on down the line if things don't improve.

7. No Brand Identity

It is not uncommon for small businesses to have issues with branding and marketing. They may not have the funds or expertise to develop a strong brand identity design, which leads to a lack of awareness and visibility. For example, if you are a fashion designer who produces clothing but doesn't have the funds or skills to create your website, people may not know that you exist because they couldn't find your products on search engines. That is why small businesses need to identify their strengths and weaknesses to use the right platforms and techniques to reach their target audience.

8. Quality Control Issues

One major problem faced by cottage industries is quality control. The vast majority of cottage industries are family owned and operated. When the owner is also the manufacturer, they are not able to monitor the quality of their products as well as a corporation might be able to. They will often produce goods until they run out of materials instead of monitoring the quality and stopping when a sufficient amount has been made. As a result, some buyers complain about receiving low-quality items that do not meet their

expectations or are defective because they were rushed to make them before running out of materials.

9. Lack of Government Support

The Indian government has not been supportive of the cottage industries. The government's policies do not support the growth and development of cottage industries. For example, cottage industries are only given a 15% discount on the minimum rate they need to pay on electricity charges when they purchase their power from a State Electricity Board (SEB) instead of a 50% discount if they purchase their power from private companies. It makes it difficult for these small businesses to survive, as they will have to spend more money each month to use electricity.

10. Sustainability Issues

One major issue that many cottage industries have is sustainability. There are not as many jobs as there used to be, and the demand for handmade goods is decreasing. It means that the cottage industries have less income, which makes it hard to maintain their business operations..

Government Actions to Resolve the Problem

The government has launched a number of efforts to address the problems facing the cottage and small scale industries because of their significance. The first actions taken are as follows:

- A number of organisations have been established by the Union Government to support small companies and rural communities. They include the Central Silk Board, the All India Handicrafts Board, the AH India-Handloom Board, and the Khadi and Village Industries Commission.
- There are now industrial cooperatives, industrial estates, and rural industrial initiatives.
- To encourage the small-scale manufacturing sector, the Central Government has designated 807 products for exclusive manufacture.
- District Industries Centers are being created at the district level to house all the support and services needed for small and village businesses.
- The Industrial Policy Resolution of 1980 provides the following provisions for the growth of home-based and small-scale businesses:
 1. Launching a programme to create buffer stocks of essential goods, which are frequently hard to get by. Priority will be given to the special needs of those states that depend heavily on a small number of essential raw materials.
 2. In order to produce as many ancillaries, small, and cottage suits as possible, the government will establish a few nucleus plants in each district. A nucleus plant would bring together the output of the auxiliary and small-scale units that fell inside its orbit.
 3. Increasing the cap on capital investments for small and supporting businesses.

Problems of Cottage and Small-Scale Industries

The major problems faced by the cottage and small-scale industries are stated below:

1. Non-availability of timely and adequate credit.
2. Inefficient management
3. Lack of infrastructure
4. Technological obsolescence
5. Limited availability of raw materials
6. Marketing problems
7. Competition with large-scale industries and imports.
8. Excessive burden of local taxes
9. Widespread sickness

Conclusion

India's cottage industries are culturally and economically significant. They preserve ancient traditions while simultaneously employing a large number of people. Because these industries confront intense competition from other economies, society should provide support to prevent exploitation and further develop them. The only solution to combat the monster of unemployment in over-populated countries like ours is to promote cottage and small-scale industries. Cottage industries are unorganized and fall under the category of small scale industries. They use traditional ways to create consumable goods. Furthermore, these industries emerge in areas where unemployment and underemployment are common. As a result of this technique, the cottage industry benefits the economy by absorbing a large portion of the surviving workers in rural areas. On the other hand, the industry faces numerous challenges in a variety of ways. As a result, the government is attempting to address the sector's issues since it recognises that the sector has a lot of promise in a variety of sectors if properly supported.

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TECHNOLOGICAL REFORMS IN AGRICULTURAL GROWTH

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Abstract

In India, Agriculture is an important sector. It plays a vital role in the process of economic development in less developed countries like India. In Indian economy, it is indispensable for the substance and Growth. The Critical issues that plague Indian agriculture at present are the knowledge deficit and infrastructure deficit, especially in the rural areas. Now a days, Problems are related to irrigation infrastructure. In this, Lack of delivery mechanisms are the Major Issue in India. So, we not have effective delivery mechanisms. There are many Numbers of schemes. The Agricultural need to be increased so that farmers an get more remuneration from the same piece of land with less labours

Keywords: *Agriculture, Infrastructure and India.*

Introduction

In Indian there are 1.3 billion people, and it ranks second in terms of the agricultural output. In 2021, the gross value added (GVA) was accounted 16.4% in forestry and fishing sector. In country's population, there are more than 50% of serving primary source of livelihood. These sector accounts for majority of the poor of the country. Over 58 percent of the rural households depend on agriculture.

In Demand side factors include, awareness and knowledge about technology, that access to credit and relevant inputs, risk implications and marginal returns. In Supply side factors includes, policy support, investment in agricultural research and extension system, availability of infrastructure, and institutional arrangements for the delivery and benefit sharing of technologies.

Importance

The crops produced in this manner are sufficient because of the expanding population. The reforms after independence are consequently given priority. The agricultural development helping crop producers or farmers by offering various forms of support in the agricultural industry. This delevopment includes offering security, assisting with research, using cutting-edge methods, preventing pests, and promoting diversity.

Agricultural technology assists farmers in overcoming operational challenges such as financing, supplies, and crop productivity. The farmers can increase overall production, reduce their impact on natural ecosystems, and ensure safer growing conditions. Agricultural technology provides farmers with improved worker facilities, increased efficiencies, and low prices.

Roles Agricultural Technologies

During 1960s, the institutional approach was shelved to make the way for the technocratic approach only to remerge during post liberalization period. The main motto behind these initiatives was to improve farmers access to institutional credit. A large number of institutional agencies are involved in the disbursement of credit to agriculture. A large number of formal institutional agencies like co-operatives, Regional Rural Banks (RRBs), Non-banking Financial institutions(NBFIs), Self-help Groups(SHG),etc.

Agricultural technology plays a crucial role in the agriculture industry by helping farmers overcome various challenges they face in their day-to-day operation. It helps farmers in various aspects of their farming operations. From increasing crop production to reducing water, fertilizer, and pesticides to improving working conditions for farm workers. and it plays a vital role in making the agriculture industry more efficient and sustainable.

Roles of agricultural reforms are,

- Precision agriculture
- Climate prediction through AI
- Use of *sensor* in agriculture
- Biotechnology in agriculture
- Digital solution for *financing* and *supplies*
- E-commerce solutions for selling *agricultural products*.

Impacts

It Increase in agricultural products both import and export. Technologies can enable the transition of modern agriculture in the field. While some technologies have transformed the way we operate, there is a need for spreading technological advancements in agriculture like, artificial intelligence and machine vision. Farmer can have ready availability of weather information and disaster warnings. The three main aspects of agricultural reforms are liberalization, privatization and globalization. Agriculture is the primary source of income in rural India, and any reforms will have a direct impact on the nation's economy and vice versa. Agriculture reform has a significant impact on the following areas:

- Increase in agricultural products both import and export.
- Improvements in agricultural technology and rural infrastructure are two areas where progress is being made.
- Agricultural methods are becoming more prevalent
- Agriculture and food security prices are maintained.

Merits and Demerits

Merits	Demerits
Productivity is boosted by Technology and they reduce the time.	Excessive Use of Fertilizers and Pesticides.
Water supply becomes easy by using Modern Technology.	High Maintaining Cost.
Modern machines can control the efforts of farmers.	It is efficient but has many side effects and drawbacks.
Better marketing and exposure to the price. And irrigational technology.	Lack of practical knowledge the farmers cannot handle the machines properly.
Low run of chemicals and also waste materials into seas and water.	The robotic machine could not change their culture, we have to set their Programmes manually.
Decrease the use of water, fertilizers which keeps the prices down. And improve the fertility of the soil.	Improve the scouting programmes.
Facilities in online trading and E-commerce. And suitable for the campus environment.	Most of the farmers are illiterates so they are unable to use the modern machines.

Conclusion

The food and agriculture sector Is crucially important in the green growth. Because it is major user of land water and marine resource. And biodiversity has important linkages and agriculture has given so much to society. In India technological it is rapidly growing field with potential boost food security and create new jobs and rural development. The region has had to face problems of food insecurity. In some countries have needed food aid for IDPs and refugees.

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India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence

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SIGNIFICANCE OF DIGITAL INNOVATION IN BUSINESS PROCESS

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Abstract

Emerging technologies have capabilities to reshape business process management from its traditional version to a more explorative variant. However, to exploit the full benefits of new information technology, it is essential to reveal research potential and to detect recent trends in practice. Therefore, this work presents a systematic literature review with 231 recent academic articles from 2014 until May 2019 that integrate Business Process with digital innovations. We position those articles against seven future Business Process trends that were inductively derived from an expert panel. By complementing the expected trends in practice with a state-of-the-art literature review, we are able to derive covered and uncovered themes in order to help bridge a rigor-relevance gap. The major technological impacts within the Business Process field seem to focus on value creation, customer engagement and managing human-centric and knowledge-intensive business processes.

Keywords: Business Process Management - Business Process Innovation - Digital Innovation Emerging Technologies.

Introduction

Today's technologies are triggering a fourth industrial revolution and generate new ways of doing business. With the rapid boom of new technologies from block chains, Internet of Things or artificial intelligence, organizations are struggling to take maximum advantage of new in response, business operations, structures and processes need to learn how to adapt and implement a new version of business process management called ambidexterity. Ambidextrous is a mixture of two aspects: exploiting the benefits of existing technologies while simultaneously, exploring the benefits of new explorative on the one hand, emerging technologies enable disruptive digital innovations which are rudimentary prerequisites of sustainable business processes an organization's long-term way of working. While product/service innovations are a potential feature for organizations to lead in the market, digital process innovations help in terms of reducing time delays and resource sharing. Consequently, digital innovations are transforming both the client needs and the infrastructural requirements.

Digital Innovation Trends in BPM

As shown in the previous sections, BPM in the digital economy is transforming and creating new opportunities for improving business processes. For example, new IT can automate several manual tasks with internet-based and intelligent devices. An extensive use of social technologies encourages push and pull factors in marketing, leading to increased sales volumes and customer interactions or emerging technologies also help during process analysis, namely for tracking and monitoring in a fast and efficient manner. Although digital innovation transforms BPM with the help of emerging technologies, more research is needed to fully grasp those opportunities. Hence, Van Looy and Poels collected the opinions of 19 BPM practitioners on how they see the future of BPM evolve based on emerging technologies, and categorized them into the following seven BPM-DI trends:

We have adopted these BPM-DI trends to categorize our literature review in order to find ways to bridge the rigor-relevance, which refers to the differences between practical experience from industry and academic theories or literature. Bridging this gap is important, as research and real-time practical experience are interdependent to obtain rigorous insights that are relevant for society. Subsequently, we explain each BPM-DI trend by highlighting relevant studies on different industries and perspectives before systematically mapping the state-of-art for deriving calls to research and practical guidelines.

Digital Technologies and Connectivity Can Drive Economic Inclusion of All Businesses

Essentially, the wide group of mostly free digital tools from the Facebook company, combined with the worldwide expansion of the internet, afforded less-advantaged groups the ability to connect their products and services with customers around the world and serve a wider, and sometimes even global, economy in 2018-2019. We contend that digital tools could help to foster economic activity and further increase social inclusion in the coming years. In keeping with the UN Sustainable Development Goals, which highlight economic inclusion, we suggest that continued improved access to infrastructure and investments in digital skills for the regions and groups that currently have limited or no access to these resources would facilitate this economic activity and social advancement.

Digital Technology Can have a Marked Impact on Hiring and Jobs

Digital tools allow employers to advertise job requirements for vacant positions quickly and at low cost, while giving applicants the ability to seek jobs in a wider geographical area, improving the overall functioning of the job market. In our survey, 29 per cent of firms using Facebook apps and technologies reported that they used the apps and technologies for hiring purposes in 2018-2019.³ In addition to making hiring easier, digital tools and associated reduced costs may enable companies to retain their headcount by helping to increase sales, exports, and profit margins.

Digital Technology Can Help Firms Access Markets Abroad

We find that digital tools have lowered trade costs and offered firms a larger base of potential customers in both near and distant markets. In our survey of businesses across 30 countries and regions, we find a higher propensity to export by businesses using Facebook apps and technologies (44 per cent), compared to businesses not using Facebook apps and technologies (26 per cent), in 2018-2019.⁴

Digital Technology Can Help Decrease Barriers to Growth

By lowering the costs of marketing and enabling wider customer reach, digital technologies including, as an example, Facebook apps and technologies can help businesses overcome barriers to growth. In our survey, 78 per cent of businesses that reported using Facebook apps and technologies used them for paid ads, free marketing, or finding new clients or customers in 2018-2019.

The Benefits of Digital Transformation

According to the "2023 State of Digital Transformation" report from systems, the top 10 reasons why executives pursue transformation initiatives include the following: improved customer experience (40%), improved efficiency (38%), business process transformation (38%), modernization of IT infrastructure (35%), increased innovation (31%), improved cyber security (29%), improved employee experience (24%), introduction of new business models/revenue streams (23%), increased speed to market for existing products and services (22%) and introduction of new products and services (21%).

Those Digital Transformation Benefits Include the Followings

1. Increased efficiency and productivity

Digital technologies deliver gains in efficiency and productivity by speeding up processes and streamlining operations. Technologies such as robotic process automation and AI, including machine learning, consistently demonstrate an ability to outperform humans by multifold factors in both speed and accuracy.

The economic potential of generative AI: The next productivity frontier, " a 2023 report from global consulting firm McKinsey & Company, quantified the benefits these technologies deliver, noting experts estimate that approximately half of the work activities that exist in 2023 could be automated by 2060. The report also noted that generative AI could "enable labor productivity growth of 0.1 to 0.6 percent annually through 2040, depending on the rate of technology adoption and redeployment of worker time into other activities."

2. Better resource management

As companies transform, they're replacing legacy systems serving individual business units with modern IT architectures designed to consolidate processes and seamlessly enable the flow of data across all departments. Experts said this end-to-end digital technology approach has helped CIOs and other executives eliminate duplicate and superfluous technologies, as well as associated costs. Furthermore, on-demand computing

resources and as-a-service platforms have helped organizations optimize their technology spending by providing as much computing capacity as needed in the moment versus paying for excess capacity to handle rare peaks in usage.

3. More resiliency

Organizations that embrace digital technologies and build a digital culture to celebrate change are able to quickly adapt to shifting market forces, whether it's the quick rise of ChatGPT or dramatic social and economic upheavals like those caused by COVID-19. Additionally, their pervasive use of digital technologies, particularly cloud computing, delivers built-in redundancies and elasticity that further resiliency.

4. Greater agility

Digitally savvy enterprises have the ability to not just react to change but to capitalize on it, DX experts said. As Brouhard explained, transformation programs force organizations to modernize their legacy cultural and technical debt, both of which were designed for stability and, thus, require a long time to change. In doing so, these organizations can adjust more quickly, for example, by using cloud resources to rapidly scale up or down based on needs.

5. Improved customer engagements

Digital transformation calls for becoming customer-centric, Schrage said. Consequently, digitally mature organizations have learned to innovate by first asking how they can better serve their customers through new products, services and experiences and then determining what digital capabilities will let them deliver those in a "faster, cheaper, better and more agile" manner, he said. Those organizations "design from the customer or client experience in" as opposed to making design decisions based on their technology assets, Schrage explained.

6. Increased responsiveness

Digitally transformed organizations have better customer engagement initiatives, so they're better able to anticipate evolving customer requirements and changing marketplace "Companies are leveraging technology to change the ways they create and deliver a value proposition to their customers," said Bryan Throckmorton, global digital strategy and transformation lead at management consulting firm Protiviti.

7. Greater innovation

Digitalization creates new opportunities for companies across all industries to develop products and services they couldn't create previously. Examples include tool companies that offer online services to match contractors with customers and personal gym equipment that delivers virtual on-demand exercise instruction. "New technology solutions enable organizations to innovate their business models, opening up avenues for diverse revenue streams," explained Kamales Lardi, author of *The Human Side of Digital Business Transformation* and CEO of Lardi & Partner Consulting. "For example, a car manufacturer might introduce a subscription-based model for electric vehicles, offering charging maintenance and periodic upgrades as part of the package, thus creating a recurring revenue model."

8. Faster time to market

One of the biggest digital transformation benefits is a shortened product lifecycle, as companies can lean on modern technologies such as digital twins, which virtually replicate environments, and modern processes such as analytics for insights and decision support to rapidly test, pilot, iterate and launch. "It's about how fast you can go from ideas to putting ideas into the world," said Sheldon Monteiro, chief product officer at Publicis Sapient, a global digital transformation consulting company. "If it took you months or years before, transformation can help you reduce [that timeline] to weeks, days or hours."

9. Increased revenue

Although studies have found that executives don't always see the return on investments they anticipated from their transformation efforts, research has confirmed that digitally mature companies do see a boost.

10. Continued relevancy

When done right, transformation initiatives give organizations the ability to rapidly identify customer needs, marketplace trends and new opportunities and quickly pivot to meet them. That capability, experts said, keeps organizations, regardless of industry, not only in business but ensures their long-term competitiveness.

11. Encourages employee excellence

A July 2023 survey commissioned by company 10x, found that 94% of surveyed product managers in the banking industry would leave their jobs to work for a bank with better tech; 92% would leave for a bank with more ambitious transformation goals. That, in turn, further helps boost retention. "Improving employee experience allows you to retain folks," Smith said, an especially important benefit in a tight labor market.

12. Improves future digital growth

One of the biggest benefits of a successful digital transformation effort is its ability to propel an organization to further success, DX experts said. "It helps keep you competitive, improves your ability to move forward and instills the mechanisms for more innovation," Smith said.

Conclusions

Emerging technologies and digital innovations force us to rethink and streamline business process management. Current trends in the business world are forcing organizations to focus on process if they want to remain successful. Many of these trends, such as the mobility of the workforce, rising customer expectations, and the speed at which business is conducted, are not likely to stop in the near future. Therefore, process emphasis will continue to grow as a key component of future organizational success.

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Volume – 2



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India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence

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IMPACT OF DIGITAL PUBLIC INFRASTRUCTURE AND OUTLOOK IN INDIA

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Abstract

The Digital India initiative is the dream plan of the Government of India to reshape India into a knowledge economy and a digitally empowered society with good governance for its citizens. Digital Public Infrastructure (DPI) is a shared mechanism for multiple purposes. It is an important enabler of digital transformation and helps improve public service delivery at scale. Public administrators need to ensure that the implementation of digital public infrastructure is done in a fair and transparent manner, with a focus on promoting public interest. Public administrators need to ensure that the implementation of digital public infrastructure is done in a fair and transparent manner, with a focus on promoting public interest. This paper examines the impact of digital public infrastructure in India from the perspective of public administration.

Keywords: *Digital India - identification, payment infrastructure and data exchange solution*

Introduction

Public infrastructure has been a cornerstone of human progress, but it has plagued the previous generation, making it imperative for the third type of public infrastructure called **Digital Public Infrastructure (DPI)**, with more open and democratic principles built in. This platform such as digital identification, payment infrastructure and data exchange solutions that help countries deliver essential services to their people, empowering citizens and improving lives by enabling digital inclusion. DPIs mediate the flow of people, money and information. First, the flow of people through a digital ID System. Second, the flow of money through a real-time fast payment system. And third, the flow of personal information through a consent-based data sharing system to actualize the benefits of DPIs and to empower the citizen with a real ability to control data. Technology is the key to the vision of a Digital India. Social Media, Mobility, Analytics and Cloud are the foundations that will enable the Digital India visions of providing “governance and services on demand” and “digitally empowering citizens” and support the social inclusion schemes being launched by the government. The digitization has a proven impact on economy and society by reducing unemployment, improving quality of life, and boosting access to knowledge and other public services.

Need of DPI

- Public infrastructure has been a **cornerstone of human progress**. From the transcontinental railways of the nineteenth century to telecommunication in the

twentieth century, infrastructure has been vital to facilitating the flow of people, money and information. Built on top of public infrastructure, democratic countries with largely free markets have fostered public and private innovation and, therefore, generated considerable value creation in societies.

- DPI has emerged as the most feasible model due to its low cost, interoperability and scalable design, and because of its safeguards against monopolies and digital colonisation.
- The COVID-19 pandemic accelerated the use of these systems as enforced isolation left people with no choice but to rely on these digital alternatives

Components of DPI

Digital Identity Systems

Digital identity systems are foundational to DPI. They ensure secure online identification and are increasingly prevalent worldwide. Estonia issues citizens digital IDs that grant access to over 2,000 government services online, including e-voting and e-residency.

E-Government Services: DPI includes a plethora of e-government services that reduce bureaucratic red tape, save time, and enhance transparency. Singapore's eCitizen portal, for instance, offers over 1,400 government e-services, allowing citizens to renew passports, apply for permits, and more with ease.

ODigiYatra and DigiLocker

DigiYatra is a Biometric Enabled Seamless Travel (BEST) experience based on a facial recognition system (FRS), again through a partnership between industry and government, which ensures seamless identification of passengers at key checkpoints such as airport entry, security check and boarding gate clearance.

Pen Data Initiatives

Open data initiatives involve making government data accessible to the public. The United States, through **Data.gov**, provides access to a vast repository of datasets. This transparent approach encourages innovation, research, and data-driven decision-making.

Cyber security Measures

Protecting the integrity and security of digital infrastructure is paramount. DPI incorporates robust cyber security measures, from encryption protocols to threat detection systems, safeguarding sensitive data and critical systems.

Digital Payment Systems

Digital payment systems, such as mobile apps, digital currencies, and online banking, have become an integral part of DPI. In Sweden, the adoption of mobile payment apps has reduced the need for cash, promoting convenience and financial inclusion.

Discussion

Impact of Digital Public Infrastructure on India

Digital public infrastructure has had a significant impact on India's economy and society. The impact can be seen in the following areas:

Financial inclusion: UPI has played a significant role in promoting financial inclusion in India. UPI has made it easier for the unbanked population to access digital financial services, reducing the cost of cash handling and promoting financial literacy [13].

E-Governance: Aadhaar has enabled the government to implement various e-governance initiatives such as Direct Benefit Transfer (DBT), which has reduced corruption and leakage in welfare schemes. Aadhaar has made it possible to create a digital identity for citizens, enabling the government to provide services in a more efficient and transparent manner.

Business efficiency: GSTN has simplified the tax administration process, reducing compliance costs for businesses and promoting transparency in tax administration. GSTN has made it possible for taxpayers to file returns online, reducing the time and cost of compliance [14].

Education and research: NKN has facilitated collaboration and resource-sharing among academic and research institutions, promoting innovation and knowledge sharing. NKN has made it possible for researchers to collaborate and share resources and data, accelerating the pace of research and development.

Challenges and Controversies

While digital public infrastructure has brought significant benefits to India, there are also challenges and controversies associated with these initiatives. Some of the key challenges and controversies include:

Privacy concerns: The Aadhaar initiative has faced criticism over privacy concerns. Critics argue that Aadhaar collects sensitive personal information that could be used for identity theft and other malicious activities.

Security risks: UPI has faced criticism over security concerns, with reports of fraudulent transactions and security breaches. UPI's security concerns have raised questions about the safety and reliability of digital payment systems.

Digital Public Infrastructure is the linchpin of our digital era, reshaping the way we interact with governments and organizations. From streamlined e-governance to the adoption of digital currencies, the impact of DPI is profound. However, as DPI evolves, it is essential to ensure equitable access to these services while maintaining robust security and privacy. Embracing DPI propels us toward a more efficient, innovative, and inclusive digital age, one in which public services are more accessible and user-friendly than ever before.

The New Wave in India

India's new wave of digital public infrastructure initiatives includes the national health stack, the national digital education architecture and the national language translation

mission. The national health stack aims to create a digital health infrastructure that enables the provision of affordable and accessible healthcare services. The initiative includes the creation of a health registry, health information exchanges, and digital health records. The implementation of the national health stack is expected to reduce healthcare costs and improve the quality of healthcare services. The national digital education architecture aims to create a digital infrastructure for education that enables the provision of quality education to all. The initiative includes the creation of a national digital education ecosystem, digital content repositories, and a learning management system. The implementation of the national digital education architecture is expected to improve the quality of education and promote digital literacy. The national language translation mission aims to promote the use of Indian languages in digital services and content. The initiative includes the creation of a language grid, language tools, and a language data repository. The implementation of the national language translation mission is expected to promote linguistic diversity and enable access to digital services for non-English speaking individuals.

Conclusion

Impact of Digital Public Infrastructure and Outlook in India. The world needs a new playbook for digital infrastructure that mediates the flow of people, money and information. It will help countries that want to digitally empower their citizens. They can then quickly build sites that address people's specific needs.

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ROLE AND FUTURE OF DIGITALIZATION IN BUSINESS - A QUALITATIVE STUDY

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Abstract

In the dynamic and rapidly evolving business landscape, organizations are increasingly recognizing the pivotal role of digital innovation in shaping their competitiveness and sustainability. This Study provides an overview of the key facets of digital innovation in the business context. This is a qualitative study examines the role of digitalization in business innovation and find out the strength, weakness, opportunities and threats of Digitalization in business through role and predict the future of digitalization in business. The study concludes the various roles of digitalization in business and interpret SWOC analysis and perfectly predict the future of digitalization.

Keywords: Digitalization, Business, Innovation, SWOC Analysis

Introduction

In the era of rapid technological advancement, the business landscape is undergoing a profound transformation fueled by digital innovation. Digital technologies have become pervasive, reshaping the way organizations operate, strategize, and engage with their stakeholders. From artificial intelligence and data analytics to blockchain and the Internet of Things, the digital revolution is challenging traditional norms and creating unprecedented opportunities for businesses. As we embark on this journey into the realm of digital innovation in business, it is clear that the fusion of technology and strategy is reshaping industries and challenging traditional paradigms. This exploration aims to unravel the layers of this transformative process, examining how digital innovation is not merely a tool but a catalyst for organizational evolution and sustained success in the 21st-century.

Review of Literature

The Following review of literature were scrutinized and presented in the following paragraph,

HelisiaMargahana (2024) in his study, "Business Development In The Digital Age" depicts that high global competition puts its own demands on businesses to continuously improve product innovation by utilizing existing technology to face these global challenges. Businesses that succeed in the digital era are those that can adapt quickly and remain responsive to changes in the market and technology. Businesses need to adapt to technological developments and utilize them to improve business quality and expand market reach.

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ROLE OF ENTREPRENEURSHIP IN PROMOTING RURAL WOMEN EMPOWERMENT

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Abstract

Woman creates a family which leads to society and nation. The social and economic development of women is essential for the overall economic development to any society or country. Although entrepreneurship is in the mindset of any woman, it is not invested in India the way it should be. Although there are some exceptions, due to the changing environment, people are comfortable accepting the important role of women in our society. Entrepreneurial development of women is an essential part of human resource development. Any strategy aimed at economic growth without engaging women, who make up half of the world's population, will back fire. Evidence has unequivocally established that entrepreneurial spirit is not a male prerogative. Women-owned businesses are increasing rapidly in almost all economies. Women's latent entrepreneurial potential is gradually changing with growing sensitivity to role in society and economic status. Skill, knowledge and adaptability in business are the main reasons why women emerge in business ventures. The main objectives of the study are to find out the factors that contribute to the formation of female entrepreneurs. The study also highlights the major barriers and challenges faced by women entrepreneurs and the opportunities available to them. Finally the paper makes some commendations to increase or promote women entrepreneurship and healthy development of women entrepreneurship in India.

Keywords: Women Entrepreneurship, Role, Self-Fulfillment, Entrepreneurship Development.

Introduction

Women's empowerment is a social process in which women expand and recreate what it means to be in a previously denied situation. There are many principles that define women's empowerment, for one to be empowered; they must come from a position of disempowerment. Entrepreneur is the agent who buys means of production at certain prices, in order to sell at prices that are certain at the moment at which he commits himself to his cost". According to P.F Drucker "he is one who always searches for change: responds to it & exploits it as an opportunity". Hence, Entrepreneurship refers to the act of setting up a new business or reviving an existing business so as to take advantages from new opportunities. Women have

developed tremendously in their mentality. With increasing dependence on the service sector, many entrepreneurial opportunities have been created, especially for women, where they can enhance their skills while maintaining a balance in their lives.

Objectives

The study has the following objectives

- To understand the philosophy and concept of women empowerment and entrepreneur development in rural area.
- To identify the impact of entrepreneur development on women empowerment; and
- To suggest one possible solution for encouraging; developing; and improving the women empowerment in emerging economies.

Methodology

Given the nature of the present study, data had to be collected from secondary sources. The author was always mindful of the objectives of the study and collected data accordingly to achieve those objectives. Secondary data was collected from research studies, books, journals, newspapers and on going academic work papers. The collected data can be processed and analyzed to make the present study useful for the practitioners, researchers, planners, policymakers and educators of the concerned area.

Analysis and Findings

1. Empowerment

Empowerment means that people have power and control over their own lives. People get the support they need. Empowerment means that people are equal citizens. They are respected and trusted in their community. Empowerment as action refers to the process of self-empowerment and professional support of people to overcome their feelings of powerlessness and lack of influence, and to identify and use their resources. The term empowerment originates from American social psychology and is associated with social scientist Julian Rappaport (1981).[1] However, the roots of empowerment theory extend further into history and are linked to Marxist sociological theory. These sociological concepts are continuously developed and refined through neo-Marxist theory. Empowerment redistributes power from the powerful to the powerless. It is more than participation in decision making, it must also include the process that lead people to perceive themselves as able and entitled to make decisions (Prasad & Sahay, 2000). Empowerment must

involve undoing negative social construction, so that people come to see themselves as having the capacity and the right to act and influence decisions (Rowlands, 1997).

II. Entrepreneurship

Entrepreneurship is the creation or extraction of economic value. With this definition, entrepreneurship is viewed as change, generally entailing risk beyond what is normally encountered instarting a business, which may include other values than simply economic ones. An entrepreneur is an individual who creates and/or invests in one or more businesses, bearing most of the risks and enjoying most of the rewards. The process of setting up a business is known as entrepreneurship. The entrepreneuris commonly seen as an innovator, a source of new ideas, goods, services, and business/or procedures. More narrow definitions have described entrepreneurship as the process of designing, launching and running a new business, which is often similar to a small business, or as the "capacity and willingness to develop, organize and manage a business venture along with any of its risks to make a profit. The people who create these businesses are often referred to as entrepreneurs. While definitions of entrepreneurship typically focus on the launching and running of businesses, due to the high risks involved in launching a start-up, a significant proportion of start-up businesses have to close due to "lack of funding, bad business decisions, government policies, an economic crisis, lack of market demand, or a combination of all of these."

Characteristics of Entrepreneurship

Not all entrepreneurs are successful; there are definite characteristics that make entrepreneurship successful. A few of them are mentioned below:

- **Ability to take a risk:** Starting any new venture involves a considerable amount of failure risk. Therefore, an entrepreneur needs to be courageous and able to evaluate and take risks, which is an essential part of being an entrepreneur.
- **Innovation:** Its hould be highly innovative to generate new ideas, start a company and earn profits out of it. Change can be the launching of a new product that is new to the market or a process that does the same thing but in a more efficient and economical way.
- **Visionary and Leadership quality:** To be successful, the entrepreneur should have a clear visionof his new venture. However, to turn the idea into reality, a lot of resources and employees are required. Here, leadership quality is paramount because leaders impart and guide their employees towards the right path of success.

- **Open-Minded:** In a business, every circumstance can be an opportunity and used for the benefit of a company. For example, Paytm recognized the gravity of demonetization and acknowledged the need for online transactions would be more, so it utilized the situation and expanded massively during this time.
- **Flexible:** An entrepreneur should be flexible and open to change according to the situation. To be on the top, a business person should be equipped to embrace change in a product and service, as and when needed.

III. Empowerment of women through empowerment

In the early 1980s, the United Nations reported that women performed two-thirds of the world's work. The world's labor earned one-tenth of the world's income and owned one-hundredth World Economic Resources (Laois, 2000). A tool for women empowerment is self-employment or entrepreneurship. Why women choose self-employment or Entrepreneurship? In one study autonomy was rated highly as a means to gain Personal freedom. This level of autonomy offers opportunities to:

- (1) Be able to their Own Decisions
- (2) Able to do optional work
- (3) To reach Financial Independence

The impact of ED on Empowerment

1. Self- confidence of women

Increased self-confidence through entrepreneurship development for women a prosperous future.

2. Economic Solvency

Economic solution the most significant changes come from increases in income, not just upgrades the individual's life but increases her quality of life, the economy increases hardness within the family. Increase in her income also increase in family income and it provides better lifestyle including education to the family members improving child and family health.

3. Capital Building

Women economic success enables women to expand their business, procure new machinery, tools, accessories and relevant necessities. Modernization of the workplace, introduction of new technology for increase production, increase of labourers, along with the increase in purchasing power, upgrades their status both socially and economically.

4. Role of Status

Some aspects of household decision making are reported to have changed as a result of women's contribution in family income. Most of the men now consult with

their wives in important family matters. Their power of decision making has increased because they have money. Since women retain control over earnings, women can easily lend small and big amounts to business and others without asking for their husbands' permission. Since women perceive that their bargaining power within the family has increased as an indirect outcome of participating in the business. Women's status has changed in the family and society gradually.

Conclusion

Empowerment is scalable. Women develop their managerial skills and develop visions of growth that embrace strategic planning areas. Empowerment Women's economic independence leads to control over their lives, self-determination and self-fulfillment. Empowerment by Self-employment is associated with women's ability to gain control over economic resources and participate fully in the wealth building process. Empowerment leads to the self-fulfillment of knowing where women are headed.

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PERSPECTIVE OF ICT TOOLS IN EDUCATION

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ICT TOOLS IN TEACHING LEARNING PROCESS

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Abstract

Information communication technology is a general term that refers to the technologies used to collect, store, edit and communicate information in various forms. ICT is the use of computer-based technology is used in education is an educational system that uses information and communication technology to support, enhance and enhance the delivery of information. Adapting to these new technologies is a slow process, but it allows many teachers to improve the quality of teaching. Global research has shown that ICT can lead to improved student learning and better teaching methods to make information and communication services widely available to users. E-learning can be termed a network-enabled transfer of skills and knowledge. While teaching can be based in or out of the classrooms, the use of computers and the Internet forms the major component of E-learning. Many institutions of higher education and universities are resorting to E-Learning. Many corporate companies are also deeply investing in E-learning and setting up interactive classrooms activity. Technology has taken over our entire life and education is no exception to it, technological advancement has a great effect on how learning is imparted and also consumed.

Keywords: *ICT Tools-E-Learning-Digital Platform-Satisfaction*

Introduction

Information technology (IT) is defined as the study or use of electronic equipment's, especially computers for storing, analyzing and sending out information. Communication technology is the process of sending, receiving and exchanging information. ICTS can be defined as "diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information." These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony. The use of e-learning in education improves the quality of practical education and a better understanding of the subject. Indira Gandhi National Open University (IGNOU), the world's largest Open University launched a 24x7 E-learning satellite channel called GyanDarshan. E-learning gives the advantage of 24x7 and 365 days a year-round access as compared to Instructor-Led Training, which is a one-time class that must be scheduled. Undoubtedly, one lecture can teach more students wide geographic area by responding to e-learning technology. In general, this review provides important information to increase the knowledge base of various performance educational methods. In the future, there is still a need to develop and evaluate such methods education among higher education students. It is important that these studies are conducted show effectiveness, and they should also focus on outcomes at different levels.

Statement of Problem

The purpose of this research is that the government introduces many new technologies in the country to suit the people's society in order to fulfill the objective of development of the country. A project like Digital transformation in education. E-learning level perception, culture and satisfaction varies from person to person due to many factors such as gender, education etc.

Objective of the Study

- To study the awareness level of people towards ICT tools
- To apply critical thinking skills to their students action, behavior and social engagement on digital platform.
- To identify the satisfaction towards e-learning.

Review of literature

Sahlam et-al (2021) made a study on "The effects of modes of test administration on test scores: A study in an Indonesian school ". The main objectives of this study the effect of gender and the interaction effect between gender and mode of testing on test scores were significant. The primary and secondary data were used for this study. 234 respondents were collected for this study by using simple Random sampling method. The statistical tools like simple percentage will be used to analysis the data. The study revealed that indicated that neither gender, mode of test administration nor the interaction between gender and mode students anxiety levels. **Noreen & Malik, (2020)**. It is found that, teachers also require the necessary infrastructure, hardware and software, reliable high-speed internet connectivity, continuous professional development and the support of administrators. **Muhammad Hafeez (2021)** discovered that Teaching-Learning Process and ICT Tools- A Review and found that usage of modern ICT tools in teaching- learning process successfully improved the teaching-learning process and the traditional lecture learning does not improve the cognitive and communication skills of the learners. **Dr. Pranjal Grover et-al (2021)** made a study on "Efficiency of online pre-Recorded practical demonstrations and live Streamed practical demonstrations in third year physiotherapy students during the COVID-19 pandemic-a survey ".The main objective of this study is to understand the efficacy of online pre-recorded practical demonstrations. The primary data were used for this study. 44 respondents were collected for this study by using a complete enumeration sampling method. Statistical tools like simple percentages will be used.

Table 1

Variable	Number of respondents	Percentage
Age:		
Below 20 years	68	55.76
21- 30 years	87	43.58
31-40 years	1	0.66
Total	156	100

Area:		
Rural	98	62.82
Semi -urban	13	28.84
Urban	45	8.33
Total	156	100
Gender:		
Male	37	23.71
Female	119	76.28
Total	156	100
Marital status:		
Married	12	7.69
Unmarried	144	92.30
Total	156	100
Educational qualification:		
up to HSC	11	53.20
UG	83	37.17
PG	58	7.05
Others	4	0.64
Total	156	100
Occupation :		
Agriculture	22	73.07
Salaried Person	16	13.46
Labour	5	10.25
Business	113	3.20
Total	156	100
Digital Platforms tools used		
Yes	125	80
No	31	20
Total	156	100

Data: primary data

From the above table shows that Majority of the respondents are age group between 21-30 years. Most of the respondents are rural area. Majority (76.28%) of the respondents are gender in female. Majority (92.30%) of the respondents are marital status in unmarried. Majority (53.20%) of the respondents are Educational qualifications UG level. Majority (73.07%) of the respondents are Occupation level in Students.

Chi Square Test**Chi square value 5% @Satisfaction onlevel of people****Table 2**

S.No	Particulars	D.F	Chi square Value	Table value	Result
1	Age	4	10.316	9.488	Rejected
2	Area	2	9.375	5.991	Rejected
3	Education qualification	6	11.069	12.592	Accepted

Source: Primary data

From the above table found that respondents calculated chi-square is higher than table value at five percent level, there are significant association between the demographic variables and level of satisfaction. Null hypothesis rejected.

Conclusion

Digitization of legacy and vintage structures has replaced conventional operations with new technology and fashions. Due to that technology the instructional part has additionally got a big change and has changed the conventional training version to a brand new technology based smart version. By digitizing the learning experience, both college students and instructors can hone their skills and create a lively instructional process. Digital transformation can be implemented in many aspects within the academic quarter, including new student recruitment, online knowledge acquisition, scholarly assessments, personalized knowledge of experiences and exams. Generational penetration within the instructional quarter has promised dynamic participation and proposed new methods of training and mastering methods

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ROLE OF MSME IN CONNECTING SOCIETY

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Abstract

Over the past few decades, the Micro, Small and Medium Enterprises sector has emerged as an exceedingly lively and dynamic Indian economy sector. MSMEs in India have been increasingly become important for the sole reason of their role in the Indian economic structure. The MSME sector is vital for India's economy. There are more than 6 crore enterprises in various industries, employing more than 10 crore people. India's micro-sized enterprises face many hurdles and yet are capable of taking advantage of opportunities in rapidly changing global markets. MSMEs contribute significantly to the country's industrial output, jobs, exports and consistent employment growth, followed by agriculture.

Introduction to MSME

The Government of India has been promoting MSME as powerful instrument for realizing the twin objectives of "accelerate industrial growth & creating additional productive employment potential in rural & backward areas", thus connecting various section of the societies. These business, spread across the country, are the backbone of Indian economy – driving growth, employment, exports & productivity. MSME contributes nearly 27% of the country's GDP. It primarily works for the development of people from backward & rural areas. They encourage the growth of entrepreneurship as well as upgrading of skills by establishing specialized training centers.

Micro, Small and Medium Enterprises (MSME) contributes significantly to the development of society & acts as vital link in the industrialization in terms of production, employment and exports of economic prosperity. MSME dominate the industrial scenario in the country with sizeable proportion of labor force and tremendous export potential. MSME's are widening their domain across sectors of the economy, producing diverse range of products and services to meet demands of domestic as well as global markets. MSME enjoys a distinct position in view of their contribution to the socio-economic development of the country.

Role of MSME's in Indian Economy

The MSME's have been contributing significantly to the expansion of entrepreneurial endeavors through business innovations. They play a huge role by providing large employment opportunities at comparatively lower capital cost than large industries as well

as through industrialization of rural & backward areas, inter alia, reducing regional imbalances, assuring more equitable distribution of national income & wealth. The sector not only plays a critical role in providing employment opportunities at comparatively lower capital cost than large industries but also helps in industrialization of rural and backward areas, reducing regional imbalances and assuring more equitable distribution of national income and wealth. MSMEs complement large industries as ancillary units and contribute enormously to the socioeconomic development of the country. The MSME sector contributes to 45% of India's Total Industrial Employment, 50% of India's Total Exports and 95% of all industrial units of the country and more than 6000 types of products are manufactured in these industries (As per msme.gov.in). When these industries grow, the economy of the country grows as a whole and flourishes.

Connecting Society

MSME's provide a huge impact to the society in the way of:

- a. **Fostering growth in backward & underdeveloped regions:** A large number of MSME's are located in rural & backward areas which promotes economic activity & create employment opportunities in these regions
- b. **Driver of change:** Women entrepreneurs are going from strength to strength with 20.37% of proprietary MSME's being owned by a female. And to top it off, the socially backward groups owned almost 66.27% of MSME's

Sector	Male	Female	All
Rural	77.76	22.24	100
Urban	81.58	18.42	100
All	79.63	20.37	100

Sector	SC	ST	OBC	Others	Not known	All
Rural	15.37	6.70	51.59	25.62	0.72	100
Urban	9.45	1.43	47.80	40.46	0.86	100
All	12.45	4.10	49.72	32.95	0.791	100

- c. **Job creation & reducing regional disparities:** MSMEs are expanding with a consistent development rate and giving both urban and rural people with employment opportunities. According to the 2017-18 MSME report, about 49 percent of MSMEs are located in urban areas, while 51 percent in rural areas make a good contribution towards development in those areas. As a result, the standard of living of the population of rural areas is improving healthily
- d. **Making growth inclusive:** MSMEs are instruments of inclusive growth which touch upon the lives of the most vulnerable and marginalized. For many families, it is the only source of livelihood. Thus, instead of taking a welfare approach, this

sector seeks to empower people to break the cycle of poverty and deprivation. It focuses on people's skills.

- e. **Economic growth:** MSME invests in new technology & infrastructure that can create a positive ripple effect throughout the society. They drive competition, which can lead to lower prices & higher quality products, services. They are often the forefront of innovation, developing new products, services & business models that can disrupt established industries & encourage growth.
- f. **Community development:** They provide goods & services that are tailored to the needs of the community & often support local charities & organizations. By sourcing materials locally, they stimulate local economy & help to build strong, sustainable communities. In addition, they are often owned & operated by members of the community, creating a sense of pride & ownership of the community.

Conclusion

The government and private sectors have a responsibility to create an enabling environment that supports MSME's growth and success by creating favorable policies and regulations, providing funding and access to capital, offering training and education programs, and promoting partnerships. Ultimately, cooperation between private sectors and the government is the key to maximize the impact of these initiatives. If these initiatives are implemented, it will certainly drive sustainable economic growth in the country.

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ABOUT THE DEPARTMENT

The PG Department of Commerce with International Business is established in the year 2002 with a prime motto to uplift the rural students to know the edge in the specialized field of International Business. The syllabus is designed, crit. developed at regular intervals, since it is a self. The PG programme is covering students from undergraduate and the course is framed to cater to, fill the needs and wants of the student and industry as well. The PG programme is initiated as a mark of the Silver Jubilee Year of the College in 2017. The Department has been offering various useful skills, leadership qualities and preparing the students at least of level. It wishes the students in various Skill Development Programmes, Orientation Programmes, Workshop and Extension Activities. It keenly concentrates on the recent trends prevailing in the environment, updates its syllabus to match it with the industrial needs and sends the students accordingly, so as to get success with the help of Team Work. The Strength of the Department is its Qualified Faculty Team which always focuses on achieving the goals of Student and College as well.

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CHALLENGES FACED BY COTTAGE INDUSTRY IN INDIA

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Introduction

In India, cottage industries are a major source of employment and livelihood. These industries are also the backbone of the Indian economy. The cottage industry is an industry that is small-scale and informal. This business idea among other small business ideas is typically a family business and the owner of the business lives on the premises. Small-scale units or manufacturing businesses managed by family members from their homes or establishments usually near their homes. They are the backbone of the Indian economy. In India, the Khadi and Village Industries Commission (KVIC) is the organization that promotes village and cottage industries. These industries fulfill the basic needs of local markets and all its requirements like raw materials, skilled labour, etc., are met from within the village. They include handloom, pottery making, food processing, pickles, khadi, etc. The government, on the other hand, has taken steps to revitalize cottage industries, and they now play an important role in the country's economy. Cotton weaving, silk weaving, carpet making, leather industry, metal handicrafts, and small food processing businesses are the top five Indian cottage industries. In India, cotton weaving is a significant cottage industry. Cotton clothing is frequently worn throughout the country, therefore this expertise extends back to ancient times. Cotton weaving in India is noted for its traditional motifs and patterns created by skilled weavers using looms. Maharashtra, Tamil Nadu, and Gujarat are the cotton-producing states in India. Another well-known cottage industry in India is silk weaving. Silk is worn on important occasions such as weddings and festivals, and India is one of the largest manufacturers and consumers of the material. India's silk varieties include Mulberry, Muga, Tassore, and Eri. Karnataka accounts for approximately 70% of India's silk weaving industry. During the Mughal dynasty, carpet making was brought to India. India is also famed for its durries and coir mats, despite the fact that Kashmiri carpets are world-renowned for their exquisite quality. Kashmir, Rajasthan, Punjab, Uttar Pradesh, Andhra Pradesh, and Punjab are all home to the carpet industry in India. The Carpet Export Promotion Council was established by the Indian government to promote hand knitted rugs and various types and styles of floor coverings from around the country. India is a major exporter of high-quality leather to other countries.

Types of Indian Cottage Industries

Cottage industries are manufacturing enterprises that do most of their labor by hand. India is famous and well known for its diverse culture, handicrafts of traditional cottage industries and variety of business. Cotton weaving, carpet weaving, silk weaving, leather industry, metal handicrafts and small scale food processing are the major cottage industries in India.

1. Cotton Weaving:

Cotton weaving is a significant cottage industry in India. As cotton clothes are widely worn throughout the country, the knowledge is ancient. Cotton clothing is famous for its traditional style, vibrant color and designs made by expert weavers using handloom. Gujarat, Tamil Nadu and Maharashtra are three major cotton producing states.

2. Silk Weaving:

Another well-known cottage industry in India is silk weaving. Our nation produces and exports a significant amount of silk, both domestically and abroad. Karnataka produces the most silk, making up over 70% of the entire silk weaving business. Mulberry, Tassore, Muga, and Eri silks are produced in our count.

3. Carpet Weaving:

During the Mughal era, carpet weaving was first introduced to India. The durries and coir carpets are equally renowned for their exceptional quality and texture as the Kashmiri carpet. In spite of the fact that the carpet industry is widespread throughout the nation, it is largely concentrated in Kashmir, Rajasthan, Punjab, Uttar Pradesh, Andhra Pradesh, and Punjab. The Carpet Export Council was also founded by the Indian government to promote knotted rugs and other types of floor coverings from all around the nation.

4. Leather Production:

India is a significant producer of premium leather for export to international markets, providing around 10% of the demand. One of India's top export earners and one with almost 2.5 million workers is the leather industry. The Indian states that produce leather are Uttar Pradesh, West Bengal, and Tamil Nadu.

5. Metal Works:

Metal has long been used in India to make figurines, jewellery, utensils, and other objects. India's metal handicrafts are well-liked worldwide and have a major economic impact on the nation. Metal handicrafts are created using hand-operated tools rather than sophisticated machinery.

Issues Faced by the Cottage Industries in India

The lack of access to adequate finance options and limited technical knowledge has made it difficult for cottage industries to fulfil domestic and international customer

demands, thereby inhibiting their growth. These are some of the major issues faced by cottage industries in India – let's learn more about each one of them individually in the following sections.

1. Self-Employed Labor Shortage

The self-employed labor shortage is a major problem faced by Indian cottage industries. The lack of skilled laborers has been made worse by the Great Recession and economic slowdown, which led to a large number of factory workers losing their jobs. Most cottage industries are made up of small-scale producers who find it difficult to attract employees due to low wages, insecure working conditions, and long hours. These challenges have worsened with the rise in unemployment rates across the country. Cottage industries also have difficulties finding skilled employees because many young people choose not to pursue traditional occupations and apprenticeships.

2. Low Demand for Handmade Goods

The majority of the demand for handmade products comes from tourists visiting the country. But unfortunately, not enough people live in these villages to keep up with production. It means that most of these goods are not made locally and can't be sold nearby. The result is a vicious cycle where supply and demand cannot meet due to a lack of market access. There's a general misconception that cottage industry goods should be easy to transport because they're small. However, this isn't always the case! For example, if you want to ship something fragile like silverware to long distances without damaging it, you will need high-quality packing materials. One of the unfortunate realities when it comes to cottage industries is low-quality products. These businesses often have little knowledge of producing high-quality goods, leaving many unsatisfied buyers.

3. Lack of Financing Options

Traditional banks offer loans with higher interest rates than microfinance institutions. The perception of high-interest rates may be that they are due to the poor credit history and low income of the rural borrowers. However, there are other reasons for the high cost of these loans. For example, traditional banks charge a commission for processing the loan. The process is lengthy and demanding for bank staff and customers, so it costs more to service each loan transaction. Moreover, using outdated manual systems to process data limits efficiency, increasing costs. In contrast, many microfinance institutions offer their customers products with lower rates and no commissions on transactions because they do not have expensive brick-and-mortar branches or costly IT infrastructure; instead, they mainly operate online or through mobile phone banking apps.

4. Government Regulations

Each state has its regulations that govern the industries, so it is important to consult your local government officials and determine the regulations before starting a business. For example, each state restricts how many days a week a business can be open or if

employees must wear certain clothing. There may also be a restriction on when employees can take breaks during the day. As another example, there may be different child labour laws for children under 14 years old compared to children over the age of 14 years.

5. Poor Working Conditions

In the past, people worked in these spaces for up to 18 hours a day. They'd work with chemicals and dangerous tools, often without protective gear or knowledge of how to use them safely. And they were paid only a fraction of what they were worth. In recent years, we've seen some progress. The Indian government has passed legislation that mandates fair wages and working hours for this industry. But there are still many challenges – like limited access to markets for their products or lack of business skills – that limit their success.

6. Ineffective Marketing Strategies

Cottage industries in India need to take marketing into their own hands because there are not enough jobs available. Of course, marketing is an important part of any business, but it's essential for businesses that rely on word-of-mouth and referral. As a result, these businesses will have to be more creative in advertising themselves. For example, they could try sending emails with their products and services attached, sponsoring events, participating in community groups, or partnering with local hotels or restaurants. Investors want nothing short of success for the companies they invest in. But investors also know these enterprises start small and don't grow overnight. As a result, it can be difficult for them to make money as quickly as they would like from investments, so they might stop investing altogether or only offer a little before reducing investment levels even further later on down the line if things don't improve.

7. No Brand Identity

It is not uncommon for small businesses to have issues with branding and marketing. They may not have the funds or expertise to develop a strong brand identity design, which leads to a lack of awareness and visibility. For example, if you are a fashion designer who produces clothing but doesn't have the funds or skills to create your website, people may not know that you exist because they couldn't find your products on search engines. That is why small businesses need to identify their strengths and weaknesses to use the right platforms and techniques to reach their target audience.

8. Quality Control Issues

One major problem faced by cottage industries is quality control. The vast majority of cottage industries are family owned and operated. When the owner is also the manufacturer, they are not able to monitor the quality of their products as well as a corporation might be able to. They will often produce goods until they run out of materials instead of monitoring the quality and stopping when a sufficient amount has been made. As a result, some buyers complain about receiving low-quality items that do not meet their

expectations or are defective because they were rushed to make them before running out of materials.

9. Lack of Government Support

The Indian government has not been supportive of the cottage industries. The government's policies do not support the growth and development of cottage industries. For example, cottage industries are only given a 15% discount on the minimum rate they need to pay on electricity charges when they purchase their power from a State Electricity Board (SEB) instead of a 50% discount if they purchase their power from private companies. It makes it difficult for these small businesses to survive, as they will have to spend more money each month to use electricity.

10. Sustainability Issues

One major issue that many cottage industries have is sustainability. There are not as many jobs as there used to be, and the demand for handmade goods is decreasing. It means that the cottage industries have less income, which makes it hard to maintain their business operations..

Government Actions to Resolve the Problem

The government has launched a number of efforts to address the problems facing the cottage and small scale industries because of their significance. The first actions taken are as follows:

- A number of organisations have been established by the Union Government to support small companies and rural communities. They include the Central Silk Board, the All India Handicrafts Board, the AH India-Handloom Board, and the Khadi and Village Industries Commission.
- There are now industrial cooperatives, industrial estates, and rural industrial initiatives.
- To encourage the small-scale manufacturing sector, the Central Government has designated 807 products for exclusive manufacture.
- District Industries Centers are being created at the district level to house all the support and services needed for small and village businesses.
- The Industrial Policy Resolution of 1980 provides the following provisions for the growth of home-based and small-scale businesses:
 1. Launching a programme to create buffer stocks of essential goods, which are frequently hard to get by. Priority will be given to the special needs of those states that depend heavily on a small number of essential raw materials.
 2. In order to produce as many ancillaries, small, and cottage units as possible, the government will establish a few nucleus plants in each district. A nucleus plant would bring together the output of the auxiliary and small-scale units that fell inside its orbit.
 3. Increasing the cap on capital investments for small and supporting businesses.

Problems of Cottage and Small-Scale Industries

The major problems faced by the cottage and small-scale industries are stated below:

1. Non-availability of timely and adequate credit.
2. Inefficient management
3. Lack of infrastructure
4. Technological obsolescence
5. Limited availability of raw materials
6. Marketing problems
7. Competition with large-scale industries and imports.
8. Excessive burden of local taxes
9. Widespread sickness

Conclusion

India's cottage industries are culturally and economically significant. They preserve ancient traditions while simultaneously employing a large number of people. Because these industries confront intense competition from other economies, society should provide support to prevent exploitation and further develop them. The only solution to combat the monster of unemployment in over-populated countries like ours is to promote cottage and small-scale industries. Cottage industries are unorganized and fall under the category of small scale industries. They use traditional ways to create consumable goods. Furthermore, these industries emerge in areas where unemployment and underemployment are common. As a result of this technique, the cottage industry benefits the economy by absorbing a large portion of the surviving workers in rural areas. On the other hand, the industry faces numerous challenges in a variety of ways. As a result, the government is attempting to address the sector's issues since it recognises that the sector has a lot of promise in a variety of sectors if properly supported.

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Volume – 2



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India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence

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DIGITAL ECONOMY

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Abstract

The digital economy is based on electronic goods and services produced by e-commerce, an enterprise with electronic production and management processes that interacts with its partners and customers and conducts transactions via the Internet and networked communication technologies. With a growing population and a mobilization of resources, the digital economy is not limited to commerce and services that touch all aspects of life, from healthcare to education, from business to banking. Many observers have noted the rapid development of the digital economy in general. Great attention is paid to the continuous and spectacular development of electronic commerce. Despite its rapid growth in recent years, we view the emergence of the digital economy as an important trend that is just part of a broader, evolving economic fabric driven by dramatic changes in digital and information technology (IT). The main objective of the article is to show the impact of the digital economy through the Internet and network technologies.

Keywords: Digital Economy, Global Economy

Introduction

Digital economy is one collective term for all economic transactions that occur on the internet. It is also known as the Web Economy or the Internet Economy. With the advent of technology and the process of globalization, the digital and traditional economies are merging into one. Let us learn more about this concept of digital economy. Digital economy is defined as an economy that focuses on digital technologies, i.e. it is based on digital and computing technologies. It essentially covers all business, economic, social, cultural etc. activities that are supported by the web and other digital communication technologies.

The world lives under the impulse of radical changes, the revolution of science, technology and movement. A wide range of fields is the result of this spectacular development of science and technology. Development has given the world economy its previous speed and efficiency, which, among other things, has led to the emergence of new ideas that reflect this development. We find an economic globalization that has reduced the world to a small village. There have been tremendous advances in technology and a significant development of the world. The field of information and communication is due to the emergence of new patterns in human economic life as the economy has become heavily dependent on technology, social affairs and science. This has led to a change in ways and means in all areas of life. The implementation of economic activities has led to the emergence of a new type of economy, the so-called "digital economy". or the information economy, which expresses a vision of the future. In the world of business intelligence is the cornerstone of business.

The digital economy promotes the spread of the information and knowledge society as it entails a series of strategic changes in the nature and organization of the economic

environment in order to better respond to the challenges of globalization and communication through information and communication technologies. Information and communication technologies (ICT) are among the most important movements of the 21st century with their accelerated phases of development and their global spread. Technology has become the common language of the peoples of the world and the fundamental basis of their contacts, progress and development to follow the Chronology that has eliminated distances and facilitated access to information. Through interaction, exchange and participation in political, economic, social and scientific areas.

Literature Review

Muhammad Zaki Hassan's study (2019). Digital economy (advantages, challenges and applications). One of the most important movements of the twenty-first century is information and communications technology, its rapid development and spread in the world. Technical technology has become the only language of the world's peoples and the fundamental basis for its dealings, upgrading its progress and development in order to keep pace with the temporal sequences that have ended and facilitate access to information, through interaction, exchange and participation in the political, economic, social and scientific fields. Clearly, this type of economy depends on information technology, communications, connectivity to the global information network and digital information-sharing services that have dropped and removed all borders and barriers to the flow of information, goods and services, and capital mobility for market access, regardless of where they exist and when the economy is unlimited. The world's conflict has become rapidly accessing information and having the methods of its circulation and analysis to make a sound decision based on accuracy in the formulation of States' economic policy.

Bui, T. H., & Nguyen, V. P. (2023). The impact of artificial intelligence and digital economy on Vietnam's legal system. Digital transformation incorporates new technology into all elements of business and will require the modification of old business models. Similarly, artificial intelligence (AI) is a relatively new disruptive technology with the potential to impact industry and society substantially. Cognitive techniques imitating human behavior and thought have resulted in advanced analytical models that assist businesses in increasing sales and improving customer engagement, operational efficiency, and service quality by producing new relevant from existing data. These decision-making models are based on descriptive, predictive, and prescriptive analytics. A legislative framework that oversees all digital development uniformly across countries and facilitates a fully regulated digital transformation process is required. However, this regulatory system must not hinder the digital revolution. This study shows that AI and digital transformation will be integrated into various applications and thus used extensively. Nonetheless, the implementation must be carried out in conformity with both standard regulations and the new realities.

Chen, Y., Xu, S., Lyulyov, O., & Pimonenko, T. (2023). China's digital economy development: incentives and challenges. The development of the digital economy has become a new way to respond to the epidemic impact effectively. With the innovative breakthrough of information and communication technology, the digital and real economies are deeply integrated. The digital economy has become an important driving force for the transformation of economic momentum and development. Panel data from 31 provinces in China from 2010 to 2019 were selected for analysis. In the first stage, the study constructed the evaluation index system of digital economy development. Then, the quality development index of the digital economy is calculated by using the entropy method. Finally, the main factors of digital economy development are analyzed by spatial measurement. The research results prove that: (1) the development of China's digital economy in 2010–2019 has gradually increased; (2) the development of the digital economy has a positive correlation between regions and has a spatial spillover effect; (3) the level of economic development, urbanization, government support, industrial structure, and the level of opening will promote the development of the digital economy.

Characteristics of the Digital Economy

- **Digitized and Tracked**

With the advent of technology, objects generate digital signals, these signals can be measured, tracked and analyzed which helps in better decision making. While the cost involved in equipment and machinery is quite high.

- **Connected**

Digital economy helps in better communication by interlinking of assets suppliers, workers and stakeholders who indirectly improves the safety, efficiency, and visibility of the business. Therefore, the business can function much better by adopting the digital economy.

- **Shared**

The digital economy functions by sharing. What one company needs are fulfilled by the other, so this is their shared process i.e. Purchasing what is needed as well as buying the services.

- **Personalized**

The digital economy is fully depended upon the customer personalization. Therefore, it is a fully personalized economy. Therefore, companies try to deliver products as per the need and demand of customers.

Advantages of Digital Economy

- **Promotes Use of the Internet**

Today most of the work is done on the internet and with the help of the internet. Therefore, there is a dramatic rise in investment of technology. Thus, higher demand for hardware, technological research, software, services, digital communication, etc is there which has indirectly affected the imports as well as the exports in the world.

- **Rise in E-Commerce**

With the rise of the digital economy, E-commerce has also gained importance and increasingly gaining the market. Every task related to buying, distribution, marketing, creating, selling is now just a click away all because of the digital economy.

- **Digital Goods and Services**

Nowadays, goods are available to us digitally. We don't need to go to the market and purchase goods, even the services as well are now available on the internet. If you want to watch a movie you can buy it from the online website or download it, and in case of baking services if you want to visit your bank to make payment to anyone that too you can do with the help of internet. So, goods and services have become digital now.

- **Transparency**

All the transactions in the digital economy happen online. Therefore, there is no need for cash which indirectly has reduced the black money and corruption in the market giving our economy more transparency.

Disadvantages of Digital Economy

- **Loss in Employment**

As we are depending more on technology, we are moving away from the natural as well as human resources in our society. And this is affecting the unemployment ratio which has grown with the advent of technology. Due to this technology and the digital economy; we are losing our jobs.

- **Lack of Experts**

To set up the digital economy a huge investment, as well as resources, are required that are not possible to arrange in rural areas. So, no technical development takes place in rural areas. Therefore, we can say that the digital economy is not readily available, especially in rural and semi-rural areas.

- **Heavy Investment**

A strong infrastructure, high functioning Internet, strong mobile networks and telecommunication are all essential things to work for a digital economy, which are a heavy investment thing. Thus, the digital economy in itself involves huge cost and investment as well as it is a very slow, tedious and costly process to work on.

Two Faces of the Digital Economy

- Information technology (IT) and
- Communication technology (CT)

1. Information Technology (IT)

Information technology (IT) comprises of the various items which help in economic activities. Thus, some of the components of IT are:

- artificial intelligence (AI)
- robotics, and machine learning

Of which speeds up data processing as well as reduces the number of tasks, and generates concentration forces for economic activities.

2. Communication Technology (CT)

Communication technology (CT) discusses all the equipment and programs that are used to process and communicate information. Internet, multimedia, e-mail, telephone, etc all are some of them are examples of communication technology.

Effects of a Digital Economy

- **Big Data**

Every small detail is recorded as data. And Google is the platform where this data is available, and where we spend most of our time. And by our devoted time, google collects the data which is useful for the companies.

- **People Are Connected**

Now people have more connectivity with each other. Companies are also working on to build connectivity. Moreover, people can connect digitally to share products and services.

- **Value Our Time**

Convenience is being given to the people with the coming forward of the digital economy and digitalization. As people can purchase and sell things as per their need and time or say on their own convenience. As by now Checking your bank balance, you need your phone.

- **Governments functioning is digital**

Health care, criminal reporting, taxes and various other daily tasks that were done offline before are now done online. This on the go service is possible only due to the effect of the digital economy.

Succeed in the Digital Economy

1. Product Innovation

While extending and restructuring the companies they try to innovate their products from the market to tackle the competition with the new technology as well.

2. Customer Expectations

Companies try to fulfil the service expectations of digitally empowered customers and offer more experiences with great costs.

3. Collaborative Innovations

Companies must try to become more innovative in order to respond to the highly competitive environment. As collaboration will lead the company to be more innovative to deal with the high competition in the economy.

4. Leadership

In order to deal with new market environments and business models, companies should try to change their organizational structures or make the necessary changes in them to deal with the fast-changing digital economy.

Conclusion

1. Optimize the industrial structure of the digital economy in accordance with the conditions of unbalanced regional development. Each region has its own unique advantages in terms of resources, geographical location, natural conditions and other characteristics, resulting in a large gap between regional development in the development level of the digital economy.
2. Strengthen support for digital innovation and infrastructure construction, which helps create a solid foundation for the digital economy. On the one hand, in order to improve digital innovation, increasing the contribution of digital resources, capital, data elements and technologies is equivalent to accumulating the innovative capacity necessary for the development of the digital economy.
3. Deepen the application of digital integration and enrich the end result of the digital economy. The integration and application of digital technologies is the ultimate goal of the digital economy development, and this is a necessary prerequisite for building a dual cycle economy in order to achieve a combination of digital technologies and the harmonious development of the three sectors (agriculture, industry and services). Nowadays, all countries in the world are actively exploring the development of the digital economy, hoping to take advantage of the new economic revolution of the digital economy and lead the world economic development. The digital economy is changing the structure of competition between countries and is becoming a new driving force for economic development. Thus, assessing the level of the digital economy development contributes to a detailed study of the advantages and disadvantages of digitalization, putting forward practical and targeted proposals for the sustainable and rapid development of the digital economy in the future.

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TECHNOLOGY STARTUPS: INNOVATION AND GROWTH

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Abstract

Business technology is applications of science, data, engineering, and information for business practices and in industrial units, such as the achievement of economic and organizational goals. The main element of technology is the idea of change in the business startups, and it will affect business and society. Business Technology students will learn the necessary skills to be fluent in business models, regulatory issues, business development, managing cross-functional and international teams, strategic management, product innovation, and go-to-market strategies to all startups are possible. There is no denying the fact technology increases the efficiency of the Startup company. The advancements in the world of robotics and applied sciences help businesses startups facilitate their customers. Moreover, due to the emergence of artificial intelligence, Startup companies can now make better use of technology. In India Technology start-up landscape has evolved to become the 4th largest in the world. Since 2010 there has been a significant rise in the growth of technology startups and in e2014 India was home to 3,000 technology start-ups. The report – first in the start-up series, conducts an in-depth analysis of the various aspects of the ecosystem. It identifies the current scale and size, factors impacting growth, and steps required to make the start-up environment more conducive. The implementation of technology in Startup business saves time and effort involved in employing human labor and increases productivity, which is in huge advantage.

Keywords: Technology, Startup, Environment, Business, Innovation.

Introduction

The Technology Is Moving Startups Beyond Conventional Tactics with its robust intervention. Technology is vital to startups, leveling the playing field and making more things than ever before accessible to new businesses. It will be always thought that it's important to be able to step outside your comfort zone when you're running a Startup business, A Startup is a young company which seed money founded by one or more entrepreneurs to develop a unique product or service and bring it to market in the competitive spirit and which will also help customers to get product at lower price and to create a greater number of employment opportunities. The biggest benefits of technology for daily business operations are the increase in flexibility so it will be useful in case of technology also.

Technology has not only helped to improve the flexibility of a number of deadlines, but advancements such as a business call app can improve the flexibility

of employees whilst reducing the need for a second phone. By its nature, the typical Startup tends to be a shoestring operation, with initial funding from the founders or their friends, families and Government. Technology and automation can help a business improve efficiencies across functions. From manufacturing to marketing, and ensure costly errors are prevented from happening. This in turn can add to business growth. Insights and Technology also prove valuable insights about the business.

A Startup business a new business that is in the initial stages of operation, beginning to grow and is typically financed by an individual or small group of individuals. It is a young entrepreneurial, scalable business model built on technology and innovation. The technology affects a firm's ability to communicate with customers. Fast shipment options allow businesses to move products over a large geographic area. When customers use technology to interact with a business, the business benefits because better communication creates a stronger public image. In startups the role of technology is very important because of its scope of growth. The role of technology enables the Startup an idea that manifests into a commercial undertaking. Indian government is serious in promoting entrepreneurship at the Startup level and has taken a number of initiatives to ensure appropriate support. easier, faster and more effective communication, better, more efficient manufacturing techniques, less wastage, more efficient stock management and ordering systems, the ability to develop new, innovative approaches, more effective marketing and promotion and new sales avenues. In this aspect it is relevant to mention 'Make in India' campaign introduced in September '14 to attract foreign investments and encourage domestic companies to participate in the manufacturing sector. The government increased the foreign direct investment (FDI) limits for most of the sectors and strengthened intellectual property rights (IPRs) protection to instill confidence in the Startup in different business segment. In the case of startups technology has important effects on business operations.

An Analysis Role of Technology for Startup

In process of industrialization startups technology is growing fast, prices are dropping, and new innovations are being rolled out constantly. If you haven't been consistently looking out for new technology to assist your business, chances are that you have missed something. Technology has changed the pace of business and raised the expectations of customers. The role of technology on business doesn't stop there. Increased access has allowed us to leverage new and different technologies to grow and adapt our Startup businesses. There certainly are technology solutions out there that can improve your business. Whether you like it or not, technology is

essential to business success. Employees rely on it for day-to-day operations. Outside companies, clients, and prospective clients evaluate you on your use of technology. HR relies on technology to train and develop employees.

Technology can assist in ensuring that you are prepared for even the most difficult communication obstacles sustainable growth of business which will enables. It's no secret that there have been some awesome technological advancements in recent years. Advancements such as Life size's video conferencing technology and Zulty's VOIP phone cloud solution are strategically designed to improve efficiency and reduce lay time in the office. Cyber attacks are growing at an alarming rate. So too are the amazing cyber-security defenses Top-notch cyber security being essential for protecting your business from thefts of data or money, primarily if you use computers and other technological tools. The latest cyber security advancements, like antivirus or cloud protection systems, secure your crucial and sensitive data from being hacked by malicious parties.

Being Startup technological innovations, Germany is leading other countries in business innovation and technology. As per IMF data, Germany has the largest business software market in Europe and accounts for nearly a quarter of the value of the business technology market on the continent. A report by the IZA Institute of Labour Economics showed that technological innovations were one of the main driving forces behind Germany's formidable economic growth. Technological adoption in German businesses reduced stagnation in business ideas, and predictive analytics gave entrepreneurs the insights to make data-backed decisions. The Sophos' Deep Learning technology. In an age where almost all-important business assets are stored in the cloud or on endpoints, it is imperative that businesses employ security technology to protect those assets.

Startups and Economy

Startups play the most crucial role in an economy. Most of us feel that startups grow in the developed economy due to adequate availability of resources. On the contrary, these ventures can start from anywhere as per market demand.

Economic Prosperity

Startups boost economic activity that helps the nation to expand. In addition to this, it also maximizes profits through technological innovations. This eventually improves the GDP of an economy and transfers money into the hands of the customers. It brings competitive dynamics to the economy to encourage existing businesses and adopt newer technologies.

Developments and Innovations

Older businesses or industry leaders are more inclined to spend money on incremental innovation and R&D on already established technologies. While startups are more concerned with cutting-edge innovation and innovative technologies. Startups are more agile and able to develop a concept into a product and update it in response to customer demand with quicker decision-making communications as they are not constrained by a multi-layered corporate bureaucracy. Employees are driven to go above and beyond to succeed by the high risks involved. Giant corporations, like Google and Microsoft, frequently buy out startups to better innovate and increase sales through their size and distribution networks.

Increase the Production of Goods and Services

Startups tend to have more advanced technology. The output of products and services increases as a result. With this, they are able to produce greater revenue from the same amount of capital inputs as more established businesses. In short, the new ventures enhance the production of goods and services which increase the revenues of the nation also.

Direct Impact

Startups also directly affect the cities they are based in, just like Google and Microsoft have impacted Mountain View and Redmond, respectively. They bring riches and a sizable influx of graduates and seasoned professionals looking for employment chances from other places.

Entrepreneurship is a Powerful Economic Force

Startups are growth-oriented forces. It is necessary to find ways to encourage competition and support transformational entrepreneurs to prevent economic stagnation. Although obtaining support at the federal level is crucial, the effort must be concentrated at the local level. Cities must support initiatives that promote entrepreneurship. Politicians and lawmakers cannot ignore entrepreneurs any longer since doing so would be detrimental to both local and national growth. Removing obstacles, fostering interaction, and assisting startups are just a handful of the ways civic leaders may give entrepreneurs a greater advantage.

Better Standard of Living

The level of living for people in society is raised through start-ups. New ideas and technologies introduced by start-ups contribute to raising the level of living in the community. For instance, a business that makes healthy products contributes to

raising the standard of living of its customers by providing solutions for their health. When they employ people, they also provide a higher standard of living. They contribute to their improvement because they now have jobs and can support themselves. To develop quickly, generate more jobs, and ultimately raise the standard of life of people via their innovations and creativity, successful start-ups must have ambition and potential.

Creates Competitive Dynamics

Startups make society very dynamic and give economic dynamism and competitiveness, which keeps the economy strong, active, and attentive. They employ their inventions to produce innovative products that are dynamic and diverse and boost the economy.

Encourage Activism

Startups alter the value of any culture in which they exist and introduce a new attitude consistent with the knowledge- and creativity-based civilization. It helps people understand their responsibilities and encourages them to think and act proactively about their job, careers, and the advancement of society. It helps people focus on delivering their best effort to their work by bringing their duties to light and assisting them in understanding how significant and relevant their tasks are in their society. Thus we can say that entrepreneurship benefits an economy and promotes its growth of it as well.

Factors that Influence Innovation

Turnover

Measures the percentage of Return on Investment over the course of the year

Financing

The availability of financial resources, equity and debts for small and medium enterprises (SMEs) (including grants and subsidies)

Post education

The extent to which training in creating or managing SMEs is incorporated with in the

Education and training system in higher education such as vocational, college, business schools, etc.

R&D

The extent to which national research and development will lead to new commercial

Opportunities and is available to SMEs.

Internal Market Openness

The extent to which new firms are free to enter existing markets

Cultural and social norms

The extent to which social and cultural norms encourage or allow actions leading to new business methods or activities that can potentially increase personal wealth and income.

Issues and Challenges

The important issues and challenges in space of Techno- Startup is witnessing by different ways. Assembling a good team is the first major requirement, failure to have one sometimes could break the Startup (Skor,2016). Tenacity of founders Skor of startups have to be tough when the going gets tough. For an outside observer, India's tech Startup ecosystem has for many years buzzed with action. Startups in popular domains like data analytics, artificial intelligence and block chain have routinely mopped up angel and seed funding; a few have even made headlines for their acquisition by global tech giants like Facebook, Google and Apple. These early stage success stories naturally inspire more young people to test the waters.

The number of startups who have successfully scaled their business to cover the whole of India or even ventured abroad can be counted on hands. For every Flipkart, Zomato and OYO Rooms; there are dozens of startups that just could not scale up despite showing a lot of promise in early stages. India has the world's largest smart phone and the Internet-connected population at 300 million, with an ever-increasing spending power thanks to a growing economy. Regulations pertaining to labour laws, intellectual property rights, dispute resolution etc. are rigorous in India. Lack of mentorship: Lack of proper guidance and mentorship is one of the biggest problems that exist in the Indian Startup ecosystem (Choudhury, 2015). Financial resources Availability of finance is critical for the startups and is always a problem to get sufficient amounts. A number of finance options ranging from family members, friends, loans, grants, angel funding, venture capitalists, crowd funding etc. are available. A large part of this population lives outside the metros, in cities and towns- big and small.

There is an even bigger emerging opportunity in serving the technology needs of Indian small and medium businesses. Some of the issues and challenges are the techno-business needs to be persistent, persuasive, and should never give up till he/she achieves desired results. Regulations Starting a business requires a number of permissions from government agencies. One such deficiency is lack of trust during hiring, in contracts and their enforcement. Our judicial system is unreliable

and unpredictably slow and as a result, businesses are never sure of being able to enforce signed contracts.

Conclusion

The Technology has revolutionized the way companies conduct business by enabling small businesses to level the playing field with larger organizations by the way of different small startups. Small businesses use an array of tech everything from servers to mobile devices to develop competitive advantages in the economic marketplace. Small start-up business owners should consider implementing technology in their planning process for streamlined integration and to make room for future expansion which enables sustainable growth of business. This allows owners to create operations using the most effective technology available for the future expansion of business.

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PERSPECTIVE OF ICT TOOLS IN EDUCATION

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INNOVATIVE ICT PEDAGOGIES

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Abstract

Information and Communication Technology (ICT) is a vehicle to enhance the quality of the education. As the world is moving rapidly into digital media and information, the role of ICT in education is becoming more important in the 21st century. The opportunities for education arising from developments in information and communication technology are very promising. In recent years, increased computing power, improved wireless and user-friendly technology, and reduced telecommunication costs have contributed to lowering barriers to information access and exchange. Changes in the economic and social fundamentals call for transformation in the skills, capabilities and attitudes of the masses. This requires a shift in the delivery and pedagogy used in the current education system. ICT increases the flexibility of delivery of education so that learners can access knowledge anytime and anywhere. It can influence the way students are taught and how they learn as now the processes are learner driven and not by teachers. The purpose of this paper is to analyze the integration of Information and Communication Technologies in higher education for imparting easily accessible, affordable and quality higher education leading to the uplift of India. The focus of the paper is on the benefits that ICT integration in education can provide, right from breaking time and distance barriers to facilitating collaboration and knowledge sharing among geographically distributed students and the paper reports on the changing trends in use of ICTs for instruction in higher education institutions (HEIs).

Index Terms - Education System, Information and Communication Technology, Innovative Classroom Practices, Technological and Pedagogical Changes

Introduction

ICT in the Creative learning

Technology moves on very quickly and schemes of work often don't reflect changing technologies, times and contexts. We are in a position to personalize the curriculum in what children learn, how they learn, where they learn, with whom and with what resources. As children develop their skills using ICT both inside and outside school with innovations such as the internet, broadband, games consoles, Wiis, Nintendo DSs, iPods, iPads etc, children could be in the position where they use more technology outside school than in the classroom and perhaps even 'dumb down' as far as their achievements and their understanding of what technology can do. The knowledge, skills and understanding of our children varies greatly depending on their experiences with technology outside school.

In order, to utilize the skills that the children already have, in school we encourage teachers to allow the children to choose when it is appropriate to use technology (and when not). We also suggest teachers don't teach children a set of skills as a whole class but teach skills as and when it's appropriate. Teaching a skill at that point of need key to children remembering it and using it again. To encourage a more flexible use of computers, we have asked schools to reevaluate traditional ICT suites in favor of having the technology on hand in the classroom as and when they need the use of ICT suites and timetabled lessons can limit student access to IT. The ability of students to make creative use of ICT as and when their learning requires can be inhibited if ICT is delivered as a standalone subject. One example would be, edit these sentences adding capital letters when necessary using the shift key. It would be better to teach the usage of the shift key at a time when the children are typing letters, addressing envelopes, postcards linked to a geography topic, letters to a pen pal or a thank you note.

The skill they need to be taught needn't wait until their timetabled lesson later in the week or term but when they are asking for the answers. Having the freedom to choose how the children learn under the direction of the teacher and what technology and software they use, enables teachers to support children with different learning styles, personalizing learning and addressing multiple intelligences. Traditionally, ICT has focused on supporting children whose strengths lie in linguistic and logical (mathematical) intelligences. There should be one aspects of ICT teaching:

Through ICT supporting learning in other subjects; applying skills in real contexts, using AFL should identify the next steps in their learning in both the above.

School may have designed activities, identified skills and non-negotiable items for you to incorporate into your planning. In addition, most schools allow teachers a freedom to look at a themed topic and decide upon what applications or other ICT activities will enhance children's learning in that area. If possible, teachers should look at a range of activities over the school year that builds on the children's prior learning. In ICT, an established assessment for learning (AFL) strategy can transform the rate at which the children adopt technology. In many cases, children learn skills from their peers (and from their mistakes!) before their teachers. CT has the potential to transform learning. Too often schools substitute paper based activities for computer based ones. This undermines the capacity of technology and is wasteful of resources. A vast range of solutions, information, examples and perspectives can be offered only through the use of ICT.

Support Pedagogical Innovations with New Tools

Encouraging experimentation: Innovations in the process of learning and teaching emerge from different actors, both learners and teachers. Policies should aim to empower educational actors and institutions in their local contexts to develop innovative approaches to learning with added value in their environment, (e.g. with different local languages, or by using digital tools and media creatively for specific learning topics).

Networking and best practice exchanges: Teachers should be encouraged and supported to document and share the innovative practices they have developed and

encountered in their teaching, as knowledge of practical applications for new approaches in different environments is scarce. Incentives for the objective assessment of enabling and disabling factors should be implemented.

Teacher Training and Support: ICT and social computing can improve the effectiveness of learning and the learning outcomes, but results depend on the approaches used. Hence, initial and in-service teacher training should disseminate insights and best practices with new innovative approaches, encouraging teachers to experiment with digital and media technologies and to reflect on the learning impacts of their own teaching practices. Establishing and participating in teacher networks and following innovative practice development of the field should become part of teacher training.

Open and networked institutions: Policies should encourage institutions to embrace the networking opportunities available. By opening their learning materials (open educational resources), institutions can attract learners and also support informal learning outside institutions. Networking between institutions can enrich the curricula provided for students and transfer subject-related knowledge between practitioners. Institutions should promote collaborative networks between teachers, researchers, and professional networks, in order to support the emergence and sharing of learning innovations

Develop and support favourable culture for ICT innovation and learning: Using new tools for old processes does not create change or innovation. Institutions should facilitate emergence of innovative learning approaches by (i) ensuring that learners, teachers, managers and parents are aware of their potential and (ii) by supporting them in curricula, teaching guidelines, and teacher training. Institutions should acknowledge and encourage innovations coming from actors on different levels and develop their practices accordingly, thereby becoming reflective, learning organizations.

Research on ICT impacts on learning: More research is needed for finding evidence on how technology can enhance learning. Together, tool developers and educational researchers should study and develop models for embedding new tools such as computer-based assessment in teaching and learning approaches. This would provide institutions and teachers with proven practical models that support the take up of innovative tools.

Impact of ICT on the Teaching Process

- ICT Has an edit effect in terms of quality of student work and practical examples through visualization.
- ICT Improves poor handwriting and languages skills through word processing.
- ICT Equalizes individual differences and has particularly dramatic effects for students with special needs.
- ICT Facilitates self-pacing with increased capacities to deal with individual learning styles as students can work at the pace and intensity suitable to their needs.
- ICT Enables collaborative learning with little indication of the isolated learner.
- ICT Encourages use of peer coaching and peer reviews.
- ICT Develops communication skills and awareness of different audiences.
- ICT Has impact on resource-based learning and access to real world information through the Web.

- ICT Increases information reliability and accuracy adding to authenticity of learning tasks, with realistic and up-to-date information.
- ICT Increases student motivation through hands-on activity, visual representations and improved modes of presentation.
- ICT Encourages independent learning and individual preferences for process, layout, style and format.
- ICT Gives students more control.
- ICT Allows students to produce high quality multimedia products.
- ICT Changes teacher practices, planning tools and assessment rubrics.
- ICT Increases opportunities for classes to evolve and for student experiences to shape outcomes.
- ICT Has motivated students to commit to learn and to participate in learning activities.
- ICT Has improved students' quality of work and has given them the confidence to perform enhanced learning tasks. ICT Has allowed students to learn independently, which has enabled more work to be completed. ICT has a profound impact in classrooms. It adds complexity to a non-linear system. This complexity needs a major change in organization. Downs (2001) differentiates four levels of use of ICT in the classroom:

Level 1: ICT skills are added into the school programmed through a separate ICT subject, while teacher practices in other subjects remain unchanged;

Level 2: ICT skills are integrated into teachers' daily work with some teachers' pedagogical practices and classroom behavior remaining the same, while the practices of others change more radically;

Level 3: ICT is transformative at the classroom level as it changes content as well as pedagogy (what students learn as well as how they learn it);

Level 4: ICT is transformative at the system level leading to changes in the organisational and structural features of school learning.

The New Trend of ICT

ICT is based on individual access, personal mobile phones, personal computers etc. as well as the new trend for personalization of the Web. This implies that the needs and the competencies of students are quite different, and since ICT allows one-to-one learning, a more personalized learning may constitute the future trend of higher education. Better achievement of students is easier to obtain since the learning is personalized and customized. However, this implies a huge change in the format, in the organization of the classrooms and in the competencies and availability of teachers. This may explain the differences observed in the impact of ICT on the performance of students. Wherever the introduction of ICT is associated with a personalized service for students, performance increases.

The Outcomes of Higher Education

The impact of ICT on the learning process seems to be more important and requires more than looking only to curricula. Improved student outcomes are observed, with regard to: motivation, enjoying learning; self-esteem; ICT skills; collaborative skills; subject knowledge; information handling skills; meta-cognitive skills, etc. In European higher education institutions, while students and teachers seem to be using the new available technologies more and more intensively, organizational designs are changing slowly. The lack of a strategy regarding organizational change, as several studies have shown, leads to a weak impact of the use of ICT on student performance.

Conclusion

In order to conclude we will try to proceed to synthesize from a general viewpoint the results obtained, taking into consideration the relevant aspects of the literature. The results provided by both the quantitative and qualitative analysis of the literature obtained will be exposed especially regarding those aspects which are related to ICTs for Education and ICTs in Education. ICTs for education refers to the development of information and communications technology specifically for teaching/learning purposes, while the ICTs in education involves the adoption of general components of information and communication technologies in the teaching learning process.

The adoption and use of ICTs in education have a positive impact on teaching, learning, and research. ICT can affect the delivery of education and enable wider access to the same. In addition, it will increase flexibility so that learners can access the education regardless of time and geographical barriers. It can influence the way students are taught and how they learn. It would provide the rich environment and motivation for teaching learning process which seems to have a profound impact on the process of learning in education by offering new possibilities for learners and teachers. These possibilities can have an impact on student performance and achievement. Similarly wider availability of best practices and best course material in education, which can be shared by means of ICT, can foster better teaching and improved academic achievement of students. The overall literature suggests that successful ICT integration in education.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

VOLUME - 2

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DIGITAL INDIA AND INDUSTRY 4.0

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Abstract

The globalization and the competitiveness are enforcing organizations to readdress and innovate their production processes. The world is entering a new era of industrial emanating technology in automation and data exchange through the use of Internet of Things called fourth technological revolution or Industry 4.0. It represents the amalgamation of tools already used in the past such as big data; cloud, robot, 3D printing, simulation, etc. are now connected into an internet to transmit digital data. For the implementation of this new paradigm, there are many opportunities and also many challenges. This paper highlights brief introduction on challenges and opportunities for implementation of Industry 4.0 in India. Digitization of product and service offerings: Complete descriptions of the product and its related services through intelligent networks. Introduction of innovative digital business models: The high level of interaction between systems and technology opportunities develops new and integrated digital solutions. The basis of Industrial Internet of Things is the integrated and concurrent availability and control of systems across the organization.

Introduction

An industrial revolution can be defined as a disruptive leap in the industrial process, a development that produces fundamental transformations in the society and the economy. First industrial revolution started in 1784 with the introduction of the first machines that used steam for power. Many people worried and opposed because use of machines may reduce the requirement of manual workers. The second industrial revolution, which initiated around 1870, started the production system which manufactured the components in large scale by adopting assembly line production system which used electricity as source of power. The third industrial revolution which switches the technology driven by mechanical and analog electronic to digital electronics began with the introduction of the robotics and automation in the year 1969. Industry 4.0 has enlarged the capabilities of digital revolution and increased its significance to the organization. Industry 4.0 combines and connects the Internet of Things, digital and physical technologies; robotics, artificial intelligence, cloud computing, additive manufacturing, and others to propel more responsive, versatile and interconnected establishments to make more enlightened decisions. Industry 4.0 carries with it seemingly endless options for technological investments and endless opportunities. The Industry 4.0 is based on the concept of factory of future, where the equipment are integrated with workers through cyber-physical systems (CPS). Industry 4.0 is a new level of establishments that operates, manages and controls the whole value chain of personalized products to satisfy customer needs. The

most important component in Industry 4.0 is Digitalization because it enables to connect technology with human beings.

Industry 4.0 enables complete customization which gives very high flexibility for manufacturers to meet changing requirements from their consumers, who are increasingly favoring more customizable and flexible outputs over standard product offerings. This initiative allows sportsman's to customize and personalize their sports footwear to fulfill their styling and performance needs. In their effort to bring manufacturing closer to their customers in the respective countries, Adidas has also planned to open its first fully automated factory in Germany. Such technologies have also helped manufacturers in minimizing lead time for prototype development. As a result, companies are able to speed-up their time to market. The success metrics for organizations will also change from achieving low cost effectiveness to obtaining higher returns on capital investment. Profitability is increased by Industry 4.0 by facilitating greater customization, minimizing the complexity cost and reducing labor costs. Simultaneously, it enables to high return on the capital invested by allowing asset utilization and greater flexibility.

Opportunities for Industry 4.0

India is very much eager to implement Industry 4.0 and several measures have been adopted. According to Indian Brand Equity Foundation (IBEF), by 2025, the Government of India intends to raise the production sector's contribution from the present 16% rate to 25% of Gross Domestic Product (GDP). India is also prepared to face global competition by undertaking the Make in India and skill development programs. It is all set to lead the world with Smart Manufacturing. The following are the opportunities for industry 4.0 in India:

- (i) Young Population:** Employers want to invest in young people and see them as a future asset. With an average age of less than 30 and nearly 10 lacks individuals joining the workforce every month, India offers the ideal atmosphere for first time young job seekers to pursue opportunities in emerging fields of interest in the Indian manufacturing industry - consumer electronics, automotive, aeronautics and aerospace.
- (ii) Favorable Policies:** The 'Make in India' program is India's plan of action to encourage Indians to create products for the world market. India has the resources, policy and workforce in place. What is needed is experts from foreign industries to crank-up a manufacturing revolution in the areas of automobile and aerospace. Relaxed FDI policies and better protection for company's intellectual property, coupled with industry favorable government policies have created competition amongst Indian states to attract foreign direct investments in the manufacturing sector. With the

increase in World Bank's Ease of Doing Business ranking is also a welcome sign that first time foreign investors are positive about the country's growth potential.

- (iii) **Skilled workforce:** With a strong high school and university ecosystem, Indian students are sought after by multinationals all over the world. Fast Changing times and a slow adaptive to education system however, have rendered man qualities gained in academics Redun- dant in today's work environment. The efforts of governments and private industry to set up reskilling and skill upgrading centres to raise employability.
- (iv) **Large population base ready to go digital:** The emphasis on ' Digital India ' and the government's intervention in 2016 to suppress uncoun- ted cash from the sy stem through a huge demonetization effort are all pushing Indians too quickly to adjust to the use of digital payments. Rapid growth is set for this sector. Indian government has also begun attempts to link the nation digitally by providing a Unified Payment Interface (UPI), a zero-cost payment gateway and cash enterprises.

Industry 4.0 Benefits

- (i) Lower Cost.
- (ii) Additional Revenue.
- (iii) Enabling Industrial Companies to optimize customer relationship.
- (iv) Transparency in the production process.
- (v) Clarity on the status of all aspects of production system in real time.
- (vi) Industrial companies that successfully implement Industry 4.0 no longer need to choose between focusing on a better top or bottom line. They can improve both at the same time.
- (vii) Logistics processes become leaner.
- (viii) Reduced inventories.
- (ix) Standardization of maintenance processes.
- (x) Cent percent traceability

Challenges for Industry 4.0

The ministry of heavy industries and public enterprises provide supports to facilitate four centres in the country to help SMEs materialize Industry 4.0. Bengaluru is in the process of setting up India's first smart factory. This smart factory is driven by the Internet of Things (IoT) and data exchange. This Smart Factory is being established with financial assistance from The Boeing Company at the Centre for Product Design and Manufacturing (CPDM) department of Indian Institute of Science (IISc). The goal of Government of Andhra Pradesh to make the state into an Internet of Things (IoT) hub by 2020. With the participation of the private sector, the state government plans to set up 10 IoT hubs that will create 50,000 direct jobs in different IoT verticals. Since more than 80% of the

manufacturing industry in India is in the MSME sector, the implementation of Industry 4.0 is a major challenge.

- (i) **Investment:** A huge issue for many enterprises who wish to implement Industry 4.0 is a buying strategy that is less than clear for a lot of them. As a result, there are often unclear economic incentives for development and organizations find themselves having to spend over the odds to implement these new initiatives. Such a technological transformation will require a significant investment in new technology. For such a transformation, the decision will be taken by the highest management level. Even then, it is necessary to calculate return on investment and take the risks seriously. In addition to the requirement of huge capital, such transformation will isolate small businesses and might lose their market share in the future.
- (ii) **The workforce:** Optimizing Talent: Bringing together smart factories and manufacturing automation will bring remarkable levels of effectiveness and speed to a business, but the drawback of this is that many organizations will see a workforce that will be unused to the new developments taking place, and ill-equipped to adapt to them. While it remains early to make a judgment on working circumstances with the global implementation of Industry 4.0, it is safe to say that workers will need to acquire different or an all-new set of skills. This may help to increase the employment rates but it will also isolate a big sector workers. The sector of workers whose work is to perform repetitive tasks will face a challenge in keeping up with the industry 4.0. Different forms of education must be initiated, but it still doesn't solve the problem for the experienced workers. This is an issue that might take longer time to solve.
- (iii) **Standardisation:** Integrating Software, Hardware, Operating Systems and standards play an important role in forming industry 4.0. Developments and coordination of standards and proposals will promote efficient development of industry 4.0 infrastructures and applications, services and devices. There is some confusion with companies trying to innovate as to which standards will be adopted in the next five years. A huge challenge to overcome will be to derive a standardized system that works for all parties and allows for both horizontal and vertical integration, and results in maximum value for both present and future investments. In today's network world, global standards are more relevant than local agreements.
- (iv) **Data security:** Medium and Small scale organizations are primed to benefit the most from Industry 4.0, but this represents a quandary. Compared with traditional manufacturing data security, privacy issues of Industry 4.0 become more prominent. Much information includes privacy of users, so that protection of privacy becomes an important security issue in industry 4.0. Because of combination of things, services and networks, security of Industry 4.0 needs to cover more management objects and levels than traditional network security. Existing network security architecture that is

designed from the prospective of human communication may not be suitable and directly applied to Industry 4.0. The existing security mechanism will block logical relationship between components in Industry 4.0.

- (v) **Technical Challenge:** Technology for industry 4.0 can be complex for various reasons. Firstly there are legacy heterogeneous architecture in the existing networking technologies and applications, For example different environments and applications requires different networking technologies and the ranges as well as other characteristics of cellular, wireless local area networks and RFID technologies are much different from each other [5][21]. Secondly communication technologies including fixed and mobile communication systems, power line communications, wireless communication technologies for both fixed and mobile devices either simple or complicated should be low cost and with reliable connectivity.
- (vi) **Real-time constraints:** Industry 4.0 requires some amount of real-time performance if they are going to control machines and factories [22]. Industrial control systems require real-time reaction, making changes to the systems very difficult. Downloading the required data from the cloud for plant system operation requires the system of the plant to access "big data" in real time in cyberspace. Loading accessible software versions on the malware scanners and antivirus programs of the system could affect the process performance. Any real-time interaction must be quick enough to promote the demands for system automation. For example, Safety Instrumented Function (SIF) for turbine over-speed protection may need to react within 10 ms on demand.

Conclusion

Industry 4.0 creates a newer manufacturing environment and knowledge economy. Industry 4.0 encompasses many technologies such as IoT, WSN, Communication technologies, low power electronics etc. The development of Industry 4.0 in India exposed many challenges that includes lack of fundamental theory supporting, immature standards, Technical challenges and lack of investment. With these challenges, India has several opportunities for industry 4.0 implementation. Such opportunities are large young population ready to go for digitalization, central government policies like Make in India and skill development, significant experience in developing IT- related infrastructure, Companies collaboration with educational institutes etc.

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ENTREPRENEURSHIP DEVELOPMENT THROUGH MSME

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Abstract

MSMEs are essential to job creation. They provide employment opportunities in local communities and are often a significant source of jobs in rural or underserved areas where opportunities to work in big corporations are not available. By creating jobs, MSMEs help to reduce unemployment rates and stimulate economic growth. Additionally, entrepreneurship drives innovation and encourages the creation of new industries and markets, leading to further job creation and economic development. MSMEs are critical to economic growth. They generate revenue and expand into new markets, investing in new technology and infrastructure that can create a positive ripple effect throughout the economy. Small businesses drive competition, which can lead to lower prices and higher quality products and services. Additionally, they are often at the forefront of innovation, developing new products, services, and business models that can disrupt established industries and encourage growth. MSMEs are essential to community development. They provide goods and services that are tailored to the needs of the community and often support local charities and organizations. By sourcing materials and labor locally, they can stimulate the local economy and help to build strong, sustainable communities. In addition, MSMEs are often owned and operated by members of the community, creating a sense of pride and ownership in the community.

Introduction

The government can facilitate partnerships between MSMEs and larger companies to provide access to resources and expertise that they may not otherwise have. This can include mentorship programs and partnerships with universities and research institutions. The government can also support entrepreneurship development by promoting incubators and accelerators that provide mentoring, networking, and funding opportunities. Businesses used to compete by location or target market, but access to a bigger crowd via social media and the convenience of e-Commerce platforms have opened a new arena for competition. Along that comes multitude of opportunities - and a myriad of threats. With the fast changing consumer habits due to internet activities such as being review-reliant and crave instant gratification, the internet and technology have revolutionized the way businesses operate. MSMEs that fail to embrace digitalization risk falling behind their competitors. Digitalization enables small businesses to reach new customers, expand their markets, and improve their efficiency. By establishing an online presence through a website, social media platforms, and other digital marketing channels, MSMEs can reach customers beyond their local markets and tap into a global audience.

Digitalization can also improve the efficiency of MSMEs by automating repetitive tasks, streamlining operations, and reducing costs. Cloud-based software solutions, online payment systems, and e-commerce platforms can help MSMEs to manage their finances,

inventory, and customer data more effectively. Many productivity tools like Asana or Trello and project management framework like Kanban have rendered remote working possible, allowing for a better organized teamwork and promoting innovative ideas (At this point, the MSME would have been considered a Start-up). To help MSMEs with digitalization, the government can provide funding and support for digital training programs, mentorship, and workshops. The government can also offer tax incentives to encourage small businesses to invest in digital infrastructure and technology. Moreover, the government and private sectors, working as a unified ecosystem, can establish digital hubs and incubators that provide MSMEs with access to digital resources, training, and support.

However, many of the digitalization efforts above would not be truly effective if the most basic infrastructure for internet connectivity is not available/stable. The government can solve this by providing access to high-speed internet infrastructure in underserved areas. Many small businesses in rural or underserved areas struggle with slow internet speeds, limiting their ability to leverage digital technologies effectively. If rural infrastructures are better equipped, more opportunities and assistance would reach them - creating better delivery of human capacity development programs, awareness/outreach programs and more. The government and private sectors have a responsibility to create an enabling environment that supports MSME's growth and success by creating favorable policies and regulations, providing funding and access to capital, offering training and education programs, and promoting partnerships.

Role of MSME

MSME in India enjoy a distinct position in view of their contribution to the socio-economic development of the country. The emphasis on MSME has always been an integral part of India's industrial strategy. Development of MSME prevents migration of rural population to urban areas in search of employment and contributes to other socio-economic aspects, such as reduction in income inequalities, dispersed development of industries and linkage with other sectors of the economy.

1. The contribution of these industries to the balanced regional development of our country is noteworthy. Small industries in India account for 95 per cent of the industrial units in the country.
2. MSME are the second largest employers of human resources, after agriculture. They generate more number of employment opportunities per unit of capital invested compared to large industries. They are, therefore, considered to be more labour intensive and less capitalintensive. This is a boon for a labour surplus country like India.
3. MSME in our country supply an enormous variety of products which include mass consumption goods, readymade garments, hosiery goods, stationery items, soaps and detergents, domestic utensils, leather, plastic and rubber goods, processed foods and vegetables, wood and steel furniture, paints, varnishes, safety matches,

etc. Among the sophisticated items manufactured are electric and electronic goods like televisions, calculators, electro-medical equipment, electronic teaching aids like overhead projectors, air conditioning equipment, drugs and pharmaceuticals, agricultural tools and equipment and several other engineering products. A special mention should be made of handlooms, handicrafts and other products from traditional village industries in view of their export value.

4. MSME which produce simple product using simple technologies and depend on locally available resources both material and labour can be set up anywhere in the country. Since they can be widely spread without any locational constraints, the benefits of industrialisation can be reaped by every region. They, thus, contribute significantly to the balanced development of the country.
5. MSME provide ample opportunity for entrepreneurship. The latent skills and talents of people can be channeled into business ideas which can be converted into reality with little capital investment and almost nil formalities to start a small business.
6. MSME also enjoy the advantage of low cost of production. Locally available resources are less expensive. Establishment and running costs of small industries are on the lower side because of low overhead expenses. Infact, the low cost of production which small industries enjoy is their competitive strength.
7. Due to the small size of the organizations, quick and timely decisions can be taken without consulting many people as it happens in large sized organizations. New business opportunities can be captured at the right time.

Problems Associated with MSME

The potential of MSME is often not realized fully, because of several problems related to size and operations. We shall now examine some of the major problems that small businesses whether in urban or in rural areas are encountering in their day-to-day functioning.

1. **Finance:** One of the severe problems faced by MSME is that of non-availability of adequate finance to carry out its operations. Generally these businesses begin with a small capital base. Many of the units in the small sector lack the credit worthiness required to raise as capital from the capital markets. As a result, they heavily depend on local financial resources and are frequently the victims of exploitation by the money lenders. These units frequently suffer from lack of adequate working capital, either due to delayed payment of dues to them or locking up of their capital in unsold stocks. Banks also do not lend money without adequate collateral security or guarantees and margin money, which many of them are not in a position to provide.
2. **Raw materials:** Another major problem of MSME is the procurement of raw materials. If the required materials are not available, they have to compromise on the quality or have to pay a high price to get good quality materials. Their

bargaining power is relatively low due to the small quantity of purchases made by them. Also, they cannot afford to take the risk of buying in bulk as they have no facilities to store the materials. Because of general scarcity of metals, chemicals and extractive raw materials in the economy, the small scale sector suffers the most. This also means a waste of production capacity for the economy and loss of further units.

3. **Managerial skills:** These businesses are generally promoted and operated by a single person, who may not possess all the managerial skills required to run the business. Many of the small business entrepreneurs possess sound technical knowledge but are less successful in marketing the output. Moreover, they may not find enough time to take care of all functional activities. At the same time they are not in a position to afford professional managers.
4. **Marketing:** Marketing is one of the most important activities as it generates revenue. Effective marketing of goods requires a thorough understanding of the customer's needs and requirements. In most cases, marketing is a weaker area of small organisations. These organisations have, therefore, to depend excessively on middlemen, who at times exploit them by paying low price and delayed payments.
5. **Quality:** Many MSMEs do not adhere to desired standards of quality. Instead they concentrate on cutting the cost and keeping the prices low. They do not have adequate resources to invest in quality research and maintain the standards of the industry, nor do they have the expertise to upgrade technology. In fact maintaining quality is their weakest point, when competing in global markets.
6. **Capacity utilisation:** Due to lack of marketing skills or lack of demand, many firms have to operate below full capacity due to which their operating costs tend to increase. Gradually this leads to sickness and closure of the business.
7. **Global competition:** Apart from the problems stated above MSME are not without fears, especially in the present context of globalization. These enterprises face competition is not only from medium and large industries, but also from multinational companies which are giants in terms of their size and business volumes.

MSME and Entrepreneurship Development

Entrepreneurship is the process of setting up one's own business as distinct from pursuing any other economic activity, be it employment or practising some profession. The person who set-up his business is called an entrepreneur. The output of the process, that is, the business unit is called an enterprise. It is interesting to note that entrepreneurship besides providing self-employment to the entrepreneur is responsible to a great extent for creation and expansion of opportunities for the other two economic activities, that is, employment and profession. And, in the process, entrepreneurship becomes crucial for overall economic development of a nation.

1. **Systematic Activity** : Entrepreneurship is not a mysterious gift or charm and something that happens by chance! It is a systematic, step-by-step and purposeful activity. It has certain temperamental, skill and other knowledge and competency requirements that can be acquired, learnt and developed, both by formal educational and vocational training as well as by observation and work experience. Such an understanding of the process of entrepreneurship is crucial for dispelling the myth that entrepreneurs are born rather than made.
2. **Lawful and Purposeful Activity**: The object of entrepreneurship is lawful business. It is important to take note of this as one may try to legitimise unlawful actions as entrepreneurship on the grounds that just as entrepreneurship entails risk, so does illicit businesses. Purpose of entrepreneurship is creation of value for personal profit and social gain.
3. **Innovation**: From the point of view of the firm, innovation may be cost saving or revenue-enhancing. If it does both it is more than welcome. Even if it does none, it is still welcome as innovation must become a habit! Entrepreneurship is creative in the sense that it involves creation of value. By combining the various factors of production, entrepreneurs produce goods and services that meet the needs and wants of the society. Every entrepreneurial act results in income and wealth generation. Entrepreneurship is creative also in the sense that it involves innovation introduction of new products, discovery of new markets and sources of supply of inputs, technological breakthroughs as well as introduction of newer organisational forms for doing things better, cheaper, faster and, in the present context, in a manner that causes the least harm to the ecology/ environment.
4. **Organisation of Production**: Production, implying creation of form, place, time personal utility, requires the combined utilisation of diverse factors of production, land, labour, capital and technology. Entrepreneur, in response to a perceived business opportunity mobilises these resources into a productive enterprise or firm. It may be pointed out that the entrepreneur may not be possessing any of these resources; he may just have the 'idea' that he promotes among the resource providers. In an economy with a well-developed financial system, he has to convince just the funding institutions and with the capital so arranged he may enter into contracts of supply of equipment, materials, utilities (such as water and electricity) and technology. What lies at the core of organization of production is the knowledge about availability and location of the resources as well as the optimum way to combine them. An entrepreneur needs negotiation skills to raise these in the best interests of the enterprise.
5. **Risk-taking**: It is generally believed that entrepreneurs take high risks. Yes, individuals opting for a career in entrepreneurship take a bigger risk that involved in a career in employment or practice of a profession as there is no "assured" payoff. In practice, for example, when a person quits a job to start on his own, he tries to calculate whether he or she would be able to earn the same level of income

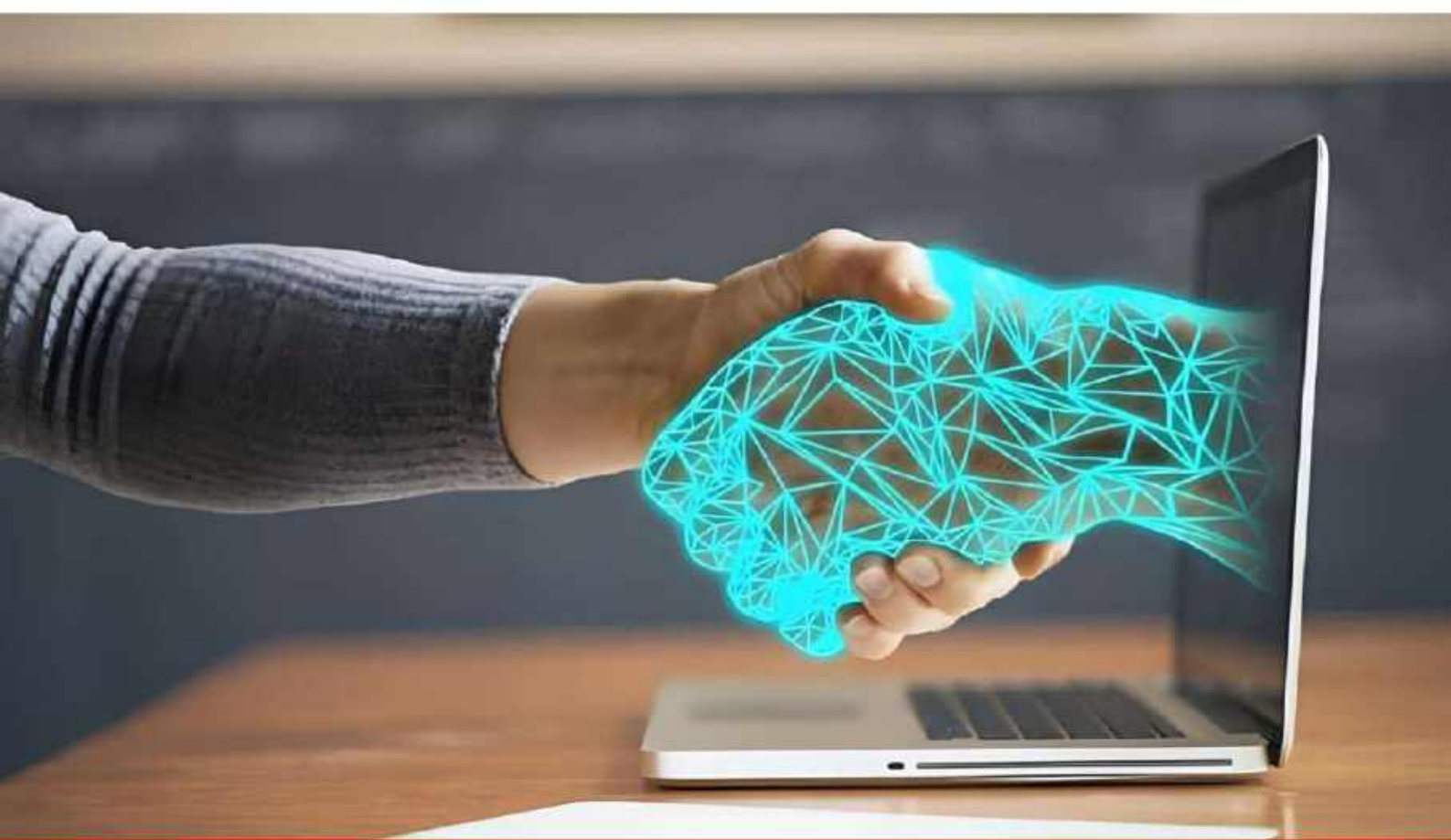
or not. To an observer, the risk of quitting a well-entrenched and promising career seems a “high” risk, but what the person has taken is a calculated risk.

Conclusion

MSMEs address major challenges of the overall Indian economy also, that are unemployment and poverty. By reducing regional imbalances, giving employment to local people living in rural areas, they have done their part to knock-down disparities. Acting as a motivational factor for the existing MSMEs and as an aspiration factor for the potential MSMEs, increase in the income of people and the trend of promoting the interests of consumers, there will be various opportunities for MSMEs to play with in the domestic as well as export-market. Around the world, MSMEs are known for its capability of acting as a turbo to the engine of development for the economy; hence the advisor and policy makers should give them their due credit by making and implementing policies for them diligently. Furthermore, government must act on the recommendations given by different institutions/committees on the MSME sector. As far as banking and other financial institutions are concerned, they have done quite well by providing easy finance, but now there is the need for them to put their heart out for MSMEs so that more and more units make use of the numerous financing schemes that are available at present. For it, government shall introduce a new credit giving agency solely for the MSME sector.

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Investment Banking

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ABSTRACT

Investment banking is a field of banking that aids companies in acquiring funds. In addition to the acquisition of new funds, investment banking also offers advice for a wide range of transactions a company might engage in. An investment bank is a financial institution that assists individuals, corporations and governments in raising capital by underwriting and/or acting as the client's agent in the issuance of securities. An investment bank may also assist companies involved in mergers and acquisitions, and provide ancillary services such as market making, trading of derivatives, fixed income instruments, foreign exchange, commodities, and equity securities. Investment bankers identify capital opportunities, negotiate and structure deals, and execute private and public financial transactions. The essential function of an investment bank is to act as an intermediary between potential investors and those who seek capital. Investors include individuals, mutual funds, municipalities, public corporations, and private institutions. An investment banking firm also does a large amount of consulting. Investment bankers give companies advice on mergers and acquisitions, for example. They also track the market in order to give advice on when to make public offerings and how best to manage the business' public assets. Some of the consultative activities investment banking firms engage in overlap with those of a private brokerage, as they will often give buy-and-sell advice to the companies they represent.

I. INTRODUCTION

The term "finance" in our simple understanding is perceived as equivalent to 'Money'. But finance exactly is not money; it is the source of providing funds for a particular activity. Providing or securing finance by itself is a distinct activity or function, which results in Financial Management, Financial Services and Financial Institutions. Finance therefore represents the resources by way funds are needed for a particular activity. We thus speak of 'finance' only in relation to a proposed activity. Finance goes with commerce, business, banking etc. Finance is also referred to as "Funds" or "Capital", when referring to the financial needs of a corporate body.

The mixture of banking and commerce is hardly a revolutionary concept. Banking and commerce have been mixed in the United States since the birth of the republic, and they remain mixed today. It was not until 1956, when the Bank Holding Company Act prohibited nonbanking corporations from owning two or more commercial banks, that "the basic principle of separation of banking and commerce was established".

A bank is a financial institution and a financial intermediary that accepts deposits and channels those deposits into lending activities, either directly or through capital markets. A bank connects customers that have capital deficits to customers with capital surpluses. Due to their critical status within the financial system and the economy generally, banks are highly regulated in most countries. They are generally subject to minimum capital requirements which are based on an international set of capital standards, known as the Basel Accords. The Bank for International Settlements (BIS) is an international organization which fosters international monetary and financial cooperation and serves as a bank for central banks. The Basel Accords refer to the banking supervision Accords (recommendations on banking regulations)—Basel I, Basel II and Basel III—issued by the Basel Committee on Banking Supervision (BCBS). They are called the Basel Accords as the BCBS maintains its secretariat at the Bank for International Settlements (BIS) in Basel, Switzerland and the committee normally meets there.

Investment banking is a field of banking that aids companies in acquiring funds. In addition to the acquisition of new funds, investment banking also offers advice for a wide range of transactions a company might engage in. An investment bank is a financial institution that assists individuals, corporations and governments in raising capital by underwriting and/or acting as the client's agent in the issuance of securities. An investment bank may also assist companies involved in mergers and acquisitions, and provide ancillary services such as market making, trading of derivatives, fixed income instruments, foreign exchange, commodities, and equity securities. Investment bankers identify capital opportunities, negotiate and structure deals, and execute private and public financial transactions.

The essential function of an investment bank is to act as an intermediary between potential investors and those who seek capital. Investors include individuals, mutual funds, municipalities, public corporations, and private institutions. An investment banking firm also does a large amount of consulting. Investment bankers give companies advice on mergers and acquisitions, for example. They also track the market in order to give advice on when to make public offerings and how best to manage the business' public assets. Some of the consultative activities investment banking firms engage in overlap with those of a private brokerage, as they will often give buy-and-sell advice to the companies they represent. Unlike commercial banks and retail banks, investment banks do not take deposits. There are two main lines of business in investment banking. Trading securities for cash or for other securities (i.e., facilitating transactions, market-making), or the promotion of securities (i.e., underwriting, research, etc.) is the "sell side", while dealing with pension funds, mutual funds, hedge funds, and the investing public (who consume the products and services of the sell side in order to maximize their return on investment) constitutes the "buy side". Many firms have buy and sell side components.

II. INVESTMENT BANKS AND INVESTMENT BANKING IN INDIA

Investment Banks are financial intermediaries who help businesses in fund raising. An investment bank or an investment banking firm is a kind of a financial institution, which assists governments, corporations and even individuals in raising assets by underwriting or acting as an agent of client for issuing securities. Such an organization even assists companies in Mergers and Acquisitions and offer ancillary services like market making, foreign exchange, trading of derivatives, commodities, equity securities and instruments of fixed income. Investment Banking in India has evolved over a period of time. As per Indian Regulations, it is not allowed for one legal entity to perform all investment banking functions. Bankruptcy remoteness is a key feature while structuring the business lines of an investment bank. Therefore, Indian Investment banks follow a conglomerate structure by keeping their business segments in different corporate entities to meet regulatory norms.

III.OBJECTIVES OF INVESTMENT BANKING

An Investment Banker is an intermediary between the capital markets (investors) and corporations (borrowers). He offers strategic advice and performs financial analysis. He also does research and analyses all public information to give advice on publicly listed stocks and bonds to investors and sales and trading groups. The objectives of Investment Banking include:

- Guidance
- Project Formulations
- Implementation
- Modernization
- Diversification
- Mobilizing resources
- Raising Capital

IV. INVESTMENT BANKING ACTIVITIES

Investment Banks provide a wide range of financial services to clients. They structure Mergers and Acquisition deals, raise capital, analyze prospects of listed companies and offer advice, trade in securities on behalf of clients etc. Therefore, Investment Banking can be defined to encompass many activities such as

a) Corporate Advisory Services:

- Identify promising projects
- Prepare feasibility studies - economic and financial
- Prepare in-depth project reports
- Capital structuring
- Arrange and negotiate foreign collaborations
- Give guidance on amalgamations, mergers and takeovers

b) Raising Capital, Syndication of loans and project finance

- Aid in applying to financial institutions, banks and other sources of finance
- Expert advice on government policies, demand-supply gaps, raw material availability, product-mix, plan capacity utilization, requirements of plant and machinery etc
 - Consultation about alternative sources of finance, debt-equity ratios, etc
 - Liaison with government departments, financial institutions, banks etc
 - Advise and assistance for modernization, expansion and diversification
 - Private equity deals
- Issue management
 - Deciding on the size and timing of a public issue in the light of market conditions
- Preparing the base of successful issue marketing from initial documentation, liaison with Securities and Exchange Board of India (SEBI), and preparation of actual launch
 - Optimum underwriting support
 - Appointment of bankers and brokers as well as issue houses
 - Issue management
- Professional liaison with share market functionaries like brokers, portfolio managers and financial press for pre-selling and media coverage
 - Preparation of draft prospectus and other documents
 - Wide coverage throughout the country for collection of applications advertisement.

V. PROFESSIONAL OPPORTUNITIES IN INVESTMENT BANKING INDUSTRY

There are a plethora of job titles available in the investment banking industry. They include:- Corporate Finance, Mergers and Acquisitions, Project Finance, Sales and Trading, Structured Finance, Derivatives, Advisory, Equity and Fixed Income Research, International Sales/Emerging Markets, Public Finance, Retail Brokerage, Institutional Sales, and Ratings Analyst. Some of the most prominent fields in the investment banking industry include:

a. Corporate Finance - The job of the corporate finance officer is to create value for a company. Those in this field work for a company in order to help it generate money to run the business, grow the business, make acquisitions, plan for its

financial future and manage any cash on hand. Corporate Finance professionals determine the funding needs of their clients and analyze the best alternatives to meet these needs, such as debt or equity issuance. Typical clients include corporations and public institutions. Other duties may involve working with investors interested in financing these ventures. Corporate finance professionals are trying to maximize shareholder value. They do this through managing cash flow, negotiating terms with leaders and suppliers, monitoring liquidity, managing risk, and raising funds. Typical job titles in this area include treasurer, credit analyst, cash manager, investor relations officer, and controller. Corporate Finance opportunities can be found in both large and small companies and in diverse industries. The skills most needed for a career in corporate finance include analytical and negotiation skills, 15 computer and communication skills, a willingness to take risks, a strategic way of thinking, and a competitive spirit.

b. Sales & Trading - Positions in this area involve analyzing stocks, bonds, and other securities for potential trading. This information is then shared with institutional investors and corporations. These positions require an in-depth knowledge about financial markets, as well as the ability to make quick decisions that may involve a great deal of risk.

c. Mergers & Acquisitions - Companies utilize investment banks when they want to sell all or a portion of their corporation. A career in this area involves analyzing the value of assets and negotiating the sale. M&A professionals are responsible for determining how much involvement their clients should have.

d. Analysts - This entails following the economy and key indicators of market stability. The investment bankers in this field may research individual companies and industries or the overall market. Forecasting future activity and risks involved are their key responsibilities.

e. Research - Most major investment banks employ a research staff that performs the risk, economic, and financial analysis used to support internal operations, from acquisitions and mergers to formulating trading positions in world, US, and regional markets. The profitability of an investment bank is directly related to the quality of its research analysis.

VI. CHALLENGES TO INVESTMENT BANKING BUSINESS

Scarce Capital Resources: The corona virus pandemic has created recessions and depressions all over the world. As a result, in almost all markets, individuals, as well as companies, are not very comfortable investing their money. They would rather hold on to their money for some time rather than invest it in the short run. This has created a world where capital resources are scarce. The job of investment bankers is to allocate capital resources efficiently. If there are fewer capital resources to be allocated, then there is a reduced business for the investment bankers in general. This has become a challenge for the entire industry since they are looking at a prolonged recession.

Need to Reduce Costs: Markets all over the world have become increasingly competitive. As a result, the prices of goods and services are going lower. This is having a ripple effect on the finance industry as well. Companies are facing shrinking margins, and hence the cost of capital is going down as well. The problem is that the investors are already afraid to invest money. In such a scenario, they expect more compensation in order to induce them to invest. However, the market is actually reducing the interest rates as well as the costs of equity. Hence, investment bankers are not able to reconcile the needs of corporations as well as the investors, which is creating a challenge for them as far as effective intermediation is concerned.

Increased Regulations: The investment banking industry was blamed for the mortgage crisis of 2008. This is the reason why heavy regulations have since been put into place. The new structured financial products which are created and sold by the finance industry are heavily scrutinized by the regulatory agencies. This creates limits on the operations of the investment banks. The number of new types of securities being created and traded by investment banks has seen a reduction post 2008. Adhering to the regulations adds to the costs at investment banks. Separate departments have to be maintained in order to ensure that the bank is compliant with the changing regulations. This also makes the services of investment banks more expensive and hence less competitive.

Technology Disruption: The rapid advances in technology have drastically changed every industry in the world. The world of investment banking is no exception, either. Over a period of years, an entirely new industry called fintech has emerged. The fintech industry is all about leveraging the use of financial technology in order to provide the same financial services for a lower price. For instance, modern fintech companies have shown that they can be more effective at raising capital as compared to investment banks. Their access to the best technology and modern network ensures that they are able to raise capital at a lower cost. Also, they have a wider reach as compared to traditional investment banks.

There are more examples where the use of technology has been more effective than investment banks. For instance, in the recent past, Bitcoin has been effectively used in order to raise capital from foreign sources. The transaction costs in the case of Bitcoin have been remarkably less as compared to the transaction costs related to normal cross border financing. If the investment banking industry does not imbibe the use of technology with immediate effect, it will soon be at the risk of becoming obsolete, thanks to fintech.

Difficulty in Cross-Selling: Investment banks have traditionally relied a lot on cross-selling. For instance, if a client comes in looking for mergers and acquisitions advisory, investment banks are often able to convince them to avail services such as issue management, capital structure advisory, and so on. There is no doubt about the fact that investment banks generate value for clients while doing these activities. However, in the current scenario, corporations have limited budgets. This means that they

have clearly instructed their finance departments to limit the number of services that they avail. This decreased budget is translating into decreased revenue for research and other departments in investment banks, which are heavily dependent upon cross-selling revenue. Companies are preferring to avail services from specialists instead of buying all the services from an investment bank for a bundled price.

VII. CONCLUSION

Investment banking taken generally to mean the financing of long-term capital needs, came into being with the merchants of medieval trade routes. In almost all developed economies of the world, even those developing late in the 19th century, investment bankers emerged from merchant roots. The provision of investment banking services has come from a variety of institutions over time and across countries. Products and services have evolved to include complex, often derivative, securities, and the legal regulation of investment banking has often changed abruptly, particularly in the last 100 years. Thus, even well-known investment banking names that have endured over the centuries bear little resemblance to their ancestors.

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INDIA 2.0: VISION FOR INDIA 2047 – DIGITAL ECOSYSTEM & HARNESSING ARTIFICIAL INTELLIGENCE

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India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence

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APPLICATION OF DIGITAL ECOSYSTEM IN EDUCATIONAL ENVIRONMENT

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Abstract

Digital ecosystems are always more extensive than any single business ecosystem and often decimate traditional market boundaries. They typically pull together various markets and stakeholders from diverse industries, connecting them in ways that were unimaginable before the digital revolution. Since the turn of the millennium, the world's most successful companies and growth drivers have almost all achieved their positions of dominance by broadening their role within larger digital ecosystems -- of which their original business model was merely a part. The technical, legal and business-related difficulties found in digital ecosystems are significant. Service orchestration, delivery and monetization, as well as customer engagement and data management (CDM) across the entire ecosystem, are some of the biggest challenges. Hundreds of digital education tools have been created with the purpose of giving autonomy to the student, improving the administration of academic processes, encouraging collaboration, and facilitating communication between teachers and learners. Time and budget are both potential barriers to implementing new technology. But partnering with digitally innovative companies can jump-start digital transformation. Building a digital ecosystem can give access to customer analytics and data, as well as new digital features or products that would be time-consuming and expensive to try and build in-house.

Keywords: *Digital Ecosystem, Digital Learning, Online Learning, Educational Environment, Digital Learning System.*

Introduction

A digital ecosystem is a group of interconnected information technology resources that can function as a unit. Digital ecosystems are made up of suppliers, customers, trading partners, applications, third-party data service providers and all respective technologies. Interoperability is the key to the ecosystem's success. The variety of digital ecosystems is already broad and most of the well-known ecosystems span multiple industries and involve different sectors of industry, partners, competitors, customers, and businesses. This defies also traditional mindsets in the industry. The “control and centralize” approach is breaking apart and a mindset of “connecting and combining” comes forward. That is why it is also one of the most successful disruptive business models. So, one of the most important parts is to understand that these digital ecosystems are not able to survive with just one single participant. There are different roles involved to make it work. Sometimes even giving the competitor a better position can pay off.

Digital Ecosystem

Digital ecosystems are frequently created and controlled by market share leaders; the model has its roots in keiretsu and is quickly influencing change in various industries,

including consumer products, automotive and healthcare. The integration of business-to-business (B2B) practices, enterprise applications and data within an ecosystem allows an organization to control new and old technologies, build automated processes around them and consistently grow their business.

Unmanaged, organic growth of an ecosystem can be fatal to a business. It's important when building an ecosystem to ensure all dependencies have been identified and can be controlled. Creating a digital ecosystem map is a key to establishing a strong ecosystem. The digital ecosystem map is a visual diagram of all digital tools and platforms used within the organization. It illustrates processes, how data is transferred between parts of the ecosystem and whether the process is automated or manual. To be effective, mapping should also document which systems are not currently connected or able to speak and transfer data between each other, as well as who the users of each system are and who is responsible for maintaining them.

Process of Digital Ecosystem

The technical, legal and business-related difficulties found in digital ecosystems are significant. Service orchestration, delivery and monetization, as well as customer engagement and data management (CDM) across the entire ecosystem, are some of the biggest challenges. The tools for managing an ecosystem can fall into the following categories:

- Project management tools, such as Agile software development tools, task management software and issue tracking systems.
- Research applications, including data storage and visualization, resource libraries and archives.
- Engagement tools, like email marketing, donor management tools and customer relationship management (CRM) software.
- Collaboration tools, including email, file sharing, instant messaging and video conferencing.
- Public platforms, such as websites, Mobile apps and social media channels.
- Knowledge management platforms, such as intranets and wikis.
- How to map a digital ecosystem
- The digital ecosystem map is essential to any digital transformation. The goal of the map is to clarify what an organization has to work with, guarantee they have the proper tools to support their goals, and ensure they are being as efficient and effective as possible in achieving those goals.

Digital Ecosystem in Education

The adoption of digital learning solutions has accelerated since the start of the COVID-19 pandemic. With multiple technologies at play, it is vital that these integrate and work together to ensure efficiency and accuracy when creating, assigning, distributing, and reporting on learning activities for the organisation. It must also integrate with HR

processes, payroll, performance management and communication – each time a new technology is added, it's vital that it works seamlessly as part of the bigger picture.

An ecosystem in the environmental sense is defined as “a biological community of interacting organisms and their physical environment”. In the context of digital learning, Gartner defines it as “an interdependent group of enterprises, people and/or things that share standardised digital platforms for a mutually beneficial purpose, such as commercial gain, innovation or common interest”.

A healthy ecosystem in the natural world remains sustainable due to its ability to maintain its structure and function against external stress. Likewise, we must pay attention to the individual components of the digital learning ecosystem within our own organisations and the internal/external forces that affect them if we want to keep that ecosystem thriving.

Components of a Good Digital Learning Ecosystem

A good digital learning ecosystem provides people with relevant, personalised learning content that can be incorporated into daily workflows. It provides one source of truth for all learning, skills and performance data, creating a collaborative environment where learning and performance data can be measured to validate business goals. Built upon social constructivism, a good digital ecosystem increases engagement by facilitating a learning experience aligned with self-led discovery. This is supported by ‘scaffolding’ in the form of peer collaboration, which helps guide learners when necessary while still granting them the freedom to create understanding for themselves. For a holistic understanding of learning, talent development and performance in organisation, 'll need to consider the individual components of a digital ecosystem and how they interact.

The Learning System

Learning system, whether that's a learning management system (LMS), learning experience platform (LXP) or smarter learning system like Thinqi, is the heart of digital learning ecosystem – in fact, 72% of organisations report gaining a competitive advantage through use of a learning system. A good learning system will include the following:

- A digital library populated with high-quality learning content
- Courses
- Functionality to support coaching and mentoring
- Collaborative discussion spaces
- Tools for detailed learner reports
- Reward mechanisms such as badges or certification
- Networks for communities of practice
- Events management
- Adaptive learning paths
- Integration with third-party content (via SCORM or xAPI)

The Human Resources Management System (HRMS)

Human resources management system (HRMS) is used to manage HR processes throughout the employee lifecycle. The HRMS can be integrated with learning system so that employee data is automatically synced across both systems. It will pull through the organisation structure and assign the correct roles and permissions to people within the business. It can also facilitate auto-enrolment of learning pathways, such as on boarding and compliance training for new hires. There is a cross-departmental requirement here where multiple departments will need to define the core competencies and requirements for roles within that area of the business. This will enable the necessary configuration to auto-enrol people into the relevant learning pathways to help them attain the competencies required in their roles. By integrating HRMS with learning system, there's no need to manually enter the same employee data into multiple systems. This saves time building complicated spreadsheets, creates a streamlined talent and learning process, and reduces the scope for errors.

Digital Tools

Hundreds of digital education tools have been created with the purpose of giving autonomy to the student, improving the administration of academic processes, encouraging collaboration, and facilitating communication between teachers and learners. Here we present 11 of the most popular.

1. Edmodo

Edmodo is an educational tool that connects teachers and students, and is assimilated into a social network. In this one, teachers can create online collaborative groups, administer and provide educational materials, measure student performance, and communicate with parents, among other functions. Edmodo has more than 34 million users who connect to create a learning process that is more enriching, personalized, and aligned with the opportunities brought by technology and the digital environment.

2. Socrative

Designed by a group of entrepreneurs and engineers passionate about education, Socrative is a system that allows teachers to create exercises or educational games which students can solve using mobile devices, whether smartphones, laptops, or tablets. Teachers can see the results of the activities and, depending on these, modify the subsequent lessons in order to make them more personalized.

3. Projqt

Projqt is a tool that allows to create multimedia presentations, with dynamic slides in which can embed interactive maps, links, online quizzes, Twitter timelines, and videos, among other options. During a class session, teachers can share with students academic presentations which are visually adapted to different devices.

4. Thinglink

Thinglink allows educators to create interactive images with music, sounds, texts, and photographs. These can be shared on other websites or on social networks, such as Twitter and Facebook. Thinglink offers the possibility for teachers to create learning methodologies that awaken the curiosity of students through interactive content that can expand their knowledge.

5. TED-Ed

TED-Ed is an educational platform that allows creating educational lessons with the collaboration of teachers, students, animators—generally people who want to expand knowledge and good ideas. This website allows democratizing access to information, both for teachers and students. Here, people can have an active participation in the learning process of others.

6. cK-12

cK-12 is a website that seeks to reduce the cost of academic books for the K12 market in the United States and the world. To achieve its objective, this platform has an open source interface that allows creating and distributing educational material through the internet, which can be modified and contain videos, audios, and interactive exercises. It can also be printed and comply with the necessary editorial standards in each region. The books that are created in cK-12 can be adapted to the needs of any teacher or student.

7. ClassDojo

ClassDojo is a tool to improve student behavior: teachers provide their students with instant feedback so that good disposition in class is 'rewarded' with points and students have a more receptive attitude towards the learning process. ClassDojo provides real-time notifications to students, like 'Well Done David!' and '+1', for working collaboratively. The information that is collected about student behavior can be shared later with parents and administrators through the web.

8. eduClipper

This platform allows teachers and students to share and explore references and educational material. In eduClipper, can collect information found on the internet and then share it with the members of previously created groups, which offers the possibility to manage more effectively the academic content found online, improve research techniques, and have a digital record of what students achieved during the course. Likewise, it provides the opportunity for teachers to organize a virtual class with their students and create a portfolio where all the work carried out is stored.

9. Storybird

Storybird aims to promote writing and reading skills in students through storytelling. In this tool, teachers can create interactive and artistic books online through a simple and

easy to use interface. The stories created can be embedded in blogs, sent by email, and printed, among other options. In Storybird, teachers can also create projects with students, give constant feedback, and organize classes and grades.

10. Animoto

Animoto is a digital tool that allows to create high-quality videos in a short time and from any mobile device, inspiring students and helping improve academic lessons. The Animoto interface is friendly and practical, allowing teachers to create audiovisual content that adapts to educational needs.

11. Kahoot!

Kahoot! is an educational platform that is based on games and questions. Through this tool, teachers can create questionnaires, discussions, or surveys that complement academic lessons. The material is projected in the classroom and questions are answered by students while playing and learning at the same time. Kahoot! promotes game-based learning, which increases student engagement and creates a dynamic, social, and fun educational environment.

Conclusion

At the moment, digital transformation has become one of the most important educational trends, especially taking into consideration the current situation that's occurring around the world. When the business has quick and constant access to learning content, it's possible to gain knowledge and complete tasks from anywhere. And one should know that situations require it quite often. With eLearning tools, one can respond to the latest requirements of the educational sector. Time and budget are both potential barriers to implementing new technology. But partnering with digitally innovative companies can jump-start digital transformation. Building a digital ecosystem can give access to customer analytics and data, as well as new digital features or products that would be time-consuming and expensive to try and build in-house.

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VISION FOR VISHWA GURU INDIA: INITIATIVES FOR GLOBAL LEADERSHIP BY 2047

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VISION FOR VISHWA GURU INDIA: INITIATIVES FOR GLOBAL LEADERSHIP BY 2047

Volume – II

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SIGNIFICANCE OF KNOWLEDGE CREATION AND INNOVATION IN HIGHER EDUCATION INSTITUTIONS

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Abstract

Education creates pathway for obtaining and creating knowledge among the human beings. New Education Policy also emphasizes the importance of knowledge creation and innovation. Innovation is the mother of inventions. Innovation is never ending since the technology keeps on updating itself with new standards and formats. The knowledge creation and innovation are inter-related and inter-dependent. Schools, colleges and universities involve in the process of knowledge creation and transmission. Knowledge creation is not so easy task as one thinks. It is complicated, perishable and different from person to person in terms of reachability. Teachers' role is crucial in creation of knowledge and transmission of knowledge to the leaning community is also important. So, the current articles highlights the knowledge creation and innovation in Higher Education Institutions (HEIs), including the sub topics: Knowledge, Types of knowledge, Process of knowledge creation, Information Technology in Knowledge creation, Innovation in knowledge creation, Higher education institutions in knowledge creation and Problems in knowledge creation. The important and relevant concepts were discussed in this article to signify the knowledge creation and innovation methodologies.

Keywords: *Knowledge, Types of knowledge, Process of knowledge creation, Information Technology in Knowledge creation and Innovation in knowledge creation*

Introduction

Knowledge is fundamental aspect of many aspects. All the disciplines such as Engineering, Science, Mathematics, Commerce, Management, Computing and so on require the application of knowledge. Knowledge is understood by different people in different meanings. But, it is common that it is related to understanding and experience. This current article discusses the creation of knowledge and innovation in higher educational institutions. Higher education plays major role in social development and economic infrastructure in the country. As per the policy of NEP 2020, Higher education institutions should play major role in creation, retention and transmission of knowledge. The knowledge creation and innovation are the primary functions of education service. Both are continuous and ongoing process.

Knowledge

Knowledge means awareness, familiarity or understanding of a factual information, descriptions. It is always acquired through experience or education by assuming, discovering or learning. Knowledge is different from skill and talent. Talent is inborn in human beings. Skill is acquisition of ability to do something. Knowledge includes talent and skill. But they are not one and same. Knowledge is not limited to education. Education just supports in acquisition of knowledge.

Knowledge creation and development are the essentials of man making process. Especially, Education sector is more concerned with the creation, development and retention of knowledge in the minds of human beings. Knowledge means different to different people. Process of knowledge creation includes many methods and techniques. Knowledge may be theoretical or experimental.

Types of Knowledge

Knowledge	
Explicit knowledge	Tacit knowledge

Explicit knowledge is a kind of informational fact which is searchable and easy to find. Users of such knowledge can integrate regarding the value and use of this knowledge. Eg. Manuals, documents, plans and procedures, how-to-do videos, etc.

Tacit knowledge means knowledge existing in minds of people virtually. Usually it is not explorable like explicit knowledge. It is also not sharable information or content with another person orally or in writing. Eg. Knowledge of walking, running, riding bicycles swimming, etc.

Though ideas are created in the minds of individuals, but the interaction critically between individuals which plays a critical role in developing these ideas. To mention typically, Interacting communities shall contribute to the creation and development of new knowledge sets. In today's marketing world, knowledge creation and knowing how management of knowledge are of top priority for everyone. Businesses which manage the information well, have an important edge over their competitors. The advanced economies of today rapidly become economies of knowledge, where the creation and marketing of knowledge turn overruling.

Knowledge Creation

Knowledge Creation literally means the continuous integration, transferring and conversion of different types of knowledge to the users or people. It happens when users try to interact, to practise and to learn. In simple words, it is the creation of various ideas, which is similar to the heart of a company's competing advantage.

Competitive or competing advantage is one that a company possesses while it has the edge over its competitive enemies and rivalries. Especially, when it has the corner of the provision for a certain product or service or brand. Knowledge creation is the formulating process of new notions, technics and conceptual facts. It happens through the human interactions between explicit and tacit knowledge of people.

Generally *intuition is accepted and valued* and where *experience is nothing more than merely a theory*. These concepts flashbacks to the idea of theory in use (pointing out to working environments that do not usually follow strict, "official" rules, protocols and procedures) and the acceptance and support of environments which allow brain-storming tasks, trial and error methods and unstructured interaction activities.

In the view of innovation theory, one shall refer to the practice of establishing key teams to solve problems of queries, unhindered by the bureaucracy policies that may exist in the firm alike the value of chaos and the benefits of smaller alongside fast-acting teams. One common alternative method is the usage of cross-functional project teams in the institutions and organizations. They are normally a group of experts persons from different parts of the organizations, which is guided by a "generalist" known project leader. If those teams are allowed with the decision making powers and independence to experiment and work in an autonomous and freed or virtually autonomous environment, it could be a great catalyst for brining innovation and new knowledge creation practically in the process.

Once the activity is completed, the members return back to their role in the organizations, by extending help to the firm to spread this knowledge back into their respective community of practices. The project team shall also facilitate the creation of bridges normally between communities of practice and at any times may even serve as a provision to extend them on as and when required basis. Deviations of this concept can be seen in many places in innovation theory in existences.

To provide facility for supporting the work tasks and flow: It can be normally groupware systems which facilitate communication or brainstorming activities. Anyhow, they should not be interference with creative processing or communities of practices, or should not enforce the rigidly stiff organizational practices.

To provide knowledge-base personnel with timely, relevant information and data. In today's rapidly fast and rapid-paced environment, It is invisibly synonymous with the implementation processes of IT systems which can store, retrieve, organize, and exhibit information and data in a helpful manner effectively.

IT and Knowledge Creation

The usage of IT is unavoidable and very much indeed. The IT is for sharing knowledge, allowing for support in the transferring process of all the knowledge kinds. An important view is that it must be supportive and should not interfere with informal collaboration works. For example, groupware systems shall be devised to enhance communication between clustering groups or teams, particularly if the support is varied (Eg: audio, video, textual materials—as per the necessities of the individual firms) informal communication.

Beyond this argument, IT also has a crucial role to play through information management systemized services, by offering access to data and information facts, for empowering the managers to perform in-depth analysis often. Even more, IT systems shall also be programmed to find out current and future trends in data and information science and showcase them to the management for decision making. It essentially stimulates the manager to take better decisions of business and helps in knowledge creation by offering some of the building blocks tactics for new knowledge delivery efficiently. IT tools and methods shall also be utilized in the innovation processes. But they are outside the limits of knowledge management in most of the cases.

Knowledge Creation Management

Knowledge creation management usually refers to the systematic process of sharing, creation, usage and management of an organization's knowledge sets and information effectively, timely and efficiently. It is based on multidisciplinary approach to take advantages of the best usage of knowledge or information. It is a wide and popular field among various services. In fact, many large institutions and companies, non-profiting organizations and public undertaken institutions devote the resources to the knowledge management properly.

The management of knowledge is quite often a part of business strategies making, human resource management or IT department's policies in the business and non-business sphere. IT here means Information Technology (Computing). Its efforts usually focus on overall objectives such as innovation, R&D and higher output productivity. It also concentrates on competitive advantage, integration of resources, the sharing of lessons and experiences learned and the on-going improvisations and mechanisms of the business ventures. Almost in all the cases, these efforts can overlap normally with organizational learning pattern.

Knowledge Creation Process in HEIs

The *knowledge creation process* has the elements of invention and innovation of new concepts, patterns, approaches, methods, techniques, products, services, and

ideas which can be utilized for the ultimate benefits of stakeholders including people, society and organizations. Generating and exploring of new sources of customer demands, stimulating personal and organizational growth and rethinking – redesigning of the existing rules of the law can help organizations to develop, thrive and endure in knowledge domain. Failure in doing so, will lead to a situation of stagnation, decay or death of the enterprise or education institutions in due course.

In HEIs, knowledge management usually tries to help in triggering the imagination by offering a continually refilled source of ideas, facts and experiences for the students and learners. People do help to bring out the best ideas in each domain and discipline and other through the interactions as a part of networking systems physically or virtually. Analysis of collected knowledge showcases the patterns and opportunities for new developments and ventures. Many HEIs always like to be familiar for their innovations, but it is not always easy to turn the thought process into reality. Some measures such as connecting creative people by various communities like departments and associations, exploring patterns through analysis and testing and establishing flows of process or algorithms for creation of new knowledge could help to stimulate innovation among the students and faculties.

Examples

- First example is “Patent disclosure process”. When an ideology for an invention is being shared with others within a HEI, it can result in helpful suggestions for improvements and corrections. Colleagues acting as a sounding board for testing process, assumptions and referrals to others shall help in doing similar tasks.
- Second example is a process for converting practical experience into new standard methods. Providing a process for practitioners who discover improved methods of doing things or tasks to convert their thoughts into new ways or procedures, which will result in creation of new knowledge being provided to others of the ecosystem.
- Third example is frequently inviting innovation practitioners to share their latest ideas and inventions during community events or students programmes can become a process of knowledge creation. As part of those presentations, building in time for the community members like students and faculty to brainstorm about methods to apply the concepts, facts and ideas. Suggesting good ideas shall be taken and followed up on them during forthcoming events may be implemented.

- Forth example is providing a simple process for white papers normally to be submitted, clearly reviewed and published which helps in facilitating knowledge creation in HEIs. Providing a new way to subscribe to the recent publications in respective subject areas of interest, connecting with the authors and co-authors and collaborating on further nuances of published ideas can be implemented.

Practical Ideas for Innovation in HEIs

1. Motivating students and faculties to practise innovations both internally and externally, for ideas generation.
2. Following good standards and best practices from other organizations, say: **Netflix prize**.
3. Conducting testifying experiments and events to test innovative methods and ideas.
4. Using analytics methods and metrics to analyze the results and pick the ones that are mostly effective and workable.
5. Collection of suggested improvements, using rapid prototyping to find them out and then iterate and improve where required.
6. Enabling innovation by supporting integration of diversified tools.
7. Encouraging students and faculties to work on projects that are innovative and risky.
8. Encouraging the formulation of book clubs portals, discussion forums or groups and brainstorming engagements and events to involve people in thinking about innovative and better ways of doing things alternatively.
9. Taking the best ideas and methodology invented and implementing them.
10. Holding regularly innovation challenging tasks, tournaments, contests, programmes and activities of jams.
11. Asking people to use collaborative tools such as enterprise social networks (ESNs) to explore ideas and thoughts for improvisations, new steering and break-throughs if really required.
12. Inviting people outside the institution to speak over calls, present in meetings and participate in conferences, seminar and workshops.
13. Adapting the methodologies proposed by external speakers for use in the HEIs.
14. Setting up prediction forums to devise the knowledge of crowds to select between options or opportunities.

Conclusion

Knowledge creation usually depends upon the various mechanisms mentioned in the sub-section on knowledge sharing, integrated with the potential to use knowledge into real time practices in an environment that supports interaction and experiential experimentations among the students and faculties of Higher Education Institutions (HEIs). The creative knowledge creation process is really a delicate, quite complicated and sensitive one and it is easily vanished by strict following to rules and regulations or by bureaucracy rule system of supervisions and supports. Similarly, IT systems of HEIs must be implemented along with due-care and should not attempt to replace processes of importance to knowledge creation in the HEIs.

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PERSPECTIVE OF ICT TOOLS IN EDUCATION

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ARTIFICIAL INTELLIGENCE IN EDUCATION (AIED) AND AI AS A DISRUPTIVE TECHNOLOGY IN LEARNING

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Abstract

At its simplest form, artificial intelligence is a field, which combines computer science and robust datasets, to enable problem-solving. It also encompasses sub-fields of machine learning and deep learning, which are frequently mentioned in conjunction with artificial intelligence. These disciplines are comprised of AI algorithms which seek to create expert systems which make predictions or classifications based on input data. Over the years, artificial intelligence has gone through many cycles of hype, but even to skeptics, the release of OpenAI's ChatGPT seems to mark a turning point. The last time generative AI loomed this large, the breakthroughs were in computer vision, but now the leap forward is in natural language processing. And it's not just language: Generative models can also learn the grammar of software code, molecules, natural images, and a variety of other data types.

Introduction

Artificial Intelligence in Education is developing new solutions for teaching and learning for different situations. Nowadays, AI is being used by different schools and colleges across different countries. AI in education has given a completely new perspective of looking at education to teachers, students, parents, and of course, the educational institutions as well. AI in education is not about humanoid robots as a teacher to replace human teachers, but it is about using computer intelligence to help teachers and students and making the education system much better and effective. In future, the education system will have lots of AI tools that will shape the educational experience of the future. In this topic, we will discuss the impact and application of Artificial Intelligence on Education.

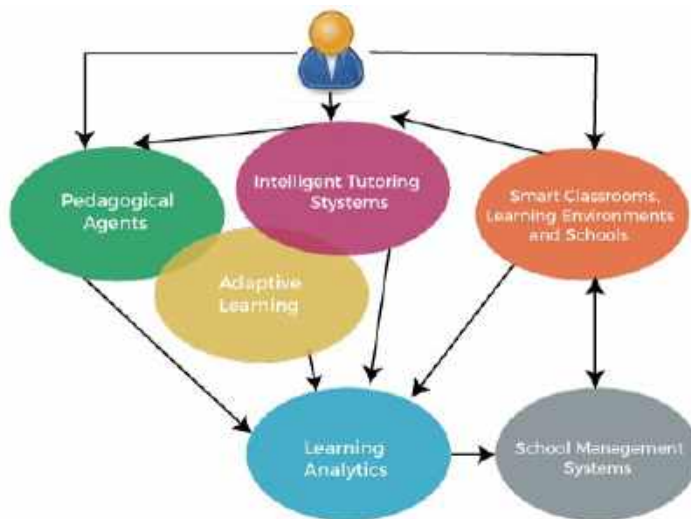
AI in Education

Artificial Intelligence (AI) has the potential to address some of the biggest challenges in education today, innovate teaching and learning practices, and accelerate progress towards SDG 4. However, rapid technological developments inevitably bring multiple risks and challenges, which have so far outpaced policy debates and regulatory frameworks. UNESCO is committed to supporting Member States to harness the potential of AI technologies for achieving the Education 2030 Agenda, while ensuring that its application in educational contexts is guided by the core principles of inclusion and equity.

Education is an important part of life for everyone, and a good education plays a vital role to have a successful life. In order to improve the education system for the students, there are always a lot of changes happening around the world, ranging from the way of teaching to the type of curriculum. Artificial Intelligence is a thriving technology that is being used in almost every field and is changing the world. One place where artificial intelligence is poised to make big changes is (and in some cases already is) in education

Overview of Aied (Artificial Intelligence in Education)

Artificial Intelligence (AI) is a simulation of human intelligence into a computer machine so that it can think and act like a human. It is a technology that helps a computer machine to think like a human. Artificial Intelligence aims to mimic human behaviour. AI has various uses and applications in different sectors, including education. In the 1970s, AIED has occurred as a specialist area to cover new technology to teaching & learning, specifically for higher education. The main aim of AIED is to facilitate the learners with flexible, personalized, and engaging learning along with the basic automated task. Some popular trends in AIED include Intelligent tutor systems, smart classroom technologies, adaptive learning, and pedagogical agents. Below diagram shows the relationship between all these trends:



Applications/Roles of Artificial Intelligence in Education

Automate basic activities in education with AI

In the education system, there are various activities which take lots of time of teachers such as grading tests and home-works. These tasks require lots of time and effort, while this time could be used in interacting with students, letting them know their errors, teaching new things, and many more. To save this time, Artificial Intelligence can be used. With AI tools, it is possible to automate the grading system for nearly all types of MCQ(Multiple choice questions) and fill-in-the-blank, and they are very close to being able to grade written responses.

Additional Support for students with AI tutor

As it is obvious that teachers can't be present with students all the time while they study, as teachers in colleges have fixed timings. But each student is not smart enough to grasp all the things at once, and they need additional supports from someone to help them in the understanding study material. This additional support can be provided by the AI tutors. Currently, there are various AI-driven tutoring programs that can help students in learning the basics of mathematics, writing, and other subjects. With these AI programs, students can learn fundamentals, but still, they are not suitable to learn high-level concepts of any subject

Helpful feedback to students and teachers with AI-driven programs

AI is not only helping the students to learn the customized course as per their requirements, but it can also give feedback to both the teachers and students about the success level of the course. Some online course providers are currently using such feedback-based AI systems to analyse the progress of the student and also alert the professors for the critical performance issue of the student. These type of AI-driven systems enables the student to get the proper support, and professors can determine the areas of teaching where it requires improvement. Instant feedback to students helps them understand where they are going wrong and how they can do it better.

Finding improvement required in course with AI

In the education system, it is very hard to find out the gaps in learning. Teachers have limited time to teach in the classroom, and they may not always know where the students are lacking and what concepts have confused the student. To solve this problem, AI-driven programs can help the education system. Coursera and some other learning platforms are already using AI-driven programs in practice. For example, when a large number of students are found to submit the wrong answer to a homework assignment, the system alerts the teacher and gives future students a customized message that offers hints to the correct answer.

Changing the role of the teacher.

Teachers always have a critical role in the education system, but this role and its requirement may change with the new technologies. As in the above points, we have already discussed that Artificial Intelligence can automate different tasks such as grading, reports, help students while learning, and may also be an option of real-world tutor in some cases. AI can be included in different aspects of teaching. AI systems can be programmed for providing expertise to students, a place where students can ask their doubts and could take the place of teacher for teaching basis course materials.

Personalize education with AI

The main aim of Artificial Intelligence in education is not to completely replace teachers. Instead, it aims to act as helping hands for teachers as well as students. AI

systems can be programmed to provide personalized learning to students. With personalized learning, each student can have their own way of learning as per their level of understanding and need. By understanding the needs of every student, teachers can come up with a tailor-made study plan for every student. As AI is developing day-by-day, it is possible that machines can identify the facial expressions of students while learning the concepts can understand if they are finding any difficulty in learning, and according to that make changes in the way of teaching.

Generating Smart content with AI

With AI, it is possible to generate smart content in three ways:

Digital Lessons	Nowadays, everything is becoming digital, and so the education. Digital learning is being preferred in colleges with customization options, e-books, study guides, bite-sized lessons, and many other things with the help of AI.
Information Visualization	Visualizing things rather than listening is much more efficient to understand in a better way and keep in mind for a long time. With Artificial Intelligence, the study information can be perceived in new ways of visualization, simulation, web-based study environment.
Learning content Updates	Moreover, AI also helps in preparing the content of lessons, keeping information up to date, and make it adaptable as per different learning curves.

Ensure Access to Education for Students with Special Needs

Life is full of challenges for those students who have some learning disabilities such as deaf or hard of hearing, visually impaired, etc. Such students may face various difficulties while learning and studying. Moreover, they also need extra care & time. With the adoption of innovative AI technology, there will be new ways of interacting with such students. AI-enabled tools can be successfully trained to help a group of students with special needs.

Universal Access

One of the great uses of Artificial Intelligence of digital learning in education is universal access to study material. Each student has his own grasping capability, and with the use of universal access, they can learn anywhere and anytime. Students can explore things whenever they want to learn without waiting for the tutor. Moreover, students get the facility of high-quality courses and material from all over the world at their place only without travelling away from their home.

Benefits of AI for Students

24*7 access to Learning

With AI-driven digital Learning, students can learn anywhere, anytime. Every learner is free to plan their schedule, rather than being linked to a specific place only. Everyone can make their learning easier and effective as per their most productive hours.

Better Engagement

With personalized learning, custom tasks, and digital visualisation, the study becomes more interactive and engaging. Personalized learning and great experience with AI-driven programs make students feel much confident and smarter as they can explore many things apart from their syllabus without any hesitation or fear of asking. All these things and new AI technologies are increasing the interest of students in studies.

Less Pressure

With AI-driven programs and personalized learning, students feel less pressure of studies. AI-enabled virtual assistants help the students whenever they ask a question, with a complete explanation. In the traditional learning methods, a student needs to ask queries in class in front of everyone, which might hesitate some students, and these issues can be resolved with the help of virtual assistants. However, all the questions can't be correctly answered by these virtual assistants. But for basic queries, they can be much helpful that can boost the confidence of each learner and reduce the pressure.

Future of AI in Education

As per the researches, in the near future, AI in education will step in three main ways, which are:

Performance personalization

With day-by-day development in AI technology and computing power, it will be possible to create personalized curricula through collecting and generalizing the information. Various new AI solution such as "Brightspace insights" helps the instructor to track, measure, and monitor the progress of learners, and also help them in this learning journey. It provides a complete picture of the learning journey of a learner across the platform.

Violation Bias

Human bias has always remained a hindrance in the education system and also an issue in AI tools. In future, AI in education will find new solutions that can evaluate work and tests exams using established criteria in order to eliminate bias.

Combined Assistance

Professors/teachers in colleges usually have masters in their field and have a degree in specific areas of development. But the administrative work is often a frustrating attempt at rapprochement with students. AI in education can solve this problem in the future with smart classrooms with AI assistance who can provide necessary help to the teachers to give their best.

AI-Guided Learning

Whether the public can see it or not, the education system is undergoing a transformation, and it will look drastically different than what we have known. This change has been in the making for years, with questions arising about the effectiveness of standardized testing, class size, personalized lessons, and much more. However, with the introduction of artificial intelligence (AI) and robotics now making it into the classroom and homes of students, we are just beginning to see the biggest change yet. It is time for a new approach to education and artificial intelligence, with a major focus being put on a new category led by ROYBI in this transformative field: “Self-Guided Learning Through AI.”

A big portion of self-guided learning takes place outside of the official classroom. That is why homework assignments have been used traditionally to allow students to repeat and practice what they have learned in the classroom, and also, develop self-discipline, self-reliance, and independent thinking. Roybi Robot encompasses this new idea of self-guided learning through AI and goes a step further, to use technology to assist students and teachers in a more efficient way. While Roybi Robot is not intended to replace the role of in-person instruction, it can allow any environment to become an extension of the classroom.

Being able to guide oneself through some portion of the learning process is an opportunity that every student would benefit from in our current unequal distribution of academic resources. It also greatly increases the effectiveness that a single instructor can have. For example, through the use of Roybi Robot, a teacher located anywhere around the world can teach any number of students without the restriction of classroom walls. On top of that, teachers can use the technology to track all of the students’ progress in one place.

Educational robots provide a variety of different ways for students to learn STEM disciplines and languages. There are a few main reasons kids learn better from robots than traditional methods, and much research has been done on the topic. The use of educational robots is more likely to elicit from the user beneficial behaviors for learning. They are perceived to be more engaging and enjoyable than virtual agents like tablets and computers. Research has also suggested that users respond and comply much more with physical robots compared to a video representation of the same robot.

Conclusion

Artificial intelligence and its uses in our lives are growing day by day in many segments. In the field of education, AI has started showing its influences and working as a helping tool for both the students and teachers and supporting the learning process. But still, the use of AI in education is not adapted by all the colleges completely, and it will take a long journey to do this. However, studies show that in the near future, AI will have a good impact on the education sector. It is currently transforming the education industry but is yet to show its real potential in education. Further, learning from computer systems can be much helpful, but it is unlikely to fully replacing human teaching in schools and colleges.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

VOLUME - 2

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EFFORTS OF GREEN FINANCING AND DIGITAL INDIA TOWARDS THE DEVELOPMENT OF MICRO ENTERPRISES IN INDIA

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Abstract

Microenterprises are small businesses that are financed by microcredit, a small loan available to people who have no collateral, credit history, savings, or employment history. The modest loans are often sufficient to get a small local business off the ground. These businesses serve a vital purpose in improving the quality of life for people in developing countries, and generally provide a product or service in their communities. As the hazards connected to ecologically destructive products and services rise, green finance is becoming a mainstream phenomenon. Green finance delivers economic and environmental advantages to everybody. It broadens access to environmentally-friendly goods and services for individuals and enterprises, equalizing the transition to a low-carbon society, resulting in more socially inclusive growth. Digital India is a programme to transform India into digital empowered society and knowledge economy. The Digital India is transformational in nature and would ensure that Government services are available to citizens electronically. This article highlights the efforts of green financing and digital India towards the development of micro enterprises in India.

Keywords: *Micro Enterprises, MSMEs, Green finance, Green economy, Digital India, Economic development.*

Introduction

Microfinance seeks to help microenterprises by loaning small amounts of capital to these businesses. This allows individuals or families with moderate, low, or no income to start their own businesses, earn income, and contribute to their communities. Many banks grant microloans to those in need, but many are provided by non-profit organizations that cater specifically to microenterprise. Like regular loans, repayment with interest is required. Digital India programme was launched on 1st July, 2015 to enable digital delivery of services to citizens. Based on the success of the programme, the Union Cabinet during August 2023 approved the expansion of the Digital India programme. The total outlay is ₹14,903 crores. It broadens access to environmentally-friendly goods and services for individuals and enterprises, equalizing the transition to a low-carbon society, resulting in

more socially inclusive growth. This results in a 'great green multiplier' effect in which both the economy and the environment gain, making it a win-win situation for everyone.

Micro Enterprises

The term microenterprise, also known as a microbusiness, refers to a small business that employs few people. A microenterprise usually operates with fewer than 10 people and is started with a small amount of capital advanced from a bank or other organization. Microenterprises are small businesses, often funded with modest startup loans. They are financed by microcredit, a type of credit available to people who have no collateral, credit history, or employment history. Microcredit has helped improve the quality of life for people in developing countries, and generally provides a product or service needed in their communities.

Microenterprises are small businesses that are financed by microcredit, a small loan available to people who have no collateral, credit history, savings, or employment history. The modest loans are often sufficient to get a small local business off the ground. These businesses serve a vital purpose in improving the quality of life for people in developing countries, and generally provide a product or service in their communities. Microenterprises not only help improve the quality of life for business owners, but they also add value to the local economy. They can boost purchasing power, improve income, and create jobs.

Microfinance seeks to help microenterprises by loaning small amounts of capital to these businesses. This allows individuals or families with moderate, low, or no income to start their own businesses, earn income, and contribute to their communities. Many banks grant microloans to those in need, but many are provided by non-profit organizations that cater specifically to microenterprise. Like regular loans, repayment with interest is required.

In India

MSME (Micro, Small, and Medium Enterprise) term was introduced by the Government of India in agreement with the Micro, Small & Medium Enterprises Development (MSMED) Act, 2006. MSME is initiated and managed under the Ministry of MSME (MoMSME) are entities engaged in the production, manufacturing, processing, or preservation of goods and commodities. MSME sector is considered the backbone of the Indian economy and contributes nearly accounts for 27% of the country's GDP. It primarily works for the development of people from backward and rural areas.

As per the official MSME annual report of 2021-22, the Total number of MSMEs in India are 6,33,88,000 out of which 3,24,88,000 MSMEs (51.25%) are in rural area and 3,09,00,000 lakh MSMEs (48.75%) are in the urban areas. As per the official data of IBEF.com as of 25th

Nov 2022 as provided by Ministry of Micro, Small and Medium Enterprise (MoMSME), there are 12,201,448 Registered MSMEs in India at Udyam Registration Portal, wherein Micro-enterprises are 11,735,117 (96.17%), Small enterprises are 426,864 (3.49%) and Midsized enterprises are 39,467 (0.32%).

Green Financing

Simply put, green finance is a loan or investment that promotes environmentally-positive activities, such as the purchase of ecologically-friendly goods and services or the construction of green infrastructure. As the hazards connected to ecologically destructive products and services rise, green finance is becoming a mainstream phenomenon. Green finance delivers economic and environmental advantages to everybody. It broadens access to environmentally-friendly goods and services for individuals and enterprises, equalizing the transition to a low-carbon society, resulting in more socially inclusive growth. This results in a 'great green multiplier' effect in which both the economy and the environment gain, making it a win-win situation for everyone.

Types of Green Financing

Green Mortgages

They allow lenders to provide better terms to home purchasers of properties with a high environmental sustainability rating or if the buyer agrees to invest in enhancing the environmental performance of a property.

Green Loans

These are loans used to support environmental initiatives such as household solar panels, electric automobiles, energy efficiency projects, and more.

Green Credit Cards

Green credit cards such as Aspirations' Zero card plant a tree every time a customer makes a purchase. They enable customers to direct their expenditure toward green finance in order to have a lasting impact on the environment.

Green Banks

Green banks operate similarly to traditional banks, but they employ public funds to spur private investment in renewable energy and other environmentally friendly initiatives. According to a 2020 research, the number of green banks in the US increased from one to 20 between 2011 and 2020, investing \$7 billion in renewable energy.

Green Bonds

Green bonds account for the vast bulk of green funding. They include bond investments, the earnings from which are used to support a variety of green initiatives such as renewable energy, clean transportation, and conservation, among others.

Digital India

Digital India is a programme to transform India into digital empowered society and knowledge economy. The Digital India is transformational in nature and would ensure that Government services are available to citizens electronically. It would also bring in public accountability through mandated delivery of government's services electronically, a Unique ID and e-Pramaan based on authentic and standard based interoperable and integrated government applications and data basis.

Digital India programme was launched on 1st July, 2015 to enable digital delivery of services to citizens. Based on the success of the programme, the Union Cabinet during August 2023 approved the expansion of the Digital India programme. The total outlay is ₹14,903 crores. The vision is centred on three key area are: Digital infrastructure as Utility to Every Citizen, Governance and services on demand and Digital empowerment of citizens

Digital Infrastructure as Utility to Every Citizen

- ❖ Availability of high speed internet as a core utility for delivery of services to citizens.
- ❖ Cradle to grave digital identity that is unique, lifelong, online and authenticable to every citizen.
- ❖ Mobile phone and Bank account enabling citizen participation in digital and financial space.
- ❖ Easy access to a Common Service Centre.
- ❖ Shareable private space on a public Cloud.
- ❖ Safe and secure Cyber-space.

Role of Digital India in Micro Enterprises

Digital technology can significantly enable India's micro, small and medium enterprises (MSME) segment, provided the emerging infrastructure has joint buy-in from the government, solution providers and importantly users. The digital landscape catering to businesses has drastically changed in recent years, several elements have emerged that can start shaping the contours of a strong digital ecosystem. The challenges reside in addressing a complex and heterogeneous MSME segment, dominated by micro enterprises at different stages, and different levels of digital readiness. The incentive for businesses to

fully embrace digital technology would be to provide a digital ecosystem that provides end-to-end solutions, from finance access, payments, operations, management to even skilling and knowledge sources that are convenient.

MSMEs are a major contributor to the Indian economy, accounting for around 30% of Gross Domestic Product (GDP) and providing employment to over 110 million people (ministry of MSME, Annual Report 20–21). However, a more sombre story emerges when examining details. The Indian MSME sector is unique in its long fat tail of relatively unproductive micro enterprises, which are unregistered or informal, new-to-formal-credit, and characterised by low growth and employment per unit. Most of the micro enterprises are sole proprietorships with less than five employees. Furthermore, informal micro enterprises are responsible for 80% of employment while contributing only 20% of output. This highlights the composition of India's current business landscape of tiny self-employed informal enterprises with low quality human capital. Conversely, there is a severe deficit of formal, productive, and job-creating small and medium enterprises.

Furthermore, while the MSME segment is perceived as a significant job creator, the quality and conditions of the jobs created are often precarious and in the form of casual labour, daily labour and self-employment, often with very little or no job security. For most micro enterprises, the entire focus is on making sure the business stays afloat, and not on growing the business. This business stagnation hampers many crucial aspects for an enterprise to grow and achieve scale, such as efficiency, innovation and production quality. While the magnitude of these problems is well known, little progress has been made to address them efficiently given the complexity and interconnectedness. In effect, three critical ingredients needed for any early stage business to thrive, namely access to markets, skills and working capital, are sorely missing for most enterprises. On the other hand, significant public investment would be required to address these gaps and create effective market linkages, skills and mentorship, and access to finance.

Role of Green Financing for Micro Enterprises

In India it is projected that MSMEs contribute roughly 70 percent to the industrial pollution. These sectors are usually dominant in industries by relatively high resources and emission intensity. Green bonds offer a range of options for MSME financing, including the issuance of green bonds from banks that aggregate MSME loans, the securitisation of MSME loans into asset-backed securities and the issuance of mini-bonds by medium-sized enterprises. An added advantage of green bonds is greater market transparency. Green finance is any financial activity undertaken to deliver better environmental outcomes. With Green funding, sustainable development projects that contribute energy efficiency and cleaner production are applicable for the scope of this scheme.

MSMEs can help in increasing entrepreneurial activities, create employment opportunities and function in backward areas thereby creating sustainability. MSMEs have capability to create a large number of earning opportunities (though smaller) catering to a big segment of population ecosystem. The Green Action Plan (GAP), adopted in July 2014, aims to help small and medium-sized enterprises (SMEs) take advantage of the opportunities offered by the transition to a green economy. The GAP is expected to: raise SMEs' awareness of: Resource Efficiency improvements and Sustainability. Green financing incorporates principles of sustainability into their business decisions in order to reduce their negative impacts on the global or local environment. They do this by selling environmentally friendly products or by greening their processes to make them more environmentally sustainable

Conclusion

The study concluded that healthy environmental policies should take into account carbon-free and ecologically friendly ways if sustainable environmental goals are to be attained. Green mortgages, bonds, and other forms of “green financing” may help us reach our goal of environmental sustainability. A digital connected India can result in the growth of the social and economic status of people. This can be achieved by the development of non-agricultural economic activities. Instead of providing access to health, education, and financial services. MSMEs are the backbone of a resilient national economy. Prioritising their development is critical to the future of the country. The government has come out with a variety of enabling mechanisms over the last few years.

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HIGHLIGHTS OF ENTREPRENEURIAL AND START-UP SCHEMES AVAILABLE FOR FOOD PRODUCTION INDUSTRIES

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Abstract

The Food Processing sector in India has a quintessential role in linking Indian farmers to consumers in the domestic and international markets. The Ministry of Food Processing Industries (MoFPI) is making all efforts to encourage investments across the value chain. The food processing industry has a share of 12.38% (at 3-digit of NIC classification) in the employment generated in all Registered Factory sector engaging approximately 1.93 Mn people. Indian government has put in place various schemes to support the food processing industry. For instance, the Pradhan Mantri Kisan Sampada Yojana (PMKSY) is aimed at promoting investments throughout the value chain to stimulate growth in the food processing industry. The Food Processing Industry sector in India is one of the largest in terms of production, consumption, export and growth prospects. The government has accorded it a high priority, with a number of fiscal reliefs and incentives, to encourage commercialisation and value addition to agricultural produce. This article discusses the highlights of entrepreneurial and start-up schemes available for food production industries

Keywords: Food industry, Food production, Food processing, Schemes for food industries, Food industry startups.

Introduction

The Food Processing sector in India has a quintessential role in linking Indian farmers to consumers in the domestic and international markets. The Ministry of Food Processing Industries (MoFPI) is making all efforts to encourage investments across the value chain. The food processing industry has a share of 12.38% (at 3-digit of NIC classification) in the employment generated in all Registered Factory sector engaging approximately 1.93 Mn people. Unregistered food processing sector supports employment to 5.1 Mn workers as per the NSSO 73rd Round report.

Food Production Industry

Major sectors constituting the food processing industry in India are grains, sugar, edible oils, beverages, and dairy products. Under PMKSY, 41 Mega Food Parks, 376 Cold Chain projects, 79 Agro-Processing Clusters, 489 proposals under Creation/Expansion of Food Processing & Preservation Capacities (CEFPPC), 61 Creation of Backward and Forward Linkages Projects, 52 Operation Green projects, 183 Food Testing Laboratories projects have

been approved across the country. The key sub-segments of the Food Processing industry in India are Fruits & Vegetables, Poultry & Meat processing, Fisheries, Food retail, dairy industry, etc.

Key Facts

- The total horticulture production is estimated to be 342.33 Mn tonnes in the year 2021-22, showing an increase of about 7.73 Mn tonnes (an increase of 2.3%) over the year 2020-21 (final)
- India ranks 1st in Milk production and the total milk production in the country during 2021-22 is 221.06 Mn tonnes. In the year 2021-22, the milk production has registered an annual growth rate of 5.29%
- In 2021-22, the total egg production in the country is 129.60 Bn which have increased by 6.19% as compared to the previous year
- The fish production in 2021-22 is 16.24 Mn Tonnes comprising of marine fish production of 4.12 mn Tonnes and 12.12 Mn Tonnes from Aquaculture
- Online grocery retail in India has seen a CAGR of over 50% and projected to grow to \$10 Bn to 12 Bn by 2025.
- Seafood products export from India during the last three years has increased from \$ 6679 mn in FY 2019-20 to an all-time high record figure of \$ 7759.58 mn in FY 2021-22. Exports to these three countries contributed 63% of exports.
- The export of other cereals recorded a growth of 13.64% in nine months of the current fiscal.
- Other cereals' exports increased from \$764 Mn in April-December 2021 to \$ 869 mn in April-December 2022 and the export of milled products increased from \$188 Mn in April-December 2021 to \$255 Mn in April-December 2022—registering a growth of 35.71 % in the nine months.
- The total meat production in the country is 9.29 Mn tonnes for the year 2021-22 with an annual growth rate of 5.62%. The total five major meat producing States are Maharashtra (12.25%), Uttar Pradesh (12.14%), West Bengal (11.63%), Andhra Pradesh (11.04%), and Telangana (10.82%)
- As per 4th advance estimates, the estimated production of rice is 130.29 Mn Tonnes, Wheat is 106.84 Mn Tonnes, and Nutri/Coarse cereals is 50.90 Mn Tonnes for the year 2021-22.
- During Sugar Season (SS) 2021-22, India exported 110 LMT sugar and became second largest exporter of sugar in the world and earned about INR 40,000 Cr worth of foreign exchange for the country.
- Non-Basmati Rice has emerged as India's top export item among the many agricultural and processed food product exports under APEDA basket, with the export of \$4,663 Mn in nine months of 2022-23.

Entrepreneurial Schemes for Food Industry

1. Mega Food Parks

The primary objective of the Mega Food Park Scheme is to provide adequate/excellent infrastructure facilities for food processing along the value chain from the farm to market. It will include creation of infrastructure near the farm, transportation, logistics & centralized processing centres. The main feature of the scheme is a cluster-based approach. The scheme aims to facilitate the establishment of a strong Food Processing Industry backed by an efficient supply chain, which would include collection centres, primary processing centres and cold chain infrastructure.

2. Integrated Cold Chain & Value Addition Infrastructure

To develop integrated cold chain and preservation infrastructure, the Ministry of Food Processing Industries (MoFPI) launched Cold Chain Scheme. The objectives of this scheme were to provide integrated and complete cold chain and preservation infrastructure facilities without any break, from the farm gate to the consumer to enable linking groups of producers to the processors and market through a well-equipped supply chain and to establish value addition with infrastructural facilities like sorting, grading, packaging and processing for horticulture, including organic produce, marine, dairy, poultry, etc.

3. Infrastructure for Agro-processing Clusters

The scheme aims at development of modern infrastructure to encourage entrepreneurs to set up food processing units based on cluster approach. The major objectives of the scheme are: To create modern infrastructure for food processing closer to production areas; To provide integrated and complete preservation infrastructure facilities from the farm gate to the consumer; To create effective backward and forward linkages by linking groups of producers/farmers to the processors and markets through well-equipped supply chain.

4. Creation of Backward and Forward Linkages

It is to provide effective and seamless backward and forward integration for Processed Food Industry; Primary processing centres/ collection centres at farm gate; Modern retail outlets along with insulated/refrigerated transport Financial Assistance; the maximum grant extended per project is INR 5.00 crores @ 35% of the eligible project cost.

5. Creation/ Expansion of Food Processing & Preservation Capacities

The main objective of this scheme is creation of processing and preservation capacities and modernization/expansion of existing food processing units which will help in increasing the level of processing, value addition and thereby lead to reduction of wastage and enhancement of farmer's income. 35% of the eligible project cost subject to a maximum of INR 5.00 crores in General Areas; 50% of the eligible project cost subject to a maximum of INR 5.00 crores in North Eastern States.

6. Food Safety and Quality Assurance Infrastructure

Setting up/upgradation of Food Testing Laboratories would benefit all stakeholders in ensuring safety and quality of food products. To analyze the samples received from food processing industry and other stakeholders; To reduce the time taken for analysis of samples by reducing transportation time of samples; To ensure compliance of

Domestic/International Standard on food; To establish a surveillance system for monitoring the quality and composition of food.

7. Human Resources and Institutions

The end product/outcome/findings of R&D work should benefit Food Processing Industry in terms of product and process development, improved preservation, packaging, storage and distribution technologies, value addition, standardization of additives, colouring agents, preservatives, pesticide residues, etc. with focus on enhancement of production, quality, consumer safety, public health and trade.

Start Ups in Food Industry

Indian government has put in place various schemes to support the food processing industry. For instance, the Pradhan Mantri Kisan Sampada Yojana (PMKSY) is aimed at promoting investments throughout the value chain to stimulate growth in the food processing industry. The Production Linked Incentive Scheme for the Food Processing Industry (PLISFPI), which is part of the Department of Animal Husbandry & Dairying in the Ministry of Agriculture & Farmers' Welfare, is another initiative aimed at promoting the industry's growth. Other schemes include the Department of Fisheries, National Bank for Agriculture and Rural Development, and Mission for Integrated Development of Horticulture (MIDH). Details of the same are available on <https://www.mofpi.gov.in/>.

There are ~3319 DPIIT recognised startups in the Food Processing Sector as on 10th April 2023. These recognised startups are spread across 425 districts of the country. They employ roughly 33,000 people. Of the ~3319 startups, approximately 32% were recognised in the year 2022. The highest number of recognised startups in this sector are in Maharashtra ~620. About 58% of the startups in this sector are from Tier 2 & Tier 3 cities.

Apart from government schemes, stakeholders such as incubators and accelerators support startups in the food processing industry. For instance, Swissnex India Accelerator, SAP-SINE Social (S-Cube) Accelerator Programme, Agri-Tech Startup Accelerator, CIE Hyderabad, and Icrisat Food Processing Business Incubator/ AgriBusiness Incubator (ABI) are some of the incubators and accelerators that support startups in the sector. Additionally, there are academic institutions such as IIT Madras' Rural Technology and Business Incubator (RTBI) and T-Hub Accelerator, which is supported by the Government of Telangana and three of India's premier academic institutes (IIIT- H, ISB & NALSAR).

Additionally, there are also several food and agriculture value chain funds like the Startup India Seed Fund Scheme, Startup India Tax Exemption Benefits, Orkla Foods Fund, SEAF India Agribusiness International Fund, Rabo Equity Advisors, Ominvore Capital and Aspada Investments. Few impact funds like Aavishkar, Villgro Innovations and Menterra are also playing a role in supporting the ecosystem.

Conclusion

The Food Processing Industry sector in India is one of the largest in terms of production, consumption, export and growth prospects. The government has accorded it a high priority,

with a number of fiscal reliefs and incentives, to encourage commercialisation and value addition to agricultural produce. The food processing industry is an important contributor to India's economy, providing employment opportunities to millions of people. With the right support ecosystem, the food processing industry in India has the potential to become a major player in the global market. In conclusion, the future of the food processing industry in India looks bright, with a growing demand for convenience foods, increasing innovation in product development, expanding export markets, the adoption of technology, and favorable government policies.

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BLENDDED MODE OF TEACHING AND LEARNING FOR TEACHERS COMMUNITY

Volume -2

Editors

Dr.M.Akilanayaki | Dr.V.Meera
Dr.T.Mohanasundari | Dr.P.Gurusamy | Dr.R.Sivarajan

DEPARTMENT OF COMMERCE - BUSINESS PROCESS SERVICES

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New Delhi

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© **Dr. M. Akilanayaki**
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TEACHERS ROLE IN BLENDED LEARNING ENVIRONMENT

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Abstract

The world is changing constantly and the various domains are also influenced by the change. There is no exemption even in the education domain. In other words blended learning means using a variety of delivery methods to best meet the course objectives by combining face-to-face teaching in a traditional classroom with teaching online. Teachers represent faculty and staff who are responsible for using a variety of instructional strategies to address individual students' strengths and needs, thereby ensuring each student has an opportunity to learn and succeed. This research indicates that able blended can play a vital role in training sessions of vocational branches in the educational organizations and workplaces. It is also not only a matter of higher education. It can be used for any vocational training based on skill development at any level. The implementation of blended learning model in a very specific field of vocational education has yielded positive results.

Keywords: *Blended Learning - Learning Materials - Students Satisfaction.*

Introduction

Blended learning shifts the teacher's role from knowledge provider to coach and mentor. This shift does not mean that teachers play a passive or less important role in student's education. In the traditional model, the teacher is the provider of knowledge. Blended Learning, on the other hand, positions the student as an active pursuer of knowledge. Information and Computer Technology (ICT) has been widely used by private and public educational institutions for teaching and learning. Higher education institutions in India have started implementing blended learning in the organizations. Blended learning approach has become more and more frequent in both research and practices. Private and government universities have facilitated their teaching and learning with Internet and ICT, especially as a supplement for their regular teaching and learning process in a blended learning environment. This means that besides face-to-face learning in a classroom, students and teachers utilize an online learning management tool or virtual learning environments.

Review of Literature

Williams, Bland, and Christie (2008) in their articles entitled that ‘blended learning as a combination of traditional face-to-face learning and distributed learning’ the latter of which "Is an instructional model that allows lecturers, students, and content to be in different locations". This pedagogical model encourages students to learn in an interactive and collaborative environment, and at their own pace and in their own time (Graham, 2006; Saltzberg & Polyson, 1995).

Wall and Ahmed (2008) carried out a research entitled that “ blended learning approach for higher education institutions faced with challenges of developing and deploying continuing professional development in the construction industry”. The framework can be used by continuing education providers to determine the most suitable combination of media for a blended learning intervention, taking into consideration learner and instructor characteristics, the desired instructional goals and strategies, the nature of the learning environment, and the availability of resources.

Yen and Lee (2011)) in their articles entitled that "blended learning, thoughtfully combining the best elements of online and face-to-face education, is likely to emerge as the predominant (Hwang, 2018; Simpson, 2018; Traxler, 2018; Leoste et al., 2019; Goodyear, 2020; Hod and Katz, 2020).

Hod, Y., and Katz, S. (2020) In this study, we found that differences between universities depending on the economic investment they had made in their facilities. In the case of the public University, the resources needed to broadcast the class from the University classroom for the blended methodology were scarce.

Objectives of the Study

The main objectives of the study is to know about the economic growth and economic development and initiative taken to blended learning environment. It can promote deeper learning, reduce stress, and increase student satisfaction.

Main Features of Blended Learning

- Students have the option of the two modes
- Teachers are well versed with both the modes
- Students get training in different life skills
- Makes teaching learning process child centered
- Diverse role of teacher.

Blended Learning Environment

Blended learning environment refers to the blend of the effectiveness of the face-to-face teaching environment and ICT-mediated teaching and learning environment (Driscoll 2002). Graham & Allen (2009) thus, describe blended learning environment as the combination of instruction, both methods and delivery media from two archetypal learning environments, the traditional face-to-face learning environment and the ICT-mediated or e-learning environment. This is the preferred working definition of blended learning environment for this study since it captures all the relevant issues being considered.

Models of Blended Learning Environment

- Transmissive pedagogy model which incorporates the provision of supplementary online resources for learning programmes conducted along predominantly traditional lines with institutionally supported virtual learning environments (VLEs). Actual teaching and learning follows the traditional face-to-face modes of lectures and seminars, but provide extra support to the students through placing lecture notes on the web.
- A holistic model of technology use to support learning. This is a newer characterization of blended learning where most learners do not distinguish between learning with or without technology. Faculty facilitates learning by using the learners' own technologies such as mobile phones, online communities and instant messaging to support the students' learning at any place and at any time

Benefits of Blended Learning

- Enhanced student learning outcomes
- Greater flexibility for students and teachers
- Improved autonomy, reflection, and research skills
- Reduced student withdrawal rate
- Ability to foster a professional learning environment
- Potential cost and resource savings

Challenges of Blended Learning

- Unrealistic student expectations
- Student-perceived isolation
- Technological problems for students
- Invasiveness into other areas of life
- Time commitment
- Technological problems for institutions
- Lack of support for course redesign
- Difficulty in acquiring new teaching and technology skills.

Conclusion

Blended learning becoming more and more prevalent, it is vital for higher education and corporate training settings to create strategic plans and directions, focusing on pedagogical techniques in blended learning" (Bonk et al., 2006). This research indicates that blended learning can play a vital role in training sessions of vocational branches in the educational organizations and workplaces. It is also not only a matter of higher education. It can be used for any vocational training based on skill development at any level. The implementation of blended learning model in a very specific field of vocational education (footwear design training) has yielded positive results. To be sure of other vocational branches in which blended learning model can be used, more researches should be carried out with emphasis on application and practice rather than theoretical knowledge.

Blended learning becoming more and more prevalent, it is vital for higher education and corporate training settings to create strategic plans and directions, focusing on pedagogical techniques in blended learning” (Bonk et al., 2006). Blended learning, in theory, can be completed from anywhere at any time, and is ideally suited to all kind of students. However, more forward thinking schools are implementing similar methods of learning for younger students. The benefits are manifest in a more responsible learner, one that is constantly challenging, creating and discovering. This research indicates that blended learning can play a vital role in training sessions of vocational branches in the educational organizations and workplaces. It is also not only a matter of higher education. It can be used for any vocational training based on skill development at any level. To be sure of other vocational branches in which blended learning model can be used, more researches should be carried out with emphasis on application and practice rather than theoretical knowledge.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

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SUSTAINABLE BUSINESS PRACTICES IN START-UPS

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Abstract

A sustainable startup refers to a startup that involves the development of products and services for fulfilling the needs of the present generation without hampering the future generation's ability to fulfil their needs. This initiative is to encourage the young entrepreneurs to greatly involve in the entrepreneurship for better future. According to the program, around 1.25 lakh bank branches will encourage youth. Entrepreneurs by giving them loan. This campaign will create new jobs for the people in India. This scheme will provide employment in long run. Success of this program may happen with overcome some barriers like rigid licensing system, lack of banks support, absence of tax holiday CSR engagement within the business models of start-ups is based on a combination of financial and social capital, while financial benefits act as a continuous motivator for CSR engagement from inception.

Keywords: Start-ups; Sustainability - CSR - Sustainable business models - Entrepreneurial orientation - Stakeholders

Introduction

Every country around the globe has understood the importance of reducing its carbon emissions. Brands have come up with eco-friendly products for people, Services are ensuring that they reduce carbon footprints. The world never had environmental concerns back in the day. Since the industrial revolution has begun, there has been an excessive load on the usage of natural resources. Carbon emits resources like crude oil, coal, etc has seen a massive spike in usage. Burning of these fuels creates carbon to rise in the air and that links to climatic issues, It has affected ozone layer depletion, and It has affected the ice sheets around the poles. The Governments across the countries have brainstormed on steps that can be taken to deal with such issues. However, companies have understood the impact and have begun with eco-friendly solutions towards their products. Some companies have come up with an idea to have their products and services entirely on an eco-friendly concept. The industry has seen massive growth in the previous decade. From Tesla and SpaceX to remote industries preparing toothbrushes, there are a number of startups with Eco-Friendly concepts. The electricity that used to get generated by coal plants has now been reduced. There are companies that have started with windmills, hydroelectric, and

Solar based energy solutions. These have not only reduced energy expenses but have also helped us reduce carbon footprints. India has promised to considerably reduce their carbon footprint by the year 2030.

Understanding the Importance of Sustainable Practices

Sustainable practices are crucial for green startups for several reasons. First, adopting eco-friendly strategies allows businesses to minimize their environmental footprint and contribute to a healthier planet. This is vital in today's world, with growing awareness of the severe consequences of climate change and resource depletion. Sustainable practices help meet global goals, such as the United Nations' Sustainable Development Goals (SDGs), which play a crucial role in global efforts to combat climate change and create a more sustainable future.

Second, sustainable practices boost a green startup's brand image and customer loyalty. Consumers are increasingly seeking environmentally responsible products and services. By incorporating sustainable practices into your business strategy and clearly communicating your efforts, you can attract and retain customers who value corporate social responsibility.

Third, focusing on sustainability can lead to cost savings and improved long-term viability. Implementing energy-efficient measures, reducing waste, and using sustainable resources can reduce expenses and enhance long-term growth prospects. Moreover, green startups that adopt sustainable practices can gain a competitive advantage, differentiating themselves from competitors and increasing market share.

Lastly, employee attraction and retention are essential benefits of sustainable practices. Companies that prioritize sustainability are more likely to attract skilled and motivated employees who value contributing to a better world. Furthermore, organizations with strong environmental values often report higher employee satisfaction and loyalty, ensuring long-term stability and committed staff members who drive the company's success.

Adopting Green Technology Solutions

Green technology solutions significantly contribute to the success of sustainable startups. These technologies allow businesses to reduce energy consumption, minimize waste, and optimize processes. Here are some green technology solutions to consider for your green startup:

Renewable Energy Sources: Utilizing solar, wind, or other renewable energy sources for your business operations can drastically cut your environmental impact and lower your energy bills. You can either install your own renewable energy systems or purchase green energy from local suppliers.

Energy-Efficient Devices: Replacing old, inefficient devices with energy-efficient ones can lead to substantial energy savings. Look for energy star certified products, and make sure to use energy-saving settings when available.

Cloud Computing: Cloud computing enables businesses to access software, storage, and computing power on a shared or virtualized platform, significantly reducing energy requirements for local servers and hardware. However, select cloud service providers that prioritize environmental sustainability.

Internet of Things (IoT): IoT devices can monitor and optimize resource usage in real-time, reducing electricity, water, and material consumption. IoT sensors and systems can also help identify inefficiencies in your operations, allowing you to implement targeted solutions.

Green Web and App Development: Sustainable web and app development include optimizing code to minimize energy consumption on the user's device and reducing data storage requirements. Utilizing eco-friendly development platforms, like AppMaster.io, can help you create web and mobile apps with minimal environmental impact.

Eco-Friendly Supply Chain Management

Effective supply chain management is a critical component of a green startup's overall sustainability strategy. Supply chains can have a significant environmental impact due to production processes, transportation, and waste generation. By implementing eco-friendly supply chain management practices, you can reduce emissions, waste generation, and resource consumption. Below are some strategies to create a more sustainable supply chain:

Sustainable Suppliers: Partner with suppliers that share your commitment to sustainability. Look for eco-friendly certifications, renewable energy usage, and waste reduction in their operations. As a startup, it's essential to set expectations and standards for suppliers at the outset of your business journey.

Reducing Packaging Waste: Seek ways to minimize packaging waste by using recycled, biodegradable, or reusable materials. Encourage suppliers to adopt eco-friendly packaging and invest in container return programs to reduce both waste generation and costs associated with purchasing new materials.

Circular Economy Model: Embrace the circular economy concept by focusing on resource efficiency and waste reduction. Design products that are durable, reusable, and recyclable, and implement systems for waste collection and recycling. Collaborate with your suppliers and customers to create a closed-loop system for material recovery and reuse.

Green Logistics and Transportation: Optimize transportation and logistics processes to reduce the environmental impact of shipping. This can include better route planning, using

fuel-efficient vehicles, working with eco-friendly logistics partners, and encouraging suppliers to consolidate shipments. Additionally, consider investing in electric vehicles or hybrid technologies as your fleet expands.

Start up

By incorporating eco-friendly practices into your supply chain management, you can minimize negative environmental impacts, reduce costs, and enhance your brand's reputation as a responsible and sustainable business. The key is to collaborate closely with suppliers, customers, and other stakeholders to maximize the potential for a greener supply chain, benefiting all parties involved and the planet.

Energy Efficiency in the Workplace

Reducing energy consumption and improving energy efficiency in the workplace are critical steps for green startups pursuing sustainable growth. By implementing energy-saving practices and technologies, businesses can significantly lower operating costs, reduce carbon emissions, and contribute to a healthier environment.

Here are some strategies to boost energy efficiency in the workplace:

Switch to energy-efficient lighting: Replace traditional incandescent, halogen, and CFL bulbs with energy-saving LED lights, which consume less electricity and last longer. Consider adding motion sensors to decrease energy usage by ensuring lights turn off when rooms are empty.

Optimize natural light: Utilize daylight as much as possible by maximizing window exposure, installing skylights, and using light-colored wall paints and furnishings that help reflect light. Natural sunlight not only conserves energy but also stimulates productivity and enhances employee well-being.

Choose energy-efficient appliances: Select office equipment and electronics, such as computers, printers, and air conditioning units, with an ENERGY STAR rating or equivalent energy-efficiency certification. These products consume less energy and help reduce utility bills.

Implement an energy management system: Monitor and control your organization's energy usage through an energy management system. This software can track consumption patterns, identify inefficiencies, and suggest actionable energy-saving measures.

Regular maintenance: Keep heating, ventilation, and air conditioning (HVAC) systems well-maintained to ensure optimal performance and energy efficiency. Clean and replace filters regularly, and address issues like leaks and drafts for better insulation.

Strategies for Integrating Sustainability into the Startup Culture

Integrating sustainability into the startup culture can seem like a daunting task, but there are many simple strategies that startups can implement to get started. The key is to make sustainability a priority and to embed it into the core values and operations of the business.

Here are some strategies for integrating sustainability into the startup culture:

1. **Start at the top:** The leadership team must lead by example and make sustainability a priority. This includes setting clear sustainability goals and communicating them to all employees.
2. **Incorporate sustainability into decision-making:** Sustainability should be a key consideration in all decision-making processes, from product development to procurement.
3. **Engage employees:** Encourage employees to get involved in sustainability initiatives and to suggest ways to reduce waste and emissions.
4. **Make sustainability a part of the employee experience:** Provide training and resources to help employees understand the importance of sustainability and how they can contribute.
5. **Collaborate with suppliers and partners:** Work with suppliers and partners to reduce waste and emissions throughout the supply chain.
6. **Measure and track progress:** Regularly track and measure progress against sustainability goals, and make adjustments as needed.
7. **Communicate progress:** Regularly communicate progress on sustainability initiatives to employees, customers, and stakeholders to build momentum and support.

Best Environmental Startups to Watch in 2023

Biome Makers. Recovering soil health is an essential step towards a more sustainable future. ...

Aurora Solar. As the demand for alternative energy sources increases, solar energy companies are more popular than ever. ...

Tree app

EcoCart

Bluebird Climate.

Conclusion

In today's world, sustainability is more important than ever. With climate change and environmental degradation becoming increasingly pressing issues, it's crucial that businesses take steps to reduce their impact on the environment. These startups work on the principle of sustainability and also encourage people to walk toward the path of a

sustainable lifestyleEco-friendly startups are an excellent means to build a better present and future. These startups preserve the environment for us and our future generations and bring up revolutionary technologies that can cause a boom in the country's economy.

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(Volume – 2)

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Envisioning a Self-Reliant Rural India for Sustainable Economic Development

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SKILL DEVELOPMENT THROUGH EDUCATION

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Abstract

Skills and knowledge are driving forces of economic growth and social development for any country. objectives in the study are twofold. First is to conduct descriptive analysis in terms of structural dimensions such as geographical context, focus on skill development, research methods, economic sector, type of training and origin of the study. The second objective is to conduct thematic analysis on importance of skill development, institutional and regulatory mechanisms, skill development as an antecedent for technology adoption, role of skill development in women empowerment, integrating skill development with design/methodology/approach Systematic literature review method is employed to review 45 articles on skill development research in India conducted between 2004 and 2022. Labour market reforms are required to overcome challenges such as mismatch between theory and practice, low quality of skills assimilated, the mismatch between demand and supply of skilled labour force, low level of in-house training, low cooperation from students and employees due to lack of incentives and lack of qualified teachers.

Keywords: Skill development, Education, Training, Employment.

Introduction

Today, the world and India need a skilled workforce. If we have to promote the development of our country then our mission has to be ‘Skill Development’ and ‘Skilled India” (Modi, 2014). Skill development is the acquisition of work-related skills or competencies through vocational education and training. Such vocational education and training is essentially to be imparted from school education onwards in order to promote entrepreneurial skill development which will fetch breadwinning in life of individuals. Employability is a great challenge in our education system because of several reasons like huge population, comparatively less number of educational institutions, inadequate infrastructure, non-availability of skilled trainers etc. Though India has strong policies and planning to promote education, vocational training and life-long learning, the implementation is not that much speedy and vigorous. Let us find in this write-up the reality, challenges and practices of skill development in education system in India.

The researchers have made an extensive review of literature to understand the importance of skill development in India.

Dr. S. C. Patil & Prof. Amaresh B Charantimath (2021) conducted a study on “Employability through Skill Development Programmes - an overview of significance of

Employability skills". The objective of the study was to comprehend the need of employability skills and to study the skill gap - desired vs possessed. The study concluded that the skill gaps can be bridged with training, education and short-term courses. In spite of the efforts there is still a great scope in transformation of abandoned knowledge into skills. Various ambitious missions of Government of India i.e. Make in India, Atmanirbhar Bharat, 5 trillion economy dreams etc can come true with collective efforts.

Vidhyadhar T. Banajawad & Dr.Mukta S. Adi(2020) conducted a study on "A study on skill development programmes for rural youth in India" with the objective to ascertain the current status, challenges and the Government initiatives for the skill development in India. The study concluded that skill development is currently gathering momentum and it is now evident that education and skills are fundamental in bettering employment opportunities, shrinking poverty, boosting productivity, and promoting environmentally sustainable rural development. The immediate need is assimilating skills, policies and strategies on rural development. Incorporation of skill-based training and industry link placement facility in education is indispensable. Skill development is need of the hour to adapt and match the current requirements for youth in rural India for rural development in real sense. Thus, education / skill development is an immediate and important requirement for developing countries with large youth population such as India.

Anita Swain & Sunita Swain (2020) conducted a study on "Skill Development in India: Challenges & Opportunities". The study intended to analyse the data sourced from National Skill Development Corporation. It concluded that India, the 2nd populous country in the world with around 60% youth population, has a 'demographic dividend' and need capitalise on it for reaping the benefit which can add value to the economy of the country and also support 'Make in India' campaign by providing the skilled workforce in the country. The 'Skill India' mission requires more focus on entrepreneurship skills for enhancing job generation in the country. Various schemes like PMKVY, DDU-GKY etc. have been launched by Government of India for making Indian youth skilled and employable. Indian youth should be aware of such schemes, get required training and make themselves employable.

Dr. Chandra Sekhar Dash, Shilpa Dash (2020) conducted a study on "Skill Development Mission and the Skill Landscape of India: - An Empirical Study". The study aimed to assess the skill landscape of India in the wake of emerging technological disruptions, global transformation and international mobility of workforce. The findings of the study indicate that despite the laudable and commendable features of the 'Skill India Mission', the challenges of gender inequality, sectorial imbalance in skilling, training and placements still persists.

Objectives of this Study

Skill-based education seeks to establish a strong foundation of competency with an eye toward further hands-on building and development, while knowledge-based education aims to deepen a specific insight and further develop one's perspective.

Review of Literature

- **Dr. S. C. Patil & Prof. Amaresh B Charantimath (2021)**, conducted a study on "Employability through Skill Development Programmes - an overview of significance of Employability skills". The objective of the study was to comprehend the need of employability skills and to study the skill gap - desired vs possessed. The study concluded that the skill gaps can be bridged with training, education and short-term courses. In spite of the efforts there is still a great scope in transformation of abandoned knowledge into skills. Various ambitious missions of Government of India i.e. Make in India, Atmanirbhar Bharat, 5 trillion economy dreams etc can come true with collective efforts.
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commendable features of the 'Skill India Mission', the challenges of gender inequality, sectorial imbalance in skilling, training and placements still persists.

Importance of Skill Development

It is important to empower students with skill-based training as the development of our economy depends upon them. Here's why skill development in school is important:

- The skill development process helps students think beyond grades. It helps them tap into their capabilities, develop real-life skills, and prepare themselves to be successful in the careers of their choice.
- Skill-based learning improves employability and helps the youth earn more. Furthermore, it improves the economy of a country and promotes its financial growth.
- Skill-based learning helps students develop problem-solving strategies and effective communication techniques.
- Learning skill development promotes the leadership skills of students as it helps them become more altruistic. They learn to use their skills to organize and inspire their teams, which, in turn, creates in them leadership qualities.
- It also helps students develop creativity, critical thinking, and analytical thinking as skill-based learning focuses on the evaluation and application of facts to real-life problems.

Skill Development in Higher Education

Today, there is a large chunk of the unemployed population consisting of highly educated youth who fail to find employment because of a lack of skills, and skilled individuals who lack eligibility because of a lack of knowledge.

And, therefore, the need to provide skill-based learning in higher education to help students receive vocational training besides academics to improve their chances of better employment and a successful career.

Because of this need, vocational education is being considered as part of a structured program at the university level. This will provide multiple opportunities to students who will acquire skills related to particular professions along with general education. This will help students pursue graduation in a variety of vocations besides the mainstream subjects, such as science, arts, commerce, medicine, engineering, etc. Students will get the freedom to select the vocation of their choice and make a career in it. Moreover, thanks to the skill development programs, students will get practical experiences in vocational training that will give them better chances at employability

Skill Development Program: How it helps the Youth?

The government of India has several plans for skill development to improve employment opportunities for the youth.

These programs not only provide the vocational training required to improve job prospects but also help develop personalities, enhance work proficiency, and improve communication skills, time management, and negotiation skills.

The skill development programs also help the youth identify their interests and talents. It helps them develop flexibility, reliability, productivity, and efficiency. All of this goes on to improve their chances of successful careers and widen their career opportunities.

Skill Development in India

The government of India launched an initiative in the year 2015 called Skill India. It aimed to train 40 crore Indians in a variety of industrial jobs. Its goal: Empower the youth with schemes and training courses by the year 2022.

The benefits of this initiative are:

- Better job opportunities, better-paying jobs, and a higher standard of living for the youth.
- Development in every sector of the economy and every sector experiencing equal growth.
- Trained individuals entering the workforce, which will lead to better and faster results and a boost to the Indian economy.

Various courses are offered as part of this initiative, such as management and development programs, entrepreneurship development programs, skill development programs, promotion of small enterprises, cluster development, lending schemes, etc.

Process Design

Teacher agency Teachers should be empowered to use their professional knowledge, skills and expertise to deliver the curriculum effectively. Authenticity. Learners should be able to link their learning experiences to the real world and have a sense of purpose in their learning. This requires interdisciplinary and collaborative learning alongside mastery of discipline-based knowledge. Inter-relation. Learners should be given opportunities to discover how a topic or concept can link and connect to other topics or concepts within and across disciplines, and with real life outside of school. Flexibility. The concept of "curriculum" should be developed from "predetermined and static" to "adaptable and dynamic". Schools and teachers should be able to update and align the curriculum to reflect evolving societal requirements as well as individual learning needs. Engagement. Teachers, students and other relevant stakeholders should be involved early in the development of the curriculum, to ensure their ownership for implementation.

Challenges in Skill Development in India

Some of the main challenges in skill development in our country are given as follows: Severe scarcity of trainers. For instance, corresponding to the current seating capacity of about 1.7 million trainees at ITIs, there is a need of almost 85,000 trainers (considering 20:1 student/faculty ratio). Non-employability due to little or no job skills. Inadequate training infrastructures, inappropriate mix of skills and education, outdated curricula, limited industry interfaces, limited standards, etc. Formal education system with limited vocational training. A disconnect between the formal education system and work requirements, compounding the challenges related to the skill gap. Owing to high capital requirements and low return on investments, skill development is often looked at as a non-scalable model and remains underinvested.

Conclusion

Skill development is crucial for young people's future. It holds the key to increased entrepreneurship, greater employment prospects, and economic progress. skill development courses during higher education are instrumental in nation-building by producing a skilled and competent workforce that can drive economic growth, innovation, and social development. skill India is a crucial step towards building a more skilled and productive workforce in India. The program's focus on industry partnerships, digital technology, and financial incentives has helped to make it more effective in addressing the country's skill development challenges. Governments should boost investment in life-long learning to retrain, retool, and de-skill. For example, governments could use individual skill accounts to provide training grants throughout people's working lives, conditional on stronger private-sector involvement in training and skills development.

Conclusion

The current study has carried out a systematic literature review on skill development research in India to analyse and synthesise the literature and provide insights for future studies. The objectives of this study are twofold. First, based on the classification framework, this study carried out a descriptive analysis. In terms of the geographical context, Pan India studies need to be considered rather than confining the work to one state. Regarding research methods, the conceptual studies will provide clarity on the concept of skill development. Studies on skill development of the labour force engaged in agriculture are vital because this sector provides 15 per cent of the total GDP and 52 per cent of employment for the Indian population. Studies on informal and non-formal training need to be considered for future studies, and collaborative research with African and South American countries will be beneficial for adopting best practices.

Second, this study seeks an answer to the research questions, and the authors recommend insights to researchers through a future research framework. As India aspires to be the largest economy in the world by 2040, it is important to instil the necessary skill

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Volume – 2



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AWARENESS OF ARTIFICIAL INTELLIGENCE IN EDUCATION

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Abstract

Artificial Intelligence (AI) technologies have changed the way learners are interacting with instructional activities in various educational settings. Learning has been shifted from in structured to the interaction of AI-powered devices and learners are no longer bound to traditional classrooms. Artificial intelligence is a branch of computer science that focuses on creating software capable of mimicking behaviors and processes we would consider “intelligent” if exhibited by humans, including reasoning, learning, problem-solving, and exercising creativity. The main aim of the study is to know about awareness of AI in higher education. In addition, the findings reveal that students assert the importance of having Artificial Intelligence in education and ready to use it in learning and teaching process, however, they have little or no trust in Artificial intelligence being used assess their academic performance.

Introduction

All human actions are based on anticipated futures. We cannot know the future because it does not exist yet, but we can use our current knowledge to imagine futures and make them happen. The better we understand the present and the history that has created it, the better we can understand the possibilities of the future. To appreciate the opportunities and challenges that artificial intelligence (AI) creates, we need both good understanding of what AI is today and what the future may bring when AI is widely used in the society. AI can enable new ways of learning, teaching and education, and it may also change the society in ways that pose new challenges for educational institutions. It may amplify skill differences and polarize jobs, or it may equalize opportunities for learning. The use of AI in education may generate insights on how learning happens, and it can change the way learning is assessed. It may re-organize classrooms or make them obsolete, it can increase the efficiency of teaching, or it may force students to adapt to the requirements of technology, depriving humans from the powers of agency and possibilities for responsible action. All this is possible. Now is a good time to start thinking about what AI could mean for learning, teaching, and education. There is a lot of hype, and the topic is not an easy one. It is, however, both important, interesting, and worth the effort.

What is Artificial Intelligence?

Artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems. Specific applications of AI include expert systems, natural language processing, speech recognition and machine vision.

How Does AI Work?

As the hype around AI has accelerated, vendors have been scrambling to promote how their products and services use it. Often, what they refer to as AI is simply a component of the technology, such as machine learning. AI requires a foundation of specialized hardware and software for writing and training machine learning algorithms. No single programming language is synonymous with AI, but Python, R, Java, C++ and Julia have features popular with AI developers.

In general, AI systems work by ingesting large amounts of labeled training data, analyzing the data for correlations and patterns, and using these patterns to make predictions about future states. In this way, a chat bot that is fed examples of text can learn to generate lifelike exchanges with people, or an image recognition tool can learn to identify and describe objects in images by reviewing millions of examples. New, rapidly improving generative AI techniques can create realistic text, images, music and other media.

AI programming focuses on cognitive skills that include the following:

- **Learning.** This aspect of AI programming focuses on acquiring data and creating rules for how to turn it into actionable information. The rules, which are called algorithms, provide computing devices with step-by-step instructions for how to complete a specific task.
- **Reasoning.** This aspect of AI programming focuses on choosing the right algorithm to reach a desired outcome.
- **Self-correction.** This aspect of AI programming is designed to continually fine-tune algorithms and ensure they provide the most accurate results possible.
- **Creativity.** This aspect of AI uses neural networks, rules-based systems, statistical methods and other AI techniques to generate new images, new text, new music and new ideas.

Importance of Artificial Intelligence

AI is important for its potential to change how we live, work and play. It has been effectively used in business to automate tasks done by humans, including customer service work, lead generation, fraud detection and quality control. In a number of areas, AI can perform tasks much better than humans. Particularly when it comes to repetitive, detail-oriented tasks, such as analyzing large numbers of legal documents to ensure relevant fields are filled in properly, AI tools often complete jobs quickly and with relatively few errors. Because of the massive data sets it can process, AI can also give enterprises insights into their operations they might not have been aware of. The rapidly expanding population

of generative AI tools will be important in fields ranging from education and marketing to product design.

Conclusion

As per the conclusion drawn from the current study upon the awareness level towards Artificial Intelligence (AI) about education system among MBA students of Delhi colleges, different specialization has different level of awareness towards AI. In the teaching pedagogy, the awareness about the AI must be incorporated, so that maximum number of students must aware of these disruptions running in education system. This study is very limited to the one course only i.e. MBA students of Delhi colleges. The work can be enhanced further to include more courses and locations. Another limitation of the study is less number of demographical variables. There are 3 demographical variables are taken to check the awareness level of the students like gender, number of hours used and specialization. In future more parameters can be included in the further research. This research can be used further to design the pedagogy for management student to increase the awareness about artificial intelligence.

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Central Banks Digital Currencies in Future Digital Transformation

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Abstract

A central bank digital currency (CBDC) is a digital version of a domestic currency with a unit of account equivalent to its domestic currency. Block chain or distributed ledger technology (DLT) can be used to enable CBDC to enable and settle peer-to-peer transactions. With the emergence of private money such as crypto currencies and stable coins and the increasing use of digital payments to mitigate the spread of global pandemics, CBDC is an area of intense research among central banks worldwide. Many central banks are starting their CBDC projects, creating DLT Proof of Concepts to mimic wholesale payment systems, and expanding their investigation into other use cases such as Delivery and Payment and cross-border remittances. Many major economies such as the US have plans to explore CBDC. This article discusses the use of block chain for CBDC through issuance of CBDC projects by central banks. Furthermore, this paper analyzes the issues, identifies challenges and discusses future work in this rapidly growing field.

INTRODUCTION

A central bank digital currency (CBDC; also known as digital fiat currency or digital base money) is a digital currency issued by a central bank rather than a commercial bank. It is the responsibility of the central bank and is denominated in sovereign currency just like physical banknotes and coins. The sign for the Hangzhou Metro ad acceptance of digital

people's currency" the first CBDC adopted by a major economy (China), instead of a new currency, CBDC is a form of central bank electronic money used by households and businesses to make payments. A report by the Bank for International Settlements notes that while the term "central bank digital currency" is not well defined, "it is envisioned by most as a new form of central bank

money distinct from traditional reserves or reserves. Settlement accounts." The present concept of CBDCs differs from virtual currency and crypto currency in that a CBDC is or would be issued by a state. Most CBDC implementations will likely not use or need any sort of distributed ledger such as a block chain.

Benefits and impact

Governments and central banks are studying CBDCs and their implications for financial inclusion, economic growth, technology innovation, and the efficiency of bank transactions.

Technological efficiency

The Technology efficiency depends on intermediaries such as banks and clearing houses, money transfers and payments could be made in real time, directly from the payer to the payee. Being real time has some advantages:

➤ **Reduces risk:** payment for goods and services often needs to be done in a timely manner and when payment verification is slow, merchants usually accept the risk of



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HIGHLIGHTS OF PEOPLE ANALYTICS AND HR PROCESS AUTOMATION

Mr Rajagopalan S, Assistant Professor of Commerce (CA), Nallamuthu Gounder Mahalingam College (Autonomous), Pollachi.

ABSTRACT

As people started to invest in Artificial Intelligence, people started to consider analytics tool as their top priority. Data analytics is a branch of computing that provides huge amount of information about customer's real-world implications to the organization in terms of meeting customer's needs, cutting-edge technologies, AI and cloud base. Even in the case of cloud based systems for human capital management, the analytics and visualization capabilities made it possible for HR leaders to connect other data sources with human data sources like customer relationship management. People analytics and human resources (HR) automation has completely transformed the HR industry and the HR process. HR professionals now rely on AI, machine learning, and data analytics to efficiently and effectively process human resource activities. A branch of data analytics, people analytics helps in the planning, organization, staffing, direction, coordination and control of HR activities. HR automation also makes management information system error-free and accurate, supporting the management in decision-making. Thus, people analytics and human resources automation will be the driving force of the industry in the coming years.

Keywords: People analytics, People management, HR automation, HR Tech and AI, HR and Technology and HR process automation

INTRODUCTION

People analytics and human resources automation have revolutionized the human resources industry and its processes. HR professionals now rely on artificial intelligence, machine learning, and data analytics to process human resource activities efficiently and effectively. Human analytics, a subset of data analytics, helps in the planning, organization, staffing, direction, coordination and control of human resources activities. In contrast, HR automation helps in the error-free and accurate management information system, supporting the management in making decisions. The combination of people analytics and automation will revolutionize the entire human resources industry in the coming years.

PEOPLE ANALYTICS

The emergence of people analytics has had a tremendous effect on human resources departments. In simple terms, people analytics is the process of collecting and analyzing data related to talent decisions and business outcomes. It allows HR departments to gain valuable insights into talent decisions, streamline workforce processes, and create better employee experiences. Human analytics and automation have a significant impact on virtually all aspects of human resources functions, including the ability to build an equitable workplace in a normal manner. Workforce insights is the greatest asset when dealing with the disruption and uncertainty that drive dramatic changes in the working environment today.

All organizations are striving to improve their employees' performance, but it won't happen overnight. To make informed decisions about hiring, learning, development and promotions, you need to have the right people analytics technology and data at your disposal. People analytics is a powerful tool that helps you to improve your employees' performance. It is also the first step before you can make any people-based decisions. Data collection and analysis is never easy. That's why you might not have done people analytics in the right way.

HR TECH AND AI

To help HR professionals, there are a number of tools powered by AI-powered solutions. These include:

- Conversational Chatbots
- Facial expression analysis
- Candidate sourcing method
- Assessment tool
- On-boarding
- Automating the sourcing, recruitment and employee engagement process

HR professionals need to become more knowledgeable about technology AI in order to understand decision algorithms system so that they can deliver their intended goals in a clear manner. The COVID-19 pandemic forced many organizations to adopt a hybrid work model, where employees work on-site and off-site.

CASES FOR PEOPLE ANALYTICS:

1. Predict employee turnover

Larger organizations typically use people analytics tool to better anticipate and prevent employee turnover.

2. Choose an office location

Enterprises collect various data about how existing offices are used, waste of space, availability of talent in specific neighbourhoods, etc.

3. Create better work-life balance

People analytics helps organizations to understand why employees are absent from work and also identifies gaps in the organization that are leading to absenteeism in the workplace.

4. Improve employee retention

It helps identify factors like burnout, absence of career opportunities, absence of employee development program and work culture that affect employee retention.

5. Improve employee performance

People analytics gives HR teams a lot of information about employee engagement and performance.

6. Workforce planning

HR teams typically collect people data across an organization to identify workforce gaps, develop upskilling strategies, prepare succession plans and adjust recruitment processes.

7. Diversity analysis

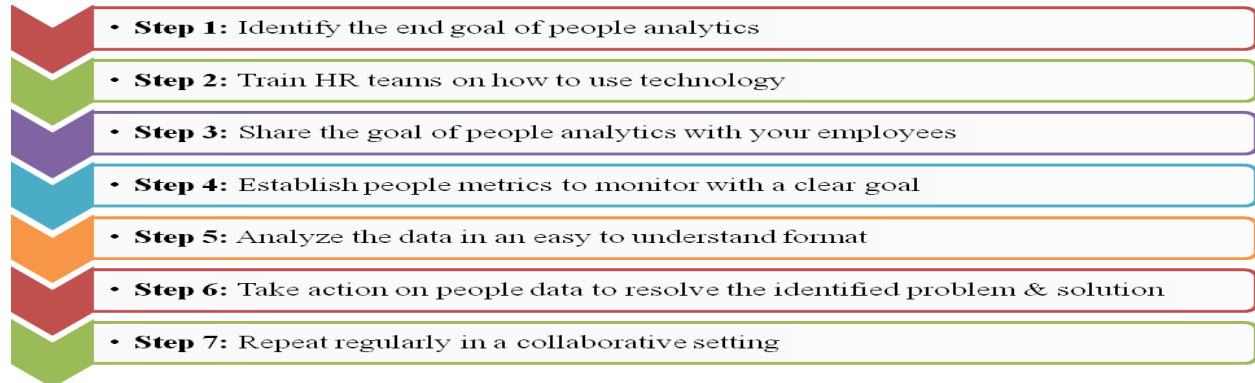
Diversity and Inclusion in the workplace is assessed through people analytics strategy. It calculates the % of employees based on gender, race and seniority.

BENEFITS OF PEOPLE ANALYTICS

- ❖ It involves assessing the outcomes of on-boarding, continuous learning and development, and upskilling programmes within organizations on a regular basis.
- ❖ It's much more than just a simple performance measurement tool.
- ❖ It generates people-based data, such as employee satisfaction score, absence rate, net promoter score, and other metrics.
- ❖ There are many easy-to-detect indicators of turnover, but organizations only see them when they're actively trying to gather information from leaving employees.
- ❖ It always helps organizations to identify barriers that are preventing employees from becoming more productive.
- ❖ It provides HR data that shows how to improve employee happiness and engagement at the workplace.
- ❖ It offers the holistic benefit of better understanding people as it drives engagement and morale, productivity, and employee satisfaction across the organization.



THE PROCESS OF PEOPLE ANALYTICS



HR AUTOMATION

Human resource management is a vital component of every organization. From hiring new employees, to training, to ensuring compliance with local labor laws, the HR process is a critical component of every company. However, HR has traditionally been seen as a very manual and departmental process. HR personnel are accustomed to rolling up their sleeves and getting the job done themselves. But all of that is changing. Automation is infiltrating the HR space and in the near future everything will become automated and computing driven. Current HR personnel will need to adapt to the changing landscape or be left in the dust.

HR automation is the process of improving the efficiency of HR departments by freeing employees from mundane manual and administrative tasks and enabling them to focus on more complex tasks such as decision making and strategic business solutions. Automating routine and repetitive HR activities will save organizations both in terms of cost and time.

Strategic human resource management is the process of identifying the long-term optimal use of human talent based on HR information. In traditional HR management, directives were mostly implemented by top-tier structure. Strategic automation could help HR teams avoid paper shuffling and instead focus on more strategic HR roles such as talent forecast and pipeline succession and more.

THE BENEFITS OF HR PROCESS AUTOMATION

HR automation allows organizations to design, automate, integrate and deploy services quickly and cost-effectively. If implemented correctly, HR automation can provide critical benefits. Here are nine key advantages of HR automation:

- Improves productivity through rapid processing and data sharing.
- Reduces employee turnover due to increased employee engagement.
- Reduces storage and printing costs due to paper-based processing.
- Eliminates compliance risk or policy violation.
- Empowers organizational growth by hiring at the optimal operational cost.
- Focuses on reducing data entry errors and miscellaneous lost/misplaced/lost documents.
- Enables intelligent business decisions with insights reports.
- Collaborates with third parties to hire, train and retain skilled labor.
- Provides more time for analyzing HR data to make smart business decisions.

POPULAR HR PROCESSES FOR AUTOMATION

1. Employee Onboarding Manual employee onboarding is often one of the HR processes that are most manual in nature. It involves the collection of documentation for verification, providing tool access to the new hire, raising device request on a regular basis, and so on. All of these processes can be automated with the help of the onboarding app. An employee onboarding app provides a simple checklist that all users can refer to in the HR process.

2. Employee Timesheets Manual timesheet tracking is highly inefficient. With the help of an automated time sheet app, such as the one from Kissflow, you can track and manage the employee timesheet automatically, making it faster and more efficient.



3. Leave Requests The calculation and approval of leaves is always a challenge, as HR staff need to check the leave balance, get a manager's approval, and record the leaves for payroll calculation. Automated leave management can do all of these things automatically, so one does not have to worry about leave requests getting bogged down in an inbox full of emails.

4. Performance Management Performance management is typically a dynamic HR process where an employee's performance is tracked, measured, and analyzed by matching it with business objectives. Automated performance management software streamlines the process, ensures bias-free decision-making, and makes the process memorable for employers and employees alike.

5. Exit Interviews The exit interview process plays an important role in enhancing employee engagement. However, traditional, paper-based exit interviews are time consuming, labor-intensive, and inefficient. By implementing human resource automation in the exit interview, organizations can detect potential issues and gather actionable information for improving employee retention without having to sift through mountains of paperwork.

FUTURE OF HR ANALYTICS

HR Analytics can help to gain a deeper understanding workforce and make informed decisions that improve your bottom line. The best practices that ensure HR Analytics aligns with business goals, focuses on high-value areas, and is backed by accurate and reliable data must be implemented by business. One must also embrace change management, share ideas effectively, and foster a culture of continuous improvement. The future of HR Analytics will be defined by predictive analytics, NLP, automation, integration, and ethical and transparent data.

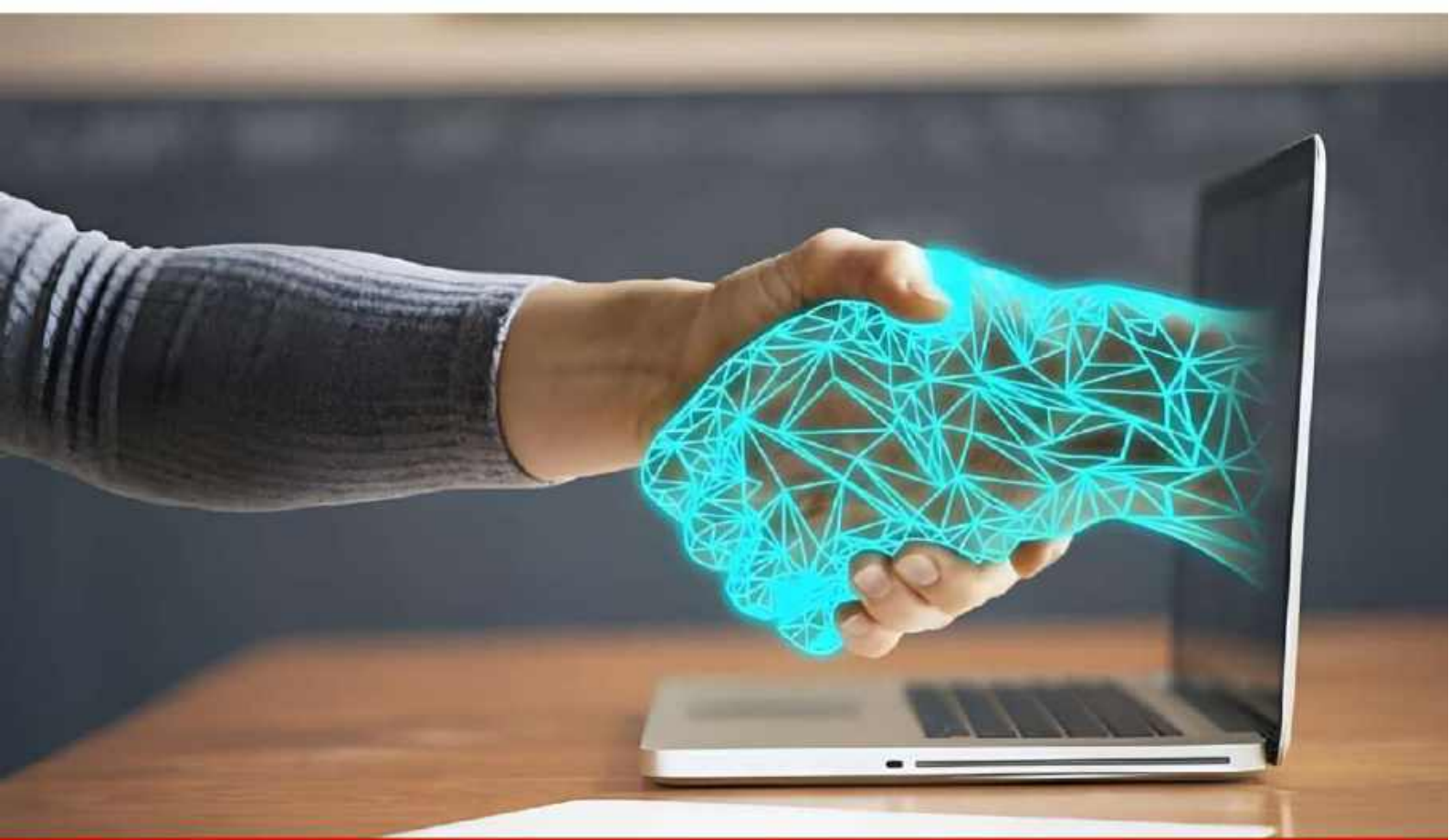
It can be ensured that your HR Analytics projects remain successful and relevant and deliver significant commercial returns by staying on top of these emerging trends and technologies. All in all, HR Analytics is a must-have tool for any business that wants to better understand and utilize its workforce. HR Analytics can help organizations gain deeper insights into their workforce, make informed decisions that produce business outcomes, and position themselves well for the future.

CONCLUSION

The business landscape is constantly evolving and technology is making the human processes easier and more efficient. Technologies like data analytics, data mining, artificial intelligence, big data, machine learning, cloud technology, etc. are very useful and effective tools in today's business world. Human resource also utilizes some of these technologies for people analytics and human process automation. These technologies will help the HR to reach new horizons and benefit the stakeholders.

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Dr T Prabu Vengatesh
Editor-in-Chief

25 AUGUST 2023



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Role of Green Banking in the Green Economy and Sustainable Environment

Mr Rajagopalan S, Assistant Professor, Department of B.Com (CA), Nallamuthu Mahalingam College, (Autonomous)

ABSTRACT

Economy is a system of policies, plans, procedures, protocols and preparedness of a particular nation which purely deals with the development of Agriculture, Industry and Service sectors in the respective country. To safeguard the globe and to prevent the ecological adverse consequences on the globe, the practices of green are adopted and followed everywhere, for example, Go-green initiative in email communications. Green economy is an emerging concept where the economy targets at slowing down and removing risks arising in environmental conditions and scarcities of ecological resources. Green banking aims at improving the operations and technology along with making the clients habits environment friendly in the banking business. It is like normal banking along with the consideration for social as well as environmental factors for protecting the environment. By adopting the environmental factors in their lending activities banks can recover the return from their investments and make the polluting industries become environment-friendly. These are the major information about Green Banking in India.

KEYWORDS

Green Economy, Green Banking, Green Deposits, Eco-friendly Banking, Sustainable Economy

INTRODUCTION

The concern for environmental sustainability by the banks has given rise to concept of Green Banking. The concept of “Green Banking” will be mutually beneficial to the banks, industries and the economy. Green financing is the part of green banking. Green banking means promoting environmental friendly practices and reducing your carbon footprints from your banking activities. Green banking aims at improving the operations and technology along with making the clients habits environment friendly in the banking business. It is like normal banking along with the consideration for social as well as environmental factors for protecting the environment. It is the way of conducting the banking business along with considering the social and environmental impacts of its activities.

GREEN ECONOMY

Economy is a system of policies, plans, procedures, protocols and preparedness of a particular nation which purely deals with the development of Agriculture, Industry and Service sectors in the respective country. To safeguard the globe and to prevent the ecological adverse consequences on the globe, the practices of green are adopted and followed everywhere, for example, Go-green initiative in email communications. Green economy is an emerging concept where the economy targets at slowing down and removing risks arising in environmental conditions and scarcities of ecological resources.

Green economy is emerging concept. It can be easily adopted without diluting the existing economy set up. Some of the ideas or policies for green economy can be introduced and compelled by Government to be followed by the business enterprises such as Green sticker method, ecologically safe labels, Eco-friendly packing and containers and so on. Economy should support the sustainable management of environment and natural resources. There are non-renewable resources which are of scarcity in nature. So, the policymakers should consider the severity of ecological damages and concerning environmental issues.

GREEN BANKING

Green banking is a part of Green Economy movement. The concept of “Green Banking” will be mutually beneficial to the banks, industries and the economy. Green financing is the part of green banking. Green banking means promoting environmental friendly practices and reducing your carbon footprints from your banking activities. Green banking aims at improving the operations and technology along with making the clients habits environment friendly in the banking business. It is like normal banking along with the consideration for social as well as environmental factors for protecting the environment. It is the way of conducting the banking business along with considering the social and environmental impacts of its activities.

RISKS IN GREEN BANKING

Green banking is very important in mitigating the following risks involving in banks.

Credit Risk:

Due to climate change and global warming there will be direct as well as indirect costs to banks. It has been observed that due to global warming there had been extreme weather condition which affects the economic assets financed by the banks thus leading to high incidence of credit default. Credit risk can also arise indirectly when banks lend to companies whose businesses were affected due to changes in environmental regulation.

Legal risk:

Banks like other business entities face legal risk if they do not comply with relevant environmental regulation. They also face risk of direct lender liability for cleanup cost for damages in case they actually take possession of pollution causing assets.

Reputation Risk:

Due to increasing environmental awareness banks are prone for reputation risk if their direct or indirect actions are viewed as socially and environmentally damaging. Reputation risks emerge from the financing of environmentally objectionable projects.

STRATEGIES

Indian Banks can adopt green banking as business model for sustainable banking. Some of following strategies little reflected in their banking business or must be adopted by banks.

Carbon Credit Business (CBS):

All Nations must reduce greenhouse gases emission and reduce carbon to protect our environment. These emissions must be certified by Certified Emission Reductions commonly known as carbon credit.

Green Banking Financial Products:

Banks can develop innovative green based products or may offer green loans on low rate of interest. As Housing and Car loan segments constitute the main portfolio of all banks so they adopt green loans facility.

Paperless Banking:

All banks are shifting on CBS or ATM platform providing electronic banking products and services. So there is a scope for banks to adopt paperless banking. Private and foreign banks are using electronics for their office but in PSU banks are still using huge paper quantity.

Energy Consciousness

Banks have to install energy efficient equipment's in their office. Banks have to transform this green banking in hardware, waste management, energy efficient technology products. Banks can donate energy saving equipment to schools and hospitals.

Mass Transportation

Banks can provide transportation facility to bank officials who work in the same branch.

Paperless Banking

Banks can adopt paperless banking and go digital. A lot of banks are already shifting to CBS or ATM platforms and providing their consumers electronic banking services & products.

Financial Products

Banks can offer green loans on low rate of interests.

Social responsibility

Banks, like other business entities, have a social responsibility toward the society. They can initiate various initiatives for the welfare of the social sector like maintenance of parks, planting trees and pollution check-up camps.

GREEN DEPOSITS

To facilitate the implementation of green deposits and promote the growth of green finance in the domestic market, the Reserve Bank of India (RBI) has established regulatory guidelines and frameworks. Green deposits are interest-bearing fixed deposits denominated in Indian rupees, similar to regular fixed deposits. The proceeds from green deposits are earmarked for allocation into projects or activities that yield environmental benefits. The RBI framework, effective from June 1, mandates that the funds raised through green deposits must be utilised for activities promoting energy efficiency, reducing carbon emissions and greenhouse gases, fostering climate resilience and adaptation, and preserving and enhancing natural ecosystems and biodiversity.

In recent years, several public-sector and private banks have begun offering green deposit options to retail and institutional customers. However, the interest rates on these deposits are generally comparable to those of traditional fixed deposits. Some banks issue a "green certificate" to depositors, highlighting their contribution to creating a greener and more sustainable planet.

BUSINESSES QUALIFICATION FOR GREEN DEPOSIT ACCESS

For businesses seeking green finance, it is crucial to identify projects that qualify under the RBI's criteria for green assets to secure funding through green deposits. Stringent governance and impact measurement requirements necessitate improvements in systems and processes. Larger, listed companies are already adhering to Sebi's requirements for business responsibility and sustainability reporting, making their governance and impact transparent. However, smaller firms may face challenges in properly assessing their impact or affording second or third-party assurance.

GREEN DEPOSITS AS MAINSTREAM

While green deposits are currently niche products appealing to environmentally conscious investors, they have the potential to become mainstream like traditional fixed deposits if additional incentives, such as higher interest rates, are provided. Financial institutions must also focus on building internal capacity and skill sets to identify and appraise viable green projects. Furthermore, ensuring a steady supply of investable projects that meet the RBI's green investment criteria and the introduction of a green taxonomy are essential for the growth of green finance.

AI FUTURE OF GREEN BANKING

The future of green financing and sustainable banking is bright, with many opportunities for growth and innovation. As more investors and institutions recognize the importance of sustainability and ESG issues, we are likely to see a significant increase in demand for green financing and sustainable banking services.

CONCLUSION

Green banking refers to the initiatives taken by banks to encourage environment-friendly investment. Green banking as a concept is a proactive and smart way of thinking towards future sustainability. It is very important for the banks to be pro-active and accelerate the rate of the growth of the economy. As there is a continuous change in the environmental factors leading the banks face intense competition in the global market. Banks need to apply morality of sustainability and responsibility to their business model, strategy and formulation for products and services, operations and financing activities and become stronger. By adopting the environmental factors in their lending activities banks can recover the return from their investments and make the polluting industries become environment-friendly. These are the major information about Green Banking in India.

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G20 AND INDIAN MANAGEMENT PRACTICES

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**CONTRIBUTION OF G-20 TOWARDS THE GROWTH STRATEGIES AND
MARKETING PLANS FOR WORLD ECONOMY**

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INTRODUCTION

The G20, also known as the Group of 20, is a forum consisting of 19 sovereign nations, the European Union, and the African Union. Its primary objective is to address

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significant global economic issues, such as ensuring international financial stability, mitigating climate change, and promoting sustainable development. Comprising finance ministries from the world's largest economies, both developed and developing, the G20 represents approximately 80% of the global gross world product (GWP), 75% of international trade, two-thirds of the global population, and 60% of the world's land area.

GROUP OF TWENTY (G20)

The G20 was established in response to various global economic crises in 1999. Since 2008, it has held annual summits attended by the heads of government or state, finance ministers, foreign ministers, and other high-ranking officials from each member country. The European Commission and the European Central Bank represent the EU at these summits. Additionally, other countries, international organizations, and non-governmental organizations are invited to participate, some on a permanent basis.

During its 2009 summit, the G20 proclaimed itself as the primary platform for international economic and financial cooperation. Over the past decade, the group's influence has grown significantly, earning recognition from analysts for its substantial global impact. However, it has also faced criticism for its limited membership, lack of enforcement powers, and alleged undermining of existing international institutions. These summits often encounter protests, particularly from anti-globalization groups. At the 18th G20 Summit in September 2023, Indian Prime Minister Narendra Modi announced the inclusion of the African Union as the 21st member of the G20.

GROWTH STRATEGIES

The G20 Leaders have concluded their summit in Brisbane, Australia, after a year-long process of preparatory work and discussion. This year, the focus of the G20 agenda was on addressing concerns about weak global growth and job creation. Both advanced economies and emerging economies have experienced slow and uneven economic recovery. It is now widely recognized that restoring robust global growth requires not only addressing the aftermath of the global financial crisis but also implementing deeper structural reforms to enhance potential growth.

In light of this, all G20 countries were requested to develop medium-term growth strategies that provide a systematic framework for addressing policies and priorities in the

growth agenda. These strategies cover a wide range of areas, including macroeconomic policies and structural reforms, with the aim of promoting strong, sustainable, and balanced growth. The Australian G20 Presidency highlighted four key policy areas in these strategies: investment and infrastructure, employment, competition and business environment, and trade. The focus on investment and structural reforms is crucial as they are the drivers of long-term productivity and sustainable growth, while macroeconomic policies play a role in supporting short-term aggregate demand. The strategies have undergone extensive discussion and peer review within the G20, with technical assessments provided by international organizations. Yesterday, the final versions of these strategies were released alongside the Leaders' Communiqué and the Brisbane Action Plan, which provides an overview of these strategies.

Progress towards the Collective Ambition

The objective of achieving a collective GDP growth of more than 2 percent by 2018 was set during the G20 Finance Ministers and Central Bank Governors meeting in Sydney. This target aimed to surpass the projected growth trajectory based on existing policies, equivalent to a 0.4 percentage point increase in the average annual GDP growth rate over the specified period. In order to attain this additional growth, G20 members were requested to outline new policy measures in their growth strategies. Now, the question arises: what impact will these strategies have on growth? Assessing the growth impact of numerous policy commitments across different policy areas and countries, each with varying levels of specificity, is a complex task. Consequently, the estimates prepared are subject to a certain level of uncertainty. However, the IMF and the OECD, with inputs from other international organizations such as the World Bank, have conducted an estimation exercise. According to their findings, if implemented, the new policy commitments outlined in the growth strategies submitted by G20 members could increase the collective GDP of the G20 by 2.1 percent by 2018. This indicates that the G20 has successfully achieved its goal. This positive outcome can be attributed to the G20's strong focus and coordination in developing growth strategies throughout the year.

Successful execution of policies for effectiveness

The projected growth resulting from these policies is based on the assumption that countries will fully implement their commitments, which poses a significant challenge. Additionally, the baseline growth projections have been revised downwards since the adoption of the 2 percent target in 2014. Therefore, even if the 2 percent target is mostly met,

the overall growth may still fall short of the initial projections. Moreover, it is important to note that the 2 percent target was established as a minimum goal by the G20. To effectively address the employment challenge, stronger medium-term growth is necessary. During the Brisbane summit, the G20 Leaders endorsed an Accountability Assessment Framework to monitor the implementation of policy commitments and make necessary adjustments to the growth strategies. This framework will also address any policy gaps that persist and respond to any potential weakening of the global growth outlook. Additionally, it will monitor the impact of members' policies on other countries, aiming to promote positive effects and minimize negative ones. The objective of this framework is to ensure that the G20 stays on track to achieve its growth objectives. The process will involve peer reviews and technical assistance from international organizations, including the World Bank.

World Bank Contributions

The World Bank played a crucial role in assisting the G20 in developing growth strategies through-out the year. To begin with, various international organizations were requested to provide diagnostic notes on key areas of reform, which would help identify the major policy gaps that G20 countries needed to address in order to enhance growth. The World Bank staff contributed notes on competition and business environment, jobs, trade, infrastructure, and education and skills, highlighting areas that required priority attention. Subsequently, the IMF, OECD, and the World Bank jointly submitted a report to the G20, outlining macroeconomic and structural reform priorities and presenting reform scenarios that could generate additional growth. This report served as the technical foundation for the G20's adoption of the 2 percent additional growth goal during its ministerial meeting in February. G20 members submitted their draft strategies in May, which were then reviewed by their peers in June. Based on this review, revised growth strategies were submitted in August for another round of peer review in September. Finally, G20 members finalized their strategies for release at the Leaders' summit. Throughout this review process, the World Bank, along with other international organizations, provided technical inputs and assessments to support the G20's efforts.

Inclusive Growth

The growth strategies aim to achieve the G20 objective of "strong, sustainable, and balanced growth". However, the aspect of promoting inclusive growth is not fully incorporated into these strategies, despite the inclusion of several measures that can not only

foster growth but also ensure its inclusivity. Given the escalating inequality in numerous countries, including a majority of G20 nations, and the mounting evidence suggesting that such inequality can undermine economic stability and the sustainability of growth, it is imperative to make inclusivity an integral component of the G20 growth strategies.

MARKETING PLANS

This G20 Summit is amplifying the voices and addressing the concerns of the Global South. It is giving momentum to development initiatives led by women. As technology plays an increasingly significant role in shaping the future, this G20 is making significant progress in the fields of AI (Artificial Intelligence) and DPI (Digital Public Infrastructure).

Regarding the marketing strategies that are being implemented, Mariya Jamal, Head of Marketing at Dot Media, stated, "The G20's marketing strategy is well-planned, focusing on collaboration, economic stability, and global governance. Leveraging its role as a platform for world leaders to address urgent global issues, the G20 utilizes diplomatic channels, engages with international media, and strategically communicates its message to capture the public's attention. The objective is to position the G20 as a crucial forum for building multilateral solutions and making global decisions."

Digital Marketing and Social Media's Role in Global Promotion

Amit Relan, Co-founder and CEO of mFilterIt, evaluated the impact of digital marketing and social media, emphasizing their crucial role in raising awareness about the G20 Summit both within India and globally. Not only did the Indian media cover this important event, but major international media outlets also spread the word in their respective countries. The use of digital platforms facilitated curiosity and awareness surrounding the summit, while also capturing the perspectives of the visiting delegates. The G20 India 2023 website showcased a specialized segment for digital marketing, providing details on how businesses could actively participate in promoting the event. Moreover, the website maintained an active social media presence on platforms like Twitter, Facebook, and Instagram, enabling organizers to share event updates and engage with prospective attendees.

Impactful Marketing Methods

The G20 Summit's successful promotion was greatly influenced by various marketing methods and mediums. India took the initiative to launch a multimedia advertising campaign

that utilized print, television, and radio platforms. In addition to these impactful marketing methods, Srivatsa T J, Vice President of PR & Communications at Broadnection, emphasized the importance of interactive content such as videos and webinars in creating longer engagements for promoting an event as significant as the G20 Summit in India. Collaborating with reputable media outlets to secure extensive earned media coverage through op-eds and feature articles, both domestically and internationally, further highlighted India's role as the host country. This approach aimed to effectively convey the summit's significance and India's preparedness to welcome the world, thereby fostering a positive image and generating interest in the event.

Tourism Industry's Prospects

The G20 Summit served as more than just a platform for diplomacy and economics; it also presented a unique opportunity to promote India's tourism industry. Vibha Singh, Director, APAC, ETML, expressed her thoughts on this industry move, emphasizing that the G20 meetings were held in various regions of India, spanning from Arunachal Pradesh to Kashmir. This geographical diversity not only highlighted India's potential as a multifaceted tourist destination but also played a crucial role in instilling a sense of security among international delegates and travelers who ventured into these regions. However, in order to sustain this momentum, continuous efforts in digital marketing, social media engagement, partnerships, infrastructure development, cultural preservation, and safety measures are vital components of a comprehensive approach to maintain and expand the growth of the tourism sector. The nation's awe-inspiring landscapes, diverse culture, and rich heritage were effectively showcased through strategic marketing campaigns aimed at promoting the G20 Summit.

CONCLUSION

The 2023 G20 New Delhi Leaders' Declaration, consisting of 83 paragraphs, received unanimous approval, achieving a remarkable 100 percent consensus, even with the agreement of China and Russia. Notably, this historic declaration stood out by lacking any footnotes or Chair's Summary. Embedded within these 83 paragraphs were multiple agreements related to the Finance Track. Additionally, there were 8 paragraphs dedicated to addressing the conflict in Ukraine and its subsequent economic implications. Finance Minister Nirmala Sitharaman highlighted the accomplishments of the Indian G-20 Presidency, emphasizing a concrete strategy for strengthening multilateral development banks, a clear path for regulating

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cryptocurrencies, and the implementation of digital public infrastructure to enhance financial inclusion. She also emphasized the importance of expediting a debt relief plan for vulnerable nations.

In terms of climate change, the declaration emphasized the urgency of mobilizing "US\$5.8-5.9 trillion in the pre-2030 period for developing countries" and "US\$4 trillion per year for clean energy technologies by 2030" in order to achieve net-zero emissions by 2050. It called for a significant increase in climate funding, transitioning from billions to trillions of dollars. A notable development was the acceptance of the African Union as a member of the G20. Prior to this, the only African member was South Africa. At the Delhi Summit of the G20, the African Union, representing the 55 countries in the African continent, was granted full membership, similar to how the EU is represented.

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"Revolutionizing Commerce: Unveiling the Transformative Power of Artificial Intelligence in Trade"

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Abstract:

This paper explores the transformative impact of artificial intelligence (AI) on global trade dynamics. Focusing on real-world applications, we examine how AI enhances efficiency, optimizes supply chains, and aids decision-making in the face of trade complexities. Ethical considerations and potential risks are discussed, emphasizing the need for responsible AI integration. Looking ahead, the paper envisions a future where strategic AI adoption becomes imperative for nations and enterprises striving for competitiveness in the evolving global trade landscape. As AI continues to reshape global trade, the paper underscores the importance of addressing data privacy and ethical concerns. It emphasizes that a strategic and responsible embrace of AI is crucial for navigating the evolving trade ecosystem. In conclusion, this work serves as a compass for stakeholders, highlighting the transformative journey and the imperative role AI plays in shaping the future of international commerce.

Keywords: Artificial Intelligence (AI), Global Trade, Supply Chain Optimization, Decision

Introduction: In an era marked by unprecedented technological advancement, the integration of artificial intelligence (AI) has emerged as a pivotal force reshaping traditional paradigms across various industries. One of the spheres experiencing a profound transformation is the intricate realm of global trade. As nations navigate an ever-evolving landscape characterized by intricate supply chains, intricate regulatory frameworks, and heightened market volatility, the

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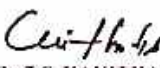


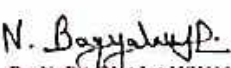
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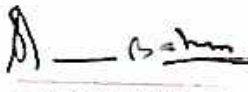
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ADULT EDUCATION AND LIFE LONG LEARNING

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Abstract

It underscores the policy's significance in empowering adults, reducing educational disparities, and promoting a holistic approach to learning that resonates with the needs of modern society. As policy makers, educators, and stakeholders navigate the implementation of the NEP, this abstract provides insights into the transformative potential of adult learning and lifelong learning in shaping India's educational future.

Keywords : Adult Education, Lifelong Learning ,New Education Policy

Introduction

The New Education Policy 2023 is based on 4 main pillars access, equity, quality and accountability. Adult education refers to educational activities and programs designed for adults who want to continue learning and acquiring new skills outside of the traditional school or college setting. It is aimed at individuals who may have missed out on formal education or who wish to further develop their knowledge and skills for personal or professional reasons.

Goal of New Education Policy

The primary goal of the Government of India in updating the New National Education Policy is to transform India into a global knowledge superpower. Access, equity, quality, and accountability are the four fundamental pillars of the New Education Policy 2023. The structure will be 5 + 3 + 3 + 4, with 12 years of schooling and 3 years of Anganwadi / pre- schooling. The new school and college education system will be more flexible, holistic, and multidisciplinary.

Main Features of National Education Policy

By 2025, a new education policy is going to concentrate on basic reading and mathematical skills. Instead of every academic year, pupils will be taking only tests in the second, fifth, and eighth grades. Board exams for the 10th and 12th grades will continue. However, it will be redesigned. The examination will be held twice per year and will consist of two sections, one objective and one descriptive. Coding will be introduced to kids in grade six, and creative education will be used.

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WOMEN EMPOWERMENT

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Abstract

The purpose of this essay is to examine the value of women's empowerment in a collegiate environment and the steps that can be taken to advance gender equality, create opportunities, and support female leadership. The empowerment of women is a crucial component of societal advancement, and educational institutions are crucial in establishing a more just future. In order to foster an inclusive and empowering atmosphere, this presentation explores a range of issues that affect women's empowerment, the difficulties they confront, and the efforts colleges can put in place.

Keywords: gender equality, societal advancement, adaptive.

Introduction

The idea of women's empowerment has come to be seen as a strong force for change in the effort to create a more equal and just society. Women's empowerment is the process of giving them the power to take charge of their life, reach their full potential, and actively engage in all facets of society. It attempts to question and eliminate the obstacles and gender-based discrimination that have historically restricted the opportunities and contributions of women.

Women have experienced numerous difficulties throughout history, including social, economic, and political exclusion as well as limited access to healthcare and education. However, as civilizations advance, there has been a rising appreciation of the need of empowering women, not only for their own gain but also for the development and prosperity of communities generally.

Comprehending Women's Empowerment

The process of giving women the authority to take charge of their life, actively engage in decision-making, and get equal opportunities in leadership, education, and work is referred to as "women's empowerment." It entails removing gender-based restrictions, dispelling conventional preconceptions, and promoting an environment where women can thrive.

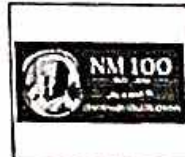


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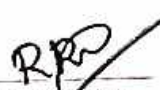
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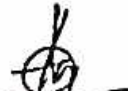
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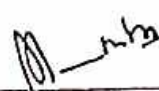
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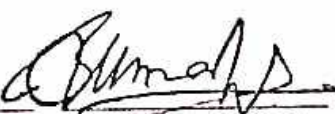
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VISION TO VICTORY; INDIA'S GLOBAL LEADERSHIP BY 2047

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Abstract

This paper examines India's global leadership in 2047, analyzing the impact of NEP 2020, Women Empowerment, Agriculture Reform, and Make in India. It explores how NEP 2020 fosters skilled individuals and innovation, while women empowerment initiatives drive social and economic progress. The agricultural reform enhances productivity and food security, and 'Make in India' campaign boosts industrial growth. This study sheds light on the interconnected effects of these policies, offering insights into India's rise as a global leader and emphasizing the significance of visionary reforms and empowerment for sustainable development.

Keywords: Empowering India's Journey to Global Leadership in 2047: A Comprehensive Analysis of NEP 2020, Women Empowerment, Agriculture Reform, and Make in India

Introduction

As India charts its path towards 2047, the centenary year of its independence, the nation's aspirations for global leadership have never been more resolute. This paper endeavors to examine the pivotal role played by key policy initiatives - the National Education Policy (NEP) 2020, Women Empowerment, Agriculture Reform, and Make in India - in propelling India towards its envisioned position on the global stage. Each of these transformative drivers brings unique dimensions to the country's journey, fostering inclusive growth, gender equality, agricultural sustainability, and industrial prowess.

Education - A True Driving Factor:

1. **Human Capital Development:** Education and NEP 2020 nurture skilled individuals, fostering creativity and critical thinking. A well-educated workforce drives economic growth and innovation, enhancing India's global competitiveness.
2. **Knowledge Economy:** NEP 2020 emphasizes research and innovation, positioning India as a leader in technology, science, and medicine. Leveraging

A STUDY ON EARLY PREDICTION OF LUNG CANCER USING MACHINE LEARNING TECHNIQUES

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ABSTRACT

Machine learning techniques are being used in cancer research more than an era. Nowadays, Machine Learning Algorithms are more widely used in the area of Lungcancer (LC) research. Lung cancer became the highest mortality rate across the globe, hence early prediction and classification of cancer cells can increase the rate of survival. Though there are many algorithms used in the field of neurology, radiology, oncology for LC prediction, the algorithms used in ML performs well with efficiency. This study first focuses on the workflow methodology used by ML for early prediction and classification of LC. Second, report of the ML algorithms used in LC and their methodologies is presented. Third, the performance metrics are analyzed. Finally, also covers the parameters used in constructing an efficient and accurate ML model for the early prediction of LC.

Keywords: Machine learning, Lung cancer, Prediction, Classification, Methodologies, Performance metrics.

I INTRODUCTION

Around the world, lung cancer (LC) remains the main source of Cancer growth rate and mortality, with so many millions of new cases and mortality [1]. Though it is the most dangerous disease an early prediction and diagnosis will increase the survival rate. Smoking is the main cause of cancer in the lungs and non smokers, Various Factors contribute to the risk of LC [2]. If half of the high-risk individuals of LC were screened, over 12,000 deaths could be prevented [3]. Detection of LC is done by various tests such as Chest Xray, helical CT scan, and Low Dose

Computed Tomography (LCTD) Among various tests LDCT screening an decrease LC mortality by 4to20percent in high-risk populations [4][5], and also LDCT Scan detects smaller lung tumors at an earlier stage [6]. All Nodules found in the lungs need not be cancerous. Lung malignancies are extensively characterized into 3 kinds: Small cell LC (SCLC) and non-small cell LC (NSCLC) and lung characinoid tumor. There are 2 types of staging systems in Lung malignant growth; one is the number system (Stage I, Stage II, Stage III, and Stage IV)

The Other is the NM (Tumor, Nodes, Metastases) system. Based on the Tumor size,

GLIMPSES OF IMAGE PROCESSING

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KAVIYARASU.R

Student

PA College of Education, Pollachi.

ABSTRACT

This paper presents a comprehensive exploration of image processing techniques applied to specify the application or task, e.g., medical imaging, object recognition. The primary focus is on enhancing the quality, extracting meaningful information, and improving the efficiency of image analysis. We employ a variety of methods, including list key techniques, e.g., image enhancement, segmentation, feature extraction. The study begins with a detailed analysis of briefly introduce the dataset or images used. Preprocessing steps involve any preprocessing steps, e.g., noise reduction, color correction. Subsequently, image enhancement techniques such as cite specific methods, e.g., contrast stretching, histogram equalization are employed to improve overall image quality. For the task of specify a task, e.g., object recognition, we implement advanced feature extraction methods like techniques, e.g., SIFT, HOG. Image segmentation is accomplished using segmentation algorithms, e.g., watershed, region-growing. The results showcase the effectiveness of these techniques in accurately delineating objects or regions of interest. Furthermore, the paper explores any additional analyses or findings, e.g., comparative studies, performance evaluations. The proposed image processing techniques exhibit promising results in terms of key metrics, e.g., accuracy, precision. In conclusion, this research contributes valuable insights into the application of image processing techniques for the domain. The findings not only advance our understanding of specific domain but also lay the groundwork for future developments in potential applications or future work.

1. INTRODUCTION TO IMAGE PROCESSING

Image processing, a cornerstone in the realm of digital technology, serves as the key enabler for extracting meaningful insights from visual data. This abstract encapsulates the essence of image processing, delving into its fundamental principles, diverse techniques, and transformative applications. At its core, image processing involves the manipulation and

analysis of digital images to enhance, interpret, or extract valuable information. Techniques range from foundational processes like filtering and enhancement to advanced tasks such as segmentation and pattern recognition. The dynamic evolution of image processing is underscored by the integration of artificial intelligence and deep learning, fostering

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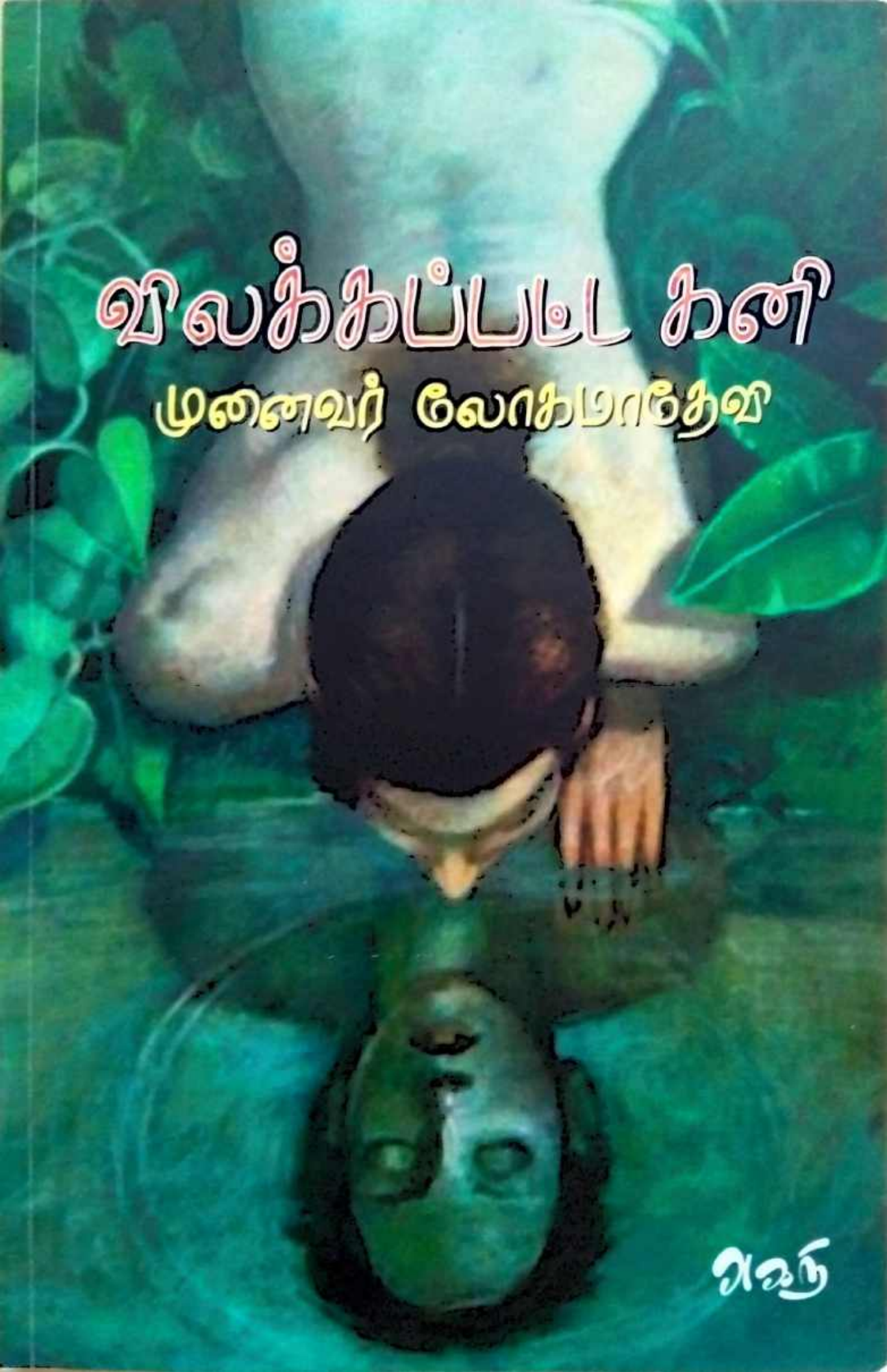


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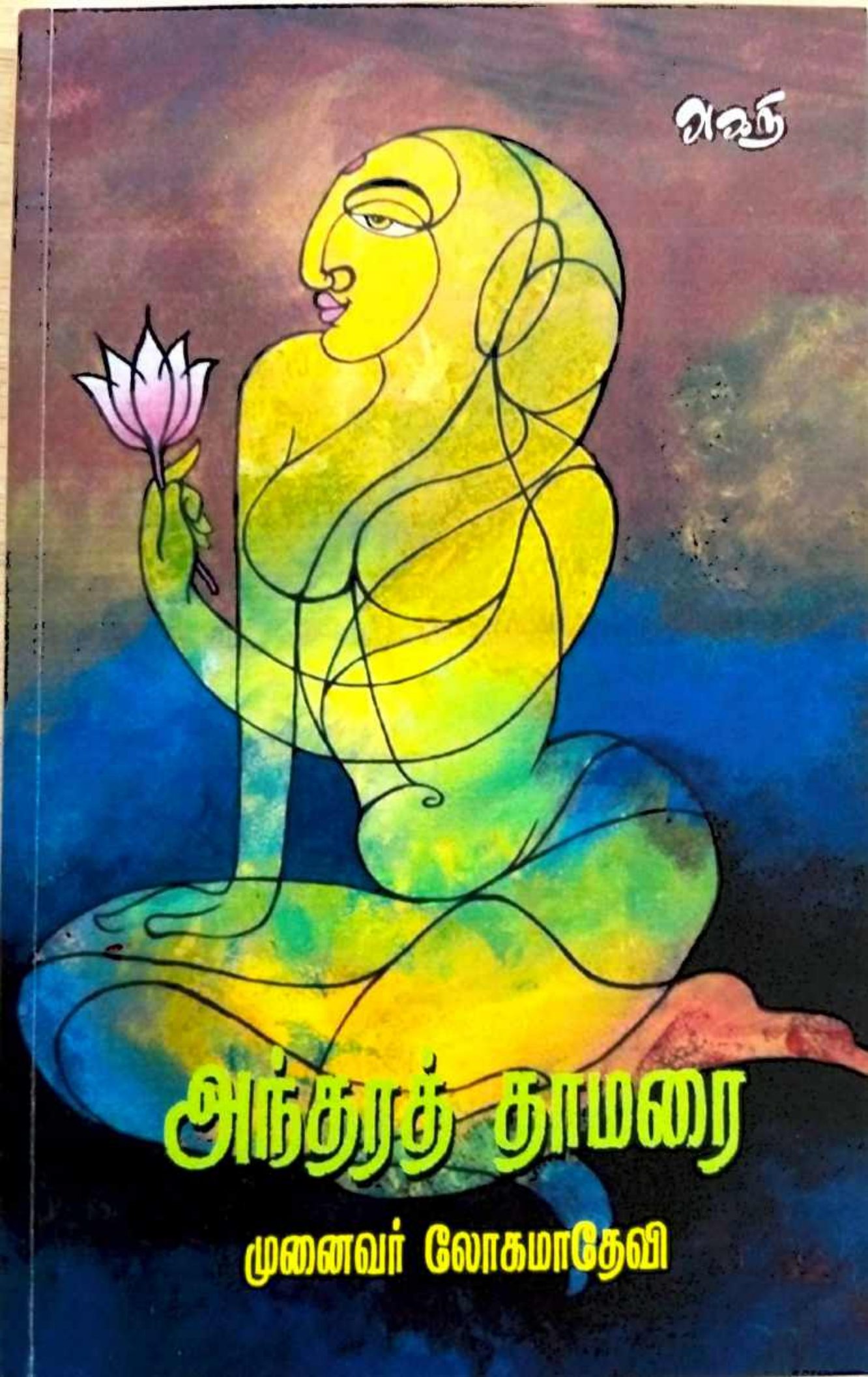
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12 கிலோ எடையில் சுமத்திரா தீவிலுள்ள காட்டு மலர், கலிபோர்னியாவில் 115 மீட்டர் உயரமுள்ள உலகின் மிக உயரமான மரம், 4 கிலோ எடையுள்ள வாழைப்பழத்தைத் தரும் இந்தோனேசிய வாழை, இன்று பிரபலமாக உள்ள பயிர் சுழற்சி முறையை 19-ஆம் நூற்றாண்டில் முதல் முறையாக அறிமுகப்படுத்திய கருப்பின பேராசிரியர் கார்வர், உலகிலேயே 50-க்கும் குறைவான டிகாப்ரியோ மரங்கள் என்று நம்மில் பலருக்குத் தெரியாத செய்திகளை இந்நூல் கொண்டுள்ளது. நெட்டிலிங்கத்தையும், அசோக மரத்தையும் ஒன்றுதான் என நாம் நினைத்துக் கொள்வோம். தாமரையையும், அல்லியையும் ஒன்று என நினைத்துக் கொள்வோம். அது தவறு என்கிறார் லோகமாதேவி. வறுத்த கொண்டைக்கடலை காப்பியாக அருந்தப்படுவதையும், தமிழ்நாட்டின் சிதம்பரத்திற்கு அருகிலுள்ள பிச்சாவரம், உலகின் இரண்டாவது பெரிய அலையாத்திக் காடுகள் என்பதையும் புதிதாகக் கேள்விப்படுகிறேன்.

கிராம்பு, கடுகு, கொண்டைக்கடலை, கரையோர நாணல்கள், விதைகளற்ற கனிகள், ருத்ராட்சங்கள், அரசாணி (பூசணி), மக்காச்சோளம், அலையாத்தித் தாவரங்கள், அந்தரத் தாமரை பற்றிய செய்திகளில் பல எனக்குப் புதியவை. ரசனைக்குரியவை.

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இப்பூவுலகின் நிலப்பரப்பில் இந்தியா 2.4 விழுக்காடுதான் என்றாலும் உலகின் 11.4 % தாவரங்களுக்கு இது வாழ்விடம். இருந்தாலும், தாவரங்களை நாம் கவனிப்பதில்லை என்று நூலாசிரியர் அங்கலாய்க்கின்றார். செடிகொடிகளைக் கண்டுகொள்ளாதிருக்கும் நிலையை 'தாவரக்குருடு' என்று கூறுகின்றார். ஒரு வேளை தாவரங்கள் ஒரே இடத்தில் நிலைத்து இருப்பதால் நாம் அவற்றைக் கவனிப்பதில்லையோ? இங்கு மனதில் கொள்ள வேண்டியது 'காட்டுயிர்' என்ற சொல், விலங்குகளையும் தாவரங்களையும் குறிக்கின்றது.

இந்தியக் கலாச்சாரத்தின் ஒரு சிறப்பு அம்சமான சந்தனம் பற்றி ஆழமான ஒரு கட்டுரை இந்நூலில் உள்ளது. அதே போன்றதுதான் மருதாணி, வெட்டிவேர், தர்ப்பை பற்றிய கட்டுரைகளும். அன்றாட வாழ்வில் இவை நமக்கு நெருக்கமாக இருந்தாலும் அறிவியல் பூர்வமாக இந்தத் தாவரங்களைப் பற்றி நாம் அறிந்திருப்பது சொற்பமே.

தாவரவியல் பேராசிரியராக இருப்பதனால் அறிவியல் அடிப்படையில் எழுதுகின்றார். ஆதாரமில்லாமல் எதையும் கூறுவதில்லை. திடமான மேற்கோள்களைக் குறிப்பிடுகின்றார். தமிழ் அறிவியல் எழுத்துலகிற்கு இந்நூல் ஒரு நல்ல வரவு.

— க. தியடோர் பாஸ்கரன்



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NUTRITIONAL BENEFITS AND BIOACTIVE ATTRIBUTES OF GLUTEN-FREE PSEUDO CEREALS: THEIR ROLE IN MANAGING CELIAC DISEASE

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Abstract

Pseudo-cereals stand out as nutritional powerhouses, distinguishing themselves from true cereals by belonging to the dicotyledonous plant category. While not genuine cereals, their seeds closely mimic those of true cereals in both function and composition. Pseudo- cereal grains, comprising Buckwheat (*Fagopyrum esculentum* Moench.) Amaranth (*Amaranthus* sp.) and Quinoa (*Chenopodium quinoa* Willd.) are gluten-free grains due to their rich nutritional profiles and bioactive compounds. Additionally, they are rich in renowned for their abundance in starch, fiber, proteins, minerals, vitamins, and notably, phytochemicals such as phenolics, alkaloids and flavonoids. These diverse phytochemicals and nutritional composition contribute significantly to their numerous health benefits and these grains have the potential to mitigate the risk of chronic ailments, including diabetes, cancer, obesity, and cardiovascular diseases. Moreover, they play a role in managing celiac disease, a health condition affecting the small intestine due to the toxic effects of gluten ingestion and digestion. Unlike cereals containing gluten, pseudo-cereals provide a valuable dietary alternative for individuals dealing with celiac disease or gluten sensitivity. It is essential to note that celiac disease cannot be cured solely by eliminating gluten-containing foods from the diet. Gluten, a protein combination of prolamin and glutelin inherent in certain grains, acts as a trigger for celiac disease. This study aims to consolidate information on the nutritional quality, bioactive compounds, health benefits, and potential applications of most commonly consumed grains.

Keywords: Phytochemicals, Pseudo-cereals, Nutraceutical, Celiac disease, Gluten-free diet

SURVEY OF WEED INFESTATION IN MILLET CULTIVATION FIELD IN VIRUDHUNAGAR DISTRICT

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Abstract

In recent years, there has been a growing recognition of millets as nutri-cereals, with both national and international policies providing much-needed support for their cultivation. Millets, primarily grown in rain fed conditions and under-nourished soils, face increased vulnerability to weed competition losses. Despite being a crucial staple food crop in semi-arid tropical regions of Africa and Asia, particularly in dry areas of India, millet yields are hindered by inefficient weed management strategies and the impact of climate change, often relying heavily on manual hand weeding. A field survey spanning from August 2022 to November 2023 was conducted in the Millets cropping season in Virudhunagar Taluk. The study focused on three randomly selected field farms for each millet type to assess weed density, employing systematic sampling with adjustments. Weed infestation associated with sorghum cultivation in Arupukkottai and Virudhunagar, Tamil Nadu, India, was meticulously studied using random sampling, assigning a specific rank to each weed based on its frequency in the study area. The dominant weeds infesting sorghum, Finger millet, Pearl millet, and Little millet, across the four different millet cultivation areas, included *Abutilon indicum* (L.) Sweet, *Rhynchosia minima* (L.) DC., *Commelina benghalensis* L., *Conyza bonariensis* (L.) Cronquist, *Dactyloctenium aegyptium* (L.) Willd., *Eragrostis chineensis* (All.) Junch, among others. These weeds, broadly distributed and generalized, presented an opportunity to explore sorghum allelopathy for effective weed control. The survey data, collected from 80 randomly selected respondents through a questionnaire, revealed that

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WOMEN ENTREPRENEURS IN DIGITAL INDIA

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Abstract

The role of women in the business landscape has evolved significantly in recent years, particularly in the context of Digital India's transformative initiatives. The government's Digital India campaign has provided a robust platform for women entrepreneurs to leverage technology, bridge gender disparities, and tap into various opportunities. This paper aims to analyze the emergence and impact of women entrepreneurs in the digital sector in India, highlighting their contributions to the economy and society. The study draws on a comprehensive review of existing literature, data's and to investigate the challenges and opportunities faced by women entrepreneurs in the digital ecosystem. However, the study also showcases inspiring success stories of women who have overcome these barriers to create innovative businesses and disrupt traditional industries. The study concludes by highlighting the importance of fostering an enabling environment that supports and nurtures women entrepreneurs in the digital space.

Keywords: *Women entrepreneurs, Digital India, Digital economy, Gender equality, Digital transformation.*

Introduction

A woman's from half of the society. The pressure of domestic work such as home- making, child care and health care makes it efficient, if not impossible, for India women to engage in the entrepreneurial actives. But the remarkable success of wide-spread e-commerce, helps many women in marketing their long-cherished of becoming entrepreneurs in the reality. Women entrepreneur is one who incubates new ideas starts her enterprise added value to society based on their independent initiative. She is self confident and has faith in herself and her abilities. She has the strength to bring the change and overcome resistance. The increasing presence of women as entrepreneurs has led to significant business and economic growth in the country. Women-owned business enterprises are playing a prominent role in society by generating employment opportunities in the country, bringing in demographic shifts and inspiring the next generation of women founders. With a vision to promote the sustainable development of women entrepreneurs for balanced growth in the country, Startup India is committed towards strengthening women entrepreneurship in India through initiatives, schemes, creation of enabling

networks and communities and activating partnerships among diverse stakeholders in the startup ecosystem.

In recent years, the emergence of digital India has led to a significant transformation in various sectors, including entrepreneurship. One of the most notable developments has been the rise of women entrepreneurs who are making remarkable strides in the digital landscape. Women in India are breaking traditional barriers and embracing technology to build successful ventures, contributing significantly to the nation's economic growth and empowerment of women. The digital revolution in India has opened up unprecedented opportunities for women to leverage technology, access information, and connect with a global audience. Empowered with digital tools and platforms, women entrepreneurs are not only establishing innovative businesses but also driving social change and gender equality.

Women Entrepreneurs in India

Women who start and run their own businesses are considered female entrepreneurs. A woman entrepreneur is one who improves the lives of economically and socially disadvantaged women in society. Go describes women entrepreneurs as "a business owned and controlled by women that creates jobs for its employees." Encouraging women to initiate and sustain enterprises could play a pivotal role in uplifting India's economy and bring about improvements on various social indicators linked to the quality of life and well-being of families. Being inextricably tied with care giving roles at home, like caring for children, preparing food, etc, also means that women tend to prioritize the well-being of their families and therefore spend a considerable portion of their income on ensuring better education for their children along with the health and nutrition of family members. The Landscape Study on Women Entrepreneurship by EdelGive Foundation shows that women entrepreneurs spend most of their income on food (65%), children's education (53%), clothing (51%) and health/medical facilities (24%), which results in better educated and healthier generations. Moreover, past studies have indicated that promoting women's participation in employment and entrepreneurship in India can potentially increase the country's gross domestic product (GDP) by \$0.7 trillion by 2025. Yet, despite the positive impact that women's entrepreneurship has on societal development and women's empowerment, the contribution of women to India's GDP is estimated at 17% as compared to the global average of 37%, with the share of women-led micro, small and medium enterprises (MSMEs) being a meager 14% .

The women entrepreneurs have leveraged technology and innovation to create successful ventures and drive social and economic change in the digital space in India:

1. **Falguni Nayar:** She is the founder of Nykaa, an e-commerce platform focused on beauty and wellness products. Nykaa has become one of the leading online beauty retailers in India.
2. **Richa Kar:** Richa Kar is the founder of Zivame, an online lingerie and intimate apparel store that has transformed the way women shop for undergarments in India.
3. **Upasana Taku:** Co-founder of MobiKwik, a digital wallet and mobile payments platform, Upasana has played a significant role in promoting cashless transactions in India.
4. **Radhika Ghai Aggarwal:** Co-founder of ShopClues, an online marketplace that connects buyers and sellers across India, offering a wide range of products.
5. **Shradha Sharma:** Founder and CEO of YourStory, a media platform that showcases stories of startups, entrepreneurs, and change-makers in India.
6. **Sabina Chopra:** She co-founded Yatra.com, one of India's leading travel portals, making it easier for people to book flights, hotels, and travel packages online.
7. **Suchi Mukherjee:** Founder of Limeroad, an e-commerce platform known for its social shopping experience, where users can create their own fashion looks and share them.
8. **Aditi Gupta:** Co-founder of Menstrupedia, a digital platform that educates people about menstruation, breaking taboos and promoting menstrual hygiene.
9. **Anisha Singh:** Founder of MyDala, a platform that provides deals and discounts on various services, making it popular among online shoppers.
10. **Neha Singh:** Co-founder of Tracxn, a startup intelligence platform that tracks data on emerging tech companies and sectors.

These women have overcome various challenges and have shown immense determination in building successful digital enterprises. They continue to inspire and encourage other aspiring women entrepreneurs in India to embrace technology and create a lasting impact in the digital ecosystem.

Women Entrepreneurs in Digital India

Women entrepreneurs in Digital India face both opportunities and challenges. It's important to note that the landscape may have evolved since then, but I'll provide insights based on the information available up to that point:

Opportunities for Women Entrepreneurs in Digital India

1. **Digitalization and E-commerce:** With the growth of Digital India initiatives, more business activities have moved online. This presents an excellent opportunity for women entrepreneurs to establish e-commerce ventures, digital marketing agencies, or online service providers.
2. **Access to a Wider Audience:** The internet allows women entrepreneurs to reach a global audience from the comfort of their homes. They can leverage social media, online marketplaces, and digital advertising to promote their businesses internationally.
3. **Government Initiatives and Support:** The Indian government has launched various schemes and programs to support women entrepreneurs, including financial assistance, skill development programs, and networking opportunities.
4. **Remote Work and Flexibility:** The digital era enables flexible work arrangements, which can be particularly advantageous for women entrepreneurs who may need to balance family responsibilities with business ventures.
5. **Empowerment through Education:** Digital platforms offer numerous educational resources, online courses, and webinars that empower women with the knowledge and skills needed to start and grow their businesses.

Challenges Faced by Women Entrepreneurs in Digital India

Despite the positive growth and progress, women entrepreneurs in Digital India also face some challenges, including:

1. **Gender Bias:** The tech industry, like many others, still faces gender bias, making it difficult for women to access funding, resources, and opportunities at times.
2. **Work-Life Balance:** Balancing entrepreneurial responsibilities with family and societal expectations can be challenging for women, affecting their entrepreneurial journey.
3. **Access to Funding:** Access to capital and venture funding remains a significant obstacle for many women-led startups in India.
4. **Digital Literacy:** While digital adoption is increasing in India, some women entrepreneurs still face challenges related to digital literacy, which can affect their ability to leverage digital tools effectively.

Despite these challenges, women entrepreneurs in Digital India are making strides, and the ecosystem is gradually becoming more inclusive and supportive. The government and various organizations are taking initiatives to encourage and

empower women to participate in the digital economy and entrepreneurship, which will likely contribute to further growth and opportunities for women in the future.

Conclusion

Women entrepreneurs in Digital India have demonstrated remarkable strength, resilience, and innovation in transforming the landscape of the country's digital economy. They have overcome various challenges, including societal norms, gender biases, and access to resources, to establish their ventures and contribute significantly to economic growth. In conclusion, the rise of women entrepreneurs in Digital India has been a powerful force for change. Their active participation in various sectors, from e-commerce to fintech, has led to the creation of job opportunities, the development of innovative solutions, and the empowerment of women in the workforce. As they continue to break barriers and pave the way for others, it is crucial for policymakers and society at large to provide adequate support, resources, and an enabling environment to further foster the growth of women-led businesses.

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VISION FOR VISHWA GURU INDIA: INITIATIVES FOR GLOBAL LEADERSHIP BY 2047

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Volume – II

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INSTITUTIONAL REFORM AND TECHNOLOGICAL ADVANCEMENTS IN INDIAN AGRICULTURE DEVELOPMENT

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Abstract

India's agricultural sector plays a crucial role in sustaining its vast population and supporting its economy. However, the sector faces numerous challenges such as low productivity, inadequate infrastructure, and fragmented landholdings. To address these issues and enhance agricultural development, institutional reform and technological advancements have emerged as critical pathways. This paper examines the significance of institutional reform and technological advancements in transforming Indian agriculture. Moreover, the paper explores the role of technology in modernizing Indian agriculture. Furthermore, the paper analyzes the challenges and opportunities associated with integrating institutional reforms and technological advancements. It highlights the importance of providing training and support to farmers for the successful adoption of new technologies. Additionally, the study discusses how public-private partnerships can facilitate the dissemination of knowledge and resources to the farming community.

Keywords: Institutional Reform, Technological Advancements, Indian Agriculture, Agriculture Development, Farmers, Agricultural Policies.

Introduction

Indian agriculture has been the backbone of the country's economy for centuries, providing livelihoods to a significant portion of its population and contributing substantially to its Gross Domestic Product (GDP). However, the sector has faced numerous challenges over the years, including outdated farming practices, low productivity, inadequate infrastructure, and volatile market conditions. In recent times, a combination of institutional reforms and technological advancements has emerged as a promising strategy to revitalize and modernize Indian agriculture, paving the way for sustainable growth and improved farmer welfare. Historically, Indian agriculture has been characterized by small landholdings, dependency on monsoon rains, and a traditional approach to farming. The lack of access to modern tools, credit facilities, and knowledge has hindered productivity and trapped

farmers in a cycle of poverty. Recognizing the urgency of addressing these issues, the government, policymakers, and agricultural experts have been increasingly focused on implementing institutional reforms that aim to empower farmers, increase their income, and foster overall rural development. Simultaneously, technological advancements have revolutionized various sectors worldwide, and agriculture is no exception. From precision farming techniques to the use of drones and artificial intelligence, technology offers immense potential to optimize agricultural practices, increase efficiency, and mitigate environmental impact. Integrating these technological innovations into Indian agriculture has become essential to overcome challenges and meet the growing demands of a burgeoning population. This paper delves into the key aspects of institutional reform and technological advancements in Indian agriculture development. It explores the recent policy measures and initiatives taken by the government to empower farmers and create an enabling environment for agricultural growth. Additionally, it examines the role of technology in transforming traditional farming methods, enhancing productivity, and promoting sustainable practices.

Institutional Reforms in Agricultural Development

Indian agriculture has played a pivotal role in the country's socio-economic fabric for centuries, providing livelihoods to a significant portion of the population and contributing substantially to the national GDP. However, over the years, the agricultural sector has faced numerous challenges, ranging from fragmented landholdings and outdated farming practices to inadequate infrastructure and market inefficiencies. These challenges have hindered the sector's growth and impeded the well-being of millions of farmers and rural communities.

Recognizing the urgent need for transformative change, institutional reforms in Indian agriculture have emerged as a critical aspect of sustainable development and rural prosperity. These reforms seek to restructure and modernize the agricultural framework, address systemic issues, and empower farmers with better access to resources, technology, and markets. Historically, the Green Revolution in the 1960s and 1970s significantly boosted agricultural production, bringing India closer to self-sufficiency in food grains. However, over time, the limitations of this model became apparent, leading to issues such as over-reliance on chemical inputs, water depletion, environmental degradation, and income disparities among farmers.

In recent years, the Government of India, along with various state governments, has been actively involved in designing and implementing agricultural reforms to bring about a more sustainable, inclusive, and prosperous agricultural sector. These reforms focus on diversifying agricultural practices, ensuring better price realization

for farmers, promoting value addition, enhancing rural infrastructure, and strengthening farmer-centric institutions.

One of the landmark initiatives in this direction was the passage of the Agriculture Reform Bills in 2020, aimed at creating a more liberalized agricultural ecosystem. The legislation sought to provide farmers with the freedom to sell their produce outside traditional agricultural produce market committees (APMCs) and explore options beyond the Minimum Support Price (MSP) system. While the reforms were met with mixed reactions, they brought the issue of institutional reform to the forefront of the national discourse. In addition to policy-level changes, various non-governmental organizations, research institutions, and private enterprises have been actively involved in driving agricultural innovation and empowering farmers through capacity-building programs, technology adoption, and market linkages.

Technology Development in Indian Agricultural Development

Agriculture has been the backbone of India's economy for centuries, providing livelihoods to millions of people and contributing significantly to the country's GDP. However, over the years, the sector has faced various challenges such as population growth, diminishing natural resources, climate change, and fluctuating market demands. In response to these challenges, the Indian agricultural sector has undergone significant technological advancements and innovations. The application of modern technology in agriculture, often referred to as "agricultural technology" or "agritech," has revolutionized the way farming is practiced in India. These technological developments aim to enhance agricultural a wide range of innovations, including the adoption of genetically modified crops, precision agriculture techniques, farm mechanization, use of drones and satellite imagery, climate-resilient practices, and improved irrigation systems, among others.

The integration of technology in agriculture has not only increased productivity but also empowered farmers by providing them with access to valuable information and resources. Additionally, technology has enabled better market linkages, reduced post-harvest losses, and facilitated the adoption of sustainable practices. It is important to note that while technological advancements offer promising opportunities, they also come with challenges and concerns. Issues related to the digital divide, accessibility, and the impacts on traditional agricultural practices need to be carefully addressed.

Challenges and Opportunities Associated with Integrating Institutional Reforms and Technological Advancements

Integrating institutional reforms and technological advancements in Indian agriculture presents both challenges and opportunities. India's agricultural sector is vital to its economy, as it employs a significant portion of the population and contributes substantially to the country's GDP. By combining reforms and technology, the agriculture sector can become more efficient, sustainable, and resilient. However, there are several hurdles that need to be addressed to fully realize the potential benefits. Let's explore the challenges and opportunities in more detail:

Challenges

1. **Limited infrastructure:** The lack of proper infrastructure, such as irrigation facilities, storage facilities, and transportation networks, poses a significant challenge to implementing and adopting advanced agricultural technologies effectively.
2. **Access to technology:** Ensuring that small and marginal farmers, who make up a substantial portion of the agricultural community in India, have access to modern agricultural technologies can be challenging due to factors like affordability and awareness.
3. **Fragmented land holdings:** The pattern of fragmented land holdings makes it difficult to implement large-scale modern farming techniques. Integrating technology in such a scenario requires coordination and collaboration among farmers.
4. **Resistance to change:** Traditional agricultural practices are deeply ingrained in the Indian farming community. Convincing farmers to adopt new technologies may be met with resistance, especially if they perceive risks associated with new methods.
5. **Financial constraints:** Many farmers face financial limitations, hindering their ability to invest in advanced technologies and machinery. Access to affordable credit and financial assistance is crucial to promoting technological integration.

Opportunities

1. **Increased productivity:** By incorporating modern technologies like precision agriculture, smart irrigation systems, and advanced machinery, Indian agriculture can witness a significant boost in productivity, leading to increased yields and income.

2. Sustainable practices: Technological advancements can enable the adoption of sustainable farming practices, reducing the environmental impact and promoting conservation of resources like water and soil.
3. Market linkages: Technology can help improve market linkages for farmers, allowing them to connect directly with buyers, negotiate better prices, and access a wider customer base.
4. Data-driven decision making: The integration of technology provides access to real-time data and information, enabling farmers to make informed decisions about crop planning, pest management, and resource allocation.
5. Empowerment of farmers: Technology and institutional reforms can empower farmers by providing them with knowledge, skills, and tools to manage their farms more efficiently and profitably.
6. Research and development: Integrating technology may foster collaboration between agricultural research institutions and private sector companies, leading to more innovations and customized solutions for Indian farming needs.
7. Job creation: The adoption of new technologies may lead to the emergence of new job opportunities in the agricultural technology sector, fostering rural economic development.
8. To leverage these opportunities and overcome the challenges, a comprehensive approach is needed. This should involve creating supportive policies, investing in rural infrastructure, providing training and education to farmers, promoting public-private partnerships, and ensuring equitable access to resources and technology. Government initiatives, NGOs, private companies, and research institutions can play a crucial role in driving this transformation towards a more technologically advanced and sustainable Indian agriculture sector.

Conclusion

Institutional reform and technological advancements play crucial roles in the development of Indian agriculture. Over the years, India has faced numerous challenges in its agricultural sector, including outdated practices, low productivity, fragmented land holdings, and insufficient access to resources and markets. However, through strategic reforms and innovative technological interventions, the country has made significant progress in transforming its agricultural landscape.

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IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

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IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

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ROLE OF EDUCATION IN THE EMPOWERMENT OF WOMEN

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Abstract

The empowerment of women is a fundamental aspect of societal progress, gender equality, and sustainable development. Education plays a pivotal role in achieving this empowerment by providing women with the knowledge, skills, and opportunities necessary to overcome social, economic, and cultural barriers. This study explores the multifaceted role of education in the empowerment of women, highlighting its significance in promoting gender equality, improving economic prospects, enhancing health and well-being, and fostering leadership and participation in decision-making processes. Additionally, it underscores the need for equitable access to quality education and the importance of addressing barriers such as gender-based discrimination and stereotypes. The paper concludes with a call to prioritize and invest in women's education as a catalyst for positive change, acknowledging that when women are empowered through education, entire societies benefit from their contributions to diverse fields and their capacity to drive inclusive and sustainable development.

Keywords: Empowerment, Women Education, NEP

Introduction

Education plays a pivotal role in the empowerment of women, serving as a catalyst for positive change in societies around the world. It is a powerful tool that not only equips women with knowledge and skills but also fosters their self-confidence, independence, and agency. The empowerment of women is essential for achieving gender equality and promoting the overall development of a society. Empowering women has become the focus of considerable discussion and attention all over the world. Today we enjoy the benefits of being citizens of a free nation, but we really need to think whether each of the citizens of our country is really free or enjoying freedom, in the true sense of the term. The inequalities between men and women and discrimination against women are an age-old issue all over the world.

Thus women quest for equality with man is a universal phenomenon. Women should equal with men in matters of education, employment, inheritance, marriage, and politics etc. Their quest for equality has given birth to the formation of many women's associations and launching of movements. The Constitution of our nation doesn't discriminate between men and women, but our society has deprived women

of certain basic rights, which were bestowed upon them by our Constitution. Empowerment allows individuals to reach their full potential, to improve their political and social participation, and to believe in their own capabilities.

Importance of Women Education

Women's education is of paramount importance for numerous reasons, and it has far-reaching positive effects on individuals, communities, and societies as a whole.

1. **Empowerment:** Education empowers women by providing them with knowledge, skills, and confidence. When women are educated, they are more likely to make informed decisions about their lives, health, and overall well-being. This empowerment extends to their ability to participate in economic, social, and political activities.
2. **Gender Equality:** Education is a fundamental tool in achieving gender equality. It helps break down traditional gender roles and stereotypes, promoting the idea that women are equally capable as men in all fields. Education can lead to greater opportunities for women in the workforce and in leadership roles.
3. **Economic Development:** Educated women contribute significantly to economic growth and development. They are more likely to secure better-paying jobs, which in turn benefits their families and communities. Studies have shown that investing in women's education has a positive impact on a nation's GDP.
4. **Family and Community Well-being:** Educated mothers are also more likely to invest in the education and well-being of their children, creating a positive cycle of education and development.
5. **Social and Political Participation:** Education enhances women's ability to participate in social and political activities. Educated women are more likely to be engaged in their communities, advocate for their rights, and participate in the decision-making processes of their countries.
6. **Reduction in Gender-Based Violence:** Education can help reduce instances of gender-based violence by empowering women to recognize their rights and stand up against abuse. It can also contribute to changing societal attitudes towards violence against women.
7. **Innovation and Progress:** Women's education brings fresh perspectives and talent into various fields, including science, technology, engineering, and mathematics (STEM). This diversity of thought can lead to innovation and progress in various industries.

8. **Poverty Alleviation:** Education is a powerful tool in the fight against poverty. When women are educated, they are better equipped to break the cycle of poverty, leading to improved living standards for themselves and their families.
9. **Global Development:** Women's education is a key component of the United Nations' Sustainable Development Goals (SDGs). Achieving universal access to quality education for women and girls is seen as a critical step toward achieving many of these goals, including those related to health, gender equality, and poverty reduction.

Women Empowerment Through Education

Women empowerment through education is a critical and multifaceted process that involves providing women and girls with access to quality education, skills, knowledge, and opportunities. It is a powerful tool for promoting gender equality, improving women's socio-economic status, and addressing various societal issues.

1. **Access to Education:** Ensuring that women and girls have equal access to education at all levels is the first step. This includes eliminating barriers such as gender-based discrimination, cultural norms, and economic constraints that may prevent girls from attending school.
2. **Increased Opportunities:** Education opens up a wide range of opportunities for women in various fields, including employment, leadership roles, entrepreneurship, and civic participation. It equips them with the skills and knowledge needed to pursue their goals and ambitions.
3. **Economic Empowerment:** Education enables women to access better job opportunities and earn higher incomes. This economic independence can lead to financial stability, reduced poverty, and an improved standard of living for themselves and their families.
4. **Health and Well-being:** Educated women tend to have better health outcomes for themselves and their children. They are more likely to make informed decisions about healthcare, and nutrition, leading to healthier families and communities.
5. **Empowerment in Decision-Making:** Education equips women with critical thinking skills and the ability to make informed decisions about their lives. This extends to choices related to marriage, family planning, and participation in community and political activities.
6. **Reducing Gender-Based Violence:** Education can help reduce instances of gender-based violence by promoting gender equality and challenging harmful stereotypes and attitudes that perpetuate violence against women.

7. **Community Development:** Educated women often play a vital role in community development and social change. They are more likely to be involved in initiatives that address local issues, advocate for women's rights, and promote sustainable development.
8. **Breaking the Cycle of Poverty:** Educated women are more likely to invest in their children's education, breaking the cycle of intergenerational poverty and promoting a culture of learning within families.
9. **Political Participation:** Education is crucial for increasing women's participation in politics and decision-making processes. When women are educated and informed, they are more likely to engage in political activities and advocate for policies that benefit their communities.
10. **Role Models:** Educated women serve as role models for younger generations, inspiring girls to pursue their own education and goals, furthering the cycle of empowerment.

Importance of Women Participation

Women's participation may be used both for support by an agency and as a control device by the law-makers. Participation may be direct or indirect, formal or informal; it may be political, social or administrative in nature. Women's participation in Panchayat Raj institutions may take many forms. It refers to all those activities which show the women's involvement in the processes and administration, that is, participation in policy formulation and programme planning, implementation and evaluation of policies and programmes meant for development target groups. Indian women have been associated with politics since the pre-independence period. They were part of the freedom movement both as volunteers and leaders. On independence, Article 15 of the Indian Constitution guaranteed equality to women under the law. Though the Indian Constitution guarantees equal rights to all citizens, women are still marginally represented in the Indian political arena. The fact is that in the hands of women are having lack of power at the centre and state level. It is sad state of affairs that about half of India's population has only 10 per cent representation in the Lok Sabha. In the current Rajya Sabha, there are 21 women out of a total of 233 MPs, which amounts to only nine per cent which is even lower than that in the Lok Sabha. At the societal level male dominance in Parliament, bureaucracy, judiciary, Army, police all point towards gender inequality, notwithstanding the fact that it is often argued that women's political leadership would bring about a more cooperative and less conflict-prone world. Lack of political and economic powers add to the subservient and unequal position of women.⁸ After Independence, in spite of having our own constitution,

India was not able to achieve morals like fairness, equality and social justice. The condition of women didn't improve even having a woman prime minister for few numbers of years. Women's representation in politics all over the world began to assume importance from mid 1970s when United Nations (UN) declared 1975 as the 'International Women's Year'. This was followed by the UN's decade for Women from 1976-1985 and the theme was "Equality, Development and Peace". Women's participation in politics remained quite inconsequential in India even today but some sort of improvement took place by the 73rd and 74th constitutional amendment acts which gave boost to the status of women at the political level by giving opportunity to women in the process of decision-making.⁹ The 73rd and 74th Amendments (1993) to the constitution of India have provided for reservation of seats in the local bodies of panchayats and Municipalities for women, laying a strong foundation for their participation in decision making at the local level.

Conclusion

Women play an imperative role in making a nation progressive and guide it towards development. They are essential possessions of a lively humanity required for national improvement, so if we have to see a bright future of women in our country, giving education to them must be a pre-occupation Empowerment means moving from a weak position to execute a power. The education of women is the most powerful tool to change the position of society. Education also brings a reduction in inequalities and functions as a means of improving their status within the family. To encourage the education of women at all levels and for dilution of gender bias in providing knowledge and education, established schools, colleges and universities even exclusively for women in the state. The education develops the idea of participation in government, panchayats, public matters etc for elimination of gender discrimination.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

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EMPOWERING INDIA'S MSMEs: PATHWAY TO ECONOMIC GROWTH, RESILIENCE, SOCIAL INCLUSION

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Abstract

Micro, Small, and Medium Enterprises (MSMEs) play a pivotal role in India's economic landscape. They contribute significantly to employment generation, GDP growth, and foster economic inclusivity. The study begins by providing an overview of the MSME sector's current state, acknowledging its challenges and potential. It then delves into the strategies necessary for fostering growth and resilience. These strategies include streamlined regulatory frameworks, access to finance, technology adoption, skill development, and market linkages. Moreover, it highlights the need for a supportive ecosystem that encourages innovation and entrepreneurship. It emphasizes the importance of gender diversity and equitable opportunities for marginalized communities. Inclusive growth not only ensures a fair distribution of economic benefits but also enhances social harmony and stability.

Keywords: *Self-Reliant India Mission, MSME, Self-reliant and globally competitive*

Introduction

Micro, Small, and Medium Enterprises (MSMEs) stand as the backbone, serving as engines of growth and innovation. These nimble and dynamic entities collectively form the bedrock of economic activity, contributing significantly to GDP, generating employment opportunities, and fostering regional development. The unparalleled potential of India's MSME sector to drive economic growth, build resilience in the face of challenges, and promote social inclusion cannot be overstated. It delves into the myriad ways in which these enterprises have consistently emerged as pillars of economic development, even in the face of adversities. Furthermore, it underscores the imperative of empowering MSMEs, providing them with the resources, support, and opportunities necessary to unleash their full potential.

India's MSME sector is remarkably diverse, encompassing a wide range of industries from manufacturing to services. It is characterized by its adaptability and ability to cater to both domestic and international markets. As a major source of employment, particularly for marginalized sections of society, it acts as a catalyst for social inclusion and poverty alleviation. However, the sector also faces numerous challenges, ranging from access to finance to technology adoption. In an increasingly interconnected and competitive world, it

is critical for India's MSMEs to not only survive but thrive. With the right interventions, these enterprises can transform into global players, enhancing India's economic standing while improving the lives of millions of its citizens. Moreover, it will provide insights into the strategies, policies, and innovations that can empower MSMEs, bolstering their contribution to India's economic growth, resilience, and social inclusion.

Empowering India's MSMEs

Empowering India's Micro, Small, and Medium Enterprises (MSMEs) is indeed crucial for the country's economic growth, resilience, and social inclusion. MSMEs play a pivotal role in the Indian economy, contributing significantly to employment generation, industrial output, and export earnings. Here are some key points highlighting the importance of empowering India's MSMEs:

Employment Generation: MSMEs are major employers in India. They provide employment opportunities to a diverse workforce, including skilled, semi-skilled, and unskilled labor, thus contributing to reducing unemployment and poverty.

Access to Finance: Improve access to affordable credit and capital for MSMEs through initiatives like the MUDRA Yojana and credit guarantee schemes. Encourage the development of alternative funding sources, such as venture capital, angel investors, and peer-to-peer lending.

Economic Growth: MSMEs make up a significant portion of India's GDP and industrial output. Their growth and success directly impact the overall economic growth of the country. They are often considered the backbone of the Indian economy.

Innovation and Entrepreneurship: Many innovative and entrepreneurial ideas are born in the MSME sector. By supporting and empowering these businesses, India can foster a culture of innovation and entrepreneurship, leading to economic diversification and growth.

Resilience: A diverse landscape of MSMEs can make the economy more resilient. During economic downturns, smaller businesses are often better equipped to adapt quickly to changing circumstances and recover faster.

Export Potential: MSMEs contribute significantly to India's exports. When these businesses are empowered, they can tap into global markets, contributing to foreign exchange earnings and economic stability.

Social Inclusion: Empowering MSMEs can help bridge the urban-rural divide and reduce regional disparities. It provides opportunities for entrepreneurship and income generation in rural and semi-urban areas, thereby promoting social inclusion.

Financial Inclusion: Expanding access to credit and financial services for MSMEs is vital. By improving financial inclusion, these businesses can access the capital needed for growth and expansion.

Technology Adoption: MSMEs can benefit from the adoption of modern technologies and digital tools. This can enhance their efficiency, productivity, and competitiveness, thereby contributing to overall economic growth.

Skill Development: Investment in skill development programs for MSMEs can help enhance the capabilities of the workforce and the competitiveness of these enterprises.

Regulatory Simplification: Streamlining regulations and reducing bureaucratic red tape can make it easier for MSMEs to operate and grow.

Policy Support: The government should continue to implement policies that support MSMEs, including access to finance, simplified regulatory procedures, and incentives for innovation. Strengthening the business environment will encourage entrepreneurship and create more jobs.

Digital Transformation: Encouraging MSMEs to adopt digital technologies and e-commerce platforms can help them expand their reach, increase efficiency, and adapt to changing market dynamics.

Skill Development: Investing in skill development and vocational training programs can enhance the capabilities of the MSME workforce, making them more competitive and adaptable.

Infrastructure Development: Improving physical and digital infrastructure, including transportation, logistics, and broadband connectivity, can reduce costs and increase the competitiveness of MSMEs.

Access to Global Markets: Promoting exports and international trade can be a significant growth driver for MSMEs. The government should facilitate easier access to global markets and provide support for compliance with international standards.

Resilience Planning: MSMEs should develop resilience strategies that include risk management, diversification, and contingency planning to mitigate the impact of unforeseen disruptions, such as the COVID-19 pandemic.

Environmental Sustainability: Encouraging MSMEs to adopt eco-friendly practices not only helps protect the environment but also opens up opportunities for green growth and access to international markets.

Inclusivity: Fostering an inclusive environment that promotes gender equality and social diversity within MSMEs can harness the full potential of the workforce and contribute to social development.

Data and Research: Regular data collection and research on the MSME sector are essential to make informed policy decisions and track progress.

Credit Guarantee and Insurance Schemes: Strengthen credit guarantee schemes and insurance options for MSMEs to mitigate risks and encourage lending by financial institutions.

Create platforms that connect MSMEs with insurers and credit providers.

Entrepreneurship Support: Foster entrepreneurship by offering mentorship, guidance, and startup incubation programs. Encourage collaboration between larger corporations and MSMEs for knowledge transfer and business opportunities.

Quality Certification and Standards: Promote adherence to quality standards and certifications, enhancing the competitiveness of Indian MSMEs in domestic and international markets.

Government Procurement: Reserve a portion of government procurement contracts for MSMEs, providing them with a stable source of revenue and opportunities for growth.

Networking and Clusters: Support the formation of industry clusters where MSMEs can collaborate, share resources, and collectively address challenges.

Sustainability and Green Initiatives: Encourage MSMEs to adopt sustainable and eco-friendly practices to meet growing global demand for green products and services.

Empowering India's MSMEs requires a multi-faceted approach that involves government support, private sector collaboration, and a focus on innovation and technology adoption. By addressing these key areas, India can create a more conducive environment for MSMEs to thrive and contribute significantly to the country's economic development.

Conclusion

Empowering MSMEs is not just about economic growth; it's about creating a more resilient and inclusive society. As MSMEs flourish, they can drive economic development, create jobs, reduce poverty, and ultimately lead to a more prosperous and socially inclusive India. Government, industry, and civil society must work together to realize this vision, and it will require a sustained commitment to fostering an enabling environment for MSMEs to thrive.

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Envisioning a Self-Reliant Rural India for Sustainable Economic Development

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THE ROLE OF ATMANIRBHAR BHARAT ABHIYAN IN INDIAN ECONOMY TRANSFORMATION THROUGH INNOVATION

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Abstract

The Atmanirbhar Bharat Abhiyan, launched by the Government of India in May 2020, holds immense significance in the context of Indian economic transformation through innovation. This ambitious initiative aims to foster self-reliance and promote indigenous production across various sectors of the Indian economy. Prime Minister remarked that the definition of self-reliance has undergone a change in the globalized world and clarified that when the country talks about self-reliance, it is different from being self-centered. He said that India's culture considers the world as one family, and progress in India is part of, and also contributes to, progress in the whole world. The primary objective of this paper is to explore and analyze the role of Atmanirbhar Bharat Abhiyan in driving economic transformation through innovation.

Keywords: *Atmanirbhar Bharat Abhiyan, Self-Reliant, Innovation*

Introduction

The "Atmanirbhar Bharat Abhiyan," also known as the "Self-Reliant India Campaign," is a significant initiative launched by the Government of India with the aim of transforming the Indian economy through innovation. This initiative was announced by Prime Minister Narendra Modi in May 2020, in the midst of the global COVID-19 pandemic. At its core, the Atmanirbhar Bharat Abhiyan seeks to make India self-reliant and less dependent on foreign countries for essential goods and services. The Atmanirbhar Bharat Abhiyan is a reflection of India's aspirations to become a major player on the global stage and to realize its full economic potential. This initiative recognizes the importance of self-sufficiency, innovation, and entrepreneurship as key drivers of economic growth and transformation. It aims to foster economic resilience, reduce vulnerabilities to global disruptions, and create a more robust and sustainable economy. The central idea of the Atmanirbhar Bharat Abhiyan is to promote indigenous manufacturing, technology development, and innovation across various sectors, including manufacturing, agriculture, healthcare, and infrastructure. It encourages the development and adoption of cutting-edge technologies, research and development, and the nurturing of a culture of innovation

and entrepreneurship. By doing so, it aims to enhance the overall competitiveness of Indian industries, create employment opportunities, and reduce import dependency.

Over the course of its implementation, the Atmanirbhar Bharat Abhiyan has had a significant impact on various economic sectors, influencing policies, investments, and collaborations. It has spurred the development of innovative solutions in areas like digital technology, renewable energy, healthcare, and agriculture. It also seeks to leverage India's demographic dividend by skilling and reskilling the workforce, making them more adaptable to the evolving global economy.

The Role of Atmanirbhar Bharat Abhiyan in Indian Economy Transformation through Innovation:

Encouraging Domestic Manufacturing: The campaign places significant emphasis on promoting domestic manufacturing and reducing dependency on imports, especially in critical sectors like electronics, pharmaceuticals, defense, and more. By doing so, it aims to create an environment conducive to innovation in indigenous industries.

Make in India: The Make in India initiative, which is closely aligned with Atmanirbhar Bharat, seeks to boost innovation by making it easier for businesses to set up and operate in India. This includes easing regulatory hurdles, improving infrastructure, and simplifying tax regimes, all of which can attract foreign investment and encourage domestic entrepreneurs to innovate.

Start-up Ecosystem: Atmanirbhar Bharat recognizes the importance of nurturing the start-up ecosystem as a breeding ground for innovation. It includes measures like financial support, regulatory simplifications, and funding for startups, all of which are crucial in driving innovation in the economy.

Research and Development (R&D) Investment: The government has incentivized R&D activities by offering tax breaks and subsidies to companies that invest in research and development. This approach can lead to innovative products and services and foster technological advancement.

Digital India: The campaign is closely aligned with the Digital India initiative, which promotes the use of digital technology and digital platforms. This focus on digitization and technological advancement can drive innovation across various sectors and improve the overall efficiency of the Indian economy.

Attracting Foreign Investment: Atmanirbhar Bharat Abhiyan, while emphasizing self-reliance, also recognizes the importance of foreign investment. It seeks to attract foreign companies to invest in India, which can bring new technologies and innovative practices to the Indian economy.

Strengthening Healthcare: The COVID-19 pandemic highlighted the need for a robust healthcare system. The campaign aims to strengthen the healthcare sector, not only by ensuring self-reliance in pharmaceuticals but also by investing in healthcare infrastructure and research. This can lead to innovations in medical technology and healthcare delivery.

Agricultural Reforms: The initiative includes agricultural reforms that aim to modernize the sector and make it more efficient. Innovation in agriculture can lead to increased productivity and better income for farmers.

Infrastructure Development: The government is investing in infrastructure development, including the construction of industrial corridors, logistics parks, and smart cities. These developments can provide a platform for innovation in urban planning and sustainable development.

Global Supply Chain Diversification: The COVID-19 pandemic highlighted the risks associated with overreliance on a single source or country for essential supplies. Atmanirbhar Bharat Abhiyan encourages diversification of the global supply chain, which is a strategic move to enhance economic stability and innovation.

Sustainable Development: The Abhiyan also emphasizes sustainability, which aligns with the global focus on environmental and social responsibility. Promoting green and sustainable practices can open doors to innovative solutions while addressing pressing global challenges.

Reskilling and Workforce Development: To keep up with the changing demands of the job market, the initiative also focuses on reskilling and upskilling the Indian workforce, making it more adaptable to the evolving economy and technological advancements.

Encouraging Innovation: The initiative recognizes the importance of innovation in achieving self-reliance. It provides incentives and support for research and development, thus fostering a culture of innovation in the country.

Strengthening Domestic Industries: Through various policy measures, Atmanirbhar Bharat Abhiyan aims to strengthen domestic industries, making them more competitive and capable of serving both the domestic and international markets.

Enhancing Ease of Doing Business: The government is taking steps to improve the ease of doing business in India, making it more attractive for both domestic and foreign investors. This, in turn, encourages innovation and economic growth.

Impact of Atmanirbhar Bharat on GDP

Positive Impact on GDP:

Promoting Domestic Manufacturing: Encouraging domestic manufacturing can potentially increase industrial production, which contributes to GDP growth. If more products are made in India and fewer are imported, this can boost GDP.

Boosting Entrepreneurship: Supporting small and medium-sized enterprises (SMEs) and startups can lead to job creation and economic growth, which, in turn, can positively impact GDP.

Negative Impact on GDP

Short-Term Disruptions: Policies that aim to reduce dependency on imports may lead to short-term disruptions in supply chains, which can have a negative impact on economic activity and GDP.

Protectionist Measures: Excessive protectionism can hinder foreign investment and trade, potentially reducing overall economic growth.

Resource Allocation: Focusing on self-sufficiency in specific sectors may lead to a misallocation of resources, potentially impacting overall economic efficiency and GDP.

Long-Term Impact: The long-term impact of such initiatives on GDP growth will depend on how effectively they are implemented, the extent to which they foster innovation, and their ability to make India competitive in the global market.

Conclusion

Atmanirbhar Bharat Abhiyan aims to transform the Indian economy into a self-reliant and innovative powerhouse. While it faces challenges and critics, the initiative represents a clear vision for India's economic future, one that prioritizes self-sufficiency, innovation, and sustainability. By embracing this initiative and nurturing a culture of innovation, India can position itself as a global economic leader, ensuring prosperity and security for its citizens.

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SELF-RELIANT INDIA MISSION- A REVOLUTION IN THE GROWTH OF INDIAN ECONOMY

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Abstract

The Self-Reliant India Mission, also known as 'Aatmanirbhar Bharat Abhiyan,' is a comprehensive economic and policy initiative launched by the Government of India. This mission aims to transform the Indian economy into a self-reliant and resilient one, reducing dependency on imports and promoting domestic production. The mission was unveiled against the backdrop of the COVID-19 pandemic and global economic challenges, making it a significant turning point in the growth trajectory of the Indian economy. The Self-Reliant India Mission is a bold and transformative initiative that aims to revolutionize the Indian economy. By fostering domestic production, encouraging innovation, and reducing dependency on imports, it aspires to make India self-reliant and globally competitive.

Keywords: *Self-Reliant India Mission, 'Aatmanirbhar Bharat Abhiyan, India self-reliant and globally competitive*

Introduction

Hon'ble Prime Minister during his address to the Nation on 12th May, 2020 mentioned that a virus has destroyed the world. Crores of people around the world are facing a crisis. World all over is engaged in a battle to save precious lives. This crisis is unthinkable as well as unprecedented for mankind. He directed to remain vigilant, closely monitor, follow the rules of engagement in such a war, save ourselves and move ahead. He informed that the state of the world today teaches us that a (Atmanirbhar Bharat) "Self-reliant India" is the only path. In order to fulfill the dream of making the 21st century India's, the way forward is through ensuring that the country becomes self-reliant. This vision of India - turning crisis into opportunity- is going to prove equally effective for our resolve of self-reliant India as the production of PPE kits, N-95 masks in India has gone up from almost being negligible to 2 lakh each, on a daily basis. Prime Minister remarked that the definition of self-reliance has undergone a change in the globalized world and clarified that when the country talks about self-reliance, it is different from being self-centered. He said that India's culture considers the world as one family, and progress in India is part of, and also contributes to, progress in the whole world.

Key Highlights of Self-Reliant India Mission

The Self-Reliant India Mission aims towards cutting down import dependence by focussing on substitution while improving safety compliance and quality goods to gain

global market share. The Self-Reliance neither signifies any exclusionary or isolationist strategies but involves creation of a helping hand to the whole world. The Mission focuses on the importance of promoting “local” products. The Mission will be carried out in two phases:

Phase 1 : It will consider sectors like medical textiles, electronics, plastics and toys where local manufacturing and exports can be promoted.

Phase 2 : It will consider products like gems and jewellery, pharma and steel, etc. The magnificent building of self-reliant India will stand on five Pillars, namely Economy - which brings in quantum jump and not incremental change. Infrastructure - which become the identity of India System - based on 21st century technology driven arrangements. Vibrant Demography - which is our strength and source of energy for a self-reliant India. Demand -whereby the strength of our demand and supply chain should be utilized to full capacity.

The Mission is also expected to complement ‘Make in India Initiative’ which intends to encourage manufacturing in India. Atmanirbhar Bharat and Economic Stimulus Prime Minister announced the ‘Atmanirbhar Bharat Abhiyan (or Self-reliant India Mission)’ with an economic stimulus package worth Rs 20 lakh crores aimed towards achieving the mission. This package will give a new impetus to the development journey of the country in 2020 and a new direction to the Self-reliant India campaign. The announced economic package is 10% of India’s Gross Domestic Product (GDP) in 2019-20. The amount includes packages already announced at the beginning of the lockdown incorporating measures from the RBI and the payouts under the Pradhan MantriGaribKalyanYojana. The package focuses on land, labour, liquidity and laws. Smt. NirmalaSitharaman, Hon’ble Finance Minister of India announced this Special economic and comprehensive package of Rs 20 lakh crore in five tranches. The first tranche of the Stimulus Package is dedicated to support micro, small and medium enterprises (MSMEs). The reforms introduced in the second tranche are aimed at providing relief to the poor including the farmers and the migrant workers. The third tranche is focused on introducing additional reforms for the agricultural sector. As part of the fourth tranche, the Government announced reforms to provide impetus to sectors including coal mining, minerals, defence civil aviation and atomic energy. The fifth and the final tranche focusses on healthcare and education and certain other reforms including de-criminalisation of the Companies Act, 2013, ease of doing business and public sector undertakings

Self-Reliant India Mission and its impact on the growth of the Indian Economy

The Self-Reliant India Mission was announced by Prime Minister NarendraModi in May 2020. It is built on the principles of 'vocal for local' and 'Make in India,' emphasizing the importance of local manufacturing and consumption. The mission seeks to make India self-reliant across various sectors, from agriculture and manufacturing to technology and defense.

Key Objectives: The mission has several key objectives, including promoting indigenous manufacturing, attracting foreign investment, improving infrastructure, reforming labor laws, and simplifying the tax system. These objectives are intended to create an environment conducive to economic growth and self-sufficiency.

Economic Reforms: The mission has spurred a series of economic reforms to enhance the ease of doing business in India. These reforms have a far-reaching impact on both domestic and international investors, making India an attractive destination for business and investment.

Sectorial Transformation: The Self-Reliant India Mission has been particularly transformative in sectors such as technology, healthcare, defense, and renewable energy. It encourages innovation, research, and development in these sectors, fostering job creation and reducing the trade deficit.

Global Implications: The mission's policies have implications for India's global trade relationships. It seeks to reduce imports, especially from China, by promoting the manufacturing of essential goods within India. This approach has diplomatic and trade implications that are closely watched by the international community.

Support for Key Sectors: The initiative focused on promoting and strengthening key sectors like manufacturing, agriculture, healthcare, and technology. By boosting these sectors, the government aimed to reduce India's dependency on imports and increase domestic production.

Digital Transformation: The COVID-19 pandemic accelerated the need for digital transformation. The initiative emphasized digitalization, making it easier for businesses to operate online and engage in e-commerce.

SME and MSME Support: Small and Medium Enterprises (SMEs) and Micro, Small, and Medium Enterprises (MSMEs) form a significant part of India's economy. Atmanirbhar Bharat aimed to provide support to these enterprises through financial assistance and policy measures.

Global Supply Chains: The initiative encouraged the diversification of global supply chains and reduced over-dependence on a few countries for critical supplies, particularly in sectors like pharmaceuticals and electronics.

Infrastructure Development: Investment in infrastructure, such as roads, railways, and ports, played a crucial role in enhancing the competitiveness of Indian industries.

Challenges: While the mission is ambitious and promising, it faces challenges related to infrastructure development, skilled labor, and regulatory reforms. Overcoming these hurdles is crucial for its long-term success.

Conclusion

Atmanirbhar Bharat Abhiyan as an idea deserves to be understood, analysed, interpreted and adopted with positive mind-set. In post covid era, the self-reliance in Indian Economy, is necessary for the survival, existence and for attaining excellence by every Indian. As a citizen of this country, the onus lies on us to play the role as consumer,

producer, distributor and trader. We need to possess optimistic approach by embracing 'Sab kaVikas, Sab kaSath and Sab kaVishwas'. To make this a successful mission, we need to increase domestic saving rate necessary for investments in order to provide an impetus to the growth in the various sectors of the economy. It is believed that the domestic saving rate is capable of strengthening the economy in-terms of all indicators of the performance of the economy including rate of investment, capital formation GDP, exports and GNP.

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ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT

(Volume – 2)

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THE ROLE OF ATMANIRBHAR BHARAT ABHIYAN IN INDIAN ECONOMY TRANSFORMATION THROUGH INNOVATION

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Abstract

The Atmanirbhar Bharat Abhiyan, launched by the Government of India in May 2020, holds immense significance in the context of Indian economic transformation through innovation. This ambitious initiative aims to foster self-reliance and promote indigenous production across various sectors of the Indian economy. Prime Minister remarked that the definition of self-reliance has undergone a change in the globalized world and clarified that when the country talks about self-reliance, it is different from being self-centered. He said that India's culture considers the world as one family, and progress in India is part of, and also contributes to, progress in the whole world. The primary objective of this paper is to explore and analyze the role of Atmanirbhar Bharat Abhiyan in driving economic transformation through innovation.

Keywords: *Atmanirbhar Bharat Abhiyan, Self-Reliant, Innovation*

Introduction

The "Atmanirbhar Bharat Abhiyan," also known as the "Self-Reliant India Campaign," is a significant initiative launched by the Government of India with the aim of transforming the Indian economy through innovation. This initiative was announced by Prime Minister Narendra Modi in May 2020, in the midst of the global COVID-19 pandemic. At its core, the Atmanirbhar Bharat Abhiyan seeks to make India self-reliant and less dependent on foreign countries for essential goods and services. The Atmanirbhar Bharat Abhiyan is a reflection of India's aspirations to become a major player on the global stage and to realize its full economic potential. This initiative recognizes the importance of self-sufficiency, innovation, and entrepreneurship as key drivers of economic growth and transformation. It aims to foster economic resilience, reduce vulnerabilities to global disruptions, and create a more robust and sustainable economy. The central idea of the Atmanirbhar Bharat Abhiyan is to promote indigenous manufacturing, technology development, and innovation across various sectors, including manufacturing, agriculture, healthcare, and infrastructure. It encourages the development and adoption of cutting-edge technologies, research and development, and the nurturing of a culture of innovation

and entrepreneurship. By doing so, it aims to enhance the overall competitiveness of Indian industries, create employment opportunities, and reduce import dependency.

Over the course of its implementation, the Atmanirbhar Bharat Abhiyan has had a significant impact on various economic sectors, influencing policies, investments, and collaborations. It has spurred the development of innovative solutions in areas like digital technology, renewable energy, healthcare, and agriculture. It also seeks to leverage India's demographic dividend by skilling and reskilling the workforce, making them more adaptable to the evolving global economy.

The Role of Atmanirbhar Bharat Abhiyan in Indian Economy Transformation through Innovation:

Encouraging Domestic Manufacturing: The campaign places significant emphasis on promoting domestic manufacturing and reducing dependency on imports, especially in critical sectors like electronics, pharmaceuticals, defense, and more. By doing so, it aims to create an environment conducive to innovation in indigenous industries.

Make in India: The Make in India initiative, which is closely aligned with Atmanirbhar Bharat, seeks to boost innovation by making it easier for businesses to set up and operate in India. This includes easing regulatory hurdles, improving infrastructure, and simplifying tax regimes, all of which can attract foreign investment and encourage domestic entrepreneurs to innovate.

Start-up Ecosystem: Atmanirbhar Bharat recognizes the importance of nurturing the start-up ecosystem as a breeding ground for innovation. It includes measures like financial support, regulatory simplifications, and funding for startups, all of which are crucial in driving innovation in the economy.

Research and Development (R&D) Investment: The government has incentivized R&D activities by offering tax breaks and subsidies to companies that invest in research and development. This approach can lead to innovative products and services and foster technological advancement.

Digital India: The campaign is closely aligned with the Digital India initiative, which promotes the use of digital technology and digital platforms. This focus on digitization and technological advancement can drive innovation across various sectors and improve the overall efficiency of the Indian economy.

Attracting Foreign Investment: Atmanirbhar Bharat Abhiyan, while emphasizing self-reliance, also recognizes the importance of foreign investment. It seeks to attract foreign companies to invest in India, which can bring new technologies and innovative practices to the Indian economy.

Strengthening Healthcare: The COVID-19 pandemic highlighted the need for a robust healthcare system. The campaign aims to strengthen the healthcare sector, not only by ensuring self-reliance in pharmaceuticals but also by investing in healthcare infrastructure and research. This can lead to innovations in medical technology and healthcare delivery.

Agricultural Reforms: The initiative includes agricultural reforms that aim to modernize the sector and make it more efficient. Innovation in agriculture can lead to increased productivity and better income for farmers.

Infrastructure Development: The government is investing in infrastructure development, including the construction of industrial corridors, logistics parks, and smart cities. These developments can provide a platform for innovation in urban planning and sustainable development.

Global Supply Chain Diversification: The COVID-19 pandemic highlighted the risks associated with overreliance on a single source or country for essential supplies. Atmanirbhar Bharat Abhiyan encourages diversification of the global supply chain, which is a strategic move to enhance economic stability and innovation.

Sustainable Development: The Abhiyan also emphasizes sustainability, which aligns with the global focus on environmental and social responsibility. Promoting green and sustainable practices can open doors to innovative solutions while addressing pressing global challenges.

Reskilling and Workforce Development: To keep up with the changing demands of the job market, the initiative also focuses on reskilling and upskilling the Indian workforce, making it more adaptable to the evolving economy and technological advancements.

Encouraging Innovation: The initiative recognizes the importance of innovation in achieving self-reliance. It provides incentives and support for research and development, thus fostering a culture of innovation in the country.

Strengthening Domestic Industries: Through various policy measures, Atmanirbhar Bharat Abhiyan aims to strengthen domestic industries, making them more competitive and capable of serving both the domestic and international markets.

Enhancing Ease of Doing Business: The government is taking steps to improve the ease of doing business in India, making it more attractive for both domestic and foreign investors. This, in turn, encourages innovation and economic growth.

Impact of Atmanirbhar Bharat on GDP

Positive Impact on GDP:

Promoting Domestic Manufacturing: Encouraging domestic manufacturing can potentially increase industrial production, which contributes to GDP growth. If more products are made in India and fewer are imported, this can boost GDP.

Boosting Entrepreneurship: Supporting small and medium-sized enterprises (SMEs) and startups can lead to job creation and economic growth, which, in turn, can positively impact GDP.

Negative Impact on GDP

Short-Term Disruptions: Policies that aim to reduce dependency on imports may lead to short-term disruptions in supply chains, which can have a negative impact on economic activity and GDP.

Protectionist Measures: Excessive protectionism can hinder foreign investment and trade, potentially reducing overall economic growth.

Resource Allocation: Focusing on self-sufficiency in specific sectors may lead to a misallocation of resources, potentially impacting overall economic efficiency and GDP.

Long-Term Impact: The long-term impact of such initiatives on GDP growth will depend on how effectively they are implemented, the extent to which they foster innovation, and their ability to make India competitive in the global market.

Conclusion

Atmanirbhar Bharat Abhiyan aims to transform the Indian economy into a self-reliant and innovative powerhouse. While it faces challenges and critics, the initiative represents a clear vision for India's economic future, one that prioritizes self-sufficiency, innovation, and sustainability. By embracing this initiative and nurturing a culture of innovation, India can position itself as a global economic leader, ensuring prosperity and security for its citizens.

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IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

Dr. M. Deepa



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Volume -2

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TRANSFORMATION OF EDUCATION SECTORS IN INDIA AFTER THE NATIONAL EDUCATIONAL POLICY 2020-AN EMPIRICAL STUDY

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Abstract

Government is looking forward to make India a “global knowledge superpower” through NEP 2020 and it will be done by making education system for schools and colleges more flexible, holistic, and multi-disciplinary which will bring out their unique capabilities. Through this new education scheme, they are trying to bring more than 2 Crore students into the mainstream and with the help of this, they aim to achieve 100% GER (Gross enrollment ratio) from pre-school to secondary by the end of 2030. The new National Education Policy (NEP) 2020 of India provides a complete framework for everything from primary education to higher education, technical & vocational education, and a new paradigm of internet-based e-learning. In order to establish perfect harmony with the ideals of the United Nations (UN) 2030 plan for sustainable development, the new education system of India has been built on the five founding pillars of this strategy (access, equity, affordability, accountability, and quality). However, a massive structural revamp of the Indian educational system is necessary for the policy's effective implementation. This article offers insights on the NEP 2020's various components and how they relate to the 2030 targets for the Sustainable Development Goals (SDGs). This essay examines how India might advance while using cares in order to meet its goals. In order to promote "excellent education for everyone" and deliver value to the world, the paper highlights five significant execution flaws that need to be fixed.

Preamble of the Study

The government finally released the new National Education Policy (NEP) after 34 years of expectation. The NEP has the ability to change the Indian educational system into a "new normal" because of its relevant and futuristic approach. The focus placed in NEP on developing critical thinking, competency development, and experiential learning will prepare the students to actively participate in the fourth industrial revolution. The depth of engagements with stakeholders across the spectrum that were conducted for NEP is noteworthy.

Importance of New Education Policy

Technology is being recognized as part of strategic development goals for inclusive education. Block chain, makes it possible to provide cost-effective

information, and makes it available for standardization of quality educational content internationally. It is evident that adopting innovative technologies such as the block chain can help in the effective planning of operations and resource utilization in education. The Covid-19 pandemic exposed the limitations of countries in handling education. Institutions globally which switched to digitalization of education with online learning began to examine their long-term strategies. Hence, innovative technologies such as deep learning, machine learning, artificial intelligence (AI), and virtual reality and block chain are part of the hybrid blended learning to support learners during this crisis. Due to the sudden pandemic scenario, educational institutions have employed IT teams to come up with many innovative features.

Objectives of the Study

The main objective of this study is to observing the transformation education sector after introducing the NETP 2020.

Statement of the Problem

There are several ways and strategies involved in up skilling the students' knowledge but there is no methods adequately promote' students' knowledge. Due to individual differences in students, educators had the duty of implementing variety of techniques. Many researches said that the researchers had made a visit to several educating environments and observed that the teachers use the method of lecturing, copying notes and questioning the students and punishing them for their inadequate listening. It was also noted that students rarely get the opportunity for collaborative learning. Therefore, there is a necessary to observe Transformation of Education Sectors in India after The National Educational Policy 2020.

Challenges of Indian Education Sectors

India ranks 62nd in the world for state expenditure per pupil while having numerous subpar schools. India is outperformed by nations like the US and China, but smaller nations like Bhutan, Korea, and Kenya also show out. In India, the Kothari Commission first suggested allocating 6% of GDP in 1964. In accordance with the current education strategy, India may set this goal in 2020. Due to this significant gap, India has struggled to adapt its educational system, which has caused gaps in worldwide advances and job distribution. China, which was strict in its adoption of the English language and was thought to be skilled with Mandarin thirty years ago, is a particularly intriguing situation. At the time, it was considered to be a nation that had trouble adjusting to the newest inventions appearing around

the globe. Indian academic personnel were larger in number in US and wealthy countries at that point in time. Today, things are different, and many Chinese people are employed in the aforementioned nations. China could quickly realize that a significant percentage of its GDP is dedicated to education, and that it is also adapting its own system to global ideas. China worked on two fronts: first, introducing and assimilating the English language; second, preserving its own culture and innovation in Mandarin. The growing middle class in India has a strong desire for education and prioritizes earning a degree over everything else, which will result in a sufficient number of admissions to support such schools. More crucially, improving governance is needed for the education policy rather than merely focusing on modifying the system's structure. Better governance can give education the gasoline it needs to take off quickly in the correct direction. Recently, during the covid-19 issue, there has been a shift in educational practices from traditional classroom instruction to online instruction using a variety of communication methods while still in the comfort of one's own home.

Teachers Transformation Towards Using Online Assessment Tools

Few other online assessment tools used by teachers are as follows:

- Answer Garden - Real-time polling and brainstorming tool
- Backchannel Chat - Teacher-moderated Twitter-type assessment tool for education
- Chatzy - Lets students chime in with questions or opinions during a lecture
- Coggle - Mind-mapping tool that lets you get a handle on student thinking
- eSurvey Creator - Make student surveys and questionnaires fast
- Flipgrid - Let students make quick videos that respond to teacher prompts
- Formative - Give live assignments, grade them, and give immediate feedback
- Lino - A sticky-note-based virtual blackboard that lets students chime in
- Naiku - Make quizzes that students can take on mobile devices
- Pear Deck - Create interactive presentations students can take part in via smart phones
- The Queue - Free educational chat tool that's similar to Twitter and facilitates remote class discussion
- Quizalize - Create homework and quizzes quickly, with a fast-grading feature
- Quizlet - Develop tests, quizzes, flashcards, and study games for mobile
- Sparkpost - Adobe app that lets teachers create exit tickets with visuals and graphics
- Typeform - Create polls with graphical elements
- VoiceThread - Create discussions around documents, videos, and other materials

- Zoho Survey - Make mobile-ready student surveys and gets real-time results
Assessments are for more than grades.

Table No: 01 Factor Influencing the Selection of Online Assessment Tools Used by the Teacher (Rank)

Factors	I	II	III	IV	V	VI	Total points	Rank
Environmental factor	18	20	12	14	22	24	366	5
Portability in all devices	25	20	12	24	12	7	401	2
Type of assessment	27	16	19	14	10	14	394	4
Ease of use	28	25	21	10	10	6	433	1
Course design	14	12	20	25	16	13	344	6
Student factor	22	25	13	20	11	9	400	3

Table no. 5 illustrates the factors influencing the selection of online assessment tools among teachers. Ease of use placed as first rank. Portability in all devices denoted as second rank. Student factor influenced as third rank and type of assessment provided by faculty got fourth rank. Environmental factor and course design are less influenced the selection of assessment tool.

Observations of the Study

The present study reveal that the faculty of higher education considers NEP to be a welcome change to the education system that will lead to a better regulation of higher educational institutions by bringing all types of institutions under uniform rules. Changes in the schooling system will provide a better foundation for students which will be reflected in their performance in higher education. NEP may also lead to better accessibility of books as books will be prepared in regional languages. Most importantly NEP will boost research in educational institutions as several universities are brought in par with IITs and IIMs. Also, NEP will encourage blended teaching strategies improving the teaching learning process. But little confidence is noticed towards the formative years of learning as it brings about a major change to the system. NEP will encourage blended teaching strategies improving the teaching learning process. But little confidence is noticed towards the formative years of learning as it brings about a major change to the system.

Recommendations of the Study

NEP would regulate HEIs under a uniform system which will boost research and development within higher educational institutions. A focus on online education and blended teaching methods would further benefit higher education students.

Though questions remain unanswered on the feasibility of NEP in a diverse and complex nation such as India, the overall perception towards the new education policy is overwhelmingly positive despite certain doubts.

Conclusion of the Study

The National Education Policy 2020 is the ideal step in preparing Indians for the future. In order to structure a worldwide value adder, the current policy necessitated a switch from a stream-based educational setting to a multimodal arrangement. The policy adjustments focus on how to adapt the system to multimodal systems, but on the flip side, difficulties arise in the form of how to implement a system that ultimately shapes pupils in a competitive context. In contrast to the other massive government initiatives like Make in India, Start-up India, Skill India, and Self Reliant (Atma-Nirbhar) India, it addresses the need for strong answers to India's challenges. Aspects of national importance affecting society and culture, such as regional adaptability and higher education for half the population, were taken into account when designing this policy, but they must be delicately created to evolve as people who can compete on a global scale.

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8. School staff should make schools a safe place where there are fewer chances that students have to make difficult decisions.
9. Classrooms need to be safe havens. When students have any doubt that they can be successful doing an assignment or task, the stress response goes into motion.
10. Students need to know that the teacher is on their side and will give them many opportunities to learn.
11. Parents should encourage their children to learn respectful behavior by thinking before he or she speaks to.

12. Parents should encourage their children to participate in exercise and physical activities. Join in to model fitness.
13. Parents should help their children to learn about healthful eating. Make it a family goal: do research, shopping, and cooking in new ways.
14. The result of this study may help school staffs, teachers and counselors to understand why some students display high anxiety, fear, and depression.
15. The focus of intervention programs should be on training students to have a healthy mindset with positive coping strategies.
16. Parents and teachers should provide activities for the students which help them to enjoy their free time, including exercise, and allow them sometime to be completely unproductive for reducing stress.
17. School staffs, teachers and counselors should develop ways to improve effective communication between students and teachers, thereby improving academic and social efficiency of students. Their understanding of students' academic stress will help them to practice techniques and adopt attitudes essential to assist and mentor them to cope/deal with academic stress more effectively.
18. Furthermore, they can also help students seek appropriate stress reduction methods to improve their academic performance.[Lazarus &Arnold,1977]
19. Further study should be conducted on the design of a curriculum which optimizes the balance between the „push“ factors (bringing out the best in students, maintaining standards, etc) and inducing undue and unproductive stress.
20. Future research should be conducted by using larger sample size from otherschools to validate these findings School staff should make schools a safe place where there are fewer chances that students have to make difficult decisions.
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PREFACE

In an era where the global landscape is undergoing rapid and profound changes, the aspiration for global leadership demands a visionary and concerted effort. The seminar proceedings titled “Vision for Vishwa Guru India Initiatives for Global Leadership by 2047” stand as a testament to India's unwavering commitment to shaping a future that is not only transformative for its own citizens but also resonates across the international community.

As we approach the momentous milestone of 2047, which marks the centenary of India's independence, we find ourselves at a crossroads of possibilities and challenges. The concept of ‘Vishwa Guru’ encapsulates India's age-old tradition of disseminating knowledge, fostering dialogue, and illuminating the path for others. This compilation of seminar proceedings is a reflection of this tradition, a dialogue that transcends boundaries and invites scholars, students, and visionaries to collectively envision the path ahead. These proceedings offer a panoramic view of the discussions and insights shared by luminaries in various fields, touching upon a myriad of sub-themes. From discussions on the Role of Technology in NEP 2020 to explorations of Ease of Doing Business, the proceedings delve into crucial facets that shape India's global role.

We extend our heartfelt gratitude to the Indian Council of Social Science Research (ICSSR) for its invaluable support in bringing together these seminal discussions. Their unwavering commitment to advancing knowledge aligns seamlessly with the spirit of the Vishwa Guru India Initiatives. As we navigate the complexities of a rapidly evolving world, we hope that these initiatives serve as a source of inspiration, a catalyst for meaningful dialogues, and a blueprint for action.

We are indebted to the authors who have contributed their scholarly insights to this compilation. Their diverse perspectives and rigorous research have enriched the discourse on global leadership and India's role in shaping the global narrative. Each paper presented here is a testament to their dedication to knowledge dissemination and their belief in the power of ideas to drive positive change.

Together, let us embrace the spirit of ‘Vishwa Guru’ and pave the way for a brighter, more harmonious, and prosperous India.

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EMPOWERMENT OF WOMEN THROUGH SELF HELP GROUPS

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Abstract

Women participation in Self Help Groups have obviously created tremendous impact upon the life pattern and style of poor women and have empowered them at various levels not only as individuals but also as members of the family members of the community and the society as whole. They come together for the purpose of solving their common problems through self-help and mutual help. The more attractive scheme with less effort is "Self Help Group" (SHGs). It is a tool to remove poverty and improve the women entrepreneurship and financial support in India.

The concept of SHG services the principle, 'by the women, of the women and for the women'. Self-help groups are voluntary associations of people with common interests formed to achieve collective social and economic goals. Such groups are organized for mutual help and benefit. It is formed democratically without any political affiliations. Self-help groups (SHGs) is as an instrument to change the conditions of women socially and economically. Once socio-economic experiment is achieved it would have implication on the overall development of women. SHGs enable economic, social, political and psychological empowerment of women.

Keywords: *tremendous, poverty, entrepreneurship, associations, empowerment*

Introduction

Self Help Groups are considered as one of the most significant tools in participatory approach for the economic empowerment of women. It is an important institution for improving life of women on various social components. The basic objective of SHG is that it acts as the platform for members to provide space and support to each other. SHGs Comprises very poor people who do not have access to formal financial institutions. It enables its members to learn to cooperate and work in a group environment. Today, in India, Self Help Groups (SHGs) represent a unique approach to financial intermediation. This combines access to low-cost financial services with a process of self-management and development for the women who are SHG members. SHGs are formed and supported usually by Non - Governmental organizations by Government agencies.

SHG are seen to confer many benefits, both economic and social. SHGs are enable women to grow their savings and access the credit which banks are increasingly willing to lend. SHGs can also be community platform from which women become active in village affairs, stand for local election to take action to address social. In India before introduce this scheme for rural women were largely negligible. But in

recent years the most significant emerging system called Self Help Group is a major breakthrough in improving lives of womenfolk and alleviating rural poverty. However, the significant success of several SHGs show that the rural poor indeed efficient to manage credit and finance. Women participation in Self Help Groups have obviously created tremendous impact upon the life pattern and style of poor women and have empowered them at various levels not only as individuals but also as members of the family members of the community and the society as whole. They come together for the purpose of solving their common problems through self-help and mutual help. The more attractive scheme with less effort is "Self Help Group" (SHGs). It is a tool to remove poverty and improve the women entrepreneurship.

Types of Empowerments through SHGs

The term Empowerment refers to measures designed to increase the degree of autonomy and self-determination in people and in communities in order to enable them to represent their interests in a responsible and self-determined way, acting on their own authority. It is the process of becoming stronger and more confident, especially in controlling one's life and claiming one's rights. Empowerment as action refers both to the process of self-empowerment and to professional support of people, which enables them to overcome their sense of powerlessness and lack of influence, and to recognize and use their resources.

Economic Empowerment

"Economic empowerment" can be defined as the development of the ability of the historically disadvantaged to engage in economic activity that benefits both the individuals in question and the broader society. It is seen as a more productive and less costly way to help those who would otherwise remain dependent on the social welfare system. Welfare has its critics who contend that welfare removes the incentive to find employment while drawing excessively from the treasury. By empowering individuals to become economically or financially self-sufficient, they are removed from welfare payrolls and become more productive members of society. Economic empowerment is often applied to women who have been subject to discrimination in education and professional opportunities. These women are not necessarily economically disadvantaged, but they have been denied opportunities to become self-sufficient due to cultural or religious obstacles. In most instances, though, they do fall on the lower end of the socioeconomic spectrum. The economic contribution of women has been found to be related to her role and status in the society. The Self-help groups provide economic benefits to the women by providing income generating activities. Economic independence facilitates in bringing about

sexual equality and increase in women's income translates more directly into family wellbeing.

Social Empowerment

Self-help Groups improve the equality of status of women as participants, decision-makers and beneficiaries in the social, democratic, economic and cultural spheres of life. SHGs ensure the equality of status of women as participants, decision-makers and beneficiaries in the democratic, economic, social and cultural spheres of life. Social empowerment is indispensable to achieving quality of life for people with disabilities and it is both a continuous process as well as a result. Though social empowerment can be achieved through other areas of practice, such as inclusive education and socioeconomic integration, it is also a specific area of practice where tools, methods and approaches exist to facilitate social inclusion. Personalised social support is one specific and tailored approach to social inclusion where a person is accompanied to thrive in his/her personal situation and environment.

Political Empowerment

SHGs as active, articulate and organized citizenry act on a range of issues, holding the Panchayati accountable in terms of the use, production and distribution of public resources for the common public good. SHGs enable women to develop their communication skills to speak at the Gram Sabha, public meetings, etc. An SHG functions through its regular meetings, where members perform transactional activities and discuss over different related issues. Social mobilization through SHGs is inevitable for political empowerment.

Psychological Empowerment

Self-help groups enhance the equality of women as participants, decision-makers and beneficiaries in the democratic, economic, social and cultural spheres of life. The SHGs inculcate a great confidence in the minds of rural women to success in their day-today life.

Conclusion

Empowerment is not essential economic one alone; it is a process having personal, economic, social and political dimensions with personal empowerment being the core of the empowerment process. Women's participation in SHGS has altered the lives of many of them, and these women can be prospective leaders in the local political field. The basics of this change are empowerment, self-assurance, political consciousness and assertion of identity. With respect to the control of

resources, changes in behaviour and the decision-making reveals that many strides have been made in the right direction and women are in the process of empowering themselves.

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IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

Dr. M. Deepa



IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

Volume -1

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STUDY OF NEP ISSUES, APPROACHES AND CHALLENGES

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Abstract

A well-defined education policy and the future are important for the country at school and college levels because of the fact that education leads to economic and social development. Different countries use different education systems with due regard to culture and traditions and take different stages during their life cycle at school and college education levels to make it work. The National Education Policy 2020 (NEP 2020), approved by the Indian Union Cabinet on July 29, 2020, sets out the vision for India's new education system. The new policy replaces the previous National Education Policy, 1986. This policy is a comprehensive framework for primary education towards higher education and vocational training in rural and urban areas of India.

Keywords: *Traditions, Primary Education, Higher Education, Vocational Training, diverted*

Introduction

India, as a fast-growing free country of change in education, currently has about 845 universities and about 40,000 higher education institutions (HIEs), reflecting the total diversity and the many small HEIs in the country connected to these universities. It has been found that more than 40% of these small institutions use a single system for me against the expected transformation of the multi-sectoral higher education system which is an important need for educational change in the 21st century. It was also noted that more than 20% of colleges are enrolled annually with less than 100 students making it impossible to improve the quality of education and only 4% of colleges enroll more than 3,000 students per year due to regional inequality and level of education. They give. Some of the reasons found for the collapse of the higher education system (HE) in India are: It is predicted that India will be the third largest in the world in 2030-2032 with a GDP of about ten billion dollars. It is clear that the ten billion economies will be driven by sources of information and not natural resources. To boost India's education sector growth, the current government has decided to revive it by introducing the National Education Policy 2020.

Issues of NEP

- Initial distribution of students in various subjects.
- Lack of access to HE, especially in the most economically disadvantaged areas has resulted in a current gross enrollment ratio (GER) of only 25%.

- Lack of teachers and institutional independence to do new things in HE attracts more students.
- Inadequate job management practices and the advancement of intelligence with institutional leaders.
- Lack of research and innovation at many universities and colleges.
- Low levels of governance and leadership in institutions of higher learning.
- A corrupt control system that allows fake colleges to thrive while pressing for better, innovative institutions.

Approaches of NEP

1. Curriculum and Content

NEP aims to introduce a transition from 10 + 2 building to 5 + 3 + 3 + 4, where early childhood education will be part of formal education. In addition, NEP 2020 focuses on reducing the content of the curriculum to create a space for critical thinking and, in turn, develop the 21st century skills incorporated into them. Therefore, all aspects of curriculum and teaching need to be restructured to achieve these goals.

2. Teacher Availability and Training

The policy aims to redesign the school curriculum. However, for the curriculum to be effective, schools and the relevant authorities need to train teachers and understand the needs of teaching in order for there to be a smooth transition to the new education system. In addition, they need to shift from teacher-centered reading to student-centered reading in order to develop interpersonal, critical thinking, problem-solving and decision-making skills among young people. The study suggests that more than 250 million students are estimated to enroll in K-12 schools in India by 2030.

3. Technology

NEP 2020 emphasizes the use of technology benefits to prepare young people for the future. However, developing digital infrastructure such as digital classrooms, remote professional-based teaching models, AR / VR tools to fill gaps in physical education and laboratory infrastructure is a major challenge because most schools do not have the right setup. Support these tools. Also, the costs associated with building a digital infrastructure may be less expensive for all schools across the country. In addition, in rural areas of the country where the Internet is virtually nonexistent, using digital learning tools is out of the question. Therefore, government must work to develop the basic infrastructure that will support digital infrastructure in all areas.

4. Test Building

NEP focuses on constructive assessment for learning rather than abbreviated assessment. The primary purpose of modifying the assessment program is to promote continuous tracking of learning outcomes. However, further testing requires schools and teachers to adopt new assessment methods and assignments. These approaches require technical intervention and active participation of teachers and students. According to a survey, out of 1.5 million Indian schools, 75 percent are state-run. Of the remaining 400,000 private schools, about 80 percent are 'private schools'. Therefore, sending a continuous assessment framework is a challenging task for these schools.

Challenges of NEP

1. Opening Weekly Universities is a Herculean Activity

India today has about 1,000 universities across the country. Doubling the Gross Ratio Enrollment in Higher Education by 2035 which is one of the stated goals of the policy will mean that we must open one new university every week, for the next 15 years. Opening one University each week on an ongoing basis is undoubtedly the biggest challenge.

2. Prices are Also Very Alarming in the Transformation Plans of our School System

The National Education Policy 2020 aims to bring back 2 million children who are currently out of school, into the school system. Whichever way you look at it, achieving this in 15 years requires the suspension of about 50 schools each week.

3. Funding is a Major Challenge in the Covid Era

From a supportive perspective, this is not a challenge for the weak. The National Education Policy 2020 anticipates an increase in spending on education from 4.6% to 6% of GDP, reaching approximately INR 2.5 lakh crores per year. The money will be well spent on building schools and colleges across the country, appointing teachers and professors, and operating expenses such as providing free breakfast for school children. What makes things even more difficult is that this policy came at a time when the economy is overwhelmed by Covid-19-related closures, government tax cuts were very low, and funding shortfalls were high even before Covid.

4. The Current Focus is on Health care and Economic Sustainability to Reduce Homicide Rates

Economists have been looking for large renewable energy packages of up to 2 percent of GDP, despite the difficulties in the exchequer.

5. The Need to Create a Large Number of Qualified Teachers

In school education, the policy aims to redesign the curriculum structure as a very acceptable step. But in order to make this curriculum successful, we need teachers who are trained and who understand the teaching needs. Many curriculum changes require major changes in the thinking of teachers, as well as parents.

6. Higher Education Requirements that Include Disciplines for Cultural Change

In higher education, the focus of the 2020 National Education Policy on disciplinary education is a very welcome step. Universities, especially in India, have for decades been siloed and run by departments. The 2020 National Education Policy contains a number of initiatives to improve the quality and scope of the education system in India.

Conclusion

Higher education, with its emphasis on academic study, often produces graduates who have few or no income. Developing GER to include all citizens of the country in higher education is the responsibility of the national government education department. India's National Education Policy 2020 is marching towards achieving that goal by creating new policies to improve quality, attractiveness, accessibility, and expand the provision of higher education in the private sector and at the same time with strict quality control controls in all institutions of higher learning. By promoting eligibility based on free shipping and scholarships, advanced and progressive research artists as members of intelligence, as well as certified leaders based on regulatory approaches, and strict quality monitoring through annual authorization based on self-proclaimed advances through technology-based technologies. Monitoring, NEP-2020 is expected to achieve its goals by 2030.

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RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT

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SKILL DEVELOPMENT FOR INDIAN YOUTH: CHALLENGES AND OPPORTUNITIES

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Abstract

Skills and knowledge are the driving forces of economic growth and social development of any country. They have become even more important given the increasing pace of globalization and technological changes provide both challenges that is taking place in the world. Countries with higher and better levels of skills adjust more effectively to the challenges and opportunities of globalization. The size of the current technical training infrastructure is much smaller than what is required. India currently has the capacity for training 3.1 million people per year. This is insufficient, given that every year, 12.8 million new people enter the workforce. The distribution of training capacities is unbalanced, with the industrially-advanced states of Maharashtra, Andhra Pradesh, Tamil Nadu and Karnataka, accounting for 48 percent of recognised technical training institutions.

Keywords: globalization, effectively, challenges; opportunities, infrastructure

Introduction

The Indian economy grew at an advanced rate of 7.1 percent year in the quarter July – Sep 2018, thereby making it a fastest economy to grow. India's demographic profile is helping the country to aim for an accelerated economic growth. India is expecting a huge growth in the labour market by having 64.8 percent of the population as the working population. It gives a lot of benefit to the country in the labour market. Skill India is a campaign launched by Prime Minister Narendra Modi on 15 July 2015 which aim to train over 40 crore people in India in different skills by 2022. It includes various initiatives of the government like "National Skill Development Mission", "National Policy for Skill Development and Entrepreneurship, 2015", "Pradhan Mantri Kaushal Vikas Yojana (PMKVY)" and the "Skill Loan scheme". The MAKE IN INDIA program laid the foundation of India's latest policy to bring an Economic revolution by making India a global manufacturing hub and welcoming both domestic and international industrialists to invest in India that will generate employment and overall development of India. Manufacturing sector is the strength of an economy as it fuels employment generation, better quality of goods and services at cheaper rate, economic growth & development along with helping the growth of other sectors also.

Challenges in Skill India

India is facing a lot of challenges keeping in view the current infrastructure and the policy framework. The Challenges faced in skill development have been discussed below:

1. **Insufficient Scale and Restricted Capability** The current infrastructure facility available in the educational institutions is inadequate considering the huge demand of labour. There aren't many trained and highly skilled trainers available.
2. **Mobilization:** The enrolment of the students for vocational education and training become an extremely challenging task. The outlook of the people associated with the skill development is still very traditional. The students would move on to managerial roles as the technical trade positions are associated with low salaries and lack of recognition.
3. **Employer's buy-in:** The industry doesn't distinguish whether the person has acquired the skills through on the job training or has gone through a formal training. Many companies make their own skill centres through which they develop the people. Though the Skill Development also focuses on the Public Private Partnership Model but it needs a lot of effort from both the players in development of skills.
4. **Scalability:** Since there is very limited buy-in from the corporate sector the progress of such initiatives is reduced. Skill development had not been a priority of the government earlier and hence this area has always been ignored stakeholders too.

Ways of Facilitating Skill Development Activities

There have been methods to smooth the progress of skill development activities through the following,

1. Creating and enhancing the skill development infrastructure.
2. When construction of schools, institutions and other establishments take place, there should be adequate measures for skill development to take place such as usage of technology.
3. Current institutions, ITIs, acquire mechanisms and equipment required for vocational training of the individuals.
4. Establishment of skill development centers in rural and urban areas, especially where there were not any.
5. Finances have been major issues especially for the economically weaker sections of the society; hence some measures have to be formulated to finance their skill development programs.
6. There has to be involvement of private organizations, profit as well as non-profit in activities implemented by the CSR cell, CSR activities make skills a responsible activity and they are really useful.

7. Efforts have to be implemented to increase the number of skilled personnel within the country and on the basis of their skills they should be able to accomplish something for themselves and find employment not only in industries but in all kinds of sectors education, transport, manufacturing etc.
8. Differential wages should be offered for the skilled and certified workforce to encourage recognition of the skill development programs by the society so that more and more individuals join them.

Opportunities

Job markets all across the world including India are undergoing a tectonic shift. The future of work in India: Inclusion, Growth and Transformation Report by the Observer Research Foundation and the World Economic Forum sheds light on the future of transformative technology and its impacts on work in India. Some key insights from this report are that companies expect technological change to lead to job creation, not job loss. They recognise the potential of new technologies in the coming years. The whole focus is expected to be on automation of repetitive tasks, time optimisation, maximising productivity, creation of digital platforms for online access to job opportunities and formalising informal operations. It is critical for people to keep picking up new tricks of their trade and keep themselves updated with new technological changes in their sphere of work.

Conclusion

Skill development is the most important aspect for the development of our country. India has a huge 'demographic dividend' which means that it has very high scope of providing skilled manpower to the labour market. This needs a coordinated effort from all stakeholders including: Government agencies such as Ministry of Skill Development and Entrepreneurship, National Skill Development Corporation etc, Industries, Educational and training institutes and Students, trainees and job seekers. To make India internationally competitive and to boost its economic growth further, a skilled workforce is essential. As more and more India moves towards the Knowledge economy, it becomes increasingly important for it to focus on advancement of the skills and these skills have to be relevant to the emerging economic environment. For transforming its demographic dividend, an efficient skill development system is the need of the hour. Therefore to achieve its ambitious skilling target, it is imperative to have holistic solutions of the challenges instead of piecemeal interventions.

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PERSPECTIVE OF ICT TOOLS IN EDUCATION

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ROLE OF ICT IN THE PROCESS OF TEACHING AND LEARNING

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Abstract

ICT enables self-paced learning through various tools such as assignment, computer etc as a result of this the teaching learning enterprise has become more productive and meaningful. ICT helps facilitate the transaction between producers and users by keeping the students updated and enhancing teacher's capacity and ability fostering a live contact between the teacher and the student through e-mail, chalk session, e-learning, web-based learning including internet, intranet, extranet, CD-ROM, TV audio-videotape. Edusat technology has become very powerful media for interactive participation of experts and learners and it reaches the unreachable. Emerging learning Technology (ELT) of blogging, Integrated Learning Modules, a pod cast, Wikis, Enhancement of Browsers, E-learning, M-learning, U-learning have started making rapid strides in teaching learning processes.

Keywords: Web Browsers, Instructional software, Interactive learning, Integrated Learning Module, U-learning, E-learning, M-learning.

Introduction

Huge changes in technology can be observed across the globe on a regular basis. It can also be stated that developments and economic growth resulted in multiple changes in the overall structural foundation. Information and communications technology (ICT) can be used as a viable tool towards the overall learning process. With the rise of the internet and usage of various technologies towards the learning process, usage of ICT will be beneficial. ICT also has the potential to increase the level of interaction between the teacher and the student, which will increase efficiency of the entire process of learning. The interest of the student also increases as there are multiple audio and visual methods of learning associated with the ICT process. In the past few years, the world has witnessed a phenomenal growth in communication technology, computer network and information technology.

Role of ICT in Teaching and Learning

India has made great strides in the utilization of data and correspondence innovation as of late and this is reflected in an energetic and quickly developing economy. It is currently a recognized world pioneer in the information business. Today, every one of our exercises are winding up very information based. There is a move from the mechanical period to the instructive time.

Globalization, progression and a market situated economy have added new flavor to our exercises, with the outcome that learning and aptitudes of each expert, including Teachers should have been ceaselessly refreshed. Anyway the instruction segment, especially the region of educator training, has fallen behind different segments of the Indian economy in profiting from the products of innovative advancement.

The present training framework faces the difficulties to get ready people for the data society in which a standout amongst the most critical points is to deal with data. So as to work in the new world economy, students and their Teachers need to figure out how to explore huge measure of data, to dissect and decide, and to ace new information and to achieve complex errands cooperatively.

Use of Emerging Learning Technologies (ELT)

We may have heard the names of following terms without understanding. Here are few ELT which are in use:

Bloggng: A blog (a blend of the term web log) is a type of website or part of a website. Blogs are usually maintained by an individual with regular entries of commentary, descriptions of events, or other material such as graphics or video. Most blogs are interactive, allowing visitors to leave comments. The ability of readers to leave comments in an interactive format is an important part of many blogs. Most blogs are primarily textual, although some focus on art photographs, videos, music and audio.

Integrated Learning Modules:- Availability of open source software has enabled development of content management system and learning management system such as a Module. Integrated Learning Module (ILM) is thematically focused classes, delivered primarily over Internet. The course content is integrated and comprehensive creating a unique perspective on course themes without the potentially repetitive requirements of separate stand-alone courses. Content and language integrated learning is an approach for learning content through an additional language (foreign or second language) thus teaching both the subject and the language.

A podcast :- A podcast (or non-streamed web cast) is a series of media files (either audio or video) that are released episodically and often downloaded through web syndication. The mode of delivery differentiates podcasting from other means of accessing media files over the Internet, such as direct download, or streamed web casting. A list of all the audio or video files currently associated with a given series is maintained centrally on the distributor's server as a web feed, and the listener or viewer employs special client application software known as a pod catcher that can access this web feed, check it for updates, and download any new files in the series.

Wikis:- Ebers bach et al (2006) note that the following basic features are common in wikis:-

Editing: - Most of the wikis use the same basic page editing function such as Text editing and image, table list hyperlink and file insertion.

Links: - Each article can be linked to other articles and thus form a new network structure.

History: - A function which saves all previous version or modifications of any single page. It allows tracking of the editing processes of an article since all changes have been documented.

Recent changes: - The features can provide a current overview of a certain number of recent changes to wiki pages or all changes with in a predefined time period.

Conclusion

Teaching occupies an honorable position in the society. ICT helps the teacher to update the new knowledge, skills to use the new digital tools and resources. By using and acquire the knowledge of ICT, student teacher will become effective teachers. ICT is one of the major factors for producing the rapid changes in our society. It can change the nature of education and roles of students and teacher in teaching learning process. Teachers in India now started using technology in the class room. Laptops, LCD projector, Desktop, EDUCOM, Smart classes, Memory sticks are becoming the common media for teacher education institutions.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

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A STUDY ON MOBILE COMMERCE IN INDIA

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Abstract

Mobile Commerce is the subset of e-commerce, which includes all e-commerce transactions, carried out using a mobile (hand held) device. This paper attempts at figuring out the relevance and potential role that m-commerce can play in the development of business environment, the use of wireless handheld devices such as cellular phones and laptops to conduct commercial transactions online. Mobile commerce transactions continue to grow, and the term includes the purchase and sale of a wide range of goods and services, online banking, bill payment, information delivery and so on.

Keywords: *M-commerce, environment, commercial, transactions, information.*

Introduction

E-commerce, or electronic commerce, refers to the buying and selling of goods and services online using the internet. This can include transactions between businesses, between businesses and consumers, and between consumers themselves. E-commerce has grown rapidly over the last few decades and has become an important part of the global economy.

M-commerce, or mobile commerce, is a subset of e-commerce that refers specifically to transactions conducted using mobile devices, such as smartphones and tablets. M-commerce includes not only online purchases made through mobile devices, but also mobile payments, mobile banking, and other transactions facilitated by mobile technology. Both e-commerce and m-commerce have become increasingly important in recent years as more and more people have gained access to the internet and mobile devices. They offer numerous benefits, including convenience, flexibility, and access to a wider range of products and services.

Characteristics and Limitations

Mobile commerce has characteristics that make it significantly different to E-commerce using desktops and laptops:

- ❖ Mobile devices tend to have limited space: a typical Smartphone or tablet would have less than 10% storage space compared to desktops and laptops.
 - ❖ Mobile devices also have significantly smaller display screens to allow easier mobility.
- This means the design of websites, apps, and applications for M-commerce needs to

take into consideration what are the essential requirements needed to fit into these limited displays.

- ❖ Mobile devices need to operate on battery for longer hours. This feature is essential if the device to be considered to be true mobile. Long and continuous use of the processing power of the mobile devices would drain the battery.
- ❖ Limited processing power and processing memory Random Access Memory (RAMs). Typical mobile devices are not equipped to perform extensive processing as traditional desktops and laptops. The processor is designed to self-cool without the need for a fan to keep the mobile devices both slim and reduce the use of the battery. Thus many traditional applications could not run efficiently on mobile devices.
- ❖ Internet traffic on mobile devices needs to consider that many mobile devices would be using mobile network. Both the devices and the network cannot handle extensive traffic although the new generations of tablets and smart phones have been designed to handle faster and better Internet traffic at speeds now reaching 5G or 100GB per second.
- ❖ The operating systems on mobile devices have been designed not to be large and reduce its extensive use of the processor and RAMs. This has come at a cost in reducing the tools and options that would have been otherwise available in typical desktop or laptop.
- ❖ Mobile devices come with extensive features not found traditionally in desktop or laptop devices. Features include: high-resolution cameras, Global Positioning Systems (GPS), Near Field Communication (NFC), SMS messages, calling, and access to extensive libraries for application downloads known as Apps.

Applications of M-Commerce

Other than the straightforward m-commerce transactions of buying and selling of goods and services, they have so many applications. Let us take a look at a few examples,

- ❖ **Mobile Banking:** Using a mobile website or application to perform all your banking functions. It is one step ahead of online banking and has become commonplace these days. For example, in Nigeria, the majority of banking transactions happen on mobile phones.
- ❖ **Mobile Ticketing and Booking:** Making bookings and receiving your tickets on the mobile. The digital ticket or boarding pass is sent directly to your phone after you make the payment from it. Even in India now IRTC and other services provide m-ticketing services.
- ❖ **E-bills:** This includes mobile vouchers, mobile coupons to be redeemed and even loyalty points or cards system.

- ❖ **Auctions:** Online auctions having now been developed to be made available via mobile phones as well.

Benefits of Mobile Commerce

M-commerce gives great benefits to both business owners and customers. Below are some benefits of m-commerce, which are;

- ❖ **Fasters Purchases**

The m-commerce gives positive customers experience, easy and repeat purchases. It also increases business owners' sales. In addition, it loads data faster and enables customers to browse and purchase products faster and easier.

- ❖ **Better Customer Experience**

According to Marketing Land, 83% of customers use smart phones inside real stores to shop. These days, people are well familiar with how smart phones and tablets work. To give your customers better experience, your online shopping app should be fast, convenient, and exclusive.

- ❖ **Direct Connection to Customers**

This benefit allows business owners to easily communicate to their customers. It notifies shoppers or customers about a new product updates, discounts, promotions, and it easily engages the customers. Customers get such messages when they open a mobile app, and may get notified even without activating an app. Studies shows that 50% of users like notifications, and 80% of users say offers and rewards make them more loyal to a brand or business.

- ❖ **Tailored Contents**

Based on customers' behavior and interaction with your mobile app, you can deliver personalized content to them. Giving customers their preferences through the use of customized content can also lead to higher customer loyalty. The effect of tailored content to your business leads to better engagement, expanded reach, and customer loyalty.

- ❖ **Deeper Analytics**

Analytics allows you to get basic information of your customers, like sex, location, age, shopping history, and other information when set up. The mobile app or website linked to Google Analytics allows you to build and set user analytics of various levels. With this analytics, you will get a better understanding of your customers or targeted audience, and in turn create more sales for your brand or business.

- ❖ **Cost Reduction and Productivity**

Most apps allow you reach your customers faster and also cut down cost when running a marketing campaign. The development of app, IT maintenance, and support are cheaper compared to a web store or any other selling points.

❖ **Store Navigation/Geo location**

M-commerce provides users with easy access to navigate through the nearest stores in their GPS. It gives users easy access to find the nearest preferred store and make a purchase. M-commerce provides fun experience for users, and creates more banding options.

❖ **Traditional Retail Sales Benefits**

The m-commerce provides you with assistance in your traditional retail sales. The customers look and explore your products online and visit your retail shop or store to make purchase. It also helps your online shop to filter the hassle of your customers having to go through all your collection manually at your shop or store. M-commerce also helps eliminate the hassle retail store owners and staffs go through to manually update their data.

❖ **New Customer Base**

M-commerce also provides you with new customers. When m-commerce is optimized very well, it does not just hold your current customer base but also brings and attracts new buyers who come to have a look at your online shop, and if they find it interesting and reliable, they make purchases. One of the means that customers use in looking for information is mobile search. M-commerce increases your likelihood to be discovered by customers.

❖ **Higher Return of Investment (ROI)**

It is important to know that 60% of people are likely to make purchases from a mobile friendly e-commerce site than from one that is not mobile friendly. With this, your product speaks for itself. It is more likely for a customer who is happy about purchasing your product, and have a good experience with your brand, to come back to make another purchase. They can also introduce or refer others to your brand or business.

- ❖ The differences between E-commerce and M-commerce
- ❖ Our world today is so much different from our previous generations. With the invention of
- ❖ Internet, everything is fast and happens online. Long gone are those days when people shop
- ❖ around 3-4 stores with the total distance of a few kilometers deciding which product to buy.
- ❖ These days, all considerations are done online before we made it to the physical store and most
- ❖ of the products are just a few clicks away from us. The terms E-commerce or web store have
- ❖ been on the market for a while, but M-commerce and mobile shopping app etc. are quite

- ❖ newcomers.
- ❖ Both of these terms have different meanings though both aim at making consumer lives
- ❖ easier. To better understand the differences between E-commerce and M-commerce, please
- ❖ have a look at the following table
- ❖ E-commerce
- ❖ M-commerce
- ❖ Definition
- ❖ Electronic Commerce (or also called E-commerce) refers to the activities of
- ❖ buying and selling products and services
- ❖ with the use of electronic systems such as
- ❖ the internet.
- ❖ Mobile Commerce (or also called M-commerce) refers to the process of buying
- ❖ and selling products and services with the
- ❖ use of internet/cellular data via wireless
- ❖ handheld devices.
- ❖ History
- ❖ 1970's
- ❖ 1990's
- ❖ Devices used
- ❖ Computers, laptops...
- ❖ Wireless handheld devices such as cell
- ❖ phones, iPads, tablets...
- ❖ The use of
- ❖ Internet
- ❖ Mandatory
- ❖ Not mandatory(allow the use of offline
- ❖ mode, might not work properly though)
- ❖ Connectivity
- ❖ Smaller
- ❖ Larger owing to the bigger number of
- ❖ mobile users
- ❖ Mobility
- ❖ Limited
- ❖ Less limited because of lighter weight and

- ❖ smaller size leading to easier to carry
- ❖ Reach
- ❖ Only at the places where the electricity
- ❖ and the internet are available
- ❖ Broader due to its portability
- ❖ Payment
- ❖ gateway
- ❖ Credit cards
- ❖ Caller's rate, mobile banking or user's
- ❖ credit card
- ❖ Usage
- ❖ Less simple because of more complicated
- ❖ user interface and more functions
- ❖ Simple because all functions have been
- ❖ simplified
- ❖ Platform used
- ❖ Web stores
- ❖ Web stores (mobile version/web app),
- ❖ hybrid app, native app
- ❖ Cost
- ❖ Less costly for the creation a web store
- ❖ and the use of internet
- ❖ More costly for the creation of a mobile
- ❖ app and the use of cellular data

Conclusion

There are news articles and pictures displaying people, who are ordering things over the Internet while waiting for a bus, downloading merchant coupons on their PDAs as they enter a store or bidding for the last table at a hot restaurant by digital phone in a spur-of-the-moment auction. Actually this process represents a tip of a very big iceberg. The advent of m-commerce, as widely referred to among the users, has far-reaching implications. But there are many limitations in the technologies that Once its relevant technologies get matured, widely available and competent, the host of portable devices will be ready to handle the bigger transactional activities not envisioned so far successfully apart from these minor activities.

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IMPORTANCE OF COTTAGE INDUSTRIES

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Abstract

Cottage industries and handicrafts constituted the major elements in the organic unity and culture of the people from the earliest times in the known history of India. The unique products of the labours of the cottage industries were in full bloom until the British arrived to the country. The advent of the British power in India adversely affected the Indian cottage industries. The demand for the products of these industries suffered through competition with cheap machine-made products of the British industry. The commodities that are being produced by cottage industries are basically consumable ones and are produced through the utilization of the traditional techniques. Cottage Industry especially started its function in the country sides of a country where unemployment along with under-employment are prevalent.

Keywords: Cottage Industries, consumable, traditional, techniques, commodities, capital intensive.

Introduction

Rural families were some of the first to become involved in the cottage industry. They added to their agricultural income by making products at home. Merchants provided the raw materials to the families, collected and marketed the finished product, and then paid the family a percentage of the price charged to the end consumer. Some of the items made by these at-home workers were cloth and clothing, shoes, cigars, and hand-decorated items.

Cottage industries developed in cities around 1870, resulting in the harsh tenement housing system. Immigrant families lived and worked in these crowded, unsafe apartment buildings. They worked for extremely low wages, usually making garments. This system lasted until around 1920, when better management of factories made home-produced goods less competitive. Household, rural, and traditional industries are other names for cottage industries or cottage manufacturing. The artists, with the help of their families and part-time workers, make items at home using basic tools and raw materials. The items are then used at home and sold in the nearby village. They are also traded with other goods as a barter system.

Cottage Industries are typically extremely small businesses that are founded in homes or other modest structures. A governmental institution called the **Khadi and Village Industry Commission (KVIC)** supports cottage industries as well as village industries. All family members must take part in the development of the cottage industries. Capital subsidies are the most common sort of government assistance given to this sector of the economy. Another choice is self-help groups. In India, small-scale and cottage industries produce about 40% of the nation's overall industrial output.

Defining Cottage Industries

A cottage industry is one which is carried on wholly or primarily with the help of the members of the family either as a whole time or part-time occupation. It is small scale, decentralized manufacturing business. They are generally classified based on the amount of investment required to start and the number of people employed. They produce labour intensive goods and thereby often find it difficult to compete with the machine or factory.

A cottage industry is a small manufacturing operation and is often run out of a home by a single individual or family. Cottage industries can be an important source of income in rural areas where jobs are scarce.

Importance of Cottage Industries

A unique position for the cottage industry exists in India because of the country's extremely diverse socioeconomic and geographic structure. These fit very well with Gandhi's rural development philosophy. The Government of India has given the cottage sector significant incentives to shine from the plan after plan because of the unique position it occupies in India's development landscape.

However, this industry has been experiencing serious risks due to emancipation, globalization, and privatization since 1990. This is because of economies of scale brought about by larger companies producing the same items according to the current paradigm's tenet that the stronger will survive.

- Increased employment opportunities provided by cottage industries ultimately reduce poverty and inequalities.
- This economic sector is one of the most crucial for balancing regional rural economic growth and development.
- Since women play a significant part in these businesses at the managerial and working levels, the cottage industry is also regarded as vital for women's empowerment.
- In contrast to large units, these industries (handicrafts) are environmentally friendly, energy-efficient, and have low emission levels.
- Cottage industries make good use of local talent. Due to their rarity, several of these old skills gain prominence.
- Little cash is needed for the cottage industry.
- Because most cottage industries are found in tiny towns and villages, there is less strain on agriculture due to population growth. So they aid in diversifying the rural economy.
- If correctly utilized, these industries have strong export potential. These sectors' historic, distinctive, and eco-friendly goods are in high demand worldwide.

Types of Indian Cottage Industry

The phrase "cottage industry" refers to manufacturing businesses that do most of their work by hand. India is recognised and known for its diversified culture, handicrafts from

traditional cottage industries, and a wide range of cuisine items, among other things. Cotton weaving, carpet weaving, silk weaving, leather industry, metal handicrafts, and minor food processing are the principal cottage industries in India.

1. **Cotton Weaving:** In India, cotton weaving is a very important cottage industry. Cotton clothing is commonly worn across the country, therefore the expertise dates back to ancient times. Cotton clothing is noted for its classic design, rich colour, and patterns created by skilled weavers using handlooms. Maharashtra, Tamil Nadu, and Gujarat are the three states with the most cotton production.
2. **Silk weaving:** Silk weaving is another well-known cottage industry in India. Silk is a key producer and exporter in our country, both domestically and internationally. Karnataka is the most important silk producer, accounting for almost 70% of the total silk weaving industry. Within our count, Mulberry, Tassore, Muga, and Eri silks are produced.
3. **Carpet Weaving:** Carpet-weaving was first introduced to India during the Mughal period. The Kashmiri carpet is famed for its outstanding quality and texture, but so are the durries and coir carpets. The carpet business is spread out over the country, with the majority of it concentrated in Kashmir, Rajasthan, Punjab, Uttar Pradesh, Andhra Pradesh, and Punjab. In addition, the Indian government has established the Carpet Export Council to promote knotted rugs and other forms of floor coverings from all around the country.
4. **Leather production:** India is a major producer of high-quality leather to worldwide markets, meeting roughly 10% of global demand. The leather sector employs approximately 2.5 million people and is one of India's largest export earners. Tamil Nadu, West Bengal, and Uttar Pradesh are the Indian states that produce leather.
5. **Metal Works:** In India, metal has traditionally been utilised to create figurines, jewellery, utensils, and other items. India's metal handicrafts are well-liked around the world and contribute significantly to the country's economy. Metal handicrafts are made without the use of high-tech equipment and are made with hand-operated tools.

Problems faced By Cottage Industries in India

Cottage industry is considered for its enormous potential of providing employment. But, over the years, employment may have increased in this industry but the income of the people has definitely decreased as the middlemen offer low prices to the manufacturers but take heavy chunks of money from the buyers. But it is not only the middlemen and the dealers. The new revised foreign policies, globalization is also responsible for the current condition of cottage industry. The handloom weavers are facing constant competition from the power looms. These workers have given their whole life to stitching and knitting. The skill that they possess is just unmatched. But still they are at the same place where they had started years ago. An industry, providing employment to a large section of our

population is in such distress. With over 4 million people engaged in handloom industry, such a condition proves the adversities which these people are facing.

An interesting point to note is that out of the total people engaged in this industry, around 47% are below poverty line. Also, according to the new census, the average annual household income of these people is just Rs 41,068. And given the large family size among this section of the society, the per capita income is just a little more than nothing. Cottage industries in India face dearth of capital and large quantity of labour, which force them to buy capital-saving techniques. Hence, there is an urgent need for implementation of techniques which not only enhances productivity but develops skills of the laborers and meets the requirements of the local market. Endeavours should be directed towards the development of technology so that labours can enjoy a decent lifestyle. Government should also provide subsidiaries for the growth of cottage industries especially in the preliminary stages. The labourers of cottage industry often find themselves fighting against all odds at every stage of their business, be it buying the raw materials or promoting their products, arranging for capital or access to insurance covers, etc.

- **The Raw-Materials Issue**

The owners of these businesses cannot afford to buy raw materials in bulk due to their restricted resources. That is why they pay a lot of money for low-quality materials.

- **Financial Issues**

These industries do not have access to low-cost, easy-to-get financing. The government's and banks' funding systems are set up in such a way that these businesses must fulfil several formalities and deal with numerous obstacles.

- **Issues with marketing**

These enterprises are primarily found in villages, and their ability to locate adequate markets for their products is hampered by a lack of transportation and communication services.

- **A Managerial Deficit Talent**

Cottage and small-scale enterprises are typically conducted by tiny business owners who lack managerial and organisational skills. How can these sectors compete with the huge seals industries, which are managed and structured by experts in the field.

- **Rivalry with large-scale businesses**

The fundamental issue these industries face is their inability to compete with large-scale businesses. Because they lack access to the economies of large-scale production, they are unable to compete with large-scale industries. When it comes to capturing the attention of contemporary industry, cottage industries are the losers. This necessitates the protection and promotion of cottage industries through the development of state policies aimed at enhancing the industry's profitability and technological features. It is past time for the government to take some action.

Conclusion

India's cottage industries are culturally and economically significant. They preserve ancient traditions while simultaneously employing a large number of people. Because these industries confront intense competition from other economies, society should provide support to prevent exploitation and further develop them. The only solution to combat the monster of unemployment in over-populated countries like ours is to promote cottage and small-scale industries.

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A STUDY ON THE PROGRESS OF PRADHAN MANTRI JEEVAN JYOTI BIMA YOJANA (PMJJBY) FROM 2015 TO 2022

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Introduction

The Government initiated the National Mission for Financial Inclusion (NFI), namely, Pradhan Mantri Jan Dhan Yojana (PMJDY) in August, 2014 to provide universal banking services for every unbanked household, based on the guiding principles of banking the unbanked, securing the unsecured, funding the unfunded and serving unserved and underserved areas. A digital pipeline has been laid for the implementation of PMJDY through linking of Jan-Dhan account with mobile and Aadhaar [Jan Dhan-Aadhaar-Mobile (JAM)].

In order to move towards creating a universal social security system for all Indians, especially the poor and the under-privileged, three ambitious Jan Suraksha Schemes or Social Security Schemes pertaining to Insurance and Pension Sector were announced by the Government in the Budget for 2015-16. The schemes were launched on 9th May, 2015, for providing life & accident risk insurance and social security at a very affordable cost namely (a) Pradhan Mantri Suraksha Bima Yojana and (b) Pradhan Mantri Jeevan Jyoti Bima Yojana and (c) Atal Pension Yojana. Pradhan Mantri Vaya Vandana Yojana to protect elderly aged 60 years and above was initially opened for subscription for a period of one year i.e. from 4th May 2017 to 3rd May 2018.

Objective of the Study

Among the three social security schemes Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) is chosen for the study. The objectives of the study are

1. To comprehend about PMJJBY.
2. To know the salient features of PMJJBY.
3. To assess the progress of PMJJBY over the years.

Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)

With the aim of insuring the uninsured a universal social security system for all Indians, especially the poor and the under-privileged, the PMJJBY was launched by the Hon'ble Prime Minister for providing cover for death due to any reason. To achieve saturation under this scheme as announced by Hon'ble PM on 15.08.21, digital and periodic physical camps/drives were taken up. Further PMJDY account holders holding quarterly average balance of Rs. 1000 or more and standard PMMY account holders were also targeted. To increase voluntarily enrollment under the scheme enhanced intermediary commission of Rs.30 payable to BCs is being passed to the subscriber by reduction of amount of Insurance premium payable amount.

The PMJJBY is available to people in the age group of 18 to 50 years having a bank account who give their consent to join / enable auto-debit. Aadhar would be the primary KYC for the bank account. The life cover of Rs. 2 lakhs shall be for the one year period stretching from 1st June to 31st May and will be renewable. Risk coverage under this scheme is for Rs. 2 Lakh in case of death of the insured, due to any reason.

The premium is Rs. 436 per annum which is to be auto-debited in one installment from the subscriber's bank account as per the option given by him on or before 31st May of each annual coverage period under the scheme. The scheme is being offered by Life Insurance Corporation and all other life insurers who are willing to offer the product on similar terms with necessary approvals and tie up with banks for this purpose.

Salient Features

- Launched on 9th May, 2015
- Offers a renewable one-year term life cover of Rupees Two Lakh to all subscribing bank account holders in the age group of 18 to 50 years, covering death due to any reason
- Annual premium of Rs.436/- per annum per subscriber.
- The scheme is offered/administered through LIC and other Life Insurance companies willing to offer the product on similar terms.

Progress of Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)

The scheme was launched on 9th may, 2015 and still in operation. It has been eight years since its launch the following charts show the progress made during this period.

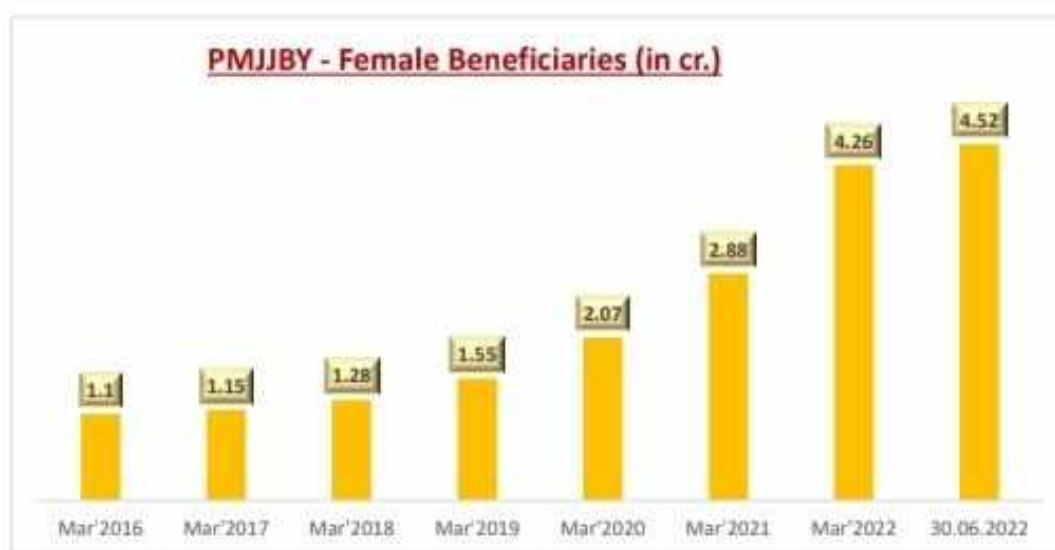
Cumulative Enrolments in PMJJBY from 2016 TO 2022

The total enrollments in the scheme at the end of March 2016 was 2.96 Crores and now it has reached a peak of 13.11 Crores by June 2022.

Cumulative Number of Claims Disbursed Under PMJJBY

The total number of claims disbursed under the scheme is depicted in the chart above. At the end of March 2016 41,437 claims were disbursed and by end of June 2022 it is 6, 21,372. More than 6 Lakhs people have claimed the benefit.

Female Beneficiaries under PMJJBY



Source :Banks

The chart shows the female beneficiaries under PMJJBY scheme, at the launch it was 1.1 Crores out of 2.96 Crore of total enrollment. At the end of June 2022 the female beneficiaries accounted for around 4.52 Crores which is 49% of the total enrollments.

Conclusion

Insurance is a strong weapon against loss due to risk of death and other uncertainties. By making insurance available to all at a minimum cost the government has ensured security and social welfare among the masses. PMJDY accelerated the progress of PMJJBY through providing a support vehicle. More such social security schemes will ensure a safe and risk free life for the underprivileged. The aim of insuring the uninsured through a universal social security system for all Indians, especially the poor and the under-privileged, through PMJJBY has proven to be efficient and successful through the enormous progress made by the scheme.

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SKILL INDIA INITIATIVE FOR ATMANIRBHAR BHARAT

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Introduction

India is a country with high working age population. Unemployment is a severe problem faced in India. Skill India is an initiative to improve the physical and mental development of Indian youths so that the unemployment problem in the country can be reduced. Skill India is a multi skill project launched in March 2015. The main aim is to develop the talents of Indian Youths. Here more emphasis is given to value addition among youth who are jobless, school dropouts along with the educated ones. It emphasizes on the concept of job creation and social security by which the youth undertake responsibility and no youth remain idle and burden to the economy. Skill development idea helps youths to raise their confidence and improve their productivity. The Skill India concept provides support, training and guidance for all occupations like construction, textile, transportation, agriculture, weaving, handicraft, horticulture, fishing and various other sectors along with language and communication skills, life skills, personality development skills, management skills including job and employability skills.

Objectives of the Study

The main objectives of the study is to find answer for the following questions

1. What is Skill India Mission scheme?
2. What are the objectives of the Skill India Mission?
3. What are the features of the Skill India Mission?
4. What are the benefits of Skill India Mission?

Skill India Mission

Knowledge and Skill are the deciding factors of economic growth and social development for any country. India is blessed with 65% of youth in the working age group. As per the National Policy for Skill Development and Entrepreneurship 2015, it is estimated that the average age of the population in India by 2020 will be 29 years as against 40 years in USA, 46 years in Europe and 47 years in Japan. In next 20 years, the labor force in the industrialized world is expected to decline by 4%, while in India it will increase by 32% which creates a need and opportunity to provide its

workforce with required skill sets and knowledge to enable them to contribute substantially to the economic growth of India.

In 2015, Prime Minister, Mr. Narendra Modi launched the Skill India Mission, which was in accordance with his vision to help India become 'Atmanirbhar' (self-reliant). This initiative was aimed to create and implement comprehensive skill development training programmes that would help bridge the gap between industry demands and skill requirements and therefore, develop the country at large.

The skill India programmes comprised implementing curriculum-based skill training courses, wherein trainees would gain certifications and endorsements from industry-recognised learning centres. The mission also involved incorporating skill-based learning in school curriculum, creating opportunities for both long- and short-term skill training and employment.

Need for Skill India Initiative

With India being a 'young' country due to its 75% working-age population, development of a skilled and educated workforce will play a significant role in enhancing its overall economy. According to the International Labour Organisation (ILO), India is likely to face shortage of ~29 million skilled personnel by 2030. Following this, Accenture in 2019 predicted that if India does not take timely actions—such as invest in new technologies or build industry-required skills—the skill deficit could cost the country US\$ 1.97 trillion in terms of gross domestic product (GDP) over the next decade.

With 'Skill India Mission', the Indian government aims to develop those practical skills, which are required by the industry and therefore, improve employment rate in the country. Since implementation, the mission has helped boost employment. According to data from the Centre for Monitoring Indian Economy (CMIE), unemployment rate dropped to 6.5% in January 2021 from 9.1% in December 2020, while the employment rate increased to 37.9% in January 2021 from 36.9% in December 2020.

Skill Development Schemes Launched by Government of India

1. Deen Dayal Upadhyaya Grameen Kaushalya Yojana
2. Pradhan Mantri Kaushal Vikas Yojana
3. Financial Assistance for Skill Training of Persons With Disabilities
4. National Apprenticeship Promotion Scheme
5. Craftsmen Training Scheme
6. Apprenticeship Training
7. Pradhan Mantri Kaushal Kendra
8. Skill development for Minorities
9. Green Skill Development Programme

Objectives of the Skill India Initiative

Following are the purposes of the said scheme for the development of the workforce in India.

- The Skill India Mission aims to offer market-oriented skills training to nearly 40 Crore Indians by 2022.
- It works to create a space for promoting the talents of youths and creating job opportunities for them.
- Skill India Mission funds sectors that are searching for options to recognise areas for skill development.
- It removes the gap between talented youth and enterprises.
- Lowering the poverty graph in the country.
- Boosting healthy competition in Indian businesses.
- Support Indian workforce and local production in the Indian and global markets.
- Diversifying skill development schemes to meet crucial challenges.
- Enhancing engagement of social partners and improving the relationship between public and private partnerships.
- Seek investors to finance sustainable skills development.

Features of the Skill India Mission

The features of the Skill India Mission are as follows.

- It creates a lucrative scheme for the development of rural youth.
- This scheme focuses on improving the entrepreneurship and service skills of Indian youth.
- National Skill India Mission supports and offers training to individuals working in both organised and unorganised sectors. For instance, cobblers, nurses, masons, kiln workers, etc., can apply for this scheme.
- Skill India Mission also focuses on developing sectors, such as designing, textiles, gems industry, transportation, real estate, textiles, etc. These areas need adequate training for growth.
- It trains youth and makes them capable of finding a job in both India and abroad.

Benefits of Skill India Mission

The Skill India Mission offers beneficiaries the following benefits.

- With appropriate skill development, one can get better job positions and appropriate salaries.
- They can improve their standard of living and support their family.
- The development at the grass-root level will help boost the economy and attract foreign investments.
- Individuals receive a National Skill India Mission certificate which substantiates their skill training.

- Skilled employees would offer better outcomes and more productivity.
- An individual can develop his/her skills and set up a business. This again increases the scope for employment in India.
- Salaried beneficiaries can avail loans of up to ₹1 crore and ₹3.5 crores as self-employed against this scheme. With a stable income, they can easily repay the outstanding balance within the tenure of 20 years.

Conclusion

It is seen in the same newspaper both issues related to unemployment and many advertisements for recruitment. Most of the youth are not aware to modern technology which helps in their personal development and growth of the country. Skill development program is powerful weapon to develop the creative skills and technical training to young population of the country. And it motivates the youth to develop the quality of self-development and self-entrepreneurships concept by providing training in several activities and it also provides a financial assistance through loans at a cheaper rate of interest. No one can have any doubt in the statement 'Development of the individuals in a nation lead to development of nation'. Therefore it is assured that the campaign ' Skill India' will occupy a major role in the development of individual as well as social and economic development very soon through skill development.

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PERSPECTIVE OF ICT TOOLS IN EDUCATION

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AN INTRODUCTION TO ICT TOOLS

Ms. V. Poornima

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Introduction

“Technology will never replace great teachers, but in the hands of great teachers, it’s transformational.” – George Couros

ICT tools stand for Information Communication Technology tools. The ICT tools means to digital infrastructures like computers, laptops, printers, scanners, software programs, data projectors, and interactive teaching box.

The ICT devices are the latest tools, concepts and techniques used in student-to-teacher, student-to-student interaction for example: - clicker devices, mobile applications, flipped classroom) for information and communication technology. Use of ICT Tools is all pervasive in our everyday life, and use of ICT tools has almost revolutionized the way teachers impart knowledge to students and students receive knowledge from their teachers, Not only that, by making accessible entire bookshelf and whole of library to students and teachers on a click of their smart phones and laptops have made education simple, much more efficient and have enhanced their productivity enormously.

Had it not been for availability of such modern ICT tools, we could not have pushed through education of our students during pandemic period in such an efficient manner for almost last two years. With advent of ICT Tools, students-teachers community has been benefitted immensely. Now-a-days, classrooms are equipped with desktops, projectors, internet (which facilitates downloading of info from across the world). With availability of smart phones, teachers and students can “virtually” assemble in a classroom and interact with each other with help of ICT software tools such as Google Meet, Zoom etc.

Objectives of the Study

- To study about some of the commonly used ICT tools.
- To assess the importance of ICT in education.
- To evaluate the advantages and disadvantages of ICT tools.

Some ICT Tools



The most commonly used ICT tools for teachers are discussed below,

1. Genially: excellent for creating different content in which interactivity and information are highly valued. Perfect for classroom use, getting students hooked, and explaining full lessons with a single image.
2. Microsoft Teams: the perfect tool to bring all your content together in one place. Integrated into Office 365, it's Microsoft's solution for encouraging collaborative work. Create teams in each classroom where class jobs are shared, assignments are given out, and other participants can chat.
3. Kahoot: allows you to create quizzes that serve to test students' knowledge or review content that has already been worked on in the classroom. There are four types of tests: contest, puzzle, debate, and survey. Games can be projected on a screen, making the entire class participate and having students respond from their computers or mobile devices.
4. Dropbox: this accommodation space has different tools to save files such as documents, images, and presentations. But storage is not your only feature, as it allows you to synchronize folders with classmates, students, and family members. You can also talk to other users through the feedback system and access it from different devices.
5. We Transfer: ideal for exchanging files. Without having to be registered to an account, you can send files that do not exceed 20 GB, which really allows for professional use.
6. Mindomo: one of the best resources for creating mental and conceptual maps. It allows you to create and collaborate online, synthesize ideas, analyze and generate new ones, and solve problems.

7. **Visual.ly** : create and view infographics. In addition, it allows you to share the content you've created on social networks.
8. **Trello**: the ideal place to organize your life. Notes, emails, reminders... Everything will be organized there in a very visual way.
9. **Feedly**: with Feedly you can stay up to date with new content and news that are emerging in the world of education and use them in your classes.
10. **Clippings**: perfect for reading on electronic devices and also underlining appointments and creating notes. It allows you to import clippings from your ebooks, and then select them and organize them into categories and tags.

Importance of ICT in Education

1. **ICT Brings Inclusion**: - The advantage of ICT in education is that all the students in the classroom can learn from the course material. Students with special requirements are no longer at a drawback because they have the necessary materials. Students can use special ICT tools so that they can use the ICT tools to their educational requirements. Despite this, it opens up new problems related to the 'digital divide' and provides those who are less fortunate with access to ICT resources and tools.
2. **E-Learning or Online Learning**: - The ICT tools provide a new way of learning for students and teachers. Online or E-learning is getting popular. Different extraordinary events are happening in our lives, opening up opportunities for schools to ensure that students can access course materials while in the classroom. Outside students are also allowed to make sure. One can also learn in class, such as at home or in hospitals.
3. **ICT Enhances Subject Learning**: - These days, it is well known that in education, ICT adds a huge value to key learning areas like numeracy and literacy.
4. **ICT Use Motivation Learning**: - The demand of society for new technology has not left out children and their requirements. With new technology, children are fascinated, motivating and encouraging children to learn in the classroom.
5. **ICT Use Allows for Effective Differentiation Instruction with Technology**: - We all learn and understand things differently at different levels, styles, and the technology offers chances for this to happen.
6. **ICT in Education Improves Engagement and Knowledge Retention**: - Students become more involved in their work if the TCT is integrated into lessons. And the reason behind that is the technology offers various opportunities to make it more enjoyable and fun in the context of teaching similar things in a number of ways. As a result of this increased busyness, it is said that they are capable to retaining knowledge more efficiently and effectively.
7. **ICT Use Encourages Collaboration**: - We only need a computer, iPad, or laptop in the classroom to understand how it works. Naturally, ICT brings children together so that the children can discuss and talk about what they are exactly doing for their

work. This in turns opens communication avenues that lead to the development of language.

8. **ICT Use Develops ICT Literacy and ICT Capability:** - ICT literacy and ICT capability are the skills of the 21st century which are best developed in ICT and remain transparent in the subject learning context. Offering them meaningful activities that are embedded in purposeful subject-related contexts is a great way to develop the capability of ICT.

Advantages of ICT Tools

There are various advantages of ICT Tools:

1. Cost-efficient
2. Provide the facility for easy student management
3. Direct classroom teaching
4. Improved modes of communication
5. Eco-friendly-Eliminate the usage of paper
6. Direct classroom teaching
7. Minimize cost and saves time
8. Improved data and information security
9. Web-based LMS tools link teachers, students, researchers, and scholars and education together.
10. Teachers are able to teach better with graphics, video and graphics.
11. Teachers can create interesting, well-designed and engaging classroom activities.
12. Provide better teaching and learning methods
13. To spread awareness about the social impact of technological change in education.
14. Promoting and improving the digital culture in universities, colleges, and schools.
15. Automated solutions to paper-based manual procedures and processes.

Disadvantages of ICT Tools

There are various disadvantages of ICT Tools:

1. **Unemployment:** -Although IT has streamlined the process of business, it has created redundancy and subcontinent in the job. Employers can save more money by using computers instead of human resources, but due to this, employees are losing their jobs as no longer needed.
2. **Lack of Security/Privacy:** - Although IT has changed and may be more convenient, it has also raised issues of privacy and security. Phone signal interception, email hacking, etc., people are concerned that personal information can become public knowledge. IT continues to change almost every day, which means that to secure their jobs, everyone has to be up-to-date in IT. Risk factors for attacking computer viruses, trojans, spam, malware is also present in the systems.
3. **Cyber Bullying:** - In social network pages, it is now so easy to bully and bully others as it has become very easy for the users of the internet around over the world. They do not realize the consequences of reading/listening to hostile

comments. There have been various investigation cases involving cyberbullying with lethal implications in the recent past.

4. **Reliance on Technology:** - People no longer bother to read, write, or calculate without computers because of losing handwriting skills (why write if spell checker can be used). Calculate without calculator even for the small addition, reading books (why read if there is huge information on the internet).
5. **Social Media:** - Network pages are open for everyone who can influence their physical and mental health by playing and watching violent games, including young children and teenagers. They are addicted to iPods, phones, gaming consoles, forgetting about society's external activities and communication.
6. **Preparation Time:** - Preparation takes more time so that the internet can be used effectively for education. In addition to designing internet-based plans, we have to surf the Internet in order to download the lesson plans and adapt them to support the course's objectives or visit sites to choose appropriate places for the classes needed.

Conclusion

Students these days are becoming smart. And smart students need even smarter ways when it comes to teaching. If you are a teacher and want your students to be the best, you must include some of the ICT tools for teaching and learning. Integration of ICT in classroom needs serious consideration in order to increase the competency of the country's education system. This will help in increasing the world ranking of the national education and produce the better future work force. In order to enhance the use of ICT in classroom, the government needs to improve and change the teachers' belief about the integration of ICT in classroom. As the teachers' role is the key role in making any of the new policy to be implemented efficiently and successfully. The changes that is taking place is driven by advanced technology and communication devices that should be available to students wherever they are either at school or home. In addition , the needs for teachers to be literate and have good skills and knowledge in using ICT to improve their teaching methods and approach is desired to promote effective learning as well as to meet the demand of the 21st century teaching skills.

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IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

Dr. M. Deepa



IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

Volume -1

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A STUDY ON THE HISTORY OF EDUCATION POLICIES IN INDIA

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Abstract:

India has a long and varied history of implementing educational policies at the local, state, and national levels. Over the centuries, the country has seen many changes and developments in its educational system, with the aim of providing access to quality education for all its citizens. The National Policy on Education (NPE) is a policy formulated by the Government of India to promote and regulate education in India. The policy covers elementary education to higher education in both rural and urban India. The first NPE was promulgated by the Government of India by Prime Minister Indira Gandhi in 1968, the second by Prime Minister Rajiv Gandhi in 1986, and the third by Prime Minister Narendra Modi in 2020.

Keywords: Education, Policy, NPE, NEP.

Introduction:

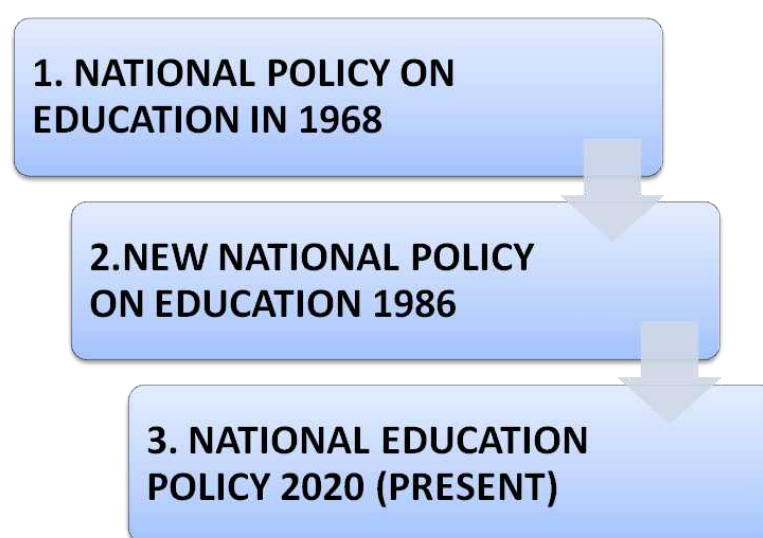
India has a long and varied history of implementing educational policies at the local, state, and national levels. Over the centuries, the country has seen many changes and developments in its educational system, with the aim of providing access to quality education for all its citizens. Education is one of the fundamental rights of any individual; it helps individuals to become responsible and productive members of the society. It fosters critical thinking, develops skills and knowledge, and makes a person more responsible towards the society as they contribute to the economy of the nation and participate fully in civic life. It plays a very crucial role in promoting personal and social development. It helps to build strong communities and a strong democracy, and it is essential for the ongoing and development of our world.

History of Education Policies in India:

The National Policy on Education (NPE) is a policy formulated by the Government of India to promote and regulate education in India. The policy covers elementary education to higher education in both rural and urban India. The first NPE was promulgated by the Government of India by Prime Minister Indira Gandhi in 1968, the second by Prime Minister Rajiv Gandhi in 1986, and the third by Prime Minister Narendra Modi in 2020.

Since the country's independence in 1947, the Indian government sponsored a variety of programmes to address the problems of illiteracy in both rural and urban

India. Maulana Abul Kalam Azad, India's first Minister of Education, envisaged strong central government control over education throughout the country, with a uniform educational system. The Union government established the University Education Commission (1948–1949), the Secondary Education Commission (1952–1953), University Grants Commission and the Kothari Commission (1964–66) to develop proposals to modernise India's education system. The Resolution on Scientific Policy was adopted by the government of Jawaharlal Nehru, India's first Prime Minister. The Nehru government sponsored the development of high-quality scientific education institutions such as the Indian Institutes of Technology. In 1961, the Union government formed the National Council of Educational Research and Training (NCERT) as an autonomous organisation that would advise both the Union and state governments on formulating and implementing education policies.



1. National Policy on Education in 1968

Based on the report and recommendations of the Kothari Commission (1964–1966), the government headed by Prime Minister Indira Gandhi announced the first National Policy on Education in 1968, which called for a "radical restructuring" and proposed equal educational opportunities in order to achieve national integration and greater cultural and economic development. The policy called for fulfilling compulsory education for all children up to the age of 14, as stipulated by the Constitution of India and specialized training and qualification of teachers. The policy called for a focus on the learning of regional languages, outlining the "three language formula" to be implemented in secondary education - the instruction of the English language, the official language of the state where the school was based, and Hindi. Language education was seen as essential to reduce the gulf between the intelligentsia and the masses. Although the decision to adopt Hindi as the national

language had proven controversial, the policy called for the use and learning of Hindi to be encouraged uniformly to promote a common language for all Indians. The policy also encouraged the teaching of the ancient Sanskrit language, which was considered an essential part of India's culture and heritage. The NPE of 1968 called for education spending to increase to six percent of the national income. As of 2013, the NPE 1968 has moved location on the national website.

2. New National Policy on Education 1986

In 1986, the government led by Rajiv Gandhi introduced a new National Policy on Education. The new policy called for "special emphasis on the removal of disparities and to equalise educational opportunity," especially for Indian women, Scheduled Tribes (ST) and the Scheduled Caste (SC) communities. To achieve such a social integration, the policy called for expanding scholarships, adult education, recruiting more teachers from the SCs, incentives for poor families to send their children to school regularly, development of new institutions and providing housing and services. The NPE called for a "child-centred approach" in primary education, and launched "Operation Blackboard" to improve primary schools nationwide. The policy expanded the open university system with the Indira Gandhi National Open University, which had been created in 1985. The policy also called for the creation of the "rural university" model, based on the philosophy of Mahatma Gandhi, to promote economic and social development at the grassroots level in rural India.^[7] 1986 education policy expected to spent 6% of GDP on education.

3. National Policy on Education (Modification) 1992

The 1986 National Policy on Education was modified in 1992 by the P. V. Narasimha Rao government. In 2005, Former Prime Minister Manmohan Singh adopted a new policy based on the "Common Minimum Programme" of his United Progressive Alliance (UPA) government. Programme of Action (PoA) 1992, under the National Policy on Education (NPE), 1986 envisaged to conduct of a common entrance examination on all India basis for admission to professional and technical programmes in the country. For admission to Engineering and Architecture/Planning programmes, Government of India vide Resolution dated 18 October 2001 has laid down a Three – Exam Scheme (JEE and AIEEE at the National Level and the State Level Engineering Entrance Examinations (SLEEE) for State Level Institutions – with an option to join AIEEE). This takes care of varying admission standards in these programmes and helps in maintenance of professional standards. This also solves problems of overlaps and reduces physical, mental and financial burden on students and their parents due to multiplicity of entrance examinations.

4. National Education Policy 2020 (Present)

In 2019, the then Ministry of Human Resource Development and now the Ministry of Education released a Draft New Education Policy 2019, which was followed by a number of public consultations. It discusses reducing curriculum content to enhance essential learning, critical thinking and more holistic experiential, discussion-based and analysis-based learning. It also talks about a revision of the curriculum and pedagogical structure from a 10+2 system to a 5+3+3+4 system design in an effort to optimise learning for students based on cognitive development of children. Research Methodology has been added in the last year of graduation course and student will have the choice to leave the course and receive the certificate/ degree according to that. On 29 July 2020, the cabinet approved a new National Education Policy with an aim to introduce several changes to the existing Indian education system, which will be introduced in India till 2026.

Conclusion:

The National Education Policy is a comprehensive set of guidelines and recommendations for the Indian education system. It aims to make education more inclusive, relevant, and engaging for all students, and to foster the development of critical thinking and problem-solving skills. By implementing these recommendations, the NEP aims to ensure that all students have the opportunity to receive a high-quality education and reach their full potential. In conclusion, the New Education Policy represents a major shift in the way education is delivered in India, and it has the potential to bring significant benefits to the education system. Though it has faced a lot of criticism from students as well as educators and learners who are in the mid of the course which will no longer be considered a degree (like an M.Phil). However, its success will depend on effective implementation and adequate resources, and it will require continued effort and commitment from the government, educators, and the wider community.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

Volume - 1

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DIGITAL FINANCIAL INCLUSION IN INDIA: CHALLENGES AND OPPORTUNITIES

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Abstract

India's Financial Inclusion journey has been phenomenal in the last decade and expressly promoted by the Government of India through their Digital India Movement & Pradhan Mantri Jan Dhan Yojana. Reduction of poverty and addressing the challenges of ensuring sustainable income could become a key factor to achieve an inclusive society. Information and Communication Technology are providing access to unbanked population progressively and helping to bring them into the banking segment. Digital Technologies are driving usage and making a positive impact on livelihood of citizens. In this paper we are discussing on what is achieved in Financial Inclusion so far and what next and how do we leverage and harness digital technologies to achieve an inclusive society. This paper enlists various challenges that continue to prevail in achieving an inclusive society.

Keywords: *Financial Inclusion, Information and Communication Technology, Social Inclusion, Health Inclusion, Sustainable Growth ecosystem*

Introduction

Financial Inclusion (FI) means delivering basic financial services to the marginalized and excluded members of society. It is the process in which we ensure adequate line of credit accessible by the weaker section of the society at a reasonable cost. Financial inclusion helps in developing a culture of savings among semi urban and rural population by bringing low income groups within the formal frame- work of banking and insurance sector which is significant for national economic development. It came into prominence around 2008 when it became clear to the government that it needs to be the key driver for economic growth of the country. Vision for Financial Inclusion in India is to induce inclusive financial growth by including the unbanked and unsupported individuals and MSMEs by formal financial institutions by providing them convenient access to basic financial products including bank accounts, remittances, bill payments, government supported insurance, pension products and formal credit at reasonable costs. There has been growing evidence on how financial inclusion has a multiplier effect in boosting overall economic output, reducing poverty and income inequality at the national level.

With the advent of "Digital India Movement" and telecom penetration to deep rural areas, sincere efforts are made to bring widespread formal banking channels and innovative financial technology together to create a viable and vibrant ecosystem to drive accessibility of formal financial products to unbanked and deprived segments of Indian society. It started with the services related to opening of no-frills accounts, delivering smart cards containing balance and biometric information to registered on the card. There was no active network connectivity during initial stages of FI. Last mile agents used to visit

the bank, withdraw money & beneficiary list, go to each beneficiary, authenticate with biometrics, and deliver the services. Post which, they go back to the bank to reconcile. Out of 650,000 villages in India, around 150,000 were identified by the govt. initially to service through BC Model.

Fast-forward now, there is far more online connectivity in the remotest areas, smart card is replaced by real time Aadhaar based authentication, beneficiary enrolment & transactions can be done in real-time in field. Last mile channels like micro ATMs, Kiosks, PoS machines, Tablets, Mobile Phones are utilised for service delivery. Basic requirement of UPI based FI transaction is that the beneficiary account should be opened through PM JDY scheme and it is linked to the customer's mobile number.

There is a great need for inclusive growth. By leveraging digital technologies, this is a great opportunity for Govts. and market leaders to improve digital penetration, ease of use of digital products, contextualised and personalised offerings to citizens increase availability, drive down costs, enhance security and trust. There is a need for sustainable cooperation between govts., businesses and unbanked population .

National leadership and policy making institutions like RBI and Niti Aayog have brought in some strong initiatives for inclusive growth which culminated in National Mission for Financial Inclusion namely Pradhan Mantri Jan Dhan Yojana PM JDY leveraging banking network and technology innovations. It enabled access to financial services and coverage of banking to excluded population.

With over 95% of Indian population having Unique Identification through Aadhaar, India achieved 80% of adult population having bank account by 2017. 77% Indian Women have bank accounts. In the outbreak of Covid-19 pandemic, this back bone of bank account has been instrumental to provide help of ₹500 per month for 3 months to over 200 Mn woman beneficiaries, transfer of Rs. 6000/- in 3 installments per year (currently citizens are receiving their 8th installment) of PM Kisan Samman Nidhi Yojana to farmers through direct benefit transfer schemes . Under PM JDY, 423.7 Mn total no of Beneficiaries of which 279.5 Mn Semi Urban/ Rural Beneficiaries . Rapid digital penetration along with enhancing the financial literacy of people has started. We are moving from assisted to self-service model for multiple services.

Current Challenges

1. People included in the financial inclusive ecosystem end up getting excluded and are not able to sustain within the framework due to various reasons general or health related causes.
2. There is a clear demarcation of digital divide among some are tech savvy people and delivering the services and making them understand is not difficult, where as some in semi-urban and majority of people in rural areas find difficult to understand and utilise technology efficiently.
3. Lack of financial literacy and awareness on financial cybercrimes has resulted in

general mistrust among rural population which leads to reduced digital penetration.

4. There is a burden on running sustainable last mile delivery model, particularly in rural areas & last mile level service delivery. Multiple Govt. & Business agencies are trying to reach the same location for various reasons related to FI, Social or Healthcare inclusion and these are disjoint efforts and driving higher costs.
5. Different data elements available with govt. such as healthcare schemes data, social inclusion data, COVID data, vaccination data, etc. are not leveraged to full extent as there is clear lack of coherence between these data elements.
6. Last mile technological systems and artefacts are vulnerable to exposure and exploitations. It is loosely handled by BC or BF agents as adequate security measures to control it are not put in place. This has resulted in lot of frauds happening on the ground. About 22% BC agents faced fraud in 2017, a noteworthy increase from 2% in 2015. Business model of Last mile & BC Agent network must be looked at again from privacy security & safety angle.
7. Data Privacy is still a major concern as a lot of captured data is easily available to various stake- holders as PII norms are not completely followed. KYC Data & mobile numbers are available everywhere. Biometric data is captured duplicitously by some BC Agents in clay who will replicate it later for fraudulent reasons. Another way is when they give a manual receipt instead of computerised one during transactions.
8. SMS messages for transactions in an account are not reaching the customer due to lack of mobile device (More than 310 Mn people still do not possess a basic feature phone or a smart phone) or financial institutions are not sending these messages for low value transactions. This has led to increased dependency on local agents.
9. Access to credit is still a concern as small time lenders charging high rate of interest are prevalent in rural areas. Govt. schemes have not penetrated fully and need more rural outreach to enhance credit access. Lack of avenues for digital lending and online loans from credible financial institutions is missing.
10. Recommendations for individuals based on their requirement is not provided and leveraging the personalised data of the person, by performing analytics using AI & ML, banks can offer loans, insurance and other services based on analytics & credit score.

National Strategy for Financial Inclusion

In the year 2020, RBI came up with national strategy for Financial Inclusion with focus on creating an outreach of financial services outlets to provide banking access to every household within 5KM radius. All eligible adults must have access to basic financial services such as Bank Account, line of credit, life and other insurance, pension scheme and suitable investment product. Now, the next paradigm for financial inclusion program

(2020–2024) is focused on addressing inherent behavioural and practical aspects .

1. *A strong financial transaction grievance redressal system* to address concerns of arguably less technology-savvy citizens.
2. *Increasing digital penetration as still the smartphone usage* for financial transactions are limited to urban and semi urban population predominantly.
3. *Bank account opening for the remaining population* of the country as still the PMJDY penetration is about 80% of the population.
4. *Ensuring the privacy of data and information of citizens* and prevention of fraudulent transactions and demographic data.
5. *Easy and affordable digital payment options* to suit the needs of small businesses and unstructured sector workers.
6. *Providing access to basic and most essential financial products* such as transactional accounts, digital payments, basic term insurance, basic medical insurance, and pension options to the population specially in the agricultural and unorganized MSME sector workers.

According to a World Bank report, globally achieving Universal Financial Access by 2020 [3] has been one of the key developmental agenda of the World Bank which aims to provide adults who currently aren't part of the formal financial system, with access to a transaction account to store money, send and receive payments to manage their financial lives. Our National Strategy is also aligned to these broad virtues suggested by World Bank. On key parameters, India is quite ahead and continuously progressing:

1. *Leadership* in India is having singular focus on technology enabled financial inclusion. It is evident through steps like DBT, PM Kisan, financial assistance to woman and poor during the recent Covid-19 pandemic etc.
2. *Target based approach for specific sectors & regions* including “National Mission for Capacity Building” by bankers for MSME sector, Certified Credit Counsellor Scheme for MSME to join them with the formal Financial Channels and informed financial credit decisions.
3. *Regulatory Framework* in Banking to protect customers, promote fair business processes and prevent unhealthy practices by market players. Initiatives like exclusive “Financial Inclusion Fund” (with initial corpus Rs.2000 Crore), issuances of differentiated banking license—Small Finance Banks, Payments Banks etc., launch of BC Registry with Indian Banks Association (IBA) etc. are steps towards the same.
4. *Market Development* initiatives like Branch Authorization Guidelines (2017) etc. to ensure accurate targeting of the beneficiaries, de-duplication and reduction of fraud and leakage have been taken. Linking all financial assistance schemes to DBT is a strong footprint in this direction
5. *Strengthening Payments Structure* through digital retail payments systems like AEPS, NACH, UPI, CTS, IMPS etc. operated by NPCI are significant steps. Aadhaar

linked direct benefit transfer has changed the scenario for public funds distribution in India.

6. *Last mile delivery* to bridge the gap for remote connectivity and doorstep financial services is key to success. ICT based solution like business correspondents/facilitators and IPPB are landmark steps in this area, launch of UPI on feature phones will be a big game changer also enabling ecosystem for NFC based touchless payments.
7. *Financial Literacy and Awareness* is a primary bottleneck in progressive financial inclusion in India. Launch of financial literacy program in 2013 helped in addressing this to some extent.

Conclusion

Even though the country has made immense progress in widening accessibility for the majority of the excluded population, including through a strong supply-side push for digital financial services, policies should focus more on addressing demand-side constraints to promote use of financial services, which remains low. Improving financial and digital literacy, internet and smartphone access, and expanding digital government payments to households (government to person) will help close the emerging digital divide. At the same time, strengthening consumer protection, data privacy, and cybersecurity remain crucial to promoting safe financial inclusion.

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PREFACE

In an era where the global landscape is undergoing rapid and profound changes, the aspiration for global leadership demands a visionary and concerted effort. The seminar proceedings titled “Vision for Vishwa Guru India Initiatives for Global Leadership by 2047” stand as a testament to India's unwavering commitment to shaping a future that is not only transformative for its own citizens but also resonates across the international community.

As we approach the momentous milestone of 2047, which marks the centenary of India's independence, we find ourselves at a crossroads of possibilities and challenges. The concept of ‘Vishwa Guru’ encapsulates India's age-old tradition of disseminating knowledge, fostering dialogue, and illuminating the path for others. This compilation of seminar proceedings is a reflection of this tradition, a dialogue that transcends boundaries and invites scholars, students, and visionaries to collectively envision the path ahead. These proceedings offer a panoramic view of the discussions and insights shared by luminaries in various fields, touching upon a myriad of sub-themes. From discussions on the Role of Technology in NEP 2020 to explorations of Ease of Doing Business, the proceedings delve into crucial facets that shape India's global role.

We extend our heartfelt gratitude to the Indian Council of Social Science Research (ICSSR) for its invaluable support in bringing together these seminal discussions. Their unwavering commitment to advancing knowledge aligns seamlessly with the spirit of the Vishwa Guru India Initiatives. As we navigate the complexities of a rapidly evolving world, we hope that these initiatives serve as a source of inspiration, a catalyst for meaningful dialogues, and a blueprint for action.

We are indebted to the authors who have contributed their scholarly insights to this compilation. Their diverse perspectives and rigorous research have enriched the discourse on global leadership and India's role in shaping the global narrative. Each paper presented here is a testament to their dedication to knowledge dissemination and their belief in the power of ideas to drive positive change.

Together, let us embrace the spirit of ‘Vishwa Guru’ and pave the way for a brighter, more harmonious, and prosperous India.

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CYBER CRIME AND DIGITAL PAYMENTS IN INDIA: A COMPREHENSIVE ANALYSIS

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Abstract

The payment method has changed as a result of financial transaction digital transformation. The use of digital payments has increased significantly and quickly. As more people choose to use digital payments, there is an increasing risk of falling victim to cyberattacks like online fraud, identity theft, and spyware or virus attacks. Cybercrime, or crimes committed online, has increased as a result of transactions taking place in the digital realm. Hacking on websites, web applications, and web browsers is known as cybercrime. For any business that deals with electronic payments and transactions, secured payment is essential. Cybersecurity is one of the most important problems facing participants in the digital payment ecosystem. Numerous factors, including ignorance and a weak digital payment infrastructure, can be blamed for the increase in these cyberattacks. Various cyber security techniques exist to protect against cybercrime's threats. This chapter discusses the causes, dangers, and fixes for cyber-attacks on digital payment systems.

Keywords: Cybercrime, Digital Payments, Challenges, Transaction, Cyber Attack.

Introduction

The way people communicate, conduct business, and access information has changed dramatically as a result of the quick development of technology. Cybercrime, as it is commonly known, is one of the newer criminal activities brought on by this digital transformation. India has emerged as a top target for cybercriminals due to its expanding digital landscape and rising internet penetration. In order to effectively combat this threat, it is crucial to comprehend the nature and extent of cybercrime in India as well as the difficulties associated with gathering electronic evidence. the impartial proof in India. This study aims to contribute to the understanding of cybercrime trends in the nation by looking at the most common types of cybercrimes, the legal framework governing cybercrime, and the difficulties and solutions related to electronic evidence collection and preservation. Hacking, identity theft, financial fraud, and online harrasment are just

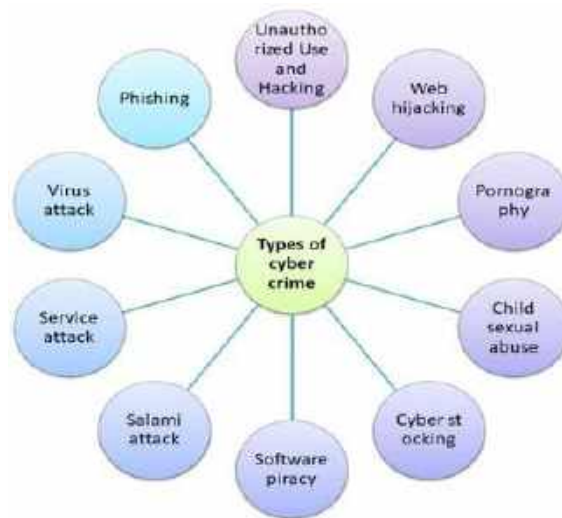
a few of the illegal activities that fall under the umbrella term "cybercrimes," which also includes other related terms. These crimes have serious repercussions for people, businesses, and national security in addition to causing significant financial losses. For the development of successful prevention and response strategies, it is essential to understand the types and patterns of cybercrimes that are common in India.

The Information Technology Act of 2000 serves as the cornerstone of India's legal framework for combating cybercrime (IT Act). The IT Act establishes the legal framework for combating cybercrimes and lays out the punishments for infractions like unauthorised access, data theft, and computer-related offences. But in order to effectively address new threats, the legal system needs to keep up with how quickly technology is developing. In cybercrime investigations, gathering and preserving electronic evidence is a significant challenge. The rapid spread of cybercrime and the dynamic nature of digital data make the timely identification and retrieval of electronic evidence crucial. The gathering and preservation of electronic evidence is further complicated by legal and procedural requirements, such as ensuring chain of custody, admissibility, and privacy concerns. Law enforcement organisations must adopt strong strategies and make use of digital forensics methods and equipment to get past these obstacles. In order to improve cybercrime investigation capabilities and create a secure framework for handling electronic evidence, cooperation between the government, law enforcement organisations, and the private sector is essential. This research paper aims to highlight the practical implications of current approaches and pinpoint areas for development by looking at notable cybercrime cases and their related electronic evidence management. Additionally, it will offer suggestions for enhancing cooperation, promoting awareness and education about cybersecurity best practises, and strengthening legislation against cybercrime. It is crucial to comprehend the nature of cybercrime and the difficulties posed by electronic evidence if we are to protect India's digital infrastructure. This research paper aims to contribute to ongoing efforts to combat cybercrime and safeguard people and organisations from digital threats by looking at the common types of cybercrimes, the legal system, and the strategies for efficient electronic evidence management.

Cyber-Crime

One of the most important inventions of the twenty-first century is the Internet. Currently, the internet has eliminated all barriers and changed how we interact with one another, play games, work, shop, meet new people, watch movies, order food, pay bills, and greet loved ones on special occasions like birthdays (Al-Zahrani, 2022). Cybersecurity is the most urgent concern as cyber threats and attacks are on the rise.

Fraudsters are now attacking the systems with more sophisticated methods. People, small businesses, and large corporations are all impacted. Because of this, all businesses—IT and non-IT alike—have realised the importance of cyber security and are working to put all available defences in place. Cybercrime is explained in depth in some definitions. Cybercrime is defined by the Oxford Dictionary as "Criminal activities conducted using computers or the Internet." "Cybercrime may be said to be those species, of which a genus is a conventional crime, and where either a computer is an object or subject of the conduct constituting crime," says the definition of the term. There are various ways to commit a cybercrime and some of them are mentioned below in Figure (1).



Hacking

It cracks personal security and finds personal data.

- **Unauthorized access to systems or networks:** It is a form of hacking, an unlawful act, or a crime. Here, the attacker intentionally uses another person's account to access a system without the victim's consent.
- **Virus/worm:** Hinders the proper operation of the programs or harms the system and software.
- **Email bombing:** This practice involves the hacker sending the victims phoney or fraudulent emails. The hackers do this by flooding the mailbox with a large number of emails. As a result, the server crashes, disrupting the operation of web portals.
- **Dos Attack:** harms the hardware and software, or prevents the programmes from operating as intended.
- **Email bombing Attack:** This hacker technique involves sending victims phoney or fraudulent emails. In order to overtax the mailbox, the hackers send an enormous number of emails. The server crashes as a result, disrupting the operation of web portals.

- **Salami attack:** It has to do with money laundering. In doing so, the hackers steal money incrementally or in small steps. Here, they create duplicate bank accounts and transfer a small sum of money from a variety of accounts to one that she can access later.
- **Trojan attack:** In doing so, the hacker seizes command over the computers of others. A Trojan horse virus infiltrates a system and deceives willing users.
- **Web jacking Attack:** The hacker gains control of and access to another legitimate website.

Authorized Framework for Cybercrime in India

Addressing cybercrime in India requires a robust legal framework that defines offenses, prescribes penalties, and establishes mechanisms for investigation, prosecution, and prevention. The primary legislation governing cybercrime in India is the Information Technology Act, 2000 (IT Act)

1) The Information Technology Act, 2000:

The IT Act is the cornerstone of India's legislation against cybercrime. It offers a thorough framework to address a variety of cybercrimes, such as hacking, unauthorised access, data theft, and computer-related crimes. The Act establishes guidelines for the search and seizure of electronic evidence and gives law enforcement agencies the authority to look into cybercrimes. It also creates the Cyber Appellate Tribunal to hear appeals against the decisions made by the Act's adjudicating officer.

2) Amendments to the IT Act:

The IT Act was strengthened and its provisions were updated to address new issues in light of the evolving nature of cybercrimes. Significant changes were made by the Information Technology (Amendment) Act of 2008 to address new types of cybercrimes and strengthen the penalties for offences like cyberterrorism, identity theft, and confidentiality breaches. The amendment also included provisions for data protection, electronic communication monitoring, and interception.

3) Other Relevant Laws and Regulations:

The legal framework for cybercrime in India is supplemented by other laws and regulations in addition to the IT Act. The Indian Penal Code, 1860, contains provisions that can be used to prosecute online crimes like fraud, libel, and stalking. The investigation and prosecution of cybercrime cases are governed by the Criminal Procedure Code, 1973. Regulations pertaining to financial cybercrimes and electronic payment systems are provided by the Reserve Bank of India Act of 1934 and the Payment and Settlement Systems Act of 2007.

Jurisdictional Challenges in Prosecuting Cybercriminals

In India, in addition to the IT Act, there are additional laws and regulations that support the legal framework for cybercrime. Online crimes like fraud, libel, and stalking can be prosecuted under provisions in the Indian Penal Code, 1860. The Criminal Procedure Code of 1973 governs the investigation and prosecution of cybercrime cases. The Reserve Bank of India Act of 1934 and the Payment and Settlement Systems Act of 2007 both contain regulations pertaining to financial cybercrimes and electronic payment systems.

Approaches of Cyber Security

Any illegal activity that makes use of a system, piece of technology, or network is considered a cybercrime. Cybercrime can be divided into two categories: that which targets systems and that which systems unintentionally assist in (Li & Liu, 2021).

Network Security

The hardware and software safeguards that guard against disruptions, unauthorised access, and other abuses of the infrastructure and network are referred to as network security. With the aid of strong network security, company assets are guarded against a variety of attacks from both inside and outside the organisation. Monitoring cyberthreats and risks related to web browsers, websites, online services, and networks is a crucial part of network security. Thanks to companies like Cisco, Palo Alto, Symantec, Fortinet, Okta, and Z scaler that provide complete network security solutions, our information is secure.

Firewall

The term "network security" refers to the hardware and software measures that safeguard the network's infrastructure against disruptions, unauthorised access, and other abuses. Effective network security safeguards company assets against a range of attacks coming from both inside and outside the organisation. Monitoring of online risks and threats involving web browsers, websites, online services, and networks is crucial for network security. Businesses offer network security.

Multi-Factor Authentications

Only after positively presenting more forms of identification to an verification device can a user access websites or software programmes with multi-factor authentication (MFA). A mobile number can be used in addition to a fingerprint, password, or two or more pieces of information (OTP).

Passwords

The likelihood of fraud or cybercrime has increased as a result of the popularity of online shopping through various e-commerce websites or applications. In order to protect applications from threats like unauthorised access and modification, security measures must be developed, incorporated, and tested into the applications. To find, fix, and ideally prevent security flaws in applications, the ultimate goal is to enhance security procedures..

Application Security

A user can only access websites or software programs with multi-factor authentication (MFA) if they successfully authenticate with identification at an authentication device. A mobile number can be accessed with the information, a fingerprint, a password, or both (OTP). Allowing MFA diminishes the risk of cybercrime because hackers won't be able to admission the computer and does not get the code that your mobile or other devices received.

Digital Signature

A digital signature, which functions as a biometric or an addition to a digital document, attests to its legitimacy and integrity. A digital certificate is a document that confirms the bearer's identity and offers security. The three guiding principles of cyber security for the organisation are CIA (Confidentiality, Integrity, and Availability) among all these methods for preventing cybercrimes .It is also referred to as the security triangle. The availability principle implies that the information must be made available based on predetermined criteria, while the confidentiality principle and integrity principle imply that only authorised individuals may access and modify the information .All information must be original and reliable, according to authentication, authorization only grants access to information to those who have been given permission, and accounting mandates regular tracking of all data and events (Wang et al., 2015).

Conclusion

Cybercrime and fraud in digital payment systems are covered in this chapter. All financial transactions now take place online as a result of digitization. This situation has increased awareness of cybercrime. The chapter discusses various cybercrimes as well as cyber security measures to prevent or stop them. It draws attention to the transition from traditional to digital payment gateways. The chapter provides a list of the various regulatory bodies in charge of monitoring online transactions and domestic and international cybercrime. CERT-In and NCSP are just two of the organisations that have worked to track down and stop these cyberfrauds. A web-

based economy was created as a result of the development of fintech. The cash-based society was replaced by a cashless society thanks to digital payments. An increase in cyber attacks is attributed to the use of computers or other electronic devices for financial transactions. The chapter discusses the main causes of these attacks as well as preventative measures.

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EMPOWERING WOMEN ENTREPRENEURS THROUGH INFORMATION AND COMMUNICATION TECHNOLOGY IN INDIA

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Abstract

This research article focuses on the role of Information and Communication Technology (ICT) in empowering women entrepreneurs in India. Despite the significant progress made in women's empowerment and gender equality, women entrepreneurs in India still face numerous challenges in establishing and growing their businesses. Limited access to resources, gender biases, social norms, and lack of networking opportunities hinder their entrepreneurial journey. ICT has emerged as a powerful tool that can bridge these gaps and provide women entrepreneurs with access to information, markets, networks, and financial services. The study explores the specific context of India and examines the potential of ICT in empowering women entrepreneurs. It discusses various initiatives, challenges, and strategies for promoting ICT adoption among women entrepreneurs in India, ultimately aiming to contribute to the economic growth and gender equality in the country.

Keywords : *Women Entrepreneurship, Empowerment and ICT*

Introduction

In recent years, there has been a growing recognition of the vital role that women entrepreneurs play in driving economic growth and fostering social development. In India, there is a need to empower women entrepreneurs and provide them with the necessary tools and resources to succeed in the digital age. Information and Communication Technology (ICT) has emerged as a powerful enabler, offering innovative solutions to overcome barriers and enhance the entrepreneurial ecosystem for women. ICT provides women entrepreneurs with a platform to connect with a wider market, both domestically and internationally. The objective is to leverage digital technologies, e-commerce platforms, and online marketplaces to expand the reach of women-led businesses. By enabling access to markets, the study aims to create opportunities for women entrepreneurs to showcase their products and services, increase their customer base, and drive economic growth. The study explores the significance of empowering women entrepreneurs through ICT in India and highlights the objectives that underpin this transformative initiative.

Review of the Literature

Ahilya(2021) in their study “Role of ICT In Women Empowerment” aimed to study ICT women are getting security, awareness, knowledge, employments, confidence, popularity etc. This paper brings into notice the role of Information and Communication Technology in women empowerment. Here various cases have been discussed to give a light on the different angles of ICT has brought to the society.

SaritaRathi and Shyamalendu (2015) in their study “Role of ICT in Women Empowerment” studied the role of Information and Communication Technology in women empowerment. Here various cases have been discussed to give a light on the changes ICT has brought to the society. It also suggests the steps to be taken for women empowerment through ICT.

Beena and Mathu (2012) studied “Role of ICT Education For Women Empowerment” to understand the extent of the influence of ICT education on women empowerment, an exploratory research was conducted. Primary data was collected using survey questionnaires for women of the Jaipur region. It is found that that the information and communication technology empower a woman in various areas like social, educational, personal, psychological, political, technological, and economical.

Statement of the Problem

The increasing use of information and communication technology (ICT) has presented new opportunities for women entrepreneurs to start and grow their businesses. However, despite the potential benefits, there are several challenges that women entrepreneurs face in utilizing ICT effectively. To foster the growth and success of women entrepreneurs in the digital era, it is crucial to identify these challenges and explore areas for improvement. Therefore, this study aims to study the potential challenges encountered by women entrepreneurs in utilizing ICT and to suggest recommendations for policymakers, stakeholders, and future research endeavours.

Objectives of the Study

- To study the Potential Challenges and Areas for Improvement among women entrepreneurs through ICT
- To suggest Recommendations for Policymakers, Stakeholders, and Future Research

Positive Outcomes of ICT- Enabled Women Entrepreneurship

The ICT bridge the digital divide that exists between men and women entrepreneurs in India. By providing women entrepreneurs with access to ICT

infrastructure, training, and resources, we aim to reduce the gender gap in digital literacy and ensure that women have equal opportunities to harness the power of technology for their entrepreneurial ventures.

Enhancing Business Skills and Knowledge

It enhances the business skills and knowledge of women entrepreneurs through ICT. By leveraging digital platforms, online courses, and e-learning resources, women can gain valuable insights into various aspects of entrepreneurship, including business planning, marketing, finance, and networking. This objective aims to equip women entrepreneurs with the necessary expertise to navigate the competitive business landscape successfully.

Promoting Access to Markets

ICT provides women entrepreneurs with a platform to connect with a wider market, both domestically and internationally. It helps to leverage digital technologies, e-commerce platforms, and online marketplaces to expand the reach of women-led businesses. By enabling access to markets, we aim to create opportunities for women entrepreneurs to showcase their products and services, increase their customer base, and drive economic growth.

Fostering Collaboration and Networking

Collaboration and networking play a pivotal role in the success of any entrepreneurial venture. Through ICT, women entrepreneurs can connect with peers, mentors, industry experts, and potential partners. It facilitates virtual communities, online forums, and networking platforms that enable women entrepreneurs to share knowledge, exchange ideas, seek support, and forge valuable collaborations.

Supporting Digital Financial Inclusion

Access to financial services is a critical factor in empowering women entrepreneurs. Through ICT, we aim to promote digital financial inclusion by facilitating online banking, digital payment systems, and access to credit for women entrepreneurs. This seeks to overcome traditional barriers and empower women to manage their finances efficiently, make secure transactions, and access financial resources for business growth.

Empowering Rural Women Entrepreneurs

Rural women entrepreneurs often face unique challenges due to limited resources, infrastructure, and connectivity. It is to specifically address the needs of rural women entrepreneurs by leveraging ICT solutions tailored to their context.

This objective aims to empower rural women, enhance their entrepreneurial skills, and create avenues for sustainable livelihoods, thereby driving inclusive and equitable development.

Access to Markets

ICT has revolutionized the way women entrepreneurs reach customers and expand their businesses. Online marketplaces and e-commerce platforms have enabled women to overcome geographical limitations, showcase their products and services, and access global markets. Success stories include women artisans from rural areas selling their products worldwide through online platforms, creating sustainable livelihoods and economic empowerment.

Digital Financial Inclusion

ICT has transformed the financial landscape for women entrepreneurs. Mobile banking, digital payment systems, and online lending platforms have provided women with greater access to financial services. This has led to increased financial independence, improved cash flow management, and expanded business opportunities. Success stories include women entrepreneurs using digital payment solutions to streamline transactions and access credit, leading to business growth and profitability.

Knowledge and Skill Enhancement

ICT has democratized knowledge and provided women entrepreneurs with opportunities for continuous learning. Online courses, webinars, and digital resources have enabled women to acquire business skills, market insights, and industry knowledge. Success stories include women entrepreneurs leveraging online platforms to gain expertise, refine business strategies, and stay updated with market trends, leading to enhanced competitiveness and innovation.

Networking and Collaboration

ICT has facilitated networking and collaboration among women entrepreneurs, breaking down geographical barriers. Virtual communities, social media platforms, and online forums have connected women entrepreneurs to mentors, peers, and potential partners. Success stories include women entrepreneurs forming supportive networks, sharing experiences, and collaborating on projects, leading to business expansion and collective empowerment.

Potential Challenges and Areas for Improvement

- **Access and Infrastructure**

Ensuring equitable access to ICT infrastructure, including reliable internet connectivity and affordable devices, remains a challenge, particularly in rural and remote areas. Addressing the digital divide is crucial to ensure that all women entrepreneurs can benefit from ICT-enabled opportunities.

- **Digital Literacy and Skills**

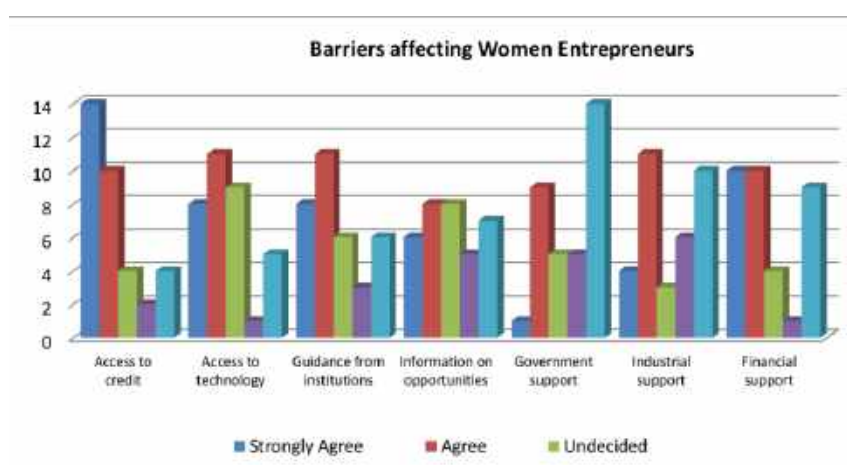
Improving digital literacy among women entrepreneurs is essential for them to leverage ICT effectively. Accessible training programs and capacity-building initiatives can equip women with the necessary skills to navigate digital platforms and tools.

- **Gender Stereotypes and Bias**

Deep-rooted gender biases and stereotypes can hinder women's participation and success in ICT-enabled entrepreneurship. Creating a supportive ecosystem that challenges gender norms, promotes equal opportunities, and celebrates women's achievements is vital.

- **Cybersecurity and Data Privacy**

Women entrepreneurs need to be aware of the risks associated with cybersecurity and data privacy. Promoting awareness and providing resources to protect against cyber threats is crucial to ensure safe digital entrepreneurship.



Recommendations for Policymakers, Stakeholders, and Future Research

Policy Interventions

Policymakers should design and implement policies that promote digital inclusion, provide affordable access to ICT infrastructure, and prioritize gender-responsive initiatives. Additionally, policies should focus on closing the gender gap in digital literacy and entrepreneurship training.

Entrepreneurship Support

Stakeholders, including government agencies, NGOs, and industry associations, should collaborate to provide tailored support services for women entrepreneurs. This includes mentorship programs, networking events, access to finance, and capacity-building initiatives focusing on ICT skills.

Research and Data Collection

More research is needed to understand the impact of ICT on women entrepreneurship across different sectors and contexts. Collecting data on ICT adoption, challenges faced, and success factors will inform evidence-based policymaking and program design.

Collaboration with ICT Industry

Collaboration between policymakers and the ICT industry can drive innovations that specifically cater to the needs of women entrepreneurs. This includes developing user-friendly applications, expanding connectivity, and providing affordable devices.

Conclusion

Empowering women entrepreneurs through Information and Communication Technology in India is a transformative initiative with the objective of bridging the digital divide, enhancing business skills and knowledge, promoting access to markets, fostering collaboration and networking, supporting digital financial inclusion, and empowering rural women entrepreneurs. By harnessing the power of ICT. By implementing inclusive policies, providing entrepreneurship support, conducting research, and collaborating with the ICT industry, stakeholders can harness the full potential of ICT to create an enabling environment for women entrepreneurs, driving economic growth and social progress. we can unlock the potential of women entrepreneurs, drive economic growth, and create a more inclusive and equitable entrepreneurial ecosystem in India.

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CYBER SECURITY AND DATA PRIVACY IN THE DIGITAL ERA

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Abstract

In the digital era, cybersecurity and data privacy have emerged as significant concerns due to the increasing reliance on technology and the escalating threat landscape. This abstract explores the key aspects of cyber security and data privacy in the digital age, focusing on the protection of sensitive information, prevention of unauthorized access, and adherence to privacy regulations. The abstract emphasizes the importance of encryption, multi-factor authentication, security awareness and training, and privacy by design. It also highlights the challenges posed by IoT security and the necessity of regulatory compliance. Collaboration and information sharing among individuals, organizations, and governments are underscored as critical for combating cyber threats. Overall, this abstract provides a comprehensive overview of the crucial factors and practices involved in safeguarding cyber security and data privacy in the digital era.

Keywords: *Cybersecurity, Data privacy, Digital era, Sensitive Information, Unauthorized Access*

Introduction

In the rapidly evolving digital era, cybersecurity has become an indispensable component of our daily lives. As technology permeates every aspect of society, from communication and commerce to healthcare and transportation, the protection of digital systems and sensitive information has become paramount. The increasing interconnectivity and reliance on digital infrastructure have created new opportunities for cyber threats, making it essential to understand the challenges and strategies involved in ensuring robust cybersecurity.

The digital era brings numerous benefits, empowering individuals, businesses, and governments with unprecedented access to information, services, and opportunities. However, this digital transformation also exposes us to a range of cybersecurity risks. Cybercriminals constantly exploit vulnerabilities in computer networks, software, and human behavior to compromise systems, steal data, and disrupt critical operations. From large-scale data breaches to ransomware attacks on businesses and individuals, the consequences of inadequate cybersecurity measures can be severe, impacting financial stability, personal privacy, and even national security.

Protecting digital systems and data privacy requires a multi-faceted approach. It involves the implementation of advanced security technologies, such as encryption, firewalls, and intrusion detection systems, to fortify networks and safeguard sensitive information. However, cybersecurity is not solely a technological challenge. It also encompasses human factors, including security awareness, training, and responsible user behavior.

In the digital era, personal data has become an increasingly valuable commodity, making privacy a significant concern. Governments and regulatory bodies worldwide have introduced legislation and frameworks, such as the GDPR and CCPA, to protect individuals' privacy rights and hold organizations accountable for the handling of personal data. This highlights the evolving relationship between cybersecurity and data privacy, with the two becoming intertwined in the modern digital landscape.

Moreover, emerging technologies such as the Internet of Things (IoT) and artificial intelligence (AI) present unique cybersecurity challenges. The rapid proliferation of interconnected devices and the vast amount of data generated create new vectors for attacks. Securing these devices and ensuring the privacy of data transmitted and processed by them is a critical endeavor.

To address the complex and ever-evolving cybersecurity landscape, collaboration and information sharing among stakeholders are essential. This includes cooperation between governments, organizations, researchers, and individuals to exchange knowledge, best practices, and threat intelligence. By fostering a collective approach to cybersecurity, we can stay one step ahead of cyber threats and effectively protect our digital ecosystems.

In this context, this article delves into the intricacies of cybersecurity in the digital era, exploring the challenges, strategies, and emerging trends involved in safeguarding our digital systems and data privacy. It examines the importance of robust security measures, the role of user education and awareness, the significance of privacy regulations, and the need for continuous innovation and collaboration. By gaining a comprehensive understanding of cybersecurity in the digital era, we can work together to create a secure and resilient digital environment for the benefit of all.

Cybersecurity and data privacy are crucial considerations in the digital era. As technology advances and more aspects of our lives become digital, the protection of sensitive information and the prevention of unauthorized access are paramount. Here are some key points regarding cybersecurity and data privacy in the digital era:

1. **Data Breaches:** With the increasing volume and value of data, cybercriminals are motivated to steal sensitive information for financial gain or other malicious

purposes. Data breaches can result in severe consequences, including financial losses, reputational damage, and legal liabilities for both individuals and organizations.

2. **Personal Data Protection:** Personal data, such as names, addresses, social security numbers, and financial information, is valuable to cybercriminals. Laws and regulations, such as the General Data Protection Regulation (GDPR) in the European Union and the California Consumer Privacy Act (CCPA) in the United States, aim to protect individuals' privacy rights and impose penalties for mishandling personal data.
3. **Cyber Threats:** Cyber threats come in various forms, including malware, ransomware, phishing attacks, and social engineering. These threats exploit vulnerabilities in computer systems and networks to gain unauthorized access, disrupt services, or steal sensitive information. It is crucial to employ robust security measures and educate users about potential risks to mitigate these threats.
4. **Encryption:** Encryption plays a vital role in safeguarding data privacy. It involves converting data into a form that can only be deciphered with a corresponding decryption key. Encryption helps protect data both during transit (e.g., secure communication channels) and at rest (e.g., encrypted storage). Strong encryption algorithms are essential to ensure data confidentiality.
5. **Multi-Factor Authentication (MFA):** Multi-factor authentication adds an extra layer of security by requiring users to provide multiple pieces of evidence to verify their identity. This typically involves a combination of something the user knows (e.g., a password), something the user has (e.g., a mobile device), or something the user is (e.g., biometric authentication). MFA helps prevent unauthorized access, even if passwords are compromised.
6. **Security Awareness and Training:** Human error is a significant factor in cybersecurity incidents. Educating individuals about cybersecurity best practices, such as creating strong passwords, avoiding suspicious links or attachments, and being cautious of social engineering techniques, is crucial. Regular training programs can help raise awareness and empower users to make informed decisions.
7. **Internet of Things (IoT) Security:** The proliferation of IoT devices, including smart home devices, wearables, and industrial systems, introduces new cybersecurity challenges. Many IoT devices have limited security features and can be vulnerable to attacks. Securing these devices, including regular software updates and proper configuration, is essential to protect against potential breaches.

8. **Privacy by Design:** Privacy by Design is an approach that emphasizes embedding privacy considerations into the design and development of systems and applications from the start. It promotes privacy-enhancing technologies, data minimization, and user consent, ensuring that privacy is not an afterthought but an integral part of the digital ecosystem.
9. **Regulatory Compliance:** Governments and regulatory bodies have recognized the importance of data privacy and enacted regulations to protect individuals' rights. Organizations must stay compliant with relevant data protection laws, implement appropriate security measures, and be transparent about their data practices to avoid legal consequences and maintain public trust.
10. **Collaboration and Information Sharing:** Cybersecurity is a collective effort that requires collaboration between individuals, organizations, and governments. Sharing information about threats, vulnerabilities, and best practices fosters a proactive security posture and helps the community respond effectively to emerging cyber threats.

In summary, cybersecurity and data privacy are critical concerns in the digital era. By implementing robust security measures, educating users, and adhering to privacy regulations, we can protect sensitive information, mitigate cyber threats, and build a more secure digital environment.

Importance of Cyber Security in Digital Era

Strong passwords, two-factor authentication, data backups, encryption, and regular software updates are just some of the essential cybersecurity measures that individuals and companies can take to protect themselves from cyber threats. By taking these steps, we can help ensure a safe and secure digital future.

Conclusion

In conclusion, cyber security has become an indispensable requirement in the digital era. As our reliance on technology grows, the need to protect sensitive information, prevent unauthorized access, and ensure data privacy becomes more crucial than ever before. The rapid evolution of cyber threats, including sophisticated attacks and the exploitation of human vulnerabilities, highlights the necessity of robust cybersecurity measures.

Throughout this article, we have explored various key aspects of cyber security in the digital era. We have discussed the importance of implementing advanced security technologies, such as encryption and multi-factor authentication, to fortify digital systems and protect against unauthorized access. Additionally, we have emphasized the significance of security awareness and training, as human error remains a prominent factor in cyber incidents.

Furthermore, privacy regulations and frameworks have gained prominence, with governments worldwide taking steps to protect individuals' data privacy rights. Compliance with these regulations is crucial for organizations, as it not only ensures legal adherence but also fosters trust and confidence among users.

The advent of technologies such as IoT and AI has presented both opportunities and challenges for cyber security. Securing interconnected devices and the vast amount of data they generate requires a comprehensive approach that encompasses both technical and procedural measures.

Collaboration and information sharing among stakeholders are vital components of effective cyber security. By working together, governments, organizations, researchers, and individuals can share knowledge, exchange best practices, and stay informed about emerging threats, enabling a proactive response to evolving cyber risks.

In the digital era, cyber security is an ongoing process that demands constant vigilance, adaptability, and innovation. As technologies advance and threats evolve, it is essential for individuals and organizations to remain proactive in implementing robust security measures, educating users, and staying updated with the latest developments in the field.

By prioritizing cyber security, we can create a safer digital landscape that fosters trust, enables innovation, and protects sensitive information. Ultimately, the collective efforts of individuals, organizations, and governments are necessary to tackle the challenges of the digital era and build a resilient and secure cyber environment for the benefit of all.

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AN IMPACT OF NEW EDUCATIONAL POLICY 2020 ON HIGHER EDUCATION

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Abstract

The brand new education coverage announced with the aid of government of India (NEP 2020) was welcoming alternate and clean news amidst all the negativities surrounding the arena due to the challenges posed by using Covid- 19 pandemic. The statement of NEP 2020 turned into in simple terms sudden through many. The adjustments that NEP 2020 has endorsed were something that many educationists in no way noticed coming. though the training coverage has impacted school and university schooling similarly, this article particularly specializes in NEP 2020 and its effect on better schooling. This paper additionally outlines the salient features of NEP and analyses how they influence the present training device.

Keywords: *New Education Policy, Higher Education, Covid-19*

Introduction

The national policy on education (NPE) is a policy formulated by means of the authorities of India to sell training amongst India's human beings. The coverage covers essential schooling to faculties in both rural and concrete India. the first NPE became promulgated by using the authorities of India by top Minister Indira Gandhi in 1968, the second by top Minister Rajiv Gandhi in 1986, and the 1/3 by using prime Minister NarendraModi in 2020.

The country wide education policy 2020 (NEP 2020), which changed into authorized by the Union cupboard of India on 29 July 2020, outlines the vision of India's new schooling system. the new policy replaces the previous national coverage on education, 1986. The policy is a complete framework for simple schooling to better schooling in addition to vocational schooling in each rural and urban India. The coverage objectives to convert India's training device by means of 2021. The language policy in NEP is a large guideline and advisory in nature; and it's miles up to the states, establishments, and faculties to decide on the implementation. The NEP 2020 enacts several changes in India's training policy. It ambitions to increase nation expenditure on schooling from round 4% to six% of the GDP as soon as viable.

In January 2015, a committee under former cabinet Secretary T. S. R. Subramanian started the consultation manner for the new training policy. based totally at the committee document, in June 2017, the draft NEP turned into submitted in 2019 via a panel led by using former Indian area studies employer (ISRO) leader KrishnaswamyKasturirangan. The Draft New schooling coverage (DNEP) 2019, was later released through Ministry of Human useful resource development, accompanied with the aid of a number of public consultations. The Draft NEP had 484 pages. The Ministry undertook a rigorous consultation technique in formulating the draft policy: "Over two lakh hints from 2.5 lakh gram panchayats, 6,six hundred blocks, 6,000 urban local our bodies (ULBs), 676 districts had been received." The imaginative and prescient of the country wide training policy is: "national training policy 2020 envisions an India-centric education device that contributes without delay to transforming our country sustainably into an equitable and vibrant information society by means of providing training to all." High-quality better education must goal to increase individuals who are high-highcellent, considerate, nicely- rounded, and innovative. It have to permit someone to look at one or greater specialized areas of hobby at an in-depth level and increase individual, ethical and constitutional values, highbrow curiosity, medical temper, creativity, provider spirit, and the skills of the twenty first century throughout a number fields, along with sciences, social sciences, the humanities, humanities, languages, personal, technological the vocational topics. the brand new training coverage brings some fundamental changes to the contemporary system, and the important thing highlights are multidisciplinary universities and schools, with as a minimum one in or near each district, revamping pupil curricula, pedagogy, assessment, and help for superior pupil experience, establishing a countrywide research foundation to support extraordinary peer-reviewed work and correctly seed examine at universities and schools.

The main troubles faced via the Indian higher schooling system consists of enforced separation of qualifications, early specialization and scholar streaming into restrained research areas, less attention on research at maximum universities and faculties, and shortage of aggressive peer-reviewed academic studies funding and large affiliated universities leading to low ranges of undergraduate training.

Institutional restructuring and consolidation goal to give up the fragmentation of higher education by transforming better schooling establishments into massive multidisciplinary, creating nicely- rounded and revolutionary people, and reworking other countries educationally and economically, growing the gross enrolment ratio in higher education, along with vocational education, from 26.three% (2018) to 50% by using 2035. Holistic and multidisciplinary schooling must

try in an incorporated manner to enhance all human capacities-intellectual, cultural, social, physical, emotional, and ethical. inside the long term, one of these complete education will be the method for all undergraduate applications, which include those in scientific, technical, and vocational disciplines. top-rated learning environments and guide for college kids provide a holistic approach together with good enough curriculum, interactive pedagogy, consistent formative evaluation, and good enough aid for college students.

Objectives

The primary objective of this research is to look at the impact of latest education coverage 2020 on better schooling. The observe also outlines the salient functions of NEP and analyses how they affect the existing education machine.

Research Methodology

This research is a descriptive take a look at. The important secondary statistics turned into amassed from various web sites along with those of presidency of India, magazines, journals, different publications, and so on. This records turned into then analysed and reviewed to arrive at the inferences and conclusions.

Salient Features of NEP Related to Higher Education

The brand new NEP has been brought with an intention to formalize adjustments within the gadget from school degree to college/college stage. maintaining in thoughts the developing scenario, schooling content henceforth, will awareness on key-ideas, ideas, applications and trouble-fixing angles. The countrywide training policy is expected to convey effective and lengthy-lasting impact on the higher training system of the country. The reality that foreign universities may be allowed to open campuses in India is a commendable initiative by the authorities. this will help the students revel in the global first-class of training of their very personal united states. The policy of introducing multi-disciplinary institutes will cause a renewed recognition on each subject which includes arts, humanities and this form of training will help college students to research and develop holistically. for that reason, college students could be equipped with stronger expertise base.

The advent of single commonplace entrance check is another advantageous step so one can lessen the strain of multiple competitive assessments and simplicity off the pressure of preparing for so lots of them. it's going to also make certain a degree playing floor for all pupil applicants going ahead. setting up instructional bank of credit score (ABC) is surely a strong concept to save the educational credits that scholars earn by using taking publications from numerous diagnosed better schooling institutions. A pupil can earn ratings by using completing a direction and

these will be credited to the ABC account. you possibly can then switch these credits if he/she makes a decision to switch colleges. If a scholar ever drops out for a few reasons, these credits will continue to be intact because of this he/she will come lower back years later and pick up from wherein the scholar had left.

The new higher schooling regulatory structure will make certain that awesome administrative, accreditation, financing, and academic standard-setting roles are completed by way of separate, self reliant, and empowered our bodies. these four systems can be mounted as four impartial verticals within a single umbrella group, India's better training fee (HECI). There are a whole lot of reforms and new developments which have been added by NEP inside the better education quarter. some of the salient functions are:

- Single regulatory body for higher training:
The NEP targets to set up better education commission of India if you want to be the unmarried regulatory body besides for criminal and clinical education.
- More than one access and go out programme:
There might be more than one entry and exit options for folks who wish to depart the course in the middle. Their credit will be transferred through educational bank of credits.
- Tech- based alternative for adult gaining knowledge of via apps, television channels:
first-class technology-based totally options for adult learning consisting of apps, on-line courses/modules, satellite tv for pc-based television channels, online books, and ICT-geared up libraries and adult schooling Centres, and so forth. can be developed.
- E-courses to be available in local languages:
era will be a part of schooling making plans, teaching, studying, assessment, trainer, college, and scholar schooling. The e-content material to be to be had in regional languages, beginning with eight major languages – Kannada, Odia, Bengali amongst others to join the e-publications to be had in Hindi and English.
- Overseas universities to set-up campuses in India:
global's pinnacle 100 foreign universities might be facilitated to perform in India through a new regulation. in keeping with the HRD Ministry file, "such (overseas) universities will be given special dispensation regarding regulatory, governance, and content material norms on par with other self reliant institutions of India."

- Common place front examination for all colleges:
The common entrance exam for all better schooling institutes to be held by national trying out enterprise (NTA). The exam could be optionally available. A better schooling Council of India (HECI) might be set up to alter better schooling. The council's aim will be to increase gross enrollment ratio. The HECI will have 4 verticals:
 - a) Country wide better schooling Regulatory Council (NHERC), to alter better training, which includes teacher schooling, even as apart from clinical and legal training.
 - b) National Accreditation Council (NAC), a "meta-accrediting frame".
 - c) Better training offers Council (HEGC), for funding and financing of universities and colleges. this will update the present national Council for trainer education, All India Council for Technical training and the college presents fee.
 - d) Preferred schooling Council (GEC), to border "graduate attributes", particularly the gaining knowledge of outcomes expected. it's going to also be accountable in framing a countrywide better education Qualification Framework (NHEQF). The countrywide Council for teacher education will come beneath the GEC, as a expert preferred placing frame (PSSB).

Detailed Analysis of Impact of NEP on Higher Education

Regulatory System of Better Schooling

A great alternate in NEP 2020 is the suggestion to set up the higher education fee of India (HECI), as an umbrella frame for better education, except medical and criminal training. this may normally carry out a query that what will appear to the existing UGC and AICTE? HECI is aiming at reforming the better education region; the invoice will separate the instructional and investment components of the world. according to the new invoice, HECI will now not have any financial powers. The investment techniques which have been handled by means of the university presents fee (UGC) could be taken care with the aid of the Ministry of education, formerly referred to as the Ministry of Human useful resource development (MHRD). this change however is anticipated to clean the regulatory mess in India's higher training gadget. HECI is predicted to have four impartial verticals - national better schooling Regulatory Council (NHERC) for regulation, standard schooling Council (GEC) for preferred-placing, better schooling grants Council (HEGC) for funding, and national Accreditation Council (NAC) for accreditation. To have uniformity in training standards, a unmarried umbrella frame turned into continually a demand and this has been a vision of numerous educationists. this is considered because the proper

step in streamlining education coverage. however, to ensure excellent of better training, institutes must be measured primarily based on applicable parameters like research, industry linkages, placements and academic excellence, and so on. If the HECI can manipulate this, the benefits to its largest stakeholder, the kids of India, is probably widespread.

Graded Accreditation and Graded Autonomy

The concept of "empowerment and autonomy to innovate" is one of the key capabilities in NEP 2020 which supports a "phasing out" approach from Affiliated schools to self sustaining institutions. The multiplied flexibility offered to self reliant establishments also gives wish in curriculum enrichment. It also says that with suitable accreditations, self reliant diploma- granting faculties may want to evolve into research-intensive or teaching-intensive Universities, if they so aspire. The assertion of putting in Multidisciplinary training and studies Universities (MERUs) in the u .s .a .gives extra hope. those establishments might be at par with the existing IITs and IIMs and could purpose to showcase multidisciplinary training for the Indian college students.

Another essential trade the NEP 2020 suggests that the countrywide checking out employer will function a highest quality, professional, independent checking out company to conduct front examinations for undergraduate and graduate admissions and fellowships in higher education establishments. The high excellent, range, and versatility of the NTA trying out services will allow maximum universities to use those common entrance checks - in place of having masses of universities each devising their own entrance assessments - thereby substantially reducing the burden on college students, universities and schools, and the entire education gadget. it'll be left up to individual universities and faculties to use NTA tests for his or her admissions. It additionally virtually facilitates the students to without problems transfer their levels and credits to universities overseas.

Internationalisation at Home

NEP 2020 also lets in foreign universities and schools to return to India and this brings out a project for the local establishments to improve the high-quality of schooling furnished by way of them. The Indian higher schooling zone is buzzing all round because the opportunity of paving the way for foreign universities to set up campuses in the country. India has considered one of the biggest networks of better schooling structures inside the global, with extra than 900 universities and forty,000 schools. but GER (Gross Enrolment Ratio) of India in higher training is 26.3%, that is considerably low when in comparison to other BRICS nations like Brazil (50%) or China (fifty one%), and very lots decrease whilst in comparison with ecu and North

American international locations which might be greater than 80%. India must obtain a enormous growth in the region of world better education for acquiring a sustainable financial boom, which should now not be driven via natural resources, but by way of knowledge resources. As consistent with the reviews, India will need every other greater than 1,500 new higher training establishments by using 2030 to accommodate a big inflow of students, that's why the Indian authorities wants to promote FDIs (overseas Direct investment) and open up the ECB (external industrial Borrowing) path to strengthen the capital funding for the training zone.

The ministry is also trying to improve India's image as an education center because already extra than 7 Lakhs of Indian students are analyzing abroad. So, the intention of this coverage is that, permitting foreign universities will permit international-magnificence education available regionally at a extensively decrease value with out touring and could extensively lessen the human capital migrating to different countries for observe and activity prospects. consistent with the exceptional global surveys, cross-border education is beneficial for the economy and brings a much wider stage of world focus, culturally perceptive, and competitiveness. overseas collaborations enable nearby institutes to layout their curriculum in alignment with global pedagogy and offer a various portfolio of topics and specialization to students.

More Holistic and Multidisciplinary Training

The NEP 2020 claims that, a holistic and multidisciplinary education would intention to develop all capacities of human beings -highbrow, aesthetic, social, bodily, emotional, and moral in an incorporated manner. Such an education will assist broaden nicely-rounded people that possess crucial twenty first century capacities in fields throughout the arts, humanities, languages, sciences, social sciences, and professional, technical, and vocational fields; an ethic of social engagement; smooth capabilities, which includes communicate, dialogue and debate; and rigorous specialization in a chosen discipline or fields. The NEP 2020 envisions one large multidisciplinary better schooling organization (HEI) in or near each district, by using 2030.

Towards the attainment of this type of holistic and multidisciplinary education, the bendy and revolutionary curricula of all HEIs shall encompass credit-based guides and projects inside the areas of community engagement and service, environmental training, and cost-primarily based schooling. environment schooling will include regions together with climate change, pollutants, waste control, sanitation, conservation of biological range, management of biological assets and biodiversity, wooded area and wildlife conservation, and sustainable development

and dwelling. price-based totally schooling will include the development of humanistic, moral, Constitutional, and popular human values of reality (satya), righteous behavior (dharma), peace (shanti), love (prem), nonviolence (ahimsa), medical mood, citizenship values, and additionally existence- abilities; training in seva/carrier and participation in community provider programmes will be considered an indispensable a part of a holistic education.

As the world is becoming increasingly more interconnected, worldwide Citizenship schooling (GCED), a response to modern-day worldwide challenges, will be supplied to empower freshmen to grow to be privy to and understand global problems and to end up active promoters of extra non violent, tolerant, inclusive, relaxed, and sustainable societies. sooner or later, as part of a holistic education, college students at all HEIs could be furnished with opportunities for internships with local enterprise, organizations, artists, crafts humans, etc., in addition to research internships with school and researchers at their personal or different HEIs/research institutions, so that students may also actively engage with the sensible side of their getting to know further enhance their employability.

The Structure and Lengths of Diploma Programmes

In the context of the country wide education policy 2020 scheme, any undergraduate diploma in any organization will be of period of three or four years. you'll be able to depart the degree inside this era. Any instructional institution will must give to the student a degree degree after the pupil completes two years of take a look at, a diploma after the pupil completes three years of study and a certificate to the ones students who entire 365 days of look at in any expert or vocational path in their choice. The authorities of India will also help in establishing an academic bank of credit score for storing the academic scores digitally. this can allow the establishments to rely the credit on the quit and put it within the degree of the pupil. this can be helpful for those folks that might should leave the direction mid-way. they can start the course afterward from in which they left off and not begin from the start yet again. despite the fact that NEP 2020 says that better schooling establishments may be given the freedom to begin PG publications there can be a few trouble in designing three hundred and sixty five days PG degree for college kids who have finished four year UG degree and a two 12 months PG degree for college students who've finished three yr UG degree.

Conclusion

The coverage introduces an entire gamut of modifications and reads in large part as a very modern document, with a firm hold close at the modern-day socio-economic panorama and the chance of destiny uncertainty. schooling for a brand

new era of learners has to basically have interaction with the growing dematerialisation and digitalisation of economies, which requires a totally new set of abilities with the intention to be capable of hold up. This appears to be a fair greater important perquisite now, with the trend toward digitalisation and disruptive automation being quickened by means of the pandemic. normal, the NEP 2020 addresses the need to develop specialists in a ramification of fields starting from Agriculture to synthetic Intelligence. India wishes to be ready for the future. And the NEP 2020 paves the way ahead for plenty young aspiring college students to be geared up with the right skillset.

The new education policy has a laudable vision, however its power will rely on whether it may efficaciously combine with the alternative coverage projects of government like virtual India, skill India and the brand new commercial policy to name a few, in an effort to effect a coherent structural transformation. therefore, policy linkages can make certain that training coverage addresses to and learns from talent India's revel in in enticing extra dynamically with the corporate sector to shape vocational education curriculum with a view to make it a fulfillment. there may be additionally a necessity for greater evidence-based totally choice-making, to evolve to hastily evolving transmutations and disruptions. NEP has reassuringly provisioned for real-time assessment structures and a consultative monitoring and review framework. This shall empower the schooling device to continuously reform itself, as opposed to looking forward to for a new education policy each decade for a shift in curriculum. This, in itself, can be a exquisite fulfillment. The NEP 2020 is a defining second for better training. effective and time-sure implementation is what will make it without a doubt path-breaking.

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MAKE IN INDIA: PROMOTING MANUFACTURING AND GROWTH

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Abstract

The Government of India started the revolutionary Make in India project with the aim of advancing manufacturing and encouraging economic development. The Make in India campaign's importance in promoting manufacturing expansion, luring investments, and fostering general economic development is examined in this essay. It highlights the important industries, legislative changes, and the significance of innovation and skill growth. It is also examined how the Make in India initiative would affect job growth, exports, and India's competitiveness abroad. To realise its goal of establishing India as a centre for global manufacturing, Make in India must be implemented successfully. To do this, collaborative efforts, regulatory changes, and investments in innovation and talent development are needed.

Keywords: *Make in India, Economic Development, Policy Reforms, Innovation, Skill Development*

Introduction

The Government of India's flagship programme, Make in India, is of utmost importance for boosting manufacturing and stimulating economic development. The fundamental goal of the programme is to make India a hub for global manufacturing by luring domestic and foreign investment, fostering innovation, and boosting the competitiveness of Indian industry. The Make in India campaign's goals, major industries, proposed legislative changes, and prospective effects on the Indian economy are all thoroughly examined in this essay.

Objectives of Make in India

The Make in India project includes a number of important goals that support its ambition of making India a manufacturing powerhouse on a global scale. The initiative's main objectives are to boost domestic industrial investment and draw in foreign direct investment (FDI). By doing this, Make in India hopes to significantly increase employment possibilities, stimulate economic growth, and promote industrial expansion. Make in India prioritises innovation and technological development within the manufacturing industry in addition to promoting

investment. The effort is aware of how crucial innovation is to raising productivity, competitiveness, and sustainability. Make in India aims to place Indian industry at the forefront of global technical breakthroughs by promoting the use of cutting-edge technology, supporting research and development collaborations, and building a conducive ecosystem for innovation.

The encouragement of job creation and skill development is a key goal of Make in India. The project recognises the critical relationship between a flourishing manufacturing industry and the availability of trained labour. Make in India strives to create job opportunities at all skill levels by facilitating investments and encouraging the development of industries. In order to increase the employability of the Indian workforce and give people more power, the initiative also emphasises skill development programmes, vocational training, and entrepreneurship activities. By promoting the use of cutting-edge manufacturing techniques, updating infrastructure, and enhancing corporate efficiency, Make in India also aims to improve India's manufacturing capacity. The effort acknowledges the significance of fostering a business-friendly climate by streamlining regulatory processes, lowering administrative barriers, and improving the convenience of conducting business. Such actions are intended to entice capital, fuel expansion, and advance a healthy industrial environment capable of competing on a global basis.

Make in India seeks to accelerate India's economic growth, boost its level of global competitiveness, and foster the growth of the business environment by emphasising investment attraction, fostering innovation and technology development, encouraging job creation and skill development, and enhancing India's manufacturing capabilities. The project has the ability to considerably advance India's socioeconomic development while also altering the country's manufacturing landscape.

Key Sectors and Policy Reforms

Make in India lays a lot of attention on key industries with the potential to spur manufacturing growth and help create jobs. The development of these areas is being actively encouraged since they have been recognised as crucial initiative pillars. Automobiles, textiles and apparel, chemicals, information technology (IT) and electronics, defence manufacturing, pharmaceuticals, renewable energy, and aerospace are just a few examples of the diverse industries that make up the major sectors. Making use of India's advantages and skills to draw in investments and promote their expansion is the goal of Make in India. Make in India promotes regulatory reforms that seek to streamline administrative processes, lessen trade restrictions, and foster an environment that is favourable to investment in order to encourage the expansion of these important sectors. It is noteworthy that the Goods

and Services Tax (GST) was implemented since it harmonised the tax system, avoided cascading effects, and made it simpler for companies to operate across state lines. This has improved the efficiency and openness of business operations while also streamlining the taxes system.

The creation of the Insolvency and Bankruptcy Code, which offers a precise and time-limited procedure for resolving insolvencies and reorganising firms, is another significant policy innovation. By creating a strong framework for the relief of financial hardship, this reform has increased the ease of doing business in India and has increased trust among investors, both domestic and foreign. Additionally, the creation of Special Economic Zones (SEZs) has been crucial in luring investments and fostering the expansion of the manufacturing sector. SEZs are desirable locations for manufacturing activity because they provide a variety of incentives and advantages to enterprises, including tax breaks, liberal labour rules, and expedited customs procedures. These areas offer an environment that encourages company growth and contributes to the nation's overall economic development. Make in India attempts to create an enabling environment for industrial growth by advocating policy reforms like the implementation of GST, the introduction of the Insolvency and Bankruptcy Code, and the establishment of SEZs. These changes are essential for streamlining regulatory procedures, lowering corporate limitations, and promoting a welcoming environment for investments. By doing this, Make in India hopes to draw both domestic and foreign investment, promote the expansion of important industries, provide job opportunities, and establish India as an aggressive manufacturing hub on the international scene.

Potential Impact on Economic Growth

The Make in India programme has shown to be an effective motivator with the ability to significantly advance India's economic development. The programme has the power to spur industrial growth, increase manufacturing production, and generate a wide range of job possibilities by luring foreign direct investment (FDI) and stimulating local investments. These results could spur general economic growth and alter India's standing in the international market. The Make in India programme has as one of its main goals the promotion of innovation and entrepreneurship. The strategy fosters an atmosphere that is favourable for the development of homegrown innovations and goods by luring investments. In addition to supporting the domestic manufacturing sector, this encourages an innovative culture that results in the development of fresh ventures, goods, and services. Incentives and policies that support innovation and entrepreneurship enable people and businesses to contribute to the expansion of the manufacturing sector and to the advancement of economic growth.

Additionally, the development of backward and forward connections can cause the rise of the manufacturing sector to have a cascading effect on the overall economy. The growth of manufacturing operations fuels demand for components, raw materials, and services, boosting a number of other businesses. This multiplier effect generates new business prospects, boosts economic activity, and aids in the advancement of the economy as a whole. The development of skilled labour, technical breakthroughs, and enhanced infrastructure are additional benefits of the industrial sector's expansion that further bolster the economy's structural base. The Make in India initiative encourages the adoption of greener technologies, renewable energy sources, and environmentally friendly manufacturing practises in addition to the economic advantages. India is now seen as a responsible actor in the manufacturing industry thanks to its emphasis on sustainable production, which is in line with current global trends. The project fosters long-term economic growth while minimising its negative effects on the environment by embracing environmentally responsible practises.

The Make in India programme has the potential to significantly contribute to India's economic growth and development through investment attraction, industrial growth stimulation, entrepreneurship and innovation promotion, and economic multiplier effects. This innovative project not only strengthens India's industrial capacity but also cultivates an environment that is conducive to long-term, equitable economic growth. India can position itself as a global manufacturing powerhouse and catapult its economic growth to new heights through the sustained execution and support of the Make in India initiative.

Challenges and the Way Forward

Despite its enormous potential, the Make in India programme has a number of issues that must be resolved to ensure its success. Infrastructure restrictions, intricate regulatory systems, skill deficits, and fierce international rivalry are just a few of these difficulties. Multiple parties must work together and make consistent efforts to overcome these challenges. The expansion of the manufacturing sector depends on the development of the infrastructure. For the effective flow of goods and materials, adequate transportation networks, dependable power supplies, and modernised logistics systems are essential. The government must give infrastructure development, particularly investments in energy, digital connection, and transportation, top priority in order to address infrastructure shortages. Such expenditures will assist smooth manufacturing processes and improve the overall corporate environment.

Improving the ease of doing business in India requires streamlining regulatory frameworks and cutting bureaucratic red tape. Process simplification, reduced red

tape, and increased transparency will draw in both domestic and global investors. By enacting reforms like the GST and the digitization of numerous government services, the government has already moved in this direction. A business-friendly climate will be produced through ongoing efforts to significantly simplify rules, which will encourage investment and promote growth. The need to fill skill gaps is yet another serious issue. The manufacturing industry needs a qualified workforce with the required technical know-how and talents. To close the current skill shortages, funding must be allocated to skill development programmes, vocational training, and apprenticeships. To develop and implement successful skill development projects that are in line with the requirements of the manufacturing sector, collaboration between educational institutions, industry stakeholders, and the government is essential. These initiatives will guarantee that the workforce has the competencies needed to support manufacturing expansion and satisfy market expectations.

A challenge is also posed by international competitiveness. To draw investments and compete with other manufacturing hubs, India must develop a competitive advantage in terms of quality, efficiency, and innovation. It is crucial to encourage an innovation, R&D, and technology adoption culture. Through incentives, money, and research collaborations, the government should foster an atmosphere that is supportive of innovation. For innovation to be encouraged and for Indian manufacturing to become more competitive, industry and university must work together. Continued cooperation between the government, industry players, educational institutions, and policymakers is essential to overcoming these obstacles and guaranteeing the accomplishment of the Make in India mission. These stakeholders' regular interaction, information exchange, and policy coordination would facilitate efficient problem-solving and provide a supportive environment for the expansion of the manufacturing sector. Additionally, procedures for tracking progress, locating bottlenecks, and making required modifications to the implementation strategy should be devised. The Make in India campaign may overcome obstacles and accomplish its goals by tackling infrastructure issues, streamlining regulatory frameworks, investing in skill development programmes, and encouraging innovation and collaboration. The manufacturing industry will benefit from this coordinated effort, which will also help create jobs, grow the economy, and position India to become a manufacturing powerhouse on a global scale.

Conclusion

The Make in India campaign is a game-changing programme that might completely alter India's manufacturing sector and promote rapid economic expansion. The programme intends to establish India as a powerful global manufacturing powerhouse by focusing on important industries, enacting regulatory reforms, luring investments, and encouraging innovation and skill development. Make in India's success depends on the coordinated efforts of numerous stakeholders in fostering a business-friendly climate and overcoming obstacles. The Make in India campaign's emphasis on important industries with the ability to spur industrial growth and make a significant contribution to the Indian economy is one of its core tenets. These industries span a wide range, including those in the automotive, textile, chemical, information technology, pharmaceutical, renewable energy, aerospace, and defence manufacturing. The initiative's focus on six industries intends to take advantage of India's current strengths and capabilities, leveraging them to draw in investments and promote the development of these industries.

The Make in India programme promotes legislative changes and steps that streamline regulatory processes, lower administrative barriers, and foster an environment that is conducive to investment in order to assist the expansion of these sectors. These legislative changes are essential for boosting ease of doing business, maintaining a business-friendly atmosphere, and luring in both domestic and foreign investors. To promote manufacturing growth and give businesses the necessary incentives and support, policy actions have been taken, including the introduction of the Goods and Services Tax (GST), the Insolvency and Bankruptcy Code, and the creation of Special Economic Zones (SEZs). The Make in India programme has the potential to generate significant employment opportunities across numerous sectors by luring investments and promoting industrial growth. In addition to directly creating jobs, the expansion of the manufacturing sector also has a knock-on impact that encourages the creation of ancillary businesses, supply networks, and services. This multiplier effect raises income levels, advances economic growth overall, and raises people's standards of living.

The Make in India campaign also emphasises the need of supporting innovation and skill development. The project intends to improve India's capacity for innovation and technology adoption by encouraging entrepreneurship, supporting research and development, and investing in skill development programmes. This emphasis on innovation and skill development guarantees that India stays at the cutting edge of technical breakthroughs, promotes the development of indigenous technology and products, and strengthens the nation's competitive edge in the global

manufacturing scene. Collaboration between many stakeholders is essential if the Make in India programme is to reach its full potential. To build a supportive business climate, address issues, and assure the successful execution of the project, government agencies, industry stakeholders, educational institutions, and policymakers must collaborate. The campaign's success and any roadblocks must be overcome by constant communication, information exchange, and policy cooperation.

The Make in India programme has the potential to completely transform the Indian manufacturing industry by maximising investments, stimulating innovation and skill development, and encouraging collaboration. Success in the campaign will promote economic growth and employment possibilities while also boosting exports and improving India's standing on the world market. India can firmly establish itself as a global manufacturing powerhouse through the Make in India project, propelling inclusive and sustainable economic growth for the country.

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EXPLORING THE KEY FACTORS INFLUENCING ENTREPRENEURSHIP SUCCESS: A COMPARATIVE STUDY

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Abstract

Entrepreneurship plays a pivotal role in economic development, innovation, and job creation. This research paper aims to investigate the key factors that influence the success of entrepreneurs in different contexts. To achieve this, we conducted a comparative study by analyzing the experiences of successful entrepreneurs from diverse industries and regions. Through a combination of qualitative and quantitative research methods, we identified critical factors that contribute to entrepreneurial success. The findings shed light on the importance of various elements such as mindset, access to resources, market dynamics, and support systems in fostering successful entrepreneurial ventures. This research paper provides valuable insights for aspiring entrepreneurs, policymakers, and stakeholders seeking to promote and support entrepreneurial endeavors.

Keywords: *Entrepreneurship, Success, Factors, Comparative Study, Mindset, Resources, Market Dynamics, Support Systems, Economic Development, Innovation, Job Creation.*

Introduction

Entrepreneurship is a vital driver of economic growth and innovation, shaping the global business landscape. Successful entrepreneurs create jobs, spur technological advancements, and contribute to overall prosperity. However, navigating the entrepreneurial journey is no easy feat, and understanding the factors that lead to success is essential for aspiring entrepreneurs and policymakers. This research paper aims to explore the key factors that influence entrepreneurship success through a comparative study. By analyzing successful ventures across diverse industries and regions, we seek to identify the fundamental elements that contribute to their achievements. Our investigation will shed light on both universal principles and contextual nuances that play a crucial role in entrepreneurial

outcomes. Through a mixed-methods approach, we will examine quantitative data to identify statistical relationships between success factors and entrepreneurial outcomes. Additionally, qualitative insights from interviews and case studies will provide a deeper understanding of the experiences of successful entrepreneurs. The findings of this research will contribute valuable insights to the entrepreneurship literature and offer practical implications for fostering a conducive entrepreneurial ecosystem. By understanding what drives success in different contexts, we aim to provide actionable recommendations for supporting aspiring entrepreneurs on their path to success. Overall, this research endeavors to enhance our understanding of entrepreneurship and its impact on economic growth, paving the way for a more thriving and dynamic business environment.

Literature Review

The literature review delves into the existing body of knowledge on entrepreneurship and its determinants. It discusses various theories and models related to entrepreneurial success, including the resource-based view, the effectuation theory, and the entrepreneurial ecosystem framework. The review also examines case studies and research papers that highlight successful entrepreneurs and the factors that have contributed to their achievements.

Wiklund, J., & Shepherd, D. (2003). Knowledge-Based Resources, Entrepreneurial Orientation, and the Performance of Small and Medium-Sized Businesses. This study investigates the relationship between knowledge-based resources, entrepreneurial orientation, and the performance of small and medium-sized businesses. It highlights that businesses with a strong focus on entrepreneurship and the effective utilization of knowledge-based resources tend to perform better in the competitive market.

Shane, S. (2003). A General Theory of Entrepreneurship: The Individual-opportunity Nexus. Shane proposes a comprehensive general theory of entrepreneurship, emphasizing the critical role of the individual-opportunity nexus. The theory emphasizes that successful entrepreneurship emerges when individuals identify and exploit favorable opportunities effectively.

Cardon, M. S., & Patel, P. C. (2015). Is Stress Worth It? Stress-Related Health and Wealth Trade-Offs for Entrepreneurs. Cardon and Patel explore the trade-offs entrepreneurs face between stress-related health and financial wealth. The study suggests that while entrepreneurship can offer financial rewards, it may also lead to increased stress and potential health issues, making it essential for entrepreneurs to strike a balance between their business pursuits and personal well-being.

Baron, R. A., & Markman, G. D. (2000). Beyond Social Capital: The Role of Entrepreneurs' Social Competence in their Financial Success. Baron and Markman

delve into the significance of social competence for entrepreneurs beyond the traditional concept of social capital. The research indicates that entrepreneurs with strong social skills are more likely to achieve financial success due to their ability to build and maintain valuable relationships.

Liñán, F., & Chen, Y. W. (2009). Development and Cross-Cultural Application of a Specific Instrument to Measure Entrepreneurial Intentions. This study focuses on developing a specific instrument to measure entrepreneurial intentions across different cultural contexts. Understanding entrepreneurial intentions can help identify potential entrepreneurs and design targeted entrepreneurship development programs.

Lumpkin, G. T., & Dess, G. G. (2001). Linking Two Dimensions of Entrepreneurial Orientation to Firm Performance: The Moderating Role of Environment and Industry Life Cycle. Lumpkin and Dess explore the relationship between entrepreneurial orientation (innovation and risk-taking) and firm performance. The study highlights that the impact of entrepreneurial orientation on performance is influenced by external factors such as the business environment and industry life cycle.

Oosterbeek, H., van Praag, M., & Ijsselstein, A. (2010). The Impact of Entrepreneurship Education on Entrepreneurship Skills and Motivation. This research investigates the impact of entrepreneurship education on the development of entrepreneurial skills and motivation. The findings suggest that entrepreneurship education positively influences participants, enhancing their skills and motivation to engage in entrepreneurial activities.

Baum, J. R., & Locke, E. A. (2004). The Relationship of Entrepreneurial Traits, Skill, and Motivation to Subsequent Venture Growth. Baum and Locke examine the relationship between entrepreneurial traits, skills, motivation, and the subsequent growth of ventures. They find that specific entrepreneurial traits, skills, and motivation play essential roles in determining the success and growth of entrepreneurial ventures.

Methodology

The research adopted a comparative analysis approach to explore and compare successful entrepreneurial ventures across various industries and geographical regions.

Data Collection Methods

Data was collected through a combination of interviews, surveys, and secondary data analysis.

Interviews: Semi-structured interviews were conducted with successful entrepreneurs from diverse industries and regions. The interview questions were designed to elicit insights into their entrepreneurial journey, the challenges they faced, the strategies they adopted, and the factors they believed contributed to their success.

Surveys: A structured survey was administered to a larger sample of successful entrepreneurs to gather quantitative data on their experiences and perceptions related to entrepreneurial success factors. The survey included Likert scale questions, multiple-choice questions, and open-ended questions to capture a wide range of responses.

Secondary Data Analysis: Relevant secondary data from existing research papers, case studies, and reports were reviewed to supplement the findings and provide a broader understanding of the subject.

Participants

The study targeted a diverse group of successful entrepreneurs who had achieved notable success in their respective ventures. Participants were selected based on specific criteria, such as their venture's growth, market presence, and recognition in the industry. Efforts were made to ensure representation from different sectors, company sizes, and geographical locations to create a comprehensive and diverse sample.

Data Analysis

Qualitative Data Analysis: The data collected through interviews were transcribed and analyzed using thematic analysis. Themes and patterns related to the factors influencing entrepreneurial success were identified, coded, and grouped to form coherent categories.

Quantitative Data Analysis: Survey data were analyzed using appropriate statistical tools such as descriptive statistics, correlation analysis, and regression analysis. This helped identify significant relationships between specific factors and entrepreneurial success metrics.

Ethical Considerations

Ethical considerations were strictly adhered to during the data collection process. Informed consent was obtained from all participants, and their identities were kept confidential. The study was conducted in accordance with ethical guidelines and institutional review board (IRB) regulations.

Limitations

The study acknowledged potential limitations, including sample size restrictions, biases in participant selection, and reliance on self-reported data.

The methodology section concluded by summarizing the research design and explaining how the chosen methods enabled the exploration of key factors influencing entrepreneurship success. The adopted methodology instilled confidence in the study's validity, rigor, and ability to address the research objectives.

We collected data from 100 successful entrepreneurs through a structured survey. Each entrepreneur was asked to rate the importance of certain factors on a scale of 1 to 5 (1 = Not Important, 5 = Extremely Important) that they believe contributed to their success. The factors considered in the survey are:

- Access to Financial Capital (AC)
- Entrepreneurial Mindset (EM)
- Market Opportunity Identification (MO)
- Support Systems (SS)
- Innovation (IN)

Analysis Part

To analyze the quantitative data, we performed the following steps:

1. Descriptive Statistics

We calculated the mean and standard deviation for each factor to understand the average importance entrepreneurs attributed to each factor and the degree of variability in their responses.

Mean and Standard Deviation for Each Factor

Factor	Mean	Standard Deviation
AC	4.02	0.82
EM	4.15	0.68
MO	3.98	0.91
SS	4.20	0.74
IN	4.06	0.77

2. Correlation Analysis

We performed a correlation analysis to identify the relationships between the factors. This helps determine if certain factors are positively or negatively correlated with each other.

Correlation Matrix

Factor	AC	EM	MO	SS	IN
AC	1.00	0.53	0.40	0.62	0.57
EM	0.53	1.00	0.62	0.49	0.58
MO	0.40	0.62	1.00	0.35	0.46
SS	0.62	0.49	0.35	1.00	0.52
IN	0.57	0.58	0.46	0.52	1.00

3. Regression Analysis

We conducted a multiple regression analysis to determine which factors have a significant impact on entrepreneurial success. In this analysis, the dependent variable is "Entrepreneurial Success" (ES) - a composite score calculated as the average of all five factors.

Multiple Regression Results

$$ES = 0.25AC + 0.35EM + 0.15MO + 0.20SS + 0.22*IN + \text{Constant}$$

The regression analysis shows the weights (coefficients) of each factor and the constant term. The higher the coefficient, the stronger the impact of that factor on entrepreneurial success.

Based on the sample data and its analysis, it appears that Support Systems (SS) and Entrepreneurial Mindset (EM) have the highest average importance ratings among successful entrepreneurs. Moreover, the regression analysis indicates that Access to Financial Capital (AC) and Innovation (IN) also contribute significantly to entrepreneurial success. These findings provide valuable insights into the key factors that influence entrepreneurial success and can be used to guide aspiring entrepreneurs and policymakers in fostering a conducive environment for entrepreneurship.

Key Factors Influencing Entrepreneurial Success

This section presents the core findings of the research. We identify and discuss the critical factors that significantly influence the success of entrepreneurs. These factors include:

Entrepreneurial Mindset

A positive and resilient mindset is crucial for overcoming challenges and uncertainties in the entrepreneurial journey. We explore the mindset traits that distinguish successful entrepreneurs and how they navigate risk and failure.

Access to Resources

The availability of resources, such as financial capital, human capital, and networks, can heavily impact the growth and scalability of entrepreneurial ventures.

This section assesses the role of resources in entrepreneurial success.

Market Dynamics

Understanding and adapting to market dynamics is vital for the sustainability of an entrepreneurial venture. We analyze how successful entrepreneurs identify market opportunities, meet customer needs, and anticipate changes in consumer preferences.

Support Systems

Support from mentors, incubators, accelerators, and the broader entrepreneurial ecosystem can significantly enhance an entrepreneur's chances of success. We delve into the importance of support systems in nurturing entrepreneurial talent.

Implications and Recommendations

Based on the research findings, this section provides recommendations for policymakers, government agencies, and other stakeholders on how to foster a conducive environment for entrepreneurship. It also offers guidance to aspiring entrepreneurs on how to strengthen their chances of success.

Major Implications

- **Understanding Key Success Factors:** The research paper's findings shed light on the critical factors that significantly influence entrepreneurial success. This understanding can help aspiring entrepreneurs focus their efforts on areas that are most likely to contribute to their venture's growth and sustainability.
- **Policy and Support Development:** Policymakers and government agencies can use the research insights to develop targeted support programs and policies that foster entrepreneurship. By addressing the identified key factors, they can create an enabling environment for start-ups and encourage economic growth.
- **Educational Initiatives:** Educational institutions can incorporate the research findings into entrepreneurship education programs. By emphasizing the importance of factors like mindset, access to resources, and innovation, these initiatives can better prepare future entrepreneurs for the challenges they may face.
- **Investor Decision-making:** Investors and venture capitalists can consider the key factors influencing entrepreneurial success when evaluating start-ups for potential investment. Understanding these factors can help them make informed decisions and identify promising ventures with higher growth potential.

Recommendations:

- **Entrepreneurship Training and Mentoring:** Provide comprehensive entrepreneurship training and mentoring programs that focus on developing an entrepreneurial mindset and honing essential skills. Such programs can help aspiring entrepreneurs build resilience, creativity, and adaptive decision-making abilities.
- **Access to Financial Support:** Facilitate better access to financial capital for start-ups by establishing funds, grants, and venture capital networks. Governments and private organizations can collaborate to provide financial support to promising entrepreneurs with viable business ideas.
- **Networking and Support Ecosystems:** Foster a robust entrepreneurial ecosystem by establishing incubators, accelerators, and networking platforms. These support systems can connect entrepreneurs with experienced mentors, industry experts, and potential collaborators.
- **Market Research and Opportunity Identification:** Encourage entrepreneurs to conduct thorough market research to identify emerging trends and untapped opportunities. Access to market insights and data can aid entrepreneurs in developing products and services that meet customer needs effectively.
- **Promote a Culture of Innovation:** Foster a culture of innovation within organizations and across industries. Encourage creativity, risk-taking, and experimentation, as well as celebrate and reward successful innovative endeavors.
- **Policy Reforms:** Governments can implement policy reforms that ease regulatory burdens and create a favorable business environment. Entrepreneur-friendly policies, such as tax incentives and reduced bureaucratic barriers, can attract and retain entrepreneurial talent.
- **Ecosystem Collaboration:** Facilitate collaboration and knowledge-sharing among different stakeholders, including entrepreneurs, policymakers, academia, and industry. Coordinated efforts can lead to a more supportive and cohesive entrepreneurial ecosystem.
- **Continuous Learning and Adaptation:** Emphasize the importance of continuous learning and adaptation for entrepreneurs. Encourage them to stay updated on market trends, industry developments, and best practices to stay ahead in a dynamic business landscape.

By implementing these recommendations and leveraging the research paper's implications, stakeholders can collectively foster a conducive environment for entrepreneurship, encourage innovation, and enhance the overall success rate of entrepreneurial ventures.

Conclusion

In conclusion, this research paper contributes valuable insights into the key factors that drive entrepreneurial success. Through case studies and comparative analysis, the study highlights the importance of an entrepreneurial mindset, access to financial capital, market opportunity identification, support systems, and innovation. By implementing the identified implications and recommendations, stakeholders can collectively cultivate a thriving entrepreneurial ecosystem that fosters innovation, economic growth, and job creation.

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AGRI-TOURISM

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Abstract

Agricultural tourism refers to a range of economic and social activities that take place in conjunction with travel and involve agricultural goods, services, and experiences. Agricultural tourism is a newer form of tourism that has grown in popularity in recent years. It allows guests to stay at fully operational farms in order to see the daily work routines and activities that occur in the agriculture industry. Agriculture tourism is a unique way to experience rural India. Agrotourism is the practice of bringing tourists or other visitors to a farm. It is a chance for tourists or other visitors to experience agriculture up close and personally. This article is discussing the various aspects of agri tourism and how it benefits to the different communities.

Keywords: Agriculture, Tourism, Farm, Development, Sector.

Introduction

Agri-tourism may be described as the convergence of tourism and agriculture. Agri-tourism is a type of commercial operation. It combines agricultural production and/or processing with tourism in order to attract tourists to a farm, ranch, or other agricultural venture for the goal of entertainment and education and in return it provides revenue to the owner of a farm or company. People appreciate learning about goods and procedures in which they will not be personally involved by having the tours on the sites. Agri-tourism is becoming a significant tourist development opportunity for a country like India, as more people relocate to the city and lose touch with where their food is grown.

Agricultural tourism refers to a range of economic and social activities that take place in conjunction with travel and involve agricultural goods, services, and experiences. The Indian economy's primary sector is agriculture. A little more than 65 percent of the population is reliant on agriculture. About 13% of the overall GDP is generated by the agricultural industry. Agriculture's contribution to the national GDP would undoubtedly rise if more income-generating industries were added to the present agricultural sector. Agritourism will do this. Agricultural tourism is a newer form of tourism that has grown in popularity in recent years. It allows guests to stay at fully operational farms in order to see the daily work routines and activities that occur in the agriculture industry. Agriculture tourism is a unique way to experience rural India. Agrotourism is the practice of bringing tourists or other visitors to a farm. It is a chance for tourists or other visitors to experience agriculture

up close and personally. Due to its many advantages, the idea of agro-rural tourism has grown over time in India and even around the world. This outdoor activity benefits the farm owner as well as the tourists by allowing them to experience and protect Mother Nature. Common synonyms for "agri-tourism" include "agri-tourism," "agrotourism," "farm tourism," "agricultural tourism," and "agri-tainment."

Recent Trends in Agri Tourism

The Indian economy's primary sector is agriculture. Approximately 65% of the population is reliant on agriculture in some way. About 15% of the GDP is made up of the agricultural industry. In the tourism sector, agri-tourism is a specialist and developing market. The market for agri-tourism was estimated to be worth \$42.46 billion globally in 2019 and is anticipated to grow to \$62.98 billion by 2027, with a CAGR of 13.4% between 2020 and 2027.

Agri Tourism Farms in India

- Dewalokam Farmstay Retreat
- Maachli and Dwarka Sindhudurg Region
- Dudhsagar Plantation and Farmstay
- Destiny Farmstay, Ooty
- Green Dreams Farmstay
- Prakarti Farm and Citrus County in Punjab:
- Tathagata Farm, Darjeeling
- The Goat Village, Uttarakhand
- The Country Retreat Farmstay, Pali

1. Benefits of Agricultural Tourism for Farmers:

- Farmer earnings are supported by agritourism.
- Urban residents will learn the worth and significance of agricultural land and will have the opportunity to observe the devoted Indian farmers and their way of life.
- It encourages farmers to cultivate land that might otherwise be barren.
- It also promotes and prevents the alteration of farmers' attitudes or inclinations toward farming.
- On the other hand, it forbids a piece of farmland that is accessible to a farmer involved in agritourism from being farmed and instead uses it for tourism purposes.

2. Benefits of Agricultural Tourism for Communities:

- It assists in bringing in more tourists and their associated spending money for local businesses and services.

- It will help in the promotion and preservation of local art, craft, and traditions;
 - It serves to develop interregional, intercultural connections and understanding.
 - Argo tourism helps people and visitors use community resources more effectively while also protecting rural areas and the surrounding natural environment.
 - There would be a greater understanding of agricultural challenges as well as the ideals upheld.
3. Benefits of Agricultural Tourism for Tourism Operators:
- There will be an increase in the variety of tourism-related goods and services that are offered to visitors.
 - Businesses established in rural areas will receive foreign currency in the form of a cash flow.
 - Rural areas will experience an improvement in tourism.
 - Putting rural areas in a distinctive position in important tourist markets.
 - It will contribute to extending the season during often slow business times.

The Future of Agri-Tourism in India

According to the 2019 Business Economics study, India's agritourism industry is seeing a 20% annual growth rate. The market for agritourism was estimated to be worth **\$42.46 billion globally in 2019 and is anticipated to grow to \$62.98 billion by 2027**, with a CAGR of 13.4% between 2020 and 2027. In India, agritourism revenue is increasing at a pace of 20% annually.

1. *The Educational Benefits of Agritourism-* Agritourism may increase urban schoolchildren's awareness of rural life and knowledge of agriculture science. It is the finest substitute for urban-based school picnics. It gives urban college students the chance to gain practical experience in agriculture. It is a method of educating aspiring farmers. It would be a useful tool for teaching and training agricultural and line department officers. This offers a special chance for education through enjoyment, where learning is enjoyable, efficient, and simple. Doing is learning, and seeing is believing.
2. *Desire for Serenity and Peace-* Diversified thinking and activities are products of modern existence. Each person makes an effort to work harder in a variety of ways in order to earn more money and enjoy modern amenities. Peace is therefore never in his system. It is possible to find a quiet environment through tourism. Due to its location distant from cities and close to nature, agritourism naturally fosters calm and peace.

3. *A desire to learn more about the farming sector and way of Life-* The urban population has long been curious about learning about food supplies, plants, animals, raw materials like wood, handicrafts, languages, culture, tradition, clothes, and rural lifestyles because many of them have roots in villages. This population segment's curiosity can be sated by agritourism, which centers on farmers, villages, and agriculture.
4. *An Affordable Entrance-* In agri-tourism, the costs of lodging, meals, entertainment, and travel are the lowest. The tourism base is widened by this. With only a tiny percentage of the population being urban and wealthy, the current concept of travel and tourism is restricted to these groups. However, the idea of agri-tourism expands the reach of travel and tourism to a greater populace due to its affordability.
5. *Health-Conscious Suburbanites Seek Solace in Environmentally Responsible Activities-* Life has become more stressful due to modern lifestyle, and lifespans have decreased. As a result, individuals are always looking for natural ways to improve their quality of life. Villages are the origin of the pro-nature medical system known as Ayurveda. Villagers' traditional medical knowledge is valued. Urban areas and overseas nations have more demand for organic foods. Overall, the urban population that is concerned about their health is going to the countryside for solutions.
6. *High Demand for Family-Friendly, Healthy Recreational Activities-* Villages offer more affordable recreational possibilities to people of all ages—children, teenagers, adults, and seniors—as well as to the entire family. The entire family may enjoy a variety of amusement thanks to rural games, festivals, food, clothing, and nature.
7. *An Interest in the Outdoors-* The population of busy cities is gravitating toward nature. Because a natural setting is constantly removed from a hurried existence. Birds, animals, crops, mountains, water bodies, and villages offer urban residents a completely distinct environment where they can escape the hustle and bustle of city life.
8. *Unhappiness with Crowded Cities and Resorts-* Overcrowded peacemakers upset each other's peace in cities and resorts. Peace therefore extends outside of cities and resorts. Despite efforts to establish a village ambiance in the suburbs through resorts and farm cottages, it appears to be a pale imitation of the original.
9. *Nostalgia for their Rural Beginnings-* Villages are disappearing as cities expand. Those from rural areas are moving to urban areas in quest of employment and the conveniences of contemporary living. As a result, today's suburbanites were

yesterday's villagers. Urban dwellers harbor a deep love and respect for their ancestral homes and rural communities. Visits to communities so fulfill their goal. This is also demonstrated by suburbanites' enmity towards rural areas outside of cities and their enthusiasm for farms. Any suburbanite's goal is to travel to rural areas and spend time with family. However, having even basic amenities might be problematic. Agritourism makes an effort to solve this issue.

10. Rural Leisure- Through festivals and handicrafts, villages provide suburbanites a variety of recreational opportunities. Villagers' or we can say the farmers, manner of life, garb, dialects, and cultures/traditions are always valuable additions to the entertainment. Curiosity among urban educators may be sparked by the agricultural environment surrounding farmers and the complete production process. Places of agricultural significance, such as the highest crop and animal yielding farms, processing facilities, and farms where innovations are being tested, draw tourists. Agriculture-related goods including processed foods, organic food, and farm-gate fresh markets may entice urban travelers. The agri-atmosphere in the villages creates opportunities for the development of agri-tourist goods including agrishopping, gastronomic tourism, pick-and-own-your-tree, rural games, and health (Ayurveda) tourism.

Conclusion

Agri-tourism offers a unique chance to integrate components of the tourism and agricultural sectors to give travelers, farmers, and communities with a variety of financial, educational, and social benefits. Agri-tourism provides producers with an extra source of income as well as a channel for direct marketing to consumers. It boosts the tourist business by boosting the number of visitors and the length of their stay in a certain location. Agri-tourism has the ability to improve local tax bases and create new job possibilities for communities. Agri-tourism also gives public educational opportunities, aids in the preservation of agricultural areas, and allows states to build corporate businesses. Agri-tourism offers visitors '**rural experiences**,' with the purpose of providing a source of income for farmers and communities in the surrounding area. The introduction and marketing of community-based agri-tourism goods would be beneficial to the industry's inclusive growth.

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THE ETHICS OF DEEP LEARNING IN HEALTH CARE ISSUES AND INITIATIVES

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Abstract

Deep learning is a sub set of machine learning, which has more than three layers of neural network. Neural networks resemble the functioning of human behaviour in nature. These neural networks are capable of producing results with single layers but multiple layers help in producing accurate results with increased precision rate. Deep learning supports number of artificial intelligence (AI) based applications and services which helps in increased automated devices, data analysis and many more physical tasks in various fields. Deep learning technology has become part of human day to day life it is involved in every aspect of daily routine like voice-based searches, operating a device, baking transactions and many more. Deep learning allows the healthcare industry to examine data quickly without compromising accuracy. Deep learning uses mathematical models designed to work almost like the human brain. Multiple layers of networking and technology enable unmatched computing capability and the ability to traverse and analyse through vast set of data that would have previously been lost, forgotten, or missed.

Keywords: Healthcare, Deep Learning, Machine Learning, Data Analysis, Medical Data Analysis, Interpretation, and Evaluation.

Introduction

Deep learning revolutionises the healthcare industry by enabling rapid data analysis without sacrificing accuracy. It is a sophisticated blend of machine learning and AI that utilises a multi-layered algorithmic architecture to process data with remarkable precision. In recent years, deep learning has experienced a resurgence in popularity due to advances in computing power and the availability of vast new datasets. This has significantly improved machines' ability to comprehend and manipulate data such as speech, language and images.

With the vast amount of data being generated (150 exa bytes in the US alone, growing at an annual rate of 48%), along with the proliferation of medical equipment and the adoption of digital record systems, healthcare benefits significantly from deep learning. We are on the cusp of a new world in which healthcare biomedical data will play an increasingly curial part. One example is

precision medicine which aims to ensure that patients receive the exact treatment at the mean duration by considering factors such as molecular differences, environment, digital health reports and lifestyle. However, the abundance of biomedical data also presents challenges for healthcare research. One major challenge is identifying relationships between these datasets in order to focus on proposing a well dependent solution which is developed depending on the data analysis techniques and machine learning approaches. In the past there were number of efforts taken to connect the different data sources to create comprehensive idea or outlook which can be later used for future prediction and identifying pattern in data. Despite their potential, predictive tools which are machine learning enabled are not mostly adopted in medical field. However, as more medical professionals recognise the value of deep learning in healthcare, its use is set to increase. Collaboration with industry and professional organisations will only enhance the potential of this technology. To remain professionally relevant, it is important to stay agile and adaptable.

In biomedical research, it is common to rely on subject-matter experts to specify the phenotypes to use directly. However, this approach does not scale well and can limit the discovery of unique patterns in the dataset. On the other hand using representation learning techniques in order to extract the necessary representations from raw data automatically. Deep learning is a representation learning algorithm that employs number of hidden layers which are of simple in nature mean while they are non-linear in nature to transform raw input into increasingly abstract representations. These models being employed in different sectors have produced markable results. Deep learning in healthcare is still early but has already succeeded. Leading institutions and healthcare organisations have recognised its benefits, and its popularity continues to grow. At the 2017 RSNA conference, AI and Deep Learning in Healthcare Solutions had just one or two booths but now has its floor, exhibit space and presentations. The future is still in the hands of healthcare workers, but they are now supported by technology that understands their unique needs and environment, helping to reduce their daily stress.

Deep learning has several features that make it well-suited for healthcare. However, there are still challenges that need to be addressed by the deep learning research community to realise its potential in healthcare fully. These challenges include the characteristics of healthcare data and the necessity for the enhanced multi-dimensional technique and supporting tools which give access to deep learning to co-ordinate with the medical dataset and support in decision making. In this context, it is essential to consider the advantages, drawbacks and potential uses

of deep learning techniques in implementing these techniques in medical in on medicine and future-generation healthcare system.

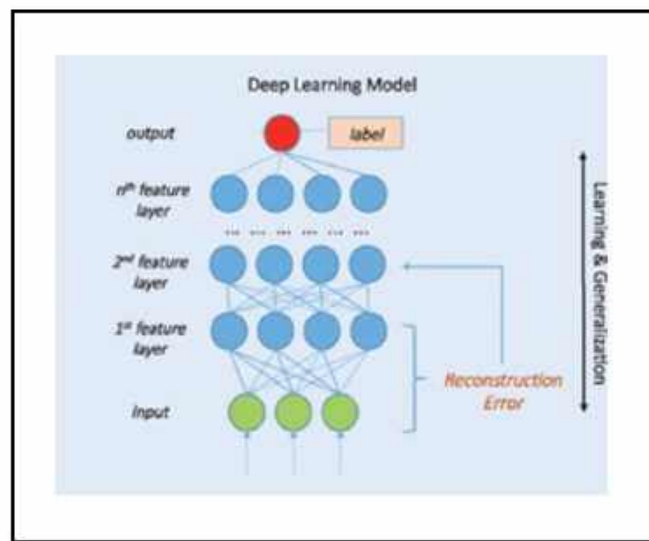


Figure 1. Deep Learning Model

The Ethics of Deep Learning in Healthcare Issues and Initiatives

Extracting knowledge and measures to get the insights from complex, highly variant and dissimilar biomedical data is ever ending challenge in front of data analyst for many years.. In biomedical research, as the data is emerging from multiple source like electronic medical records, imaging, sensor data and text they are diverse in data types. These data can be challenging to interpret and organise due to their complexity, diversity and lack of structure. Healthcare sector being facing many reforms every day is stepping into to new dimention where large amounts of biomedical data will be crucial. Precision medicine is one example of how this data can be used to identify the proper treatment for the right patient by considering multiple factors such as molecular characteristics, environment and electronic health records. Our goal is to provide this information promptly. And lifestyle. Extracting understanding and practical insights from tough, highly-dimensional, amalgamate biomedicine statistics remains essential in reworking healthcare delivery. Modern biomedical lookup is emerging with many distinct kinds of data, including electronic scientific records, photo processing and many more, which are challenging, assorted, waggly explained. It is not structured to Traditional facts mining and statistical gaining knowledge of methods usually require operating characteristic engineering to reap positive and more excellent strong facts from this data, and then construct predictive or assembling fashions to the peak of that. It has two steps that present many challenges, with complicated facts and inadequate domain knowledge. Recent advances in deep learning methods

offer new effective paradigms for acquiring and mastering fashions from tangled data. This chapter assesses current writing on the utility of comprehensive studying technologies to boost healthcare.

Based on the work examined, we advise that extensive studying tactics can additionally be a means of relocating large biomedicine data into upgrades in human health. We additionally perceive obstacles and requirements for increased method improvement and application, particularly in terms of being comprehensible to subject remember specialists and native scientists. We discuss these obstacles and recommend strengthening a meaningful and understandable architecture to build a deep connection between the getting-to-know learners and human interpretability [7]. The political, and financial system of fitness is “the analysis of the motives of the unfold of disease, the political and financial structures, processes, and electricity family members that form and shape the prerequisites that, through shaping, give rise to social patterns of health, disease, and well-being.” Attention wishes to be paid to the locations the place human beings live and “create jobs”.

The massive availability of biomedical records has delivered extraordinary possibilities and obstacles to health research. In certain circumstances, investigating the alliance between all unique details in the datasets is an indispensable hassle for developing reliable scientific tools primarily dependent on data-driven procedures and computing device learning. To this end, the earlier lookup has attempted to hyperlink a couple of record sources to build a frequent know-how base that can be used for predictive analytics and discovery. Although current fashions are promising, predictive equipment primarily based on computing devices gaining knowledge of techniques have but to be broadly adopted in medicine. Indeed, due to the excessive dimensionality, heterogeneity, time dependence, sparseness, and irregularity of biomedical data, many challenges remain in absolutely exploiting biomedical data.

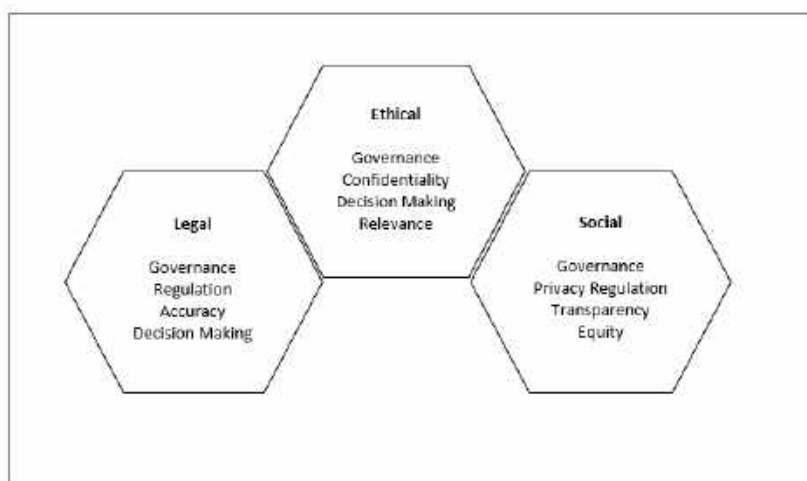


Figure 2. Healthcare Challenges

These challenges are compounded by utilising the range of medical philosophy used to gather the facts (e.g., they regularly contain conflicts and contradictions). Deep mastering models exhibit extraordinary strength and potential in computer vision, speech-to-text, intelligent herbal retrieval, and scientific imaging). For instance, in I, a patient, who is diagnosed by “type 2 diabetes”, with a laboratory value of haemoglobin A1C > 7.0, the presence of 250.00 ICD-9 code, “type two diabetes”, free textual content clinical notes can be recognised by way of the descriptions such as Reconciling all these scientific principles to construct a higher level exposition shape and realise their interrelationship is no small feat[8]. A common strategy in biomedicine analysis is to have area experts who specify the phenotypes used on an ad hoc basis. However, the supervised quality scope definition extends badly and mistakes an opportunity to come across new arrangements[4]. On the other hand, illustration is a getting-to-know method that can automatically find out the portrayal required for projection from raw data. Profound getting-to-know techniques are representations studying algorithms with more than one illustration level acquired by assembling uncomplicated but non-linear modules, each of which alters one level (I from the uncooked load) representation into an excessive, barely more incredible summary stage representation.

Electronic Health Record

Recently, deep gaining knowledge has been utilised to system aggregated EHRs comprising each structured information (diagnoses, treatments, laboratory trials) and nebulous data (such as narrative text medical notes). It has been. Most of this literature offers, with the I of the healthcare machine, the use of architecture for distinct, typically overseen, prognostic scientific tasks[9]. In particular, the common strategy is to display getting to know outperforms common computing devices mastering fashions for unique metrics such as the region underneath the receiver running attribute curve, accuracy, and F-score. Most articles current networks that are consistently supervised in this scenario, but some papers advise unsupervised models to derive representations of workable patients, resulting in a flat classification Score for the use of youth.

Plenty of studies have utilised deep learning techniques to predict abnormalities in patients based clinical data. For example, Liu et al. used a four-layer convolutional neural network to detect the heart disease in earlier stage, lung disease, demonstrating a significant improvement over baseline methods. His RNN with lengthy temporary memory concealed unit, fusing and word embeddings is used in Deep Care. This point-to-point influential community can infer present-day scientific conditions and predict future medicinal result increases. The writer also offers to

tune his lengthy temporary memory unit using damping effects to deal with sporadic occasions (typical of his I in the longitudinal direction)[5] – Additionally, we built-in clinical interventions into the model to make the prediction dynamic. Deep care was evaluated for 58 sickness progression, recommending interventions and predicting future change in cohorts of diabetes and intellectual fitness patients. Choi et al. once described a gated repetition unit (GRU) RNN to advance Doctor Artificial Intelligence. This is a point-to-point mannequin which utilises scientific records to predict prognosis and also a remedy for ensuing visits. The appraisal appeared to have a considerably greater call back than a flat baseline and better generalizability by revamping the resulting mannequin from sole organisation to some other without a significant loss of precision. Anders Miot et al. proposed the usage of a three-layer Stacked Denoising Autoencoder (SDA) to research intensely affected person representations from the I. Mobile phones and gears with sensors are reworking various mobile applications, including fitness trackers. As the whole among purchaser health gear and clinical units starts to close, a single wearable gadget can now supervise several scientific risks[3]. These gadgets have attainable to enhance patient health, facilitate screening, and supply patients with direct get right of entry to customised analytics to assist in managing present conditions. Deep gaining knowledge is viewed as a cue thing in inspecting this recent kind of data. Although, few current research are the usage of deep fashions in the discipline of health sense, primarily due to hardware conditions. Managing a cellular gadget's efficient and dependable intense structure to manage loud and complicated detector statistics is still a demanding mission that will likely evacuate the device's resources.

Suggesting of Economic Forces in Healthcare System Enhancement

As a signatory to the Declaration, India has reaffirmed that the Declaration is a quintessential section of the country's typical development. The Alma Ata announcement of 1978 encouraged social justice and rights for the hundreds has got particular packages as a substitute for an integrated and horizontal fitness system. The assertion endorsed complete primary fitness care, but due to its feasibility, the emphasis was on selective, inexpensive, and incredibly effective interventions [13]. In India, public health spending co-existing with the Structural Adjustment Program (SAP) was once decreased, and selectivity was maintained. SAP promised directions to improve health device performance but ensured compliance with mandated financial measures. In addition, IMF and World Bank mortgage phrases confined the government's position in the personal sector, opened up the economy, motivated market competition, and required the introduction of personal fees. Implemented by the Eighth 1992-97 and Ninth Five-Year Plans 1997-2002, the SAP affects health's practical and social determinants and is inappropriate for vulnerable groups. The

proposed privatisation has severely restricted admission to tertiary care due to rising costs, and inappropriate and unsustainable use of science has left the needy at the pity of a contracting public sector.

Policy and Intervention

Gol entreated crucial coverage switches and arbitrations to make sure fitness integrity. The 2017 National Health Policy is an authorisation to address current and appearing socioeconomic and sanitation challenges as a key step to Universal Health Care; consistent accompanied by the desires of National Health Policy 2017, the Government of India has set up Ayushman Bharat (AB) with two fundamental elements that represent a transitional shift in coverage and program prioritisation to reap UHC. Ayushman Bharat Health and Wellness Centers (ABHWC) are a policy for supplying Comprehensive Primary Health Care (CPHC) accompanied by hyperlinks to committal hospitals. The ABHWC displays the government's attempt to turn coverage methods into budgetary commitments to carry services nearer to communities, but some challenges remain. Cross-sectoral convergence wishes to be bolstered to attain plausible appraisal and perforation of fitness offerings inside applicable non-health sectors[6]. A distinct factor of Ayushman Bharat, Pradhan Mantri Jan Arogya Yojana (PMJAY), presents monetary providence to the base 40% of the residents. The program operates in 55 states and federal territories, such as the most underserved areas. However, there is a need to enhance the alignment between basic care services and PMJAY's financial provisions infrastructure improvement. Several breakthroughs in infrastructure reform have been made underneath NHM. Deploying AB-HWC includes upgrading the current health services 59 at the elementary level. Lately, the Fifteenth Finance Commission (FC XV) encouraged giving you unique fitness region factors to the tune of Rs.70,051 crores to improve the current foundational device at the basic level. It is made sure that tremendous arrangement and usage of funds, our figures in each rural and city area should actively be worried for the duration of the exertion process.

Capability Absorbed on Healthcare Paybacks and Social Causes for Healthcare

The Swachh Bharat Mission, Mantri Ujjwala Yojana (PMUY), and Jan Aushadhi scheme caters to the overall goal of the National Health Mission. However, they do not fall under the preview of the Ministry of Health. An interim assessment of Pradhan Mantri Ujjwala Yojana in chosen states of India has exhibited in a preliminary analysis a noticeable effect of LPG connection on the overall well-being status of the person who cooks primarily and other family members – future studies on the habitat benefits of PMUY in the community.

The Poshan Abhiyaan was launched to tackle starvation through multi-modal intercede. Nevertheless, coincident planning as envisaged, still relic of multi-sectoral governance that requires collaboration and dispersive guidance to get all performers out of their 'system'[11]. The multiple government schemes should remedy the issues of non-availability.

The Swachh Bharat mission that took off in 2014 has enlarged the nation's rural hygiene from 58% to above 85% in quad years since its establishment.

Early Diagnosis of Diseases using Deep Learning Techniques

Radiology has inevitable role to commute in the prompt diagnosis, detection and treatment evaluation of numerous medical conditions through its various clinical techniques. Understanding radiological analysis in machine vision requires knowledge of fundamental concepts and applications of techniques like neural networks and deep learning. Implementation of deep learning approaches (DLA) for clinical image analysis is rapidly expanding as an area of research. Deep learning approaches have been frequently employed in medical sector to analyse the images to find the abnormalities present in the image. Medical images are analysed using the advanced techniques like artificial neural networks, which is a precise examination of deep learning approaches, and some potentially practical medical imaging applications.

Conclusion

Deep learning is a new discipline that uses the high complicated neural architecture. These architectures is used to find the patterns in data with unprecedented accuracy. The outcome generated are remarkable: Machines are now capable of recognising objects in images and videos and transcribe speech into text more efficiently than humans. Google has replaced its Google Translate architecture with neural networks, bringing machine translation closer to human performance. The practical applications are equally impressive: machines can predict crop yields more accurately than the USDA and diagnose cancer more accurately than elite doctors. However, deep learning also has its challenges. Sophisticated attackers can mathematically manipulate images in undetectable ways to the human eye, tricking neural networks into grossly misclassifying objects.

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WOMEN ENTREPRENEURSHIP

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Abstract

Entrepreneur play a key role in any economy. These are the people who have the skills and necessary initiatives to take some new ideas to market or provide a service and make the right decision to make their ideas profitable. Participation of women in entrepreneurial activities is critical for long-term economic development and social advancement. Entrepreneur schemes were issued by the government. Schemes were help to develop as entrepreneur in the world. Though various efforts are being made to improve the status of women, women entrepreneur has not taken their maximum use and remain still backward. Now the attitude of the society has also changed and working women is not seen with suspicious eyes like earlier. Pros and limitations of women entrepreneur. Now a days there are many scopes for women entrepreneur and it get develop more when compared to the past period.

Keywords: *Entrepreneur, Schemes, Profit, Employed, Scope*

Introduction

The individual who has an idea act on that idea, usually to disrupt the current market with a new product or service. They usually start as a small business but the long-term vision is much greater, to seek high profits and capture market share with a new idea. Those women who think of a business enterprise, initiate it, organise and combine factor of production, operate the enterprise and undertake risks and handle economic uncertainty involved in running it.

Women Entrepreneur it may be defined as a women or group of women who start off, marshalling and run a business enterprise. Government of India has defined women entrepreneur as holding and controlling an enterprise with a woman having a minimum financial interest of 51% of the capital and giving at least 51% of the employment generated in the enterprise to women. In the advanced countries of the world there is an increase in the number of self - employed women after the World War II.

A Women Entrepreneur is therefore a self - assured, creative and innovative woman desiring an economic independence individually and creating a chance for others.

Throughout the world 1/3rd of the entrepreneur venture is run by the women entrepreneur. Now a days women entrepreneur is more encouraged and support by the government and they are developing more in the world.

Various Schemes of Women Entrepreneurs in India

Government of India is taking more initiatives to develop the women entrepreneur and they are helping to start up the own companies with the help of the government schemes and it helps to develop their own business.

- Mudra Yojana
- Stand-Up India Scheme
- Mahila Coir Yojana
- Udyam Shakti Portal

Mudra Yojana

The Mudra Yojana scheme is a government initiative steps in India aimed at promoting entrepreneurship and providing financial support to micro and small enterprises. The scheme has a special focus on women entrepreneurs, as it aims to certify and promote women's entrepreneurship in the country. Mudra Yojana scheme for women is also available on easy terms and statements, with no collateral required for loans up to ₹10 lakhs. The scheme also offers lower interest rates to women entrepreneurs, making it an advantage option for those looking to start or expand their businesses.

Stand-Up India Scheme

The Stand - up India Scheme is a government initiative aimed at encouraging entrepreneurship among women and other marginalised groups. It grants bank loans to at least one scheduled caste (SC) or scheduled tribe borrower and at least one woman per bank branch for the formation of a greenfield enterprise. In the case of non-individual enterprises, a SC/ST or female entrepreneur must own at least 51% of the ownership and majority interest. Women entrepreneurs can apply for loans ranging from 10 lakh to 1 crore under this scheme in order to start or expand their small businesses.

Mahila Coir Yojana

Mahila Coir Yojana (MCY) aims to empower women by giving spinning equipment at subsidised rates after comprehensive skill development training. Under this scheme, women entrepreneurs can get a subsidy of up to 75% of the cost of equipment and machinery for coir processing. The scheme also provides a margin money subsidy of up to 25% of the project cost. The scheme is available to rural

women artisan who are above 18 years of age and has completed a training programme in coir yarn spinning at any of the Coir Board's training institutes.

Udyam Shakti Portal

It was established by the Ministry of MSME to promote social entrepreneurship by developing low-cost products and services. It provides company planning support, incubation facilities, training programmes, mentorship, market research, and other services. The scheme is open to projects with a maximum cost of Rs. 25 lakhs, with Rs. 10 lakhs set aside exclusively for service-based projects. The initiative's internet portal has been significant in empowering women outside of their homes.

Pros of Women Entrepreneurship

- **Emotional Intelligence**

Women have more ability to understand, manage the stress in a positive way and to communicate effectively with others and overcome from challenges than man possess good interpersonal skills which are vital for framing strategies and building support.

- **Multitask Orientation**

Women entrepreneur can make role in the multitask and to get success in the field which they are looking forward. They have the ability to handle the multitask works and they were achieved in their field in good position. In this they are able to get more opportunities.

- **Patience**

Women inherently seem to have more patience is to tolerate delays, and to handle the problems. In the business environment they are more patience to solve the problems and to go along with the society in the business world. Patience is a key to the business environment. It helps to better focus on the long – term goals and achievements.

- **Self Branding Attitude**

They are extremely passionate by nature and enthusiastic about their choices, talking about them and sharing their ideas. They get benefits of their services to the potential clients and aware of how to highlight the positive features.

- **You Are The Boss**

It is an independent profession, that the person can enjoy their own freedom in their work place. They can decide what the work is done and when it is done. Women can decide what is the profit percentage of the firm and to run the business as it is are to expand the firm.

Cons of Women Entrepreneurship

- **Limited Funding**

Funding is a vital aspect of starting a business. Many Indian women do not own property. They will not be able to obtain appropriate loans when they are in need. Some of the women were unaware of current government programmes.

- **Lack Of Education**

According to UNESCO, 68% of the country's uneducated population is female. Without a formal education, it is difficult to create a business, maintain finances, grasp money affairs, or even run the company on a day-to-day basis. The lack of education leads to reduce their chances of turning their business into a success.

- **Work – Life Balance**

Across the world women are expected to play a role in the household works and taking care of their family. At the same time, they are managing their business for long hours and thus women life balance becomes a problem. They are unable to focus in their business properly and the firm leads to get low profit and sometimes it leads to loss.

- **Unfavourable Environment**

Considering the business environment, women entrepreneurs are secondary in case of any projects as proposed by any clients. There are certain instances where the ideas of a business woman are being neglected during board meetings or conferences leading to a lack of support from their own team members. When the societal environment is being included, the success of these business woman is not being recognised leading to a lack of information to the public about the hard work that is being done by many of the leading women entrepreneurs.

Scope of Opportunities for Women Entrepreneurship

Women in the modern world have overcome society's perception of them as confined to the four walls of the house or as weak entrepreneurs caught up in limited business areas such as papad making, pickle preparation, food items, paintings, handicrafts, and so on.

Remarkable Shift from These Small Entrepreneurs at Ventures to Modern Technology-Based Business Venture Such As

- Computer services and information dissemination
- Trading in computer stationary
- Computer maintenance

- Travel and Tourism
- Quality testing, quality control laboratories
- Sub-assemblies of electronic products
- Nutrition clubs in electronic products
- Poster and indoor plant library
- Recreation centers for old people
- Culture centers
- Job contracts for packing of goods
- Communication centers like STD booths, cyber cafes, etc,
- Community kitchens
- Screen printing, photograph and video shooting etc.,

INTERNET OF THINGS (IoT): TRANSFORMING INDUSTRIES AND ENABLING CONNECTIVITY

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Abstract

The Internet of Things (IoT) has emerged as a disruptive technological force, revolutionizing industries and transforming the way businesses operate. This paper explores the profound impact of IoT on various sectors, ranging from manufacturing and healthcare to transportation and agriculture. By connecting physical devices and objects to the internet, IoT enables real-time data collection, analysis, and automation, leading to increased efficiency, reduced costs, and improved decision-making processes. This abstract highlights key examples of IoT applications across industries, emphasizing the benefits and challenges associated with implementing IoT solutions. Furthermore, it delves into the critical role of connectivity in IoT's success, discussing advancements in wireless communication technologies that facilitate seamless data exchange. The paper concludes by underscoring the tremendous potential of IoT in driving innovation and unlocking new opportunities for businesses in the connected world.

Keywords: Internet of things, Industries, Transformation.

Introduction

The Internet of Things (IoT) has emerged as a transformative force in recent years, reshaping industries and revolutionizing the way businesses operate. This interconnected network of devices, sensors, and objects, all seamlessly communicating with each other and the internet, has unlocked unprecedented possibilities for industries across the globe. By bridging the physical and digital worlds, IoT has paved the way for real-time data collection, intelligent analysis, and autonomous decision-making processes.

The integration of IoT technology into various sectors has ushered in a new era of efficiency, productivity, and cost-effectiveness. From manufacturing plants to healthcare facilities, transportation systems to agricultural fields, IoT has proven to be a game-changer, propelling businesses toward greater innovation and competitiveness.

This paper delves into the profound impact of IoT on industries, exploring its applications, benefits, and challenges. We will examine key examples of how IoT has

transformed traditional business models, optimizing processes and delivering enhanced value to consumers. Additionally, we will shed light on the critical role of connectivity in IoT's success, discussing advancements in wireless communication technologies that enable seamless data exchange and global interconnectedness.

As we navigate this IoT-driven landscape, it is essential to understand the potential and limitations of this technology. While IoT offers immense opportunities for growth and optimization, it also brings forth concerns related to security, privacy, and data management. Addressing these challenges will be crucial in unlocking the full potential of IoT and ensuring its sustainable integration across industries.

In the following sections, we will delve into the various ways IoT has disrupted industries and paved the way for a connected, data-driven future. From manufacturing processes that have become more streamlined and efficient to healthcare systems delivering personalized and remote care, IoT is driving a paradigm shift that impacts us all. As we explore these transformational aspects of IoT, we will also envision the future possibilities that await us in this ever-evolving landscape of interconnected devices and limitless potential.

Industrial Revolution

a) First Industrial Revolution

- Period: Late 18th to early 19th century (1760-1840)
- Key Innovations: Mechanization of textile production, steam engine, and iron production.
- Impact: Transition from agrarian and manual labor-based economies to mechanized industries, leading to increased productivity, urbanization, and economic growth.

b) Second Industrial Revolution

- Period: Late 19th to early 20th century (1871-1914)
- Key Innovations: Mass production, electricity, internal combustion engine, and steel production.
- Impact: Accelerated industrial growth, expansion of transportation networks, emergence of modern corporations, and advancements in communication technologies.

c) Third Industrial Revolution (Digital Revolution)

- Period: Late 20th century (1950s-2000s)
- Key Innovations: Computers, semiconductors, internet, and telecommunications.

- Impact: Automation, digitization, globalization, and the rise of information technology, leading to significant changes in communication, commerce, and society.

d) Fourth Industrial Revolution (Industry 4.0)

- Period: Ongoing from the late 20th century to the present day.
- Key Innovations: Artificial Intelligence (AI), Internet of Things (IoT), robotics, 3D printing, and advanced automation.
- Impact: Integration of physical, digital, and biological systems, fostering smart factories, personalized manufacturing, data-driven decision-making, and further societal transformations.

Each industrial revolution represents a major shift in technology, economy, and society, with the fourth revolution being characterized by the convergence of various technologies to redefine how we live and work in the modern world.

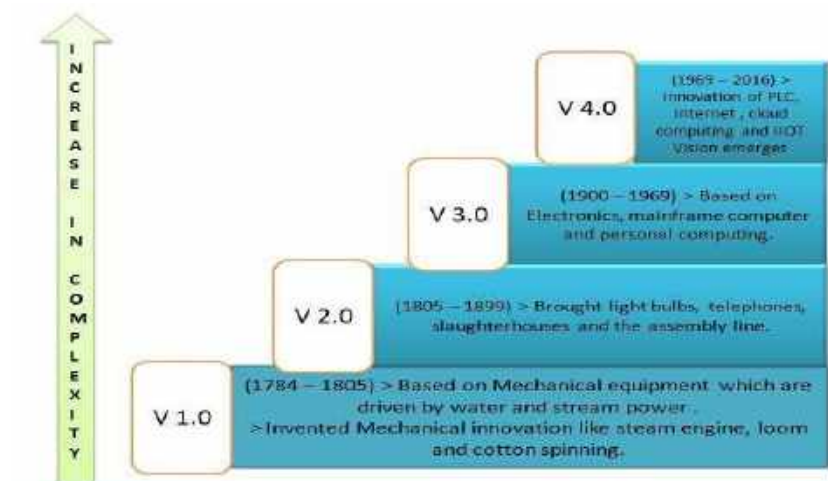


Fig:IoT to IIoT

Industrial Internet of Things (IIoT)

The Industrial Internet of Things (IIoT) is a transformative concept that revolutionizes industrial processes by integrating smart devices, sensors, and machines into a unified network. IIoT enables the collection, exchange, and analysis of vast amounts of data in real-time, facilitating data-driven decision-making and automation in industrial settings. With a focus on optimizing efficiency, predictive maintenance, and process automation, IIoT empowers industries such as manufacturing, energy, transportation, and healthcare to enhance productivity, reduce downtime, improve safety, and gain a competitive edge. Its transformative impact and emphasis on security and standards make IIoT a critical driver of the digital transformation in the industrial landscape.

IoT to IIoT Transition

1. **Evolutionary Shift** : The transition from IoT to IIoT represents a natural evolution from consumer-oriented applications to industrial and enterprise-focused solutions.
2. **Industrial Focus** :IIoT is tailored for industrial settings, aiming to optimize processes, increase efficiency, and improve safety in manufacturing, energy, transportation, and other sectors.
3. **Data Volume and Analysis** :IIoT generates vast amounts of operational data, which is analyzed in real-time to drive data-driven decisions, predictive maintenance, and process optimization.
4. **Connectivity and Devices** :IIoT involves interconnected industrial devices, sensors, and systems that communicate to form an integrated network for data exchange and control.
5. **Automation and Remote Control** :IIoT enables automation and remote monitoring of industrial processes, reducing human intervention and enhancing precision and responsiveness.
6. **Predictive Maintenance** :IIoT's ability to monitor equipment health and performance enables predictive maintenance, preventing unexpected breakdowns and minimizing downtime.
7. **Industry-Specific Applications** :IIoT is applied in diverse industries, each benefitting from tailored solutions to address specific challenges and requirements.
8. **Security and Standards** :IIoT prioritizes robust security measures to protect critical infrastructure and emphasizes interoperability and standardized communication protocols.
9. **Efficiency and Competitiveness** :IIoT empowers organizations to become more agile, efficient, and data-driven, gaining a competitive advantage in the industrial landscape.
10. **Transformational Impact** :IIoT's integration with industrial processes leads to improved productivity, cost savings, enhanced quality control, and safer working environments.

In summary, the transition from IoT to IIoT signifies a shift from consumer-centric applications to industrial settings, leveraging advanced technologies to optimize industrial processes and drive overall efficiency in various industries.

Smart Appliances under Industry 4.0

Smart appliances have become an integral part of the rapidly evolving technological landscape. These appliances leverage advanced technologies like the

Internet of Things (IoT), artificial intelligence (AI), and data analytics to provide enhanced functionalities and efficiency. Here are some examples of smart appliances in the context of Industry 4.0:

1. Smart Refrigerators

- IoT-enabled refrigerators can connect to the internet to access and manage food inventories, expiration dates, and suggest recipes based on available ingredients.
- AI-powered refrigerators can optimize temperature settings based on usage patterns, weather forecasts, and energy consumption, leading to energy efficiency.

2. Smart Washing Machines

- IoT-connected washing machines allow users to control and monitor washing cycles remotely through smartphone apps.
- AI-driven washing machines can learn users' preferences, fabric types, and adjust settings to ensure the best cleaning performance while minimizing water and detergent usage.

3. Smart Ovens

- IoT-enabled ovens can be remotely controlled and monitored, allowing users to preheat or adjust cooking settings while away from home.
- AI-powered ovens can provide cooking recommendations, optimize cooking times, and adjust temperatures based on the type and weight of the food.

4. Smart Thermostats

- IoT-based thermostats can learn users' temperature preferences, adjust heating or cooling schedules automatically, and be controlled remotely through smartphones.
- AI algorithms in smart thermostats can analyze weather forecasts and occupancy patterns to optimize energy usage and reduce heating/cooling costs.

5. Smart Lighting

- IoT-connected smart bulbs and lighting systems can be controlled remotely and adjusted for brightness, color, and ambiance.
- AI-powered lighting can optimize energy consumption by adapting to natural light conditions and occupancy patterns.

6. Smart Home Energy Management Systems

- These systems integrate various smart appliances, allowing users to monitor and control their energy consumption and optimize energy usage based on real-time data and AI algorithms.

7. Smart Home Security Systems

- IoT-connected security cameras, doorbells, and alarms provide real-time monitoring and alerts, with AI capable of distinguishing between ordinary events and potential threats.

These smart appliances enhance convenience, energy efficiency, and customization in our daily lives, marking a significant step in the progression of Industry 4.0 technologies into our homes and workplaces.

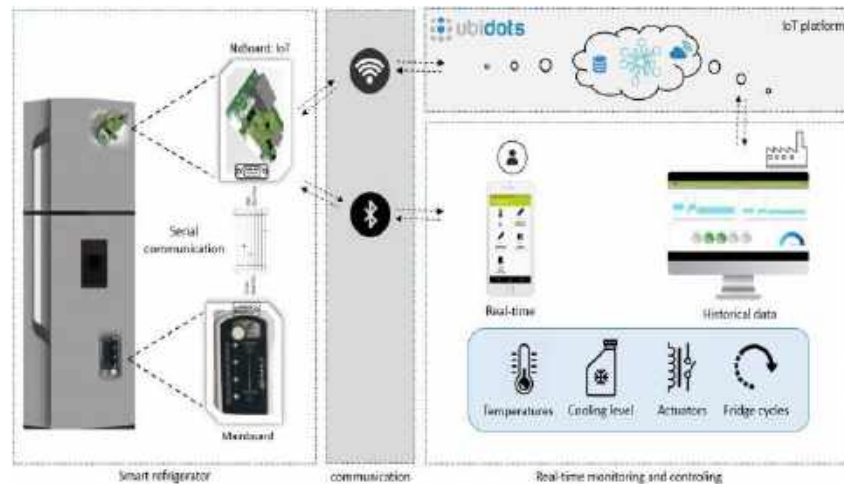


Fig: Industry 4.0

IIoT in the Business Area

IIoT (Industrial Internet of Things) is revolutionizing the business landscape, connecting smart devices, sensors, and machinery to optimize industrial processes. IIoT enables real-time data collection and analysis, empowering businesses to make data-driven decisions and improve overall operational efficiency. In manufacturing, IIoT enables smart factories that automate production processes, monitor equipment health, and reduce downtime. Supply chain and logistics benefit from IIoT's end-to-end visibility, enabling proactive decision-making and efficient inventory management.

Energy-intensive industries leverage IIoT to manage energy consumption, optimize energy usage, and reduce carbon footprints. Predictive maintenance powered by IIoT sensors helps businesses detect potential equipment failures and schedule maintenance before breakdowns occur. IIoT enhances asset tracking and management, ensuring valuable assets are accounted for and utilized optimally. Workplace safety improves with IIoT-enabled wearable devices and smart sensors, alerting businesses to potential hazards and safety violations.

IIoT enhances quality control in regulated industries by monitoring production parameters and ensuring compliance with strict standards. Remote monitoring and control provided by IIoT enable businesses to manage operations from anywhere,

increasing flexibility and scalability. IIoT drives customer experience improvements by collecting real-time data on product usage and behavior, leading to more personalized offerings. Advanced analytics and AI-powered algorithms in IIoT enable businesses to analyze large datasets and gain valuable insights for strategic planning. IIoT facilitates seamless collaboration and connectivity among various stakeholders in the supply chain, fostering efficient communication and streamlined processes. In healthcare, IIoT enables remote patient monitoring and helps optimize medical equipment maintenance and usage.

IIoT adoption leads to cost savings through optimized resource utilization, reduced downtime, and enhanced asset lifecycle management. In agriculture, IIoT-driven smart farming techniques enable precision agriculture, conserving resources and maximizing crop yields. IIoT supports real-time tracking of shipments, ensuring timely deliveries, and preventing losses in the logistics industry. Businesses in the retail sector utilize IIoT to optimize inventory levels, improve supply chain visibility, and enhance customer experience. IIoT-powered data analytics helps businesses identify trends and patterns, enabling them to remain competitive in rapidly changing markets. The transformative potential of IIoT in the business arena makes it a critical technology for enhancing efficiency, productivity, and competitiveness across industries.

Conclusion

The Internet of Things (IoT) has emerged as a transformative force, revolutionizing industries and enabling unparalleled connectivity. By interconnecting everyday objects and devices through the internet, IoT has paved the way for unprecedented data collection, analysis, and automation. As a result, industries across the board, from healthcare and manufacturing to agriculture and transportation, have experienced significant advancements in efficiency, productivity, and cost-effectiveness. Moreover, IoT's ability to seamlessly integrate devices and systems has fostered a new era of interconnectedness, enabling enhanced communication and collaboration between individuals, businesses, and governments worldwide. As IoT continues to evolve and expand its applications, its profound impact on transforming industries and fostering connectivity is set to shape the future of technology and society.

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AGRICULTURAL REFORMS – A STUDY

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Abstract

This paper explores the recent farm laws passed by parliament and their impact on farmers' income. The laws collectively offer greater freedom to cultivators to sell their produce at better prices and allow farmers to enter into contracts with processors, aggregators, wholesalers, large retailers and exporters at mutually agreed crop prices. The laws also encourage private investment into storage and warehousing by removing stockholding limits. To make these reforms work, some conditions may have to be fulfilled and imperfections and concerns have to be addressed, which are elaborated in the paper. Finally, the paper focuses on other agricultural reforms to improve the supply-side factors, such as rationalization of subsidies, land reforms, use of technology, strengthening institutions and governance, and improving rural infrastructure.

Keywords: *Agricultural Reforms, APMC, Essential Commodities Act, Agricultural Markets, Agricultural Policy*

Introduction

The performance of Agriculture in India is important as the sector not only contributes to the overall growth of the economy but also provides employment and food security to the majority of the population in the country. The structural reforms and stabilization policies introduced in India in 1991 initially focused on industry, tax reforms, foreign trade and investment, banking and capital markets. The economic reforms did not include any specific package specifically designed for agriculture. It is viewed that protection to the industry in the form of import substitution policies like tight import controls and high import duties have hurt the agriculture till 1991. Disprotection to industry since 1991 is supposed to correct this bias and increase terms of trade for agriculture. "This would create a potentially more profitable agriculture, which would be able to bear the economic costs of technological modernization and expansion" (Man Mohan Singh, 1995,). The reforms have improved terms of trade for agriculture and opened new opportunities such as benefits from trade and specialization, widening choices in new technology including biotechnology. Trade reforms are expected to have a positive impact on agriculture. There has been a significant increase in agricultural exports after economic reforms

were initiated. Increase in exports initially was due to a significant reduction in the import duties and devaluation of the Indian rupee. The economy-wide reforms seem to have benefited agriculture because of increasing business transactions between agriculture and the rest of the economy over time (Mishra and Rao, 2003). It may be true that liberalization of non-agriculture has had a positive impact on agriculture indirectly. But agriculture has not undergone direct reforms since independence. Agricultural markets witnessed only limited reforms. Since the early 2000s, there have been some attempts to amend the APMC (Agriculture Produce Marketing Committee) Act. Recently, the Central Government has brought out three farm laws as part of the agriculture market reforms. The objective of this paper is to examine (a) the recent three farm laws and their impact on farmers' incomes and supply chains; (b) other agriculture reforms needed for higher growth and incomes.

The Government with the aim of transforming agriculture in the country and raising farmers' income have passed three important legislation from Parliament.

- These legislations sought to bring much needed reforms in the **agricultural marketing system** such as removing restrictions of private stock holding of agricultural produce or creating trading areas free of middlemen and take the market to the farmer.
- The Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020,
- The Farmers (Empowerment and Protection) Agreement of Price Assurance and Farm Services Act, 2020,
- Essential Commodities (Amendment) Act, 2020.

The Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020

Features

- **Freedom to the Farmers:** The Act provides the farmers the freedom of choice related to sale and purchase of produce.
- **Liberation from the Cess:** The farmers will not be charged any cess or levy for sale of their produce under this Act. Further there will be a separate dispute resolution mechanism for the farmers.

Benefits

- **Promotes trade:** It promotes barrier-free inter-state and intra-state trade and commerce outside the physical premises of markets notified under State APMCs.
- **Better price:** It will open more choices for the farmer, reduce marketing costs for the farmers and help them in getting better prices

- **One nation, one market:** The Act will help create **One India, One Agriculture Market** and will lay the foundation for ensuring golden harvests for our hard working farmers.

The Farmers (Empowerment and Protection) Agreement of Price Assurance and Farm Services Act, 2020

Feature

- Aims to provide for a national framework on farming agreements that protects and empowers farmers to engage with agri-business firms, processors, wholesalers, exporters or large retailers for farm services

Benefits

- **Level playing field:** The new legislation will empower farmers for engaging with **processors, wholesalers, aggregators, wholesalers, large retailers, exporters** etc., on a level playing field without any fear of exploitation.
- **Transfers the risk:** It will transfer the risk of market unpredictability from the farmer to the sponsor and also enable the farmer to access modern technology and better inputs.
- **Attracts private sector:** This legislation will act as a catalyst to attract private sector investment for building supply chains for supply of Indian farm produce to national and global markets, and in agricultural infrastructure.
- **Eliminates intermediaries:** Farmers will engage in direct marketing thereby eliminating intermediaries resulting in full realization of price.
- Amendments to Essential Commodities Act (1955)

Background

- India has become surplus in most agri-commodities but farmers have been unable to get better prices due to lack of investment in cold storage, processing and export.
- The imposition of the curbs on stocking of farm produce and regulation of the prices of commodities, etc. under **Essential Commodities Act (ECA)** are some of factors responsible for less entrepreneurial spirit and thus less investment in the farm sector.

Benefits of Amendments

- The amendment would deregulate the commodities such as cereals, edible oils, oilseeds, pulses, onions and potatoes. It will help to lessen the fears of private investors of excessive regulatory interference in their business operations.

- Any limits under ECA over these commodities will be imposed only in exceptional circumstances such as war, famine, extraordinary price rise and natural calamity.
- The freedom to produce, hold, move, distribute and supply will lead to harnessing economies of scale and attract private sector/foreign direct investment into the agriculture sectors.
- It will help drive up investment in cold storages and modernization of the food supply chain.
- The amendment is expected to help both farmers and consumers while bringing in price stability.
- It will also create a competitive market environment and also prevent wastage of agri-produce that happens due to lack of storage facilities.
- It is considered as a step towards transformation of agriculture and raising farmers' income.

Significance of these Acts

- The reforms are expected to **accelerate growth** in the sector through private sector investment in building infrastructure and supply chains for farm produce in national and global markets.
- They are intended to **help small farmers** who don't have means to either bargain for their produce to get a better price or invest in technology to improve the productivity of farms.
- The legislation on **contract farming** will allow farmers to enter into a contract with agri-business firms or large retailers on pre-agreed prices of their produce.
- It will also help farmers of regions with surplus produce to **get better prices** and consumers of regions with shortages, lower prices.
- It will promote the creation of **Farmer Producer Organizations (FPO)** on a large scale and will help in creating a farmer-friendly environment for contract farming where small players can benefit.
- **Competition** is the best protector of stakeholders whether it is consumer or the farmers. Having a variety of buyers will protect farmers from exploitation and by having more sellers (farmers), consumers can buy better products at better deals.

Farmers Protest and Issues Involved

- **Federal Angle:** The provisions in the Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020, provides for unfettered commerce in designated trade areas outside APMC jurisdictions.

- Apart from this, the Act empowers the Centre government to issue orders to States in furtherance of the law's objectives.
- However, matters of trade and agriculture being the part of subjects on the State list, have caused resentment in States.
- **Lack of Consultation:** First the ordinance route and now the hastily attempt to pass the Acts without proper consultation adds to the mistrust among various stakeholders including farmers.
- Also, by allowing 'trade zones' to come up outside the APMC area, farmers have become apprehensive that the new system would lead to eventual exit from the minimum support price.
- **Absence of any regulation in non-APMC mandis:** Another issue that is raised by the farmers is that it gives the preference for corporate interests at the cost of farmers' interests.
- In absence of any regulation in non-APMC mandis, the farmers may find it difficult to deal with Corporates, as they solely operate on the motive of profit seeking.
- **Non-Favourable Market Conditions:** While retail prices have remained high, data from the **Wholesale Price Index (WPI)** suggest a deceleration in farm gate prices for most agricultural produce.
- With rising input costs, farmers do not see the free market based framework providing them remunerative prices.
- These fears gain strength with the experience of States such as Bihar which abolished APMCs in 2006. After the abolition of mandis, farmers in Bihar on average received lower prices compared to the MSP for most crops.

Impact on Stakeholders

- **Farmers:** The farmer is now the producer and the seller of his own produce and will be free to enter into agreement with private trade directly.
- **Consumers:** The consumers would now get the produce at much lower costs.
- **Middlemen:** Although the role of middlemen is not going to end completely, their hold on the trade will not be as strong.
- **State governments:** The state govt. of states such as Punjab and Haryana will be adversely affected as there will be a huge loss in annual revenue collection.

Conclusion

Basically, we have to change the narrative on agriculture towards more diversified high-value production, better remunerative prices and farm incomes, marketing and trade reforms, high productivity with less input, focus on post-

harvest value chains including storage, warehousing, processing and retailing, cost-effective and sustainable agriculture. The government policies have been biased towards cereals particularly rice and wheat. There is a need to shift from rice, wheat-centric policies to non-cerealfocused policies like millets, pulses, fruits and vegetables, livestock and fisheries to promote diversified agriculture. The agriculture reforms will help in achieving the goals of higher agricultural growth and faster increase in farmers' income.

- The above mentioned legislation basically aims at creating **additional trading opportunities** outside the APMC market yards to help farmers get remunerative prices due to additional competition.
- It proposes an **electronic trading** in transaction platform for ensuring a seamless trade electronically.
- None of the legislation affects the **Minimum Support Price** in any way as the MSP is an administrative decision not a law.
- Agricultural Produce & Market Committee (APMC) will still be available as a choice to sell their products.
- The sale, lease or mortgage of farmers' land is totally prohibited and farmers' land is also protected against any recovery.

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CLOUD COMPUTING – BENEFITS, RISKS AND ADOPTION STRATEGIES

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Abstract

Cloud computing is the rearmost of computing paradigms. It promises to change the way people use calculating coffers. Using Internet as the backbone, cloud computing asserts that it's possible to give computing as a "mileage" to end druggies "as and when demanded" base. cloud computing has an implicit to serve druggies of all kind's individual druggies, institutions, assiduity at large. Cloud computing is a business model that harnesses the web as the ultimate business platform. cloud computing is saturated with immense eventuality for array of practical operations. The model is anticipated make computing needs available via web on retail base and is called cloud computing. cloud computing intends to make the Internet the ultimate home of all computing coffers storehouse, calculations, operations and allow end stoner to available them in amounts of her choice, position of their preferences, for duration of their relish. In other world web come the provision stores for all your computing needs.

Keywords: Cloud computing, Benefits, Risks, Strategies.

Introduction

Cloud Computing is the delivery of calculating services similar as waiters, storehouse, databases, networking, software, analytics, intelligence, and more, over the cloud (Internet). Cloud Computing provides a volition to the on- demesne datacentre. With an on- demesne datacentre, we've to manage everything, similar as copping and installing tackle, virtualization, installing the operating system, and any other needed operations, setting up the network, configuring the firewall, and setting up storehouse for data. After doing all the set- up, we come responsible for maintaining it through its entire lifecycle. But if we choose Cloud Computing, a cloud seller is responsible for the tackle purchase and conservation. They also give a wide variety of software and platform as a service. We can take any needed services on rent. The cloud computing services will be charged grounded on operation.

Benefits

Cloud computing has been around for roughly two decades and despite the data pointing to the business edge, cost- benefits, and competitive advantages it holds, a

large portion of the business community continues to operate without it. According to a study by the International Data Group, 69 of businesses are formerly using pall technology in one capacity or another, and 18 say they plan to apply pall- calculating results at some point. At the same time, Dell reports that companies that invest in big data, pall, mobility, and security enjoy up to 53 faster profit growth than their challengers. As this data shows, an adding number of tech- expertise businesses and assiduity leaders are recognising the multiple benefits of the pall- calculating trend. But further than that, they're using this technology to more efficiently run their organisations, better serve their guests, and dramatically increase their overall profit perimeters. Pall computing operates on a analogous principle as web- grounded dispatch guests, allowing druggies to pierce all of the features and lines of the system without having to keep the bulk of that system on their own computers. In fact, utmost people formerly use a variety of pall computing services without indeed realising it. Gmail, Google Drive, TurboTax, and indeed Facebook and Instagram are all pall- grounded operations. For all of these services, druggies are transferring their particular data to a pall- hosted garçon that stores the information for after access. And as useful as these operations are for particular use, they are indeed more precious for businesses that need to be suitable to pierce large quantities of data over a secure, online network connection.

Cost Saving

However, you are not alone 20 of organisations are concerned about the original cost of enforcing a cloud- grounded garçon, If you're upset about the price label that would come with making the switch to pall computing. But those who are trying to weigh the advantages and disadvantages of using the pall need to consider further factors than just original price they need to consider ROI. Once you are on the pall, easy access to your company's data will save time and plutocrat in design startups. And, for those who are upset that they'll end up paying for features that they neither need nor want, utmost pall- computing services are pay as you go. This means that if you do not take advantage of what the pall has to offer, also at least you will not have to be dropping plutocrat on it.

Security

Multiple organisations have security enterprises when it comes to espousing a pall- computing result. After all, when lines, programs, and other data are not kept securely onsite, how can you know that they're being defended. If you can ever pierce your data, also what is stopping a cybercriminal from doing the same thing Well, quite a bit, actually.

Flexibility

Your business has only a finite quantum of focus to peak between all of its responsibilities. However, also you are not going to be suitable to concentrate on reaching business pretensions. The pall offers businesses more inflexibility overall versus hosting on a original garçon. And, if you need redundant bandwidth, a pall-grounded service can meet that demand incontinently, rather than witnessing a complex (and precious) update to your IT structure. This bettered freedom and inflexibility can make a significant difference to the overall effectiveness of your organisation. A 65 maturity of repliers to an InformationWeek check said “the capability to snappily meet business demands” was one of the most important reasons a business should move to a pall terrain.

Mobility

Pall computing allows mobile access to commercial data via smartphones and bias, which, considering over 2.6 billion smartphones are being used encyclopaedically moment, is a great way to ensure that no bone is ever left out of the circle. Staff with busy schedules, or who live a long way down from the commercial office, can use this point to keep incontinently over to date with guests and colleague. Through the pall, you can offer accessibly accessible information to deals staff who travel, freelance workers, or remote workers, for better work- life balance. thus, it's not surprising to see that organisations with hand satisfaction listed as a precedence are over to 24 more likely to expand pall operation.

Quality Control

There are many effects as mischievous to the success of a business as poor quality and inconsistent reporting. In a pall- grounded system, all documents are stored in one place and in a single format. With everyone penetrating the same information, you can maintain thickness in data, avoid mortal error, and have a clear record of any variations or updates. Again, managing information in silos can lead to workers accidentally saving different performances of documents, which leads to confusion and adulterated data.

Loss Prevention

However, then all of your precious data is inseparably tied to the office computers it resides in, if your organisation is not investing in a pall- computing result. This may not feel like a problem, but the reality is that if your original tackle gests a problem, you might end up permanently losing your data. This is a more common problem than you might realise computers can malfunction for numerous reasons, from viral infections, to age- related tackle deterioration, to simple stoner

error. still, you are at threat of losing all the information you had saved locally, if you are not on the pall. With a pall- grounded garçon, still, all the information you've uploaded to the pall remains safe and fluently accessible from any computer with an internet connection, indeed if the computer you regularly use is not working.

Automatic Software Updates

For those who have a lot to get done, there is not anything further prickly than having to stay for system updates to be installed. pall- grounded operations automatically refresh and modernize themselves, rather of forcing an IT department to perform a homemade organisation wide update. This saves precious IT staff time and plutocrat spent on outside IT discussion. World lists that 50 of pall adopters cited taking smaller internal IT coffers as a pall benefit.

RISK

Pall computing provides colourful advantages, similar as bettered collaboration, excellent availability, Mobility, Storage capacity, etc. But there are also security pitfalls in pall computing. Some most common Security pitfalls of Cloud Computing are given below-

Data Loss

Data loss is the most common pall security pitfalls of pall computing. It's also known as data leakage. Data loss is the process in which data is being deleted, corrupted, and undecipherable by a stoner, software, or operation. In a pall computing terrain, data loss occurs when our sensitive data is notoriety differently' s hands, one or further data rudiments can't be employed by the data proprietor, hard fragment isn't working duly, and software isn't streamlined.

Hacked Interfaces and Insecure APIs

As we all know, pall computing is fully depending on Internet, so it's mandatory to cover interfaces and APIs that are used by external druggies. APIs are the easiest way to communicate with utmost of the pall services. In pall computing, many services are available in the public sphere. These services can be penetrated by third parties, so there may be a chance that these services fluently harmed and addressed by hackers.

Data Breach

Data Breach is the process in which the non-public data is viewed, penetrated, or stolen by the third party without any authorization, so association's data is addressed by the hackers.

Vendor Lock-In

Vendor lock-in is one of the biggest security pitfalls in cloud computing. Organizations may face problems when transferring their services from one seller to another. As different vendors give different platforms, that can beget difficulty moving one cloud to another.

Increased Complexity Strains IT Staff

Migrating, integrating, and operating the cloud services is complex for the IT staff. IT staff must bear the redundant capability and chops to manage, integrate, and maintain the data in the cloud.

Account Hijacking

Account hijacking is a serious security threat in cloud computing. It's the process in which individual user's or organization's cloud account (bank account-mail account, and social media account) is stolen by hackers. The hackers use the stolen account to perform unauthorized conditioning.

Adoption Strategies

Espousing serverless as a business model requires a unique approach. One that may differ from other technology executions. An effective strategy considers several factors to determine the stylish approach. An effective strategy is one that maximizes the implicit value of the service while minimizing costs. In the end, a successful relinquishment strategy is one that aligns technology with the business. An alignment that embraces the two as the same bid to negotiate business objects. Below are the crucial abdication strategies that will help achieve the stylish outgrowth.

Define Business Outcomes

Without understanding why you're espousing the service and what value it's furnishing for your business; you're just shifting your technology mound. A many common business object is

- Cost savings.
- Erecting new specialized capabilities.
- Scaling to meet request demands.
- Integration of a complex IT portfolio.
- Democratization and/or tone- service surroundings.
- Optimization of internal operations.
- Increase in business dexterity.

Plan the Entire Journey and Implement in Stages

Espousing serverless computing isn't a "one-shot" deal where everything is moved at once. It can take time to integrate completely. After determining

businessobjects, leaders must establish a roadmap. What operations need to be shifted and when.

Address Potential Risks

Migrating to a serverless model isn't without its pitfalls. Leaders must assess these pitfalls and plan for them. Common pitfalls to consider are Security and Compliance- In the pall, data is entrusted to a third party and shares garçon space with other associations. Leaders must determine if nonsupervisory compliance requires strict security protocols that must be enforced. Vacuity and trust ability- With pall computing, the seller handles all conservation tasks. Companies should review the seller's Service position Agreements (SLAs) to ensure their timelines offer the vacuity and trust ability the company requires. Data Integration- Integrating data involves connections to colourful sources. Leaders will need to determine the applicable interdependencies and ensure the vacuity of the data needed.

Conclusion

Pall computing will affect large part of computer assiduity including Software companies, Internet service providers. pall computing makes it veritably readily for companies to give their products to end- stoner without fussing about tackle configurations and other conditions of waiters. The pall computing and virtualization are distinguished by the fact that all of the control aeroplane conditioning that centre around creation, operation, and conservation of the virtual terrain, are outsourced to an automated subcaste that's called as an API and other operation waiters for the pall operation. In simple words, the virtualization is a part of pall computing where homemade operation is done for interacting with a hypervisor. On the other hand, in pall computing, the conditioning are tone- managing where an API (operation Program Interface) is used so that the druggies can tone- consume the pall service.

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A STUDY ON IMPACT, AWARENESS ON START UP INDIA SCHEME ON YOUNG ENTREPRENEURS

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Abstract

The Indian startup scheme has been evolving rapidly over the past few years for the world's most innovative and disruptive companies. The government has launched several initiatives, such as the Startup India Action Plan and the Atal Innovation Mission, to expand entrepreneurship and support the development of innovative technologies. It has also set up dedicated startup funds and incubators to provide financial and mentorship support to startups. The government's efforts are more in helping India to become one of the world's leading startup nations. It motivates each and every youngster to start a business and create employment opportunities.

Keywords: Entrepreneur, Unemployment, Startup, Innovation.

Introduction

Startup India Scheme is set up by the Government of India for creating employment and wealth creation. The goal of Startup India is the development and innovation of products and services and increasing the employment rate in India. The operation was first announced by Indian Prime Minister, Narendra Modi during his speech on 15 August 2015. The action plan of this initiative is focusing on three areas like Simplification, Handholding, Funding Support and Incentives. The main aim of the startup scheme is to abolish unemployment and poverty.

Review of the Literature

Bosma, Praag, Thurik and Wit (2002) have presented a detailed study of firms investing in human and social capital for improving performance. They also explained that one cannot be sure about the favorable aspect is due to investing or somewhat due to the innovative entrepreneurs putting more in their human and social capital. They also found that the individual entrepreneur who is more skill full in the industry performs well than the others. And finally, they conclude that investing in human and social capital increases the entrepreneur's performance.

A Startup business should be protected from specific risk faced by the sector in which it operates. Empowered with unique demographic advantages and guided

efforts, analysts are predicting that India will be poised to a position by itself among developed economics with in the next 10 to 15 years. As indicated by the most recent UN articulation India with 356 million 10-24 year-olds have the real centralization of youth populace regardless of having a littler populace than China. Youth is the main thrust behind advancement, creation, and the future pioneers of a nation besides Youth likewise drives request and utilization design in a nation. (Kaur, 2017)

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Objectives

- To know the level of awareness and start-up schemes for young entrepreneurs.
- To analyze innovation and development among young entrepreneurs after the implementation of the startup scheme.
- To examine benefits undergone by entrepreneurs.

Statements of the Problem

The risk of reaching failure is one of the greater drawbacks in startups as compared to other organizations. The lack of a skilled workforce is not possible due to the lack of funds at the initial stage. The success of any business needs proper implementation of policies and procedures and that to be followed. It mainly focused on the short-term rather than long term. The execution of the plan is just moderate in the modern era. Were the entities looking forward to sudden growth when compared to a gradual hike.

Research Methodology

- **Area of the Study**
The Study took place around the Coimbatore district.
- **Sampling Techniques**
The study was confined to purposive sampling techniques.
- **Tools Used**
- **ANOVA**
- **Simple Percentage Analysis.**

Startup India Action Plan

As of my last update in September 2021, the "Startup India Action Plan" was a flagship initiative launched by the Government of India to promote and support startup businesses in the country. It was announced on January 16, 2016, by the Prime Minister of India, Narendra Modi.

Self-Certification: Startups were allowed to self-certify compliance with labor and environmental laws, reducing the regulatory burden on new businesses.

Startup India Portal: An online platform was created to provide a single-point access for startups to interact with the government and access all relevant information, services, and resources.

Startup India Hub: This was a dedicated platform designed to resolve queries, provide guidance, and help startups navigate the regulatory environment.

Funding Support: To encourage funding, a 10,000 crore INR fund-of-funds was established, providing support through venture capital funds.

Tax Exemptions: Startups were given a tax holiday for three consecutive years out of their first seven years of existence to promote their growth.

Simplified Exit Process: To provide an easier exit mechanism for startups that fail, a fast-track closure process was introduced.

Innovation Programs: Various innovation-related programs and incubation centers were set up to nurture and support innovation and entrepreneurship.

The Atal Innovation Mission

The Atal Innovation Mission (AIM) is an initiative of the Government of India that was launched on January 16, 2016, by the Prime Minister of India, Narendra Modi, as part of the Startup India Action Plan. The mission is named after former Prime Minister Atal Bihari Vajpayee, who was known for his vision of promoting innovation and entrepreneurship in India.

Atal Research and Innovation for Small Enterprises (ARISE): ARISE aims to stimulate innovation and research in Micro, Small, and Medium Enterprises (MSMEs) by providing grants and support for technology-driven solutions.

Atal New India Challenges: This component involves the launch of various challenges to identify and solve specific problems faced by the nation through innovative solutions. The challenges are open to startups, individual innovators, and researchers.

Atal Incubation Centers (AICs): AICs are established to support startups and entrepreneurs by providing them with the necessary infrastructure, mentoring, funding, and networking opportunities. These incubation centers are sector-specific and help nurture innovative ideas into viable businesses.

Atal Tinkering Labs (ATLs): These are dedicated innovation workspaces established in schools across India. ATLs are equipped with tools and equipment to foster creativity and problem-solving skills among students from an early age. The labs provide a hands-on learning experience and encourage young minds to become innovators and entrepreneurs.

Employment Opportunity Creation from Startup Business

Direct Employment: Startups hire employees to build and operate their businesses. They provide job opportunities across various roles, including technology, marketing, sales, operations, customer support, and administration.

Job Creation in Ancillary Industries: Startups create demand for goods and services, leading to job creation in ancillary industries that support the startup ecosystem. This includes suppliers, service providers, logistics companies, and others.

Indirect Employment: As startups grow, they require support services such as legal, accounting, marketing agencies, and consulting firms. This leads to indirect employment opportunities in these service sectors.

Regional Development: Startups can be catalysts for regional development, as they often set up their operations in smaller towns or cities, creating employment opportunities in these regions.

Entrepreneurship and Self-Employment: Some employees in startups are inspired to become entrepreneurs themselves, leading to the creation of new startups and job opportunities in the future.

Export and International Opportunities: As startups expand and explore international markets, they create job opportunities in global sales, marketing, and distribution.

Analysis and Interpretation

Table -1

Age group	No. of. Responses(100)	Analysis%
18-25	10	20%
26-30	40	80%
31- 40	35	70%
Above 41	15	30%

Sources: primary data

Table 1 The above table shows that 80% of the respondents are under 26-30 age group, 70% of the respondents are under 31-40 age group, 30% of the respondents are above 41, and 20% of the respondents are under 18-25%.

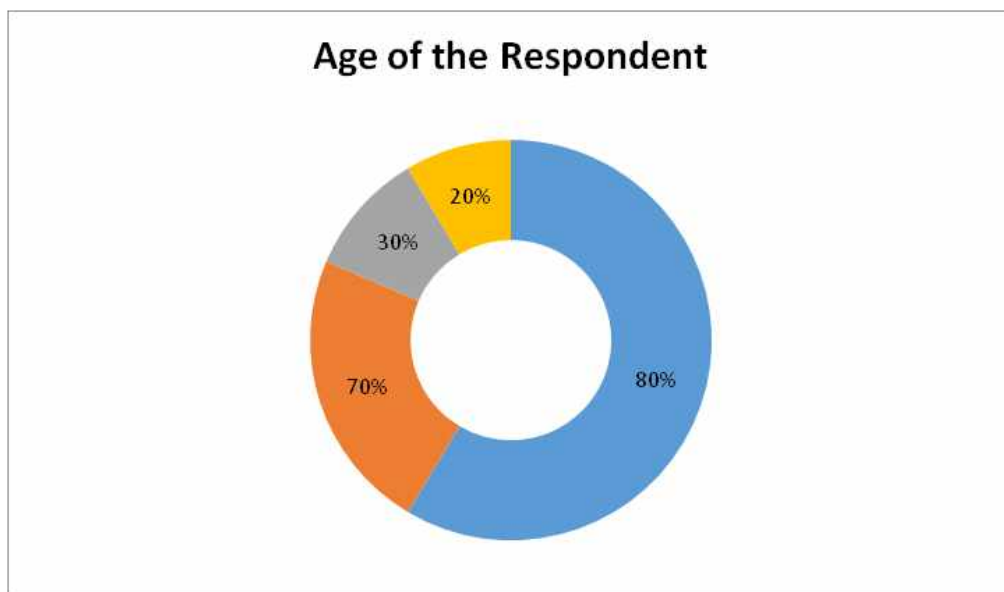
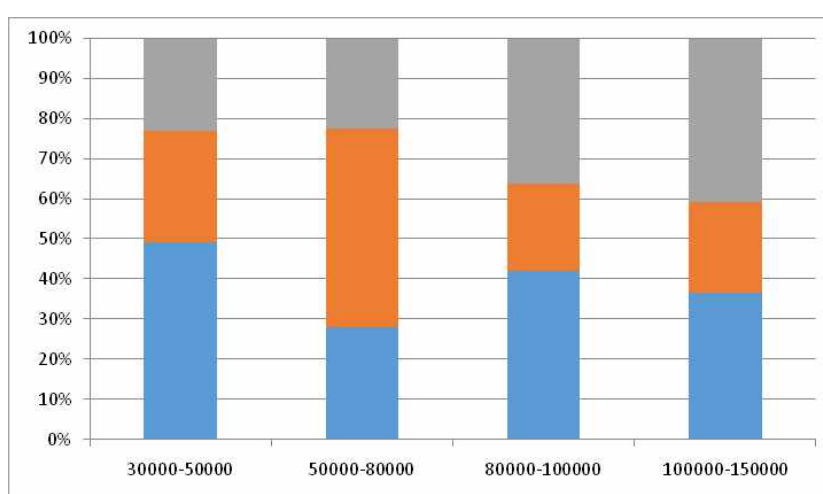


Table: 2

Income	Responses(100)	Analysis%
30000-50000	40	80%
50000-80000	30	60%
80000-100000	10	20%
100000-150000	20	40%

Sources: primary data

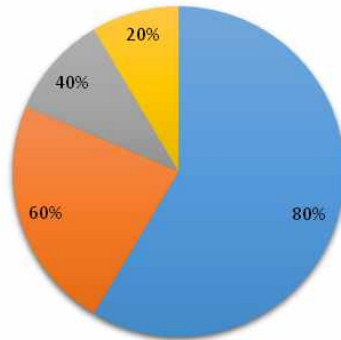
Table 2 state that 80% of the respondent income is from 30000-50000 and 60% of the respondents are 50000-80000 and 20% of the respondents are 80000-100000 and 40% of the respondents are from 100000-150000.

**Table:3**

S. No	Benefits availed by the respondent	No. of respondents	Percentage%
1	Relaxed in public	30	60%
2	Tax exemption	40	80%
3	Patent benefits	10	20%
4	Special Certification	20	40%

Source: primary data

Table 3. The above table shows that 80% of the respondents are availed due to tax exemption, 60% of the respondents are availed due to relaxation in public laws, 40% of the respondents are availed due to special certificates, 20% of the respondents are availed due to patent benefits.

Benefits availed by the Respondents

ANOVA

Table: 4 Awareness on youngsters related to startup schemes availed in commercial banks.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.144	1	.143	.422	0.003
within Groups	9.166	26	.340		
Total	9.310	27			

Source: Primary Data

Inferences

Table 4 presents the results of ANOVA, the test shows that there is no significant difference between the awareness of youngsters related to startup schemes availed in commercial banks, of the respondents. The significant P value of all these is 0.003. Hence, the hypothesis is rejected and it is evident that there is no significant difference between the awareness and schemes offered in commercial banks.

Findings

- Majority 80% of the respondents are under the age group of 26-30.
- Majority 80% of the respondents are under the income of 30000-50000.
- Majority 80% of the respondents are availed benefits of Tax Exemption.
- The commercial banks provided various schemes and the majority of the respondent's availed of different loan schemes in banks.

Conclusion

The aim of this case study is to develop knowledge about startups among Youngsters and to perceive the Government related plans for the society of the Nation. The realm of startups stands as a testament to the indomitable spirit of

human creativity and determination. Hence the government's programs have also helped to create awareness about startups and entrepreneurship in various fields.

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BLOCK CHAIN TECHNOLOGY: INNOVATION, OPPORTUNITIES AND CHALLENGES

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Abstract

Digital world has produced edge, new innovative products, and close customer connections encyclopaedically by the effective use of mobile, IoT (Internet of Things), social media, analytics and technology to induce models for better opinions. Blockchain is recently introduced and revolutionizing the digital world bringing a new perspective to security, resiliency and effectiveness of systems. It offers a secure way to change any kind of good, service, or trade. It facilitates smart contracts, engagements, and agreements with essential, robust cyber security point. A blockchain is a public census to which everyone has access but without a central authority having control. It's an enabling technology for individualities and companies to unite with trust and translucence. Blockchain technology is considered to be the driving force of the coming fundamental revolution in information technology.

Keywords: Security, Resiliency, Revolutionizing, Translucence, Information Technolog.

Introduction

Blockchain is a system of recording information that makes it impossible or delicate for the system to be changed, rewrite, or manipulated. The blockchain is a distributed census that duplicates and distributes deals across the computers participating in the blockchain. The Blockchain technology is a structure that stores transactional records, which also known as the block, of the public in various databases, known as the "chain", in a network connected through peer- to- peer bumps. generally, this storage is appertained to as a ' digital census'. Every trade in this census is authorized by the digital hand of the owner, which authenticates the trade and safeguards it from tampering. Hence, the information the digital census contains is largely secure. In simpler words, the digital census is like a Google spreadsheet shared among numerous computers in a network, in which, the transactional records are stored predicated on factual purchases.

Innovation

Blockchain is a combination of three leading technologies

- Cryptographic keys
- A peer- to- peer network containing a shared document
- A means of computing, to store the deals and records of the network

Cryptography keys correspond of two keys – Private key and Public key. These keys help in performing successful deals between the two parties. Each existent has these two keys, which they use to provide a secure digital identity reference. This secured feature is the most important aspect of this technology. The digital hand is combined with the peer- to- peer network; a large number of individualities who act as authorities use the digital hand in order to reach an agreement on deals, among other issues. When they authorize a deal, it's certified by a fine verification, which results in a successful secured trade between the two network- connected parties. So, to add it up, Blockchain stoners employ cryptography keys to perform different types of digital relations over the peer- to- peer network.

How does it Work

A blockchain is fairly similar with spreadsheet or databases because it's a database where data is entered and stored. But the basic difference between a traditional database or spreadsheet and a blockchain is how the data is created and entered. A blockchain consists of programs called scripts that conduct the tasks you generally would in a database Entering and piercing information and saving and storing it nearly. A blockchain is distributed, which means multiple duplicates are saved on multiple systems, and they must match for it to betrue. The blockchain collects trade info and enters it into a block, like a cell in a spreadsheet containing information. Once it is full, the information is run through an encryption algorithm, which creates a seven decimal value called the hash. The hash is also entered into the following block title and restated with the other information in the block. This generates a series of blocks that are chained with one another. The entire network works one after the other, trying to" break" the hash. Each bone generates an arbitrary hash except for the" nonce," short for number used formerly. Every miner starts with a nonce of zero, which is added to their erratically-generated hash. However, a value of one is added to the nonce, and a new block hash is generated, If that number isn't equal to or lower than the target hash. This continues until a miner gives a valid hash, winning the race and entering into the price.

Infinance

Blockchain technology provides hands- down effectiveness when it comes to tracking financial parcels. It provides a transparent account system, making it indeed easier to track and attack the flux and exodus of cash.

In Cloud Storage

With the successful performance of blockchain technology, pall storage can come spare secure against the attacks of hackers. It reduces unauthorized data tampering while cracking the data using cryptography.

In Cyber Security

As argued ahead, blockchain uses principles of tally technology and decentralization, making it a perfect fit to fortify cyber security. It helps secure private messaging by forming an integrating API armature that eventually enables cross- runner communication proficiency.

Financial Deals

Fintech, the technological inventions that drive financial exertion analogous as banking, payment processing and investing have given rise to an adding number of blockchain- predicated companies. samples of these are originators of the machine- outstanding web with Bitcoinand builders of a force- chain network on a blockchain structure. The lodestones of blockchain for financial services providers are security, stability and the capability to execute friction-less deals

Music and Entertainment

Blockchain technology can help cover IP rights for the creation and distribution of creative factory and increase the control IP owners have over their work. Music platforms analogous as Bit tunes and Peer Tracks are, it seems, formerly using blockchain technology to distribute and monetise their products. The technology also improves the way in which IP rights are executed

Challenges**The Illegal Connection**

The anonymous point of the blockchain technology attracted not only experts but also lawless personals. Why? Well, the nature of the network is decentralized so that no one can know your true identity. This makes the bitcoin to be the primary target used as a currency in the black request and the dark web. This bad name is making multitudinous people suppose twice ahead looking into the whole system. also, it's natural for people wanting to stay down from any lawless association. lawbreakers now use these cryptocurrencies to buy limited illegal outfit and payment styles.

They also ask for a cryptocurrency in exchange as a deliverance. The only way to manage up with this is to stop the lawless connection and for all for better blockchain performance.

Low Scalability

Another one of the challenges of administering blockchain is scalability. In reality, blockchains work for a small number of stoners. But what happens when a huge integration takes place? Ethereum and Bitcoin now have the topmost number of stoners on the network, and gratuitous to say, they are having a hard time dealing with the situation. When the number of users increase on the network, the transitions take longer to exercise. As a result, the deals bring advanced than usual, and this also restricts farther stoners on the network. It can take indeed days to exercise the whole trade. So, in the end, this blockchain relinquishment challenge is making the technology less and less profitable. Many of the blockchain technologies did show us a hastily affair, but they also breakdown when farther stoners log in to the system. So, this challenge needs to be dealt with enough presto, as it's making the whole technology kind of dull.

High Energy Consumption

Energy consumption is another blockchain handover challenge. Ultimate of the blockchain technology follow bitcoin's structure and use Proof of Work as an agreement algorithm. Still the Proof of Work is not as great as it looks. To keep the system, live, it will definitely need some systematic power. You presumably heard about mining. Mining will bear you to break complex equations using your computer. So, your Personal computer will take further and further electricity to overcome this situation when you start. At present, miners are using 0.2 of the total electricity. However, miners will take farther power than the world can give, If it keeps adding also. thus, it now becomes one of the basic challenges of this network.

Lack of Insulation

Blockchain and insulation don't go really well with each other. The public census system powers the system, so full insulation is not the first concern. But can any association function without insulation? Well, no. multitudinous companies that work with the insulation needs to have defined boundaries. Their consumers trust them with sensitive information. So, if they are all stored in a public record, it won't actually be private presently now, would it? That's why it's necessary to frequently change the registers to limit access to the information. Making it available for only the guests will be a result also. This is an essential thing in the case of bitcoin and other crypto currencies. On the other hand, this raises some enterprises for

governments and the companies. Governments and companies always need to cover and circumscribe access to their data for various reasons. This means that blockchain technology will not be suitable for people who work with sensitive information unless anyone solve the problem.

No Regulation

This is one of the main challenges of administering blockchain in an association. multitudinous associations are making blockchain technology a means of trade. You will see multitudinous products depended on this. But incase of now, there aren't any specific regulations about this. So, no one follows any kind rules when it comes to the blockchain. Now, this is where the problem comes in. Although blockchain guarantees transparency as one of its benefits, there is still no full security in this technology. You won't know for sure if it will be safer for you or not. To get over these challenges, government and extremely controlled security sectors are in the stage to provide various regulations for blockchain.

Security Problems

Security is another vital content also. We all know how every blockchain technology considers about its security. But like any other technology, blockchain also comes with a variety of security circles. The 51 attacks on the network are one of the security excrescencies of the network. In this cyber security attack, hackers can take over the network and exploit it in their own way. They can indeed alter the trade process and circumscribe other people from creating a block. To deal with this, the protocol caste needs farther security. So, no one knows whether they are safe to use for a long period of time.

Conclusion

Blockchain technology has the implicit to disrupt traditional processes across multitudinous industriousness. In some aspects, the technology may hang the traditional monitory part of the counsel as the need for advice diminishes or disappears. Still, there are still multitudinous blockchain handover challenges to see a real change in the way financial services use this technology. It seems inaudible that companies should follow it nearly and be ready to adjust their services and get the results.

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DIGITALIZATION OF AGRICULTURE IN INDIA – DESCRIPTIVE ANALYSIS

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Abstract

This article presents key technological advances in the digital agriculture, which will have significant impact. Digital Agriculture" aims to advance scientific knowledge in the field of information technologies applied to agriculture. The section welcomes original papers and review articles that provide new insights into smart sensors and networks, automation and control systems, modelling, decision support systems, machine vision, image processing, telemetry, small medium and big data, data mining and analytics, and all of the hardware and software technologies that promote knowledge, sustainability, and the quality and profitability of agricultural operations. Attention will be given to field as well as laboratory experiments, to simulations and models on smart agricultures including, but not limited to, cereals and industrial crops, greenhouses, fruit orchards, vineyards, horticulture, and animal husbandry.

Keywords: Digital Agriculture, Precision Farming, Artificial Intelligence.

Introduction

The term digital agriculture refers to the use of computers and other electronic devices in farming and other agricultural endeavors. Digital agriculture enables farmers and other stakeholders in the agriculture value chain to increase food production using advanced technologies incorporated into a single system. Digital agriculture is a database that contains various information about cultivation, from soil conditions to market assessments, as well as optimal decision operations that aid in making the best choices throughout several agricultural production and distribution processes. A digital agriculture system is a crucial tool for managing agricultural risks. It can assess climate change risks, create a revenue protection policy, and produce a soil quality management program.

Objective of the Study

- The objective of the study is digitalization of agriculture in India.
- To Increases agriculture productivity and lowers production cost.
- To Inhibits soil degradation

- To Lessens chemical application in crop production
- To Promotes effective and efficient use of water resources

Research Methodology

The research study is totally in Descriptive analysis. The research paper depends upon the secondary source of information.

Importance of Digital Agriculture

Farmers rely on cutting-edge technologies to collect and analyze data from their farms to maximize their harvests. Digital agricultural technologies can monitor factors such as moisture, nutrient trends, soil composition, and wind patterns of arable land. The digital agriculture system collects data accurately (such as weather information) using external sources. The combined data is examined and interpreted to help the farmer make better decisions. Robotics and advanced equipment quickly put these decisions into action with greater accuracy, and farmers can receive real-time feedback on the effects of their actions. Accurate weather predictions, yield mapping, variable-rate applications (of water, herbicides, and fertilizers), and GPS guiding systems are all components of digital agriculture.

Digital Agriculture Technologies

Digital agriculture technologies work on the Internet of Things (IoT) principles. These technologies include sensors, telecommunication systems, unmanned aerial systems, machine intelligence, automation, and other advanced machinery. Digital agriculture systems offer a unique perspective that improves the capacity to make and apply decisions. The current generation of farmers utilizes robots to plant and harvest crops. Over the next five years, the market for agricultural robotics is projected to grow from its current value of \$5 billion to over \$10 billion. Aerial drones are now widely used in farming to examine hectares of cotton fields, providing insights that humans would miss on the ground. Information gathered by drones can be used in various ways, including improving harvest time, irrigation, and pest control.

Impact of Climate Change on Agriculture

Fluctuations in ozone, greenhouse gases, and overall climate change impact agriculture significantly because farming is highly dependent on weather conditions. Climate shifts cause variations in habitat ranges and crop planting dates. Droughts and floods caused by climate change impair farming operations. Temperature shifts can also affect the distribution of species and reduce the nutritional quality of major cereals, crop yields, and livestock production.

Digital Agriculture Technologies Reduce Climate Change Vulnerabilities

Digital agriculture can improve farmers' capacity to respond to weather conditions affected by climate changes through accurate climate forecasts. For instance, in 2014, CIAT researchers used information from the national meteorological service to provide accurate advice on when to plant rice in Colombia, sparing 170 rice farmers an estimated 1.7 million dollars in drought-related losses. The researchers developed a computer model that anticipated drought in the area using ten years of historical information on yields and climate collected from mobile applications.

Temperature, precipitation, and wind are some weather parameters that climate changes affect. Since it is difficult to predict the future climate, historical data is used to understand past climate behavior and then apply that understanding to various future climate scenarios.

Digital agriculture can reduce climate change vulnerabilities by predicting weather forecasts. Farmers can navigate the rainfall distribution and make better decisions regarding various livelihood strategies thanks to information distributed to communities via radio broadcasts and mobile communications. Bulletins and notifications from extension services, which are digitally enabled services, can support agricultural producers unaware of digital technologies.

Risks of Digital Agriculture Technologies

The potential utilization of resources is a major risk of digital agriculture. While there is enthusiasm and excitement about integrating digital technology into agriculture, it is important to proceed cautiously, particularly in light of unintended consequences related to the potential eradication of ecological systems. Agricultural data is crucial to the optimum functioning of farms, and if farmers own their data exclusively, they can assess the advantages and disadvantages of their operations.

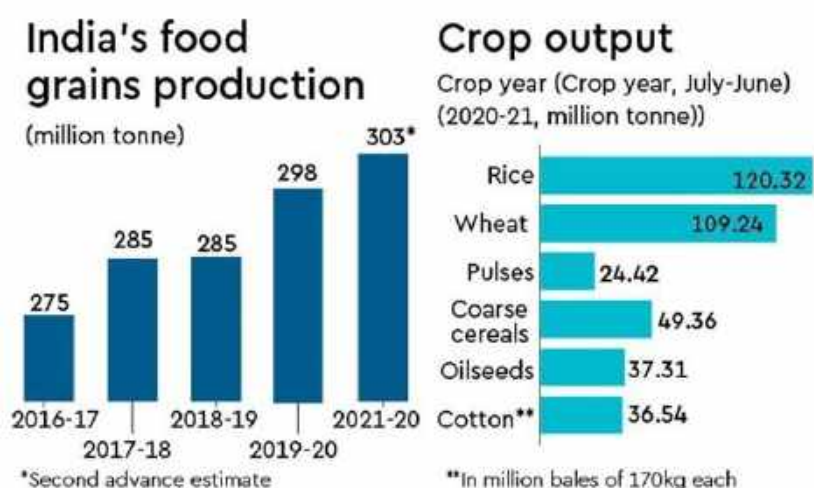
Digitalization of Agriculture in India

The digitalization of agriculture describes integrating cutting-edge digital technology into the farm production system, including artificial intelligence (AI), robotics, uncrewed aviation systems, sensors, and communication networks. Production of all food grains in India was predicted to be 275 million tons (MT) in 2017–18. India is the world's top producer of pulses (25 per cent of total output), consumer of pulses (27 per cent of total consumption), and importer of pulses (14 per cent). According to the Food and Agriculture Organization (FAO), this makes India the world's second-largest food producer.

India is the world's top producer of pulses, paddy, wheat, and wheat, respectively. The National Agricultural Research System (NARS), which includes the

Indian Council of Agricultural Research (ICAR) institutes and State Agricultural Universities, is one of the largest agricultural research systems in the world. Agriculture in India employs over 42 per cent of the labour force (2019), contributes 19.9 per cent of the Gross Domestic Product (GDP) (2020-21), and provides food security for about 1.3 billion people. Hence, technology and the digitalization of agriculture here play a role of a catalyst to improve and increase production.

According to the NITI Ayog research on artificial intelligence, agriculture must expand at a rate of 4 per cent or higher right now to maintain an annual growth rate of 8–10 per cent. Digitization is crucial for achieving this level of success. The NITI Aayog predicted in a report that by 2025, AI in agriculture would be worth \$ 2.6 Bn and rise at a pace of 22.5 per cent Compound Annual Growth Rate (CAGR). AI currently helps farmers increase yield by assisting them in choosing better crops, hybrid seeds, and resource-efficient farming techniques. It is also utilized to improve farming productivity and accuracy to assist farmers in creating seasonal forecasting models



Digital Agriculture Initiatives in India

- The Digital Agriculture Mission 2021–2025 was launched in September 2021 by Narendra Singh Tomar, Union Minister of Agriculture and Farmers Welfare. Five Memorandum of Understandings (MoUs) were signed to advance digital agriculture through pilot projects with Cisco, Ninja cart, Jio Platforms Limited, ITC Limited, and National Commodity and Derivatives Exchange (NCDEX) e-markets Limited (NeML). The Digital Agriculture Mission 2021–2025 aims to encourage and speed up projects based on cutting-edge technologies, including AI, blockchain, remote sensing, robots, and drones.

- Over 1,000 Agri-tech start-ups are based in India, and various venture capital funds, loan funds, and angel investors have long supported the sector. These start-ups have innovative ideas that assist farmers in improving farming techniques and produce.
- To provide farmers with real-time data and the necessary advice, NITI Aayog has teamed up with International Business Machines (IBM) to create a crop production forecast model supported by AI. It aids in enhancing crop output, soil quality, agricultural input control, and early disease outbreak warning.
- In August 2019, Cisco created an Agricultural Digital Infrastructure (ADI) solution to improve farming and knowledge exchange. This played an essential role in the data pool that the Department of Agriculture developed under the National Agri Stack.
- The Jio Agri (Jio Krishi) platform was introduced in February 2020, and it digitalized the agricultural ecosystem along the entire value chain to empower farmers. The platform's primary function leverages data from standalone applications to offer counsel. Its advanced features use data from various sources, input it into AI algorithms, and then deliver precise, individualized advice.
- India is gradually embracing climate-smart farming methods, which will assist in altering the country's ecology and cutting greenhouse gas emissions from agricultural activities. For instance, the farmers in Gujarat's Dhundi village have begun employing solar electricity and other sustainable energy sources for irrigation.
- Microsoft and the Indian government have teamed up to support India's small-holder farmers by running a pilot programme called 'Unified Farmer Services Interface'. The alliance aims to boost farmers' incomes through improved price management and increased agricultural yield using AI sensors. The collaboration would accelerate the use of AI in farming.
- Six institutions are a part of the government's Sensor-based Smart Agriculture (SENSAGRI) programme. Drones would be utilized in this concept to scout over land areas efficiently, acquire priceless information, and instantly communicate the data to farmers.

Conclusion

India is also helping the farmers by providing agricultural loans that will help increase natural farming practices and significantly modernise agriculture, emphasising agri-waste management. In addition, 11 crore farmers have received \$ 26.4 Bn through the Pradhan Mantri (PM) Kisan Samman Nidhi initiative. Additionally, the market for organic products has grown to \$ 1.5 Bn.

The government is also encouraging AI to revolutionise agricultural and farming trends and giving financial support to agri-tech firms. India is continually working to develop and implement regulations that would improve the sustainability of its agricultural industry. Partnerships between corporations and the government can aid in developing a smart agriculture industry, given India's dynamic corporate structure. To reach goals like doubling farmer incomes and sustainable growth, the Indian government is undertaking these initiatives and programmes. The widespread adoption of digital agriculture in India would therefore require a multi-stakeholder strategy in which the government plays a significant enabler's role in the ecosystem.

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MAKE IN INDIA: PROMOTING MANUFACTURING AND GROWTH

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Abstract

A new government initiative called Make in India aims to make India into a manufacturing hub and global design. It includes a wide range of proposals tailored for assisting local and small-scale entrepreneurs in their attempts to expand their operations and bring in Foreign Direct Investment into manufacturing. Potential investors and partners from all across the world are cordially invited to join our campaign so that everyone wins. This is built on the foundation of four primary pillars that cover every area required for the development of the manufacturing industry. This will support the expansion of the nation's economy. With the help of this program, the manufacturing sector has experienced tremendous development across all of the targeted sectors, increasing the nation's GDP.

Keywords: *Make in India, Manufacturing, Development, Foreign Direct Investment, Economy.*

Introduction

As part of the nation-building process, Prime Minister Narendra Modi introduced the Make in India program on 25th September 2014. It is designed to help India become a major center for design and manufacture on a global scale. The Indian government has been mulling over ways to boost the manufacturing sector's pace for years. The campaign was started by the decision-makers and based on the ideologies of Narendra Modi, and it significantly changed the industrial sector's operations. Together with a group of extremely specialized businesses, the Department of Promotion of Industry and Internal Trade (DPIIT) built a new infrastructure to facilitate the program's formulation. India was regarded as an agriculture-driven nation with most of its contribution to GDP. GDP (Gross Domestic Product) measures the monetary value of all finished products and services produced in a given time frame. This contribution from the primary sector did not help the country develop, which caused the economy to contract. The decision-makers chose to shift their attention to the industrial sector, which had enormous potential and chances for assisting the development of the country and encouraging economic growth, after concluding that the primary sector might not help. The government of India began formulating plans to transform the country

into a hub for global manufacturing after discovering the potential that the secondary and tertiary sectors in that country possess. They've discovered that rather than being the factory itself, India was acting as the market for finished goods and services. Instead of helping our country, this helped the other nations whose commodities were imported. This was seen as a problem by the decision-makers, slowing down the nation's development. The policy makers created this program to take advantage of the greater opportunities in the industrial sector and encourage entrepreneurs who have the potential to develop successful business ideas but lack the necessary resources. The program's goal is to help India become a hub for global manufacturing. The Indian government has started this endeavor in order to accomplish all of these. The goal of this effort, which is built upon four pillars, is to encourage entrepreneurship in India across a variety of industries, not just the manufacturing sector. This initiative is based on four pillars that have been recognized as giving the required boost to entrepreneurship in India, not only in the manufacturing sector but also in other sectors.

Four Pillars of Make in India

New Processes

The "Make in India" initiative acknowledges "ease of doing business" as the single most crucial factor in fostering entrepreneurship. To improve the business environment, a number of measures have already been launched. The goal is to delicense and deregulate the sector over a company's entire life cycle.

New Infrastructure

A crucial condition for the development of industry is the availability of modern, helpful infrastructure. To provide infrastructure based on cutting-edge technology with contemporary high-speed communication and integrated logistical arrangements, the government plans to construct industrial corridors and smart cities. By upgrading the infrastructure in industrial clusters, the current infrastructure will be enhanced. The infrastructure of the Intellectual Property Rights registration setup has been improved in response to the fact that innovation and research activities are supported by a quick registration process. It is necessary to determine the skills that are needed by industry and to develop the workforce accordingly.

New sectors

With regard to manufacturing, infrastructure, and service operations, "Make in India" has chosen 25 industries, and comprehensive information is being distributed via an interactive web page and professionally made pamphlets. Defense manufacturing, construction, and rail infrastructure have all seen significant increases in FDI.

New Mindset

The government is frequently considered as a regulator by business. By bringing about a paradigm shift in how the government interacts with industry, "Make in India" seeks to change this. The government will collaborate with business on the development of the country's economy. Instead of acting as a regulator, the plan of action will be one of facilitator.

Objectives

- **Transformation of India into a global design and manufacturing hub.**

India's role as a market for finished products did not hasten the nation's development. This program would pave the way for the establishment and promotion of new manufacturing industries and businesses to make their own goods that can be sold in the nation without importing them from other nations. Local entrepreneurs are given the chance to establish their brands in both domestic and international markets.

- **Promotion of Foreign Direct Investment**

The government of India is taking new measures to speed up the flow of FDI into India as a result of the increased focus on strengthening the infrastructure of the manufacturing sector. This will give entrepreneurs access to more sophisticated technology and capital, enabling them to produce higher-quality products that are incorporated with new technology and stand out from competing products on the market. This will boost the confidence of investors leading to more inflow of FDI.

Outcomes

- Foreign Direct Investment (FDI) Inflows: To entice foreign investment, the Indian government has implemented a liberal and open policy that makes the majority of sectors accessible to FDI via the automatic route.
- Inflows of foreign direct investment into India were USD 45.15 billion in 2014–2015, setting a record that has been continuously broken for the past eight years.
- With USD 83.6 billion, the years 2021–22 had the largest level of FDI ever.
- India is on track to bring in USD 100 billion in FDI in the current fiscal year (2022-23) thanks to economic reforms and improvements in the business climate in recent years.

Promotion of Job Creation

The creation of employment will result from the Make in India program's focus on the growth of the manufacturing sector and its encouragement of indigenous

entrepreneurs to launch their firms. Numerous new manufacturing sector provisions are given access to a wealth of resources, allowing them to access technology, raw materials, financial, and human resources. This is going to help entrepreneurs to start new ventures and enable those who already have them to grow. In turn, this will lead to more employment opportunities and assist the nation's poverty and unemployment rates decline. The improvement in living conditions will encourage people to lead better lives.

Improving the Global of Indian Manufacturing Sector

The Indian industrial sector will be able to compete with that of other nations thanks to this move. The manufacturing industry is crucial to the prosperity of every nation. Developed nations with well-established industrial sectors, such as the United States of America, South Korea, Japan, etc., help to raise their GDP. The demand for goods produced in these nations is high because it is thought that the goods produced there are superior, and orders are given to these nations. With enhanced infrastructure luring offers from around the world, the Indian manufacturing sector will now also be taken into account.

Implementing Intellectual Property Rights

It is often found that the rightful owners of technology or products are robbed of their ownership claims, which leads to losing their credits and benefits for their hard work. This initiative will help local and small entrepreneurs secure their intellectual property rights, which ensures the proper usage of technology. It will also help in bringing out new ideas that will improve the development of the country

For example, Brands like Biotique, Kaya, etc.,

Scope

The Make in India initiative has offered many entrepreneurs the opportunity to launch businesses. Both urban and rural areas are used to manufacture the goods, giving locals job possibilities. Indian companies are becoming more and more well-known, clearing the way for them to enter the international market and posing a serious threat to other well-known brands. Indian businesspeople are creating a sensation with their products, representing our nation, and the products are being embraced by the producer on a global scale. India attracts big investors because of its enormous pool of talented workers. This is a tactic used by Make in India to draw FDI to the manufacturing sector. Investors will also benefit from the government's simplification of the license application and approval processes. It also aids in the recognition of Indian manufacturers and the country's manufacturing industry, aiding in the program's goal of making India a global manufacturing hub. This will greatly contribute to the nation's development and economic expansion.

Make in India - Growth

These are the few products whose growth rate increased dramatically as a result of the Make in India program.

Herbal Products

Over time, there has been a substantial increase in the demand for Indian herbal products and Ayurvedic medicines. Cosmetics, medicinal herbs, beauty products, and natural health supplements constitute some of India's top exports. To aid in exporting and promoting herbal goods abroad, the National Medicinal Plants Board (NMPB) was created.

Jewellery

Jewellery in India is renowned for its exquisite patterns, craftsmanship, and cutting. Polished diamonds, gold jewellery, and silver jewellery are all popular choices. According to the Gem & Jewellery Export Promotion Council, the top countries importing Indian jewellery from 2019 to 2023 are the United States, Israel, Hong Kong, and the United Arab Emirates.

Clothes

India is well-known for producing cotton, silk, jute, and denim. Customers from all over the world are attracted to the unique blending of Indian culture with contemporary features in everyday attire, such as kitchen and home linens and clothing for both ethnic and western wear made by Indian Fashion Designers. It is not unexpected that India is one of the top 10 suppliers of textiles.

Tea

An additional internationally renowned Indian commodity is tea. In regions like Assam, Darjeeling, and the Nilgiris, the soil is rich and perfect for farming. Due to its distinctive flavour, abundance, and high quality, India is the second-largest producer of tea in the world.

Automotive Accessories

India is one of the top three nations exporting auto parts, after Japan and Thailand. The industrial sector has been strengthened by the Make in India initiative, which provides a platform for foreign investors to do business with Indian businesses. Automobile parts make up the majority of India's exports. The export of automotive components is anticipated to reach Rs 3000 crore by 2026, according to the Automobile Component Manufacturers Association (ACMA) projection.

Conclusion

Make in India is one of the main programs the Indian government has started to establish India as global design and manufacturing hub. Since its implementation, the manufacturing industry has experienced substantial growth. Indian goods and services were able to broaden their market reach internationally as a result. There are many opportunities for local small company owners to get the funding and technology they require to start and expand their operations thanks to the laws and programs that have been put in place to encourage foreign direct investment into India. It contributed to increasing the manufacturing sector's share of India's GDP, creating jobs, and promoting the purchase of homegrown goods.

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IMPACT OF NATIONAL EDUCATION POLICY 2020 ON HIGHER EDUCATION INSTITUTIONS: OPPORTUNITIES, CHALLENGES FOR STAKEHOLDERS

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Abstract

India has completed its 73rd year of independence with the goal of achieving 100% literacy or universal literacy in the country. It is vital to consider the vision and goals that were established for independent India. The objective is for equality in the nation, and so in education. By delivering high-quality education to all, the National Education Policy directly contributes to the long-term transformation of our country into an equitable and thriving knowledge society. On July 29, 2020, the Union Cabinet of India approved the new National Education Policy, which provides a complete framework for basic education through higher education, as well as vocational training in both rural and urban India. The new strategy seeks to achieve universal education from pre-school to secondary level by 2030, with a 100% gross Enrollment Ratio in school education and a 50% GER in higher education by 2025. The education community faces numerous possibilities and obstacles in implementing NEP 2020. This paper, Impact of National Education Policy on Higher Education: Opportunities and Challenges, attempts to trace the history of the Indian education system, to review the NEP in relation to HE, to analyse the impact of NEP on teachers, to express the opportunities and challenges in NEP implementation, and to describe the road ahead to NEP.

Keywords: National Education Policy, Higher Education, Universalization, Teachers' Impact

Introduction

India has a large presence on the international education scene. With 26.31 percent of Indians between the ages of 0 and 14 years old, India has one of the largest networks of higher education institutions in the world, and the education sector has substantial room for growth. India today has one of the best educational systems in the world as a result of recent significant improvements. Additionally, it is among the key forces behind the nation's economic growth. It is impossible to overestimate the role that private institutions have played in the growth of India's education sector, independent of government initiatives. There are also some suspicious-looking individuals, though. Despite increased funding for education, 40% of people in the nation are still illiterate. Only 15% of children are able to advance to high school, the next level.

The Higher Education

India has the third-largest upper secondary education system in the world, with many institutions. More students than ever before are pursuing higher education nowadays. The results are reflected in the number of students enrolling in higher education. Institutions are steadily growing in number. India had the following number of educational institutions as of December 31, 2020:

Institution	Qty(inno.)
Central University	54
State University	34
Private State Universities	395
Deemed to be Universities	129
Institutes of National Importance	51
Central Universities funded by UGC	40

The education sector is made up of schools, colleges, universities, and other private institutions. Students are given the knowledge and skills necessary to adapt to a workplace that is always changing through the education sector. A rising number of businesses in the sector work to provide customers with lifetime learning opportunities. The four divisions that make up the education sector are primary education, secondary education, higher education, and vocational education. For their workforce capacity, all other industries are dependent on the education sector. It does, however, have its own unique workforce development challenges. Due to its responsibility for preparing the next generation for the workforce and for both work and life, the education sector is the focus of intense public and political scrutiny as well as regular waves of policy change and revision. There are movements for educational reforms, such as those for evidence-based teaching methods or improving the quality and effectiveness of education to make it more relevant to students' lives and effective problem-solving in today's or tomorrow's society. The right to education has been recognised by some states and the UN. The Sustainable Development Goal that calls for universal access to high-quality education is the focus of international efforts.

Introduction to New Education Policy 2020

After a break of 34 years, the Indian government compiled feedback from 2.5 lakh village-level stakeholders to two national legislative-level committees over a period of more than 50 months of consultations and workshops, and on July 28th, 2020, the Union Cabinet of India approved the National Education Policy [NEP]. The extent to which proposals have been implemented into the policy is uncertain, though. The new education policy 2020, which replaces the previous [NEP] 1986, is a

comprehensive framework for K-12 education, higher education, and vocational training in both rural and urban India. The policy seeks to completely overhaul India's educational system by the year 2040.

NEP 2020: The new [5+3+3+4] School System

Here is the age-wise and class-wise break down of the [5+3+3+4] curricular & Pedagogical structure of NEP 2020 on the cognitive-developmental stages of the children.

Secondary Stage-4 Years Age 11 to18:Class 9 toClass 12
Middle Stage-3 Years Age 11 to14:Class 6 toClass 8
Preparatory Stage-3 Years Age 8 to11:Class 3 toClass 5
Foundational Stage-5 Years Age3to6:3Years(Anganwadi, Pre-school, Balvatika) Age 6 to8:2 Years (Class 1 &Class 2)

Twelve school years and three years of preschool will be included in the new 5+3+3+4 school structure. Fundamental reforms that bring the highest quality, equity, and integrity into the system are required to close the achievement gap between current learning results and expectations in all areas of education, from early childhood care and education to higher education.

By 2040, India must have a top-notch educational system with fair access for all students, regardless of their social or economic circumstances.

The nation's first education policy of the twenty-first century, National Education Policy 2020, aims to address the various expanding developmental imperatives facing the nation. This Policy recommends that all elements of the educational framework, such as funding and regulation, be updated and modernized. Create a new framework that reflects the aspirational goals of the twenty-first century.

Priority will be given to education, including SDG4, while drawing on Indian customs and value systems. It is considered essential to educate India's youth about India and its varied social, cultural, and technological requirements, as well as about its unique aesthetic, language, knowledge traditions, and strong ethics, for the purpose of national security.

Principles of Policy

The fundamental ideas that will direct both the education system as whole and specific institutions within it are listed below.

Appreciating, spotting, and promoting each student's particular skills.

- Flexibility.
- There aren't any clear divides.
- A multidisciplinary and all-encompassing approach to education.
- A concentration on mental understanding; inventiveness and critical thinking
- Teachers and faculty serve as the focal point of the learning process.

Statement of Problem

The current educational system directs pupils towards the subject's conceptual framework. The students are not given the concept of skill-based learning, which results in a gap between academics and industry.

Due to the aforementioned fact, students' ability to get employment may suffer. There are no multiple admissions or multiple exits for a course in the current educational system. This might not assist the pupils in obtaining a certificate, diploma, or degree. The aforementioned issues are resolved under NEP 2020; hence, the study is conducted.

Objectives of NEP 2020

- To study the issues and challenges of NEP 2020 in higher education.
- To study how best NEP 2020 can help the students in higher education.

Methodology of Research

Primary Data: The primary data is collected through the discussion with students and teachers of education organization.

Secondary Data: Keeping in mind the various objectives of the studies the secondary data collected from the following sources.

Research papers, Newspapers, Websites, Journals, Magazines, Articles.

SWOC Analysis of National Education Policy 2020

Following years of debate and the work of two committees, the Ministry of Human Resource and Development (MHRD) announced The New Education Policy on July 31, 2020. Despite the strategy's many beneficial qualities, the government is having difficulty spreading it and achieving the requisite learning results. Because accessibility, affordability, and quality are three critical challenges in the education industry, the goal of this article is to do a SWOT analysis of the National Education Policy 2020.

Strengths

- The plan has improved the foundation of education by revamping the school curriculum from a 10+2 model to a 5+3+3+4 model for a child's holistic development this stage accounts for 80% of cognitive growth.
- More topic choice flexibility, boundaries between the arts and sciences, curricular, co-curricular, and extracurricular activities, sports, and vocational crafts, among other things, would allow students to learn and develop at their own speed.
- It's a positive thing that the education sector's GDP allocation increased from 4.43 percent to 6%. The policy aims to achieve universal primary school literacy by 2025 and to improve the Gross Enrollment Ratio in higher education to 50% (from 26.3% today) by 2035.
- Assessment will shift away from the rote learning that is currently used in our classrooms and towards a formative style that encourages higher-order thinking abilities, critical thinking, and conceptual clarity.
- To create an all-around pleasant environment, it is critical to prioritise the construction of suitable school infrastructure that will make it easier for students with disabilities to navigate. This includes classrooms that are inclusive.
- Because education experts from all around the world agree that teaching in the mother tongue during the early years improves learning, comprehension, and learning skills, teaching in the mother tongue at the primary level, and if possible, up to class 8, has been a welcome step.
- Adding 'Classical Language' as a choice will assist pupils in improving their language skills.
- Teaching of contemporary subjects at the middle and secondary levels, including Artificial Intelligence, Design Thinking, Holistic Health, Organic Living, Environmental Education, and Global Citizenship Education (GCED).

Weaknesses

- Aside from repeating previous altruistic clichés, the policy's failure to tackle the role of the private sector in school education is particularly problematic.
- Preschool and high school compulsory education will necessitate a significant financial commitment; however, the strategy does not address how to obtain funds for this purpose.
- Furthermore, combining the first two grades of primary school with three years of preschool may make enforcing the Right of Children to Free and Compulsory Education Act (RTE) more difficult.

- The current pandemic has created a lot of obstacles to the school system. The NEP, on the other hand, either dismisses it or expresses concern about future pandemic-related problems.
- Through the integration of the beneficial domain of learning and the ongoing Happiness Curriculum currently being implemented in Delhi government schools, children should have been engaged and made aware of mindfulness.
- In order to fund the cost of teaching in-service teachers, the government will need to provide suitable infrastructure in addition to time, effort, and resources.

Opportunities

- The NEP 2020 proposes a holistic report card in which a student's performance is evaluated by considering all three domains of learning: cognitive, psychomotor, and affective, which will assist them in perceiving the world from all viewpoints.
- Allowing international institutions to build campuses in the country is a great step for both students and authorities, as it will not only provide new research-based possibilities for students, but will also increase competency and, in the long run, avoid brain drain.
- Academic credit stored in a digital locker will function similarly to bank credit, allowing a student to return to school following a break, as established subsequently by the higher education commission.
- The National Educational Technology venue (NETF) will be founded as an autonomous entity to provide a venue for the open exchange of ideas on the use of technology to improve learning, evaluation, planning, and administration in both school and higher education.
- Keeping an educator's interest, adaptability, and personality in mind is one such strategy that has offered educators hope by enabling them greater freedom in picking pedagogical components in the classroom, rather than chalk and talk, lecture, or audio-visual aids. Teachers should be encouraged to perform self-reflection, review, and self-assessment research in their classrooms.

Challenges

- Many states, including West Bengal, Andhra Pradesh, and Tamil Nadu, oppose the three-language model since making Hindi mandatory would look to be an imposition on people residing south of Vindhya.

- Given India's size, population, diversity, and constitutional federalism, the NEP 2020 is an attempt to achieve uniformity and standardisation along a single axis of control and power. Because education is on the concurrent list, many states may oppose.
- While the projected free breakfast initiative is a wonderful idea, it will add to an already bloated and corrupt mid-day meal system.
- While legislation fosters reason and critical thinking in campus activities, the majority of experts believe that real actions on the ground differ, as illustrated by recent attacks on students and critical thinkers.
- With unemployment and job losses, employers may keep wages low and fire instructors in the knowledge sector, knowing that there will be plenty of untrained and subpar teachers to take their place.

Analysis

Challenges of NEP 2020 in Higher Education

- Opening a university per week is a tremendous undertaking in today's India, which has over 1,000 institutions distributed across the country. To meet one of the policy's stated goals of doubling the Gross Enrollment Ratio in higher education by 2035, one new institution will need to operate every week for the next 15 years.
- Opening a university every week on a continual basis is an enormous challenge.
- Currently, there is a focus on healthcare and economic recovery, which is hindering execution.
- Despite the fiscal constraints, analysts have recommended for large stimulus packages totaling double-digit percentages of GDP.
- A big pool of trained teachers is required.
- The strategy envisions a major structural re-design of the curriculum in schools, which is a very positive move.
- However, in order to properly offer this curriculum, we need teachers who have been trained in and understand the pedagogical requirements.
- Many of the curriculum modifications necessitate significant mental shifts on the part of both teachers and parents.

Higher education that is multi disciplinary necessitates a cultural shift

- The National Education Policy 2020's emphasis on interdisciplinary learning is a good step forward in higher education.
- Universities, particularly in India, have been highly compartmentalized and siloed for decades.

In the Covidera, Funding is a Major Issue

- This is not a challenge for the faint of heart in terms of funding. The National Education Policy 2020 calls for a rise in education spending from 4.6 percent of GDP to 6% of GDP, or INR 2.5 lakh crores per year.

Issues of NEP 2020 in Higher Education**Integration is Lacking**

Both the notion and the paper include holes, such as the integration of technology and pedagogy. There are severe gaps, for example, in lifelong learning, which should have been a key component of transitioning to new sciences.

A Linguistic Barrier

Much of the paper, such as the terminology, is up for debate. The NEP intends to provide home language learning up to class five in order to improve learning outcomes. Early idea comprehension is improved in the native language, which is critical for future success. Learning suffers even with the best teachers and facilities if the foundations are poor. However, it is also true that social and economic mobility are primary goals of education, and English is the language of mobility in India.

Debate on Multilingualism

Home language thrives in areas where the ecosystem extends all the way through higher education and into employment. Without such ecology, this may not be enough. Multilingualism is mentioned in the NEP, which should be emphasised. Most classes in India are de facto bilingual. Some states cheerfully dismiss this strategy as a futile attempt to impose Hindenburg.

Pedagogical Constraints

The paper mentions flexibility, choice, and investigation. The text recognises that higher education has a diversity of pedagogical needs. It will be awful if it becomes a necessary choice inside single institutions, because establishing a curriculum for a classroom with both one-year diploma and four-year degree students detracts from the institution's character.

Institutional Constraints

Instead of being forced to be multidisciplinary, a healthy education system will have a diversity of institutions. Students should have the option of attending a range of educational institutions. The technique risks creating a new sort of institutional isomorphism that is enforced from on high.

Impact of New Education Policy (NEP)2020

This national education policy will affect billions of people. However, 'Students and Teachers' are the two most vulnerable groups. So, let us examine how this new education strategy will effect both students and teachers.

1. Impact on Students

NEP2020 will provide students with new learning options. The most significant effect would be a shift in the learning environment and process for pupils. The new education policy will include the following features:-

- Increase the emphasis on students' skill development and competency growth.
- Develop 21st-century abilities in pupils to prepare them for the future.
- Encourage pupils to pursue both academic and non-academic goals.
- Provide a variety of pre-primary, open, and remote learning possibilities. Students who are learning.
- Provide pupils with access to counselling and other resources.
- Students' curiosity and wonderment will rise as a result of so many expanding opportunities. As a result, it is recommended that individuals seek the advice of experts and professionals when making career selections. The Teacher is the first expert the students encounter. As a result, the Indian government has something to give teachers.

2. Impact on Teachers

According to a KPMG study, 13% of secondary school teachers in India are unqualified. Teachers not only help students achieve academic achievement, but also make great professional decisions. As a result, they must equip themselves with cutting-edge teaching methods. Teachers interested in learning advanced teaching methods and keeping up with current teaching trends can join in Univariate's 'Teach Online - Tools for a Digital Age' course. It is a 6-hour individualised training designed for teachers who want to adapt to newer and more innovative teaching approaches. They must now improve their abilities in order to satisfy the demands of the industry and overcome the skills gap. They should prioritise skill-based education above concept-based instruction. They must constantly improve their abilities and knowledge. They need to place a greater emphasis on research in their respective fields.

Outcome

A Multidisciplinary Way of Thinking

The phrase "multidisciplinary" is often heard but rarely understood. Simply said, it is a learning style that combines a number of disciplines and topics of study to

provide a well-rounded education. Does this sound familiar? It's a phrase that occurs frequently in college brochures to emphasise their liberal approach to studying and teaching. NEP 2020, on the other hand, ensures that we will not have to wait until higher education to learn about this paradigm. Science, art, and business will all be rendered obsolete. As a result of the abolition of the three different streams system, students will no longer be limited to a limited choice of disciplines. Students will have more options for what they can study and will be able to select courses of study that are more closely related to their interests. For example, if you are interested in history but also in chemical bonding and business, you can learn all of these subjects at the same time! There is no cause for fear. The overarching goal is to encourage students to be more collaborative in their approaches and flexible in their thinking in order to reach their full potential.

Holistic Development is Encouraged

We must regularly drop a stone into a tank of water to understand the Archimedes Principle. To learn the names of the different constellations, we must go to planetariums. We must seek outside our textbooks to learn from the world. Holistic education argues for this. Education will take place outside of classrooms just as much as it will within. They'll be creative and entertaining, with a focus on learning for the purpose of learning. It will be more concrete, realistic, and based on how things actually work in the real world. More vocational programmes, internships, and non-textbook school sessions are required to educate kids who are as street smart as they are book clever.

Promoting Technological Literacy

The world is evolving at a breakneck pace, and technology is at the heart of it. The only way to progress is to keep moving forward. We must adapt to the current technological environment. We must be on our toes at all times, or we shall be left in the dust. However, the true purpose is for us to contribute to it. . As a result of the execution of NEP 2020, technology will play an increasingly important role in Indian education. It will teach the future of the country to be technologically proficient by teaching every student how to use it. It guarantees that students will learn how to code, programme AIs, and create them, and that they will eventually become their own employers.

This type of education is critical for both the nation's and individual growth and well-being. Promoting learning outcomes like these will determine the country's success and aid in the fight against the difficulties we face today. It will also serve to strengthen national unity while retaining the diversity that makes us unique, allowing us to effectively compete and interact with the international community to aid in the growth of the globe.

A Polished Perspective on Examinations

"Everything will be fine as long as I pass, "a lot of us remember thinking. It wasn't that we wanted to study; it was that we wanted to write this exam and pass it. As a result, it is clear that the current educational system is ineffective. But it becomes worse when we consider the impact of today's "coaching culture" on us. It is costly for parents, difficult for children, and emphasises results above learning. It has tainted education by making it hazardous, dysfunctional, and competitive. By 2025, the National Mission will have achieved foundational learning and numeracy skills.

1. By 2030, there will be 100 percent GER from pre-school through secondary school.
2. Board Exams are used to assess key ideas and knowledge application.
3. At the end of the school year, every child will be proficient in at least one skill.
4. Common Standards of Learning in Public & Private Schools.
5. Home language/mother tongue/regional language as the medium of instruction until at least Grade 5, and preferably until Grade 8 and beyond.
6. Monitoring Student Progress to Achieve Learning Objectives.
7. National Professional Standards for Teachers (NPST).
8. There is no strict distinction between the arts and sciences, curricular and extra-curricular activities, or vocational and academic courses.
9. 5+3+3+4 Structure of the Curriculum and Pedagogy.
10. Curriculum Reduction to Core Concepts.
11. With the support of NEP 2020, the government hopes to make schooling accessible to all.
12. Through this new strategy, around two crore school pupils will be able to return to educational institutions.
13. NEP 2020 is the formation of the National Book promotion Policy in India.

Conclusion

This policy has many excellent characteristics, but it still needs to be improved. If its policies are modified on a regular basis, NEP 2020 may turn out to be the best policy in the sphere of education and human resources. As the proverb says, "a mad king misuses his power and leads his country to sewers," and the policy, if mishandled, might be deadly. Policy misuse is natural in a country beset by issues such as favouritism, corruption, and lobbying.

Furthermore, this strategy provides immense hope to individuals in need. The student-centered approach of NEP 2020 should have strengthened the education system and workforce by 2030.

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FINANCIAL LITERACY: AN OVERVIEW OF OBJECTIVE AND SUBJECTIVE FINANCIAL KNOWLEDGE

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Abstract

This descriptive study explores the relationship between subjective and objective financial impressions, sometimes known as "Objective and Subjective Finance". This research examines the interaction between objective and subjective financial knowledge to provide a thorough review of financial literacy. As a crucial component of personal finance, financial literacy affects people's capacity to make wise decisions about money management, investments, and overall financial well-being. It goes through the objective and subjective way of financial knowledge and points out the problems while making decisions solely based on any one of the two ways. The study concludes that a well-rounded financial decision can be made when these two bits of knowledge come together. An individual should consider both objective knowledge such as interest rates, Financial statements, and Stock market data keeping in mind or along with their emotion, ability to risk tolerance, and so on.

Keywords: Financial Literacy, Objective Knowledge, Subjective knowledge, Investment decisions

Introduction

Financial literacy is a crucial aspect of modern life, empowering individuals to make informed decisions about their personal finances and achieve greater financial security. It encompasses a wide range of skills and knowledge, from understanding basic financial concepts to navigating complex investment strategies. In this paper, we will provide an overview of financial literacy, exploring both objective and subjective financial knowledge.

Objective financial knowledge refers to the concrete, measurable understanding of financial concepts, principles, and tools. It includes knowing how to budget, save, invest, and manage debt effectively. Individuals with high objective financial knowledge can confidently evaluate financial products, decipher financial statements, and assess risks and rewards associated with various financial decisions. The acquisition of objective financial knowledge is essential in building a strong foundation for financial well-being. On the other hand, subjective financial knowledge pertains to an individual's attitudes, beliefs, and emotions regarding

money and financial matters. This subjective aspect plays a significant role in shaping financial behaviors and decisions. Factors such as risk tolerance, financial goals, and the ability to delay gratification are all elements of subjective financial knowledge that influence financial choices and outcomes.

The significance of financial literacy has become increasingly evident in today's fast-paced and complex financial landscape. As individuals bear more responsibility for their financial futures, the ability to manage money wisely becomes paramount. Financial literacy empowers individuals to set realistic financial goals, create sustainable budgets, make informed investment choices, and protect themselves from financial pitfalls.

Throughout this paper, we will delve into the importance of financial literacy, the challenges individuals face in improving financial knowledge, and the potential benefits of enhancing financial literacy on a personal and societal level. By gaining a deeper understanding of both objective and subjective financial knowledge, individuals can take steps toward achieving greater financial security and ultimately improve their overall quality of life.

The capacity and information necessary to comprehend and efficiently handle many facets of personal finances are referred to as financial literacy. It includes a wide range of financial knowledge, ideas, and techniques that enable people to make wise and responsible financial decisions. Financial success and effective resource management depend on one's ability to manage their finances.

Financial literacy includes theoretical understanding, actual application, and behavioral modifications. It entails making wise choices, establishing financial objectives, and taking action to reach them. Improving financial literacy requires both self-education in financial concerns as well as the occasional expert consultation. To encourage financial literacy among people of all ages, a lot of nations and organizations provide financial education programs and materials.

Objectives

- To know the difference between objective and subjective financial knowledge
- To know about financial literacy

Objective and Subjective Financial Knowledge

Objective knowledge is factual and verifiable information about financial concepts, principles, and data. It is based on concrete evidence and can be quantified or measured. Objective Financial Knowledge is known to affect financial behaviors directly (Chung & Kim, 2022). People with higher objective financial knowledge are known to reduce searching cost when choosing one among different investment options (Hasting & Tejeda-Ashton 2008, Lusardi & Tufano, 2015). On the other hand,

subjective knowledge is purely based on opinion, judgment, and individual perspectives. It may vary from person to person and is influenced by personal experience and beliefs.

The Examples of Objective Financial Knowledge Are

1. Interest rate

The current interest rate set by the central bank is an objective financial fact. (If the central bank sets the interest rate at 2.5% it is a concrete piece of evidence that can be verified)

2. Financial Statement

The Balance Sheet, Income Statements, and Cash flow statements of a company are objective financial data that give insights into its financial health. These statements are prepared based on accounting principles and provide a clear picture of companies' financial performance.

3. Stock Market Data

The closing price of a specific stock on a particular trading day, the trading volume, and historical price data are examples of objective financial knowledge.

Examples of Subjective Financial Knowledge

1. Risk Tolerance

When it comes to investing, each person has a different level of risk tolerance. While some people might feel comfortable making higher-risk investments like stocks, others might prefer to use safer strategies like bonds or cash. Risk tolerance is a personal trait that can evolve over time in response to events and experiences in life.

2. Investment Strategy

Even while objective financial statistics might indicate that some investing strategies are more successful than others, the precise strategy a shareholder opts to use can be arbitrary. For instance, two investors with identical financial information may employ various investment strategies as a result of their own preferences and worldviews.

3. Financial Goal

Due to the varying objectives, aspirations, and priorities of each person, establishing financial goals is an individualized process. Saving for a dream vacation or a down payment on a home may be a person's top priority, but saving for retirement may be another.

Disadvantages of Taking Investment Decisions Based Solely on Objectives Financial Knowledge

Making wise investing decisions requires objective financial knowledge, yet this knowledge is not without flaws. Some potential problems and restrictions can result from relying only on objective financial knowledge, including:

1. Ignoring Behavioral Bias

Investment decisions frequently involve a large amount of human behavior and emotions. Investors who base their decisions purely on objective financial data may fail to recognize psychological biases like fear, greed, or herd mentality, which can result in irrational choices.

2. Short-Term Focus

The focus of objective financial knowledge is typically on historical data and recent trends. Investors who rely just on this information risk missing out on an investment's potential and worth over the long term. While some assets may exhibit short-term volatility, they have strong fundamentals that will support long-term growth.

3. Lack of Context

Objective financial knowledge might not take into account more significant geopolitical or economic aspects that can affect the outcome of an investment. For instance, a stock may have solid financials, but outside variables like alterations in governmental rules or changes in the industry can have an impact on its prospects for the future.

4. Incomplete Information

Although objective financial knowledge offers useful information, it might not fully express an investment opportunity. Although they are more difficult to measure objectively, subjective elements like managerial caliber, corporate culture, and market mood may have a substantial impact on an investment's performance.

5. Market Inefficiencies

Because markets are not always completely efficient, asset prices could not always fully reflect all available information. Investors who just rely on objective financial data run the risk of missing out on inexpensive or overvalued assets that could present possibilities or risks.

6. Over-Emphasis on Past Performance

Although using historical financial data as the only basis for investing decisions can result in the "chasing performance" trap, it is necessary. In markets that are undergoing fast change, prior performance alone does not ensure future success.

7. Ignoring Emerging Trends and Innovation

Developing industries or technologies that have the potential to disrupt current markets and produce new investment opportunities may not be fully captured by objective financial knowledge.

8. Lack of Flexibility

Investors may be prevented from modifying their strategy to maximize profits and control risks if they rigidly adhere to objective financial data without taking into account changing market circumstances or new information.

Disadvantages of Taking Investment Decisions Based Solely on Subjective Financial Knowledge

1. Biases and Emotions

Emotions, cognitive biases, and personal opinions play a significant role in the formation of subjective financial knowledge. Investors may choose irrationally and end up with subpar financial results if they act out of fear, greed, or overconfidence.

2. Lack of Objectivity

Since subjective financial knowledge is inherently subjective, it might not be supported by rigorous analysis or verified data. It may be susceptible to wishful thinking or wishful information interpretation, which could result in biased conclusions.

3. Limited Expertise

Investors might not have the essential skills or information to make wise judgements. Without a thorough understanding of financial markets, economic trends, and investing techniques, relying exclusively on personal judgement might be dangerous.

4. Overlooking Objective Data

Financial statements, market movements, and economic indicators are just a few examples of crucial objective financial facts that subjective financial expertise may obscure or overlook. Making judgements without sufficient information can have negative consequences.

5. Emotional Timing

Subjective financial knowledge may cause investors to time the market emotionally, buying or selling assets based on momentary market swings rather than a carefully considered investment strategy. Buying at market peaks and selling at lows are frequently results of emotional timing.

6. Lack of Diversification

Subjective financial knowledge may lead to an investor's overconcentration on a small number of investments or industries that they are familiar with or emotionally related to, which would result in a lack of diversification and higher portfolio risk.

7. Hindsight Bias

When analyzing previous investment decisions based on subjective financial information, investors may experience hindsight bias. They might think they could have anticipated the future more accurately than they actually did, which would lead to overconfidence in predictions in the future.

8. Inconsistent Decision-Making

Due to the possibility that emotions and opinions may change in response to changes in the market or one's own circumstances, subjective financial knowledge may result in inconsistent decision-making. A disciplined and organized approach to investing may be hampered by this inconsistent behavior.

9. Lack of Accountability

Subjective financial expertise might not offer a clear framework for holding investors accountable or evaluating their investment choices. It may be challenging for investors to learn from mistakes and enhance their strategy since they lack a formal method for analyzing their decisions.

Conclusion

A well-rounded strategy that incorporates both objective and subjective insights enables more informed decision-making and better investing results. Making well-rounded and profitable investment decisions can also be aided by consulting with financial experts and carrying out extensive due diligence.

Making more logical and educated investing decisions can be achieved by fusing objective financial facts with individual preferences, risk tolerance, and financial objectives. Additionally, avoiding the problems of emotional decision-making and improving overall investment outcomes can be achieved by consulting financial advisors, completing extensive research, and following a long-term investment plan.

Several studies revealed that personal financial skills and knowledge are acquired mostly through 'trial and error', but no research to date has actually attempted to investigate what types of financial experiences and characteristics have the most influence on an individual's personal financial literacy or competence (Marcolin& Abraham,2006).

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ADVENT OF TECHNOLOGY IN NEP 2020 (ENHANCEMENT, INTEGRATION AND IMPLEMENTATION)

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Abstract

The National Education Policy (NEP) is a comprehensive framework that aims to transform the education system in India. Technology plays a pivotal role in realizing the vision set forth by NEP. This document explores the significance of technology in education, its integration in NEP and the potential features, it brings to the forefront. It further encompasses the concept of integration of technology, how the enhancing work of technology is embedded in purview of NEP, differences between blended learning and implementation of technology in learning, benefits and challenges in the methodology after adapting NEP 2020.

Keywords: *National Education Policy - comprehensive framework – Technology - pivotal role – significance - potential features - concept of integration - blended learning - technology in learning - benefits and challenges – adaptation.*

Introduction

Education has always been a key driver of a nation's progress and development. The Indian government recognizes this and has formulated the National Education Policy, a landmark document that envisions a radical transformation of the education sector. At the heart of this transformation lies the strategic utilization of technology to empower educators and learners alike.

The Integration of Technology in NEP

- The NEP acknowledges the transformative potential of technology and incorporates it into various aspects of the education system:
- Digital Infrastructure: NEP emphasizes the creation of robust digital infrastructure, including high-speed internet connectivity, in all educational institutions. This enables the seamless integration of technology into classrooms and ensures equitable access to digital resources.

- **E-Learning and Online Courses:** The policy encourages the development and dissemination of e-learning platforms and online courses to enhance the reach of quality education beyond the confines of traditional classrooms.
- **Teacher Training:** Recognizing the importance of competent educators, NEP emphasizes training teachers to effectively leverage technology in their teaching practices. This ensures that teachers are well-equipped to navigate the digital realm and deliver impactful lessons.
- **Personalized Learning:** Technology enables personalized learning experiences, catering to individual students' needs, strengths, and weaknesses. This fosters a more inclusive and effective education system.
- **Assessment and Evaluation:** NEP proposes the use of technology-based assessment methods, such as computer-based testing and online quizzes, to streamline evaluation processes and provide timely feedback to students.

Methods for Enhancing the NEP 2020 Education System with Technology

E-learning plays a crucial role in the educational systems of many emerging nations. It has numerous intrinsic advantages. Technology will be applied in a variety of ways to improve the procedures and overall experience once the new education policy is put into place in India.

The National Education Policy (NEP), which aims to strengthen the Indian educational system holistically, would require ongoing and crucial contributions from the edtech sector to meet its goal of providing high-quality and accessible education throughout the nation.

The following are some tech-based strategies to support the NEP 2020 Education Policy:

1. Using Cloud Tech to Store and Retrieve Records with Ease

Academic records like degrees and diplomas must be stored and retrieved, which is a lengthy process in Indian universities and schools. It is difficult to manage the volume of documents, and there is always a chance that paper-based data will become damaged. Utilising cutting-edge cloud storage technology like our Integrated School Platform almost eliminates this risk. The school's ability to keep, maintain, and update student records will be quicker and more accurate.

2. Using Virtual Digital Platforms to Manage Digital Exams More Easily

Conducting tests and internal evaluations proves laborious and time-consuming in many institutions and universities. Additionally, it uses a lot of resources. Such problems can be handled effectively by using virtual and digital exams and tests. The teachers can save a lot of time, and it is less demanding on them.

3. Enable Effective Learning Through Digital Tools

The use of digital tools and apps by students to enhance learning is emphasised in the new education policy. Apps, both free and paid, can be used to administer internal tests and participate in virtual classrooms. Teachmint enables schools to plan out, schedule, and conduct exams from a single platform with our Integrated School Platform (ISP). Digital tools are helpful even in emergency scenarios like natural calamities and pandemics that necessitate the closure of schools. Projects and assignments can be shared in real-time between professors and students using platforms like Teachmint. Everyone will find it simpler as a result of the declining cost of internet connections and the growing use of 5G networks throughout the nation.

4. Harnessing Tech to Make Learning Accessible for the Differently Abled

The use of technology indicated in the NEP School education system will make learning more adaptable for students with specific needs or disabilities (autism victims and those with ADHD, etc.). The pervasiveness of ongoing education makes the educational setup difficult. When technology is used in a significant way, these children stand to gain a lot from it. They require a fast internet connection and the use of cell phones or PCs. These make it simple for students to show up to class when they're not feeling well.

This guarantees that students do not fall behind their friends when dealing with illnesses that need a longer stay at home.

5. Digitisation for Cost-Effective Training & Education

According to the NEP School Education System, implementing technology solutions in the educational system will enable schools and universities to save a large number of funds. They will administer tests with less paper and spend less money on printing. The money saved will be useful for improving the technology setup and providing teachers with training.

Blended Learning Approach in NEP

The blended learning approach is a pedagogical strategy that combines traditional face-to-face instruction with digital technology and online resources. The National Education Policy (NEP) recognizes the potential of blended learning to transform the education system and has emphasized its integration to enhance the learning experience and outcomes for students. This section explores the key elements of the blended learning approach and its impact on personalized learning, the role of Artificial Intelligence (AI) in adaptive learning, and its effects on student engagement and academic performance.

Blending Traditional and Digital Learning

Blended learning integrates the strengths of both traditional and digital learning methods. In a blended learning classroom, students engage in direct interactions with teachers while also accessing digital content, interactive learning activities, and online assessments. This approach creates a dynamic and flexible learning environment, accommodating diverse learning styles and individual needs. By blending face-to-face instruction with digital resources, students can benefit from real-time interactions with teachers and peers while having access to a wealth of digital learning materials. This combination allows for more personalized and self-paced learning experiences.

Personalized Learning and Adaptive Technologies

One of the significant advantages of blended learning is its ability to facilitate personalized learning. Digital resources can be tailored to suit individual learning preferences, allowing students to progress at their own pace and focus on areas where they need more support. Adaptive technologies, such as learning analytics and AI-powered platforms, play a crucial role in delivering personalized content and assessments.

Adaptive technologies track and analyze students' performance and engagement in real-time, identifying their strengths and weaknesses. Based on this data, the platform can dynamically adjust the learning path, providing targeted interventions, additional resources, or challenging exercises to meet each student's specific needs.

The Role of Artificial Intelligence (AI) in Adaptive Learning

Artificial Intelligence has revolutionized the educational landscape, particularly in the context of adaptive learning. AI algorithms process vast amounts of data, including student interactions, assessment results, and learning progress, to generate personalized learning pathways. These pathways adapt to each student's proficiency level, learning speed, and individual learning pattern needs. AI-powered adaptive learning platforms can analyze patterns in student behavior, identify learning gaps, and predict future performance. The data-driven insights generated by AI help educators make informed decisions about instructional strategies and provide targeted support to students.

Benefits of Technology Integration

- **Access to Quality Education:** Technology breaks down geographical barriers and provides access to high-quality educational resources, benefitting students from remote and underserved areas.

- **Enhanced Engagement and Learning Outcomes:** Interactive and multimedia-rich content enhances student engagement, leading to better retention and understanding of concepts.
- **Teacher Empowerment:** Technology equips teachers with innovative tools, allowing them to create dynamic and personalized learning experiences for students.
- **Efficiency and Cost-effectiveness:** Technology streamlines administrative tasks and reduces the burden of paperwork, making education management more efficient and cost-effective.

Teacher Training and Technology Integration

- The NEP recognized the crucial role of teachers in effectively integrating technology into the classroom.
- Teacher training programs were being designed to equip educators with the necessary skills to utilize technology for innovative and engaging teaching methods.
- The integration of technology in teacher training itself was emphasized to foster a more tech-savvy teaching workforce.

Partnerships and Collaborations

- To accelerate the implementation of technology initiatives under NEP, partnerships between the government, private sector, and educational institutions were being encouraged.
- EdTech companies and startups played a vital role in developing and providing innovative digital solutions to support NEP's vision.

Challenges and Mitigation Strategies

- **Digital Divide**
Ensuring equitable access to technology and the internet remains a challenge. To address this, the government must focus on bridging the digital divide through targeted initiatives and infrastructure development.
- **Teacher Training**
Effective integration of technology requires well-trained teachers. Comprehensive training programs should be introduced to upskill educators in utilizing technology effectively.
- **Cybersecurity and Privacy Concerns**
As technology adoption increases, the risk of cyber threats and data breaches also rises. Implementing robust cybersecurity measures and safeguarding students' privacy is of utmost importance.

- **Overemphasis on Technology**

While technology is a valuable tool, it should complement, not replace, traditional teaching methods. Striking the right balance between tech-based and in-person learning is crucial.

Conclusion

The National Education Policy recognizes technology as a powerful catalyst in the transformation of the Indian education system. By effectively integrating technology into the curriculum, providing access to digital resources, and empowering educators, NEP paves the way for a more inclusive, efficient, and impactful education system. To achieve these goals, it is imperative for all stakeholders to collaborate, innovate, and embrace technology responsibly, ensuring that no student is left behind in India's journey towards educational excellence.

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CLOUD COMPUTING: BENEFITS, RISKS, AND ADOPTION STRATEGIES

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Abstract

Cloud computing has gained significant attention as a transformative technology that enables organizations to streamline their operations, enhance scalability, and leverage cost-effective IT solutions. This journal article presents a comprehensive analysis of the benefits, risks, and adoption strategies associated with cloud computing for organizations. The article begins by outlining the fundamental concepts of cloud computing, including Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). It then explores the key benefits offered by cloud computing, such as increased flexibility, scalability, reduced infrastructure costs, and enhanced collaboration and productivity. While cloud computing offers numerous advantages, it also introduces certain risks and challenges that organizations must consider. This article examines the potential risks, including data security and privacy concerns, data loss or leakage, regulatory compliance, vendor lock-in, and service availability. It discusses various risk mitigation strategies, such as encryption, access controls, regular audits, and data backup and recovery mechanisms.

Keywords: The Intercloud computing, Benefits, Risks, Adoption strategies.

Introduction

Cloud computing has revolutionized the landscape of information technology by offering organizations a flexible and scalable approach to managing their data and applications. With its promise of reduced costs, increased efficiency, and improved accessibility, cloud computing has become a vital component of modern business operations. However, alongside its numerous benefits, cloud computing also introduces unique risks and challenges that organizations must address when considering adoption. This journal article provides an in-depth exploration of the benefits, risks, and adoption strategies associated with cloud computing, aiming to provide valuable insights and guidance for organizations navigating this rapidly evolving technological paradigm. In recent years, the proliferation of cloud computing has been driven by its potential to transform traditional IT infrastructure into a dynamic and resource-efficient environment.

By leveraging cloud services, organizations can access on-demand computing resources, storage, and software applications without the need for extensive in-

house infrastructure. This scalability enables businesses to rapidly scale their operations, respond to changing market demands, and optimize resource utilization, all while minimizing capital expenditures. One of the primary advantages of cloud computing lies in its cost-effectiveness. By adopting a pay-as-you-go model, organizations can avoid large upfront investments in hardware and software, instead paying for the resources they consume. This shift from a capital expenditure model to an operational expenditure model allows businesses to reallocate funds towards innovation, strategic initiatives, and core competencies. Furthermore, cloud computing fosters enhanced collaboration and productivity within organizations. With cloud-based collaboration tools and file-sharing platforms, geographically dispersed teams can seamlessly collaborate on projects, accessing and editing documents in real-time.

Cloud Computing

Cloud computing has emerged as a revolutionary technology that has transformed the way organizations store, process, and access their data and applications. This journal article aims to provide a comprehensive understanding of cloud computing, including its definition, core components, and its significance in the modern digital landscape. Additionally, the article explores the benefits, risks, and adoption strategies associated with cloud computing, offering valuable insights for organizations considering its implementation. Cloud computing can be defined as the delivery of computing resources, including infrastructure, platforms, and software, over the internet on a pay-as-you-go basis. It enables organizations to access a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort. By leveraging this virtualized infrastructure, organizations can reduce their reliance on on-premises hardware and scale resources up or down based on their specific needs. This flexibility not only leads to cost optimization but also enhances operational efficiency. The fundamental components of cloud computing include three primary service models: Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). IaaS provides virtualized computing resources, such as servers, storage, and networking components, to organizations. PaaS offers a platform for organizations to develop, deploy, and manage applications without having to worry about the underlying infrastructure. SaaS allows organizations to access software applications over the internet, eliminating the need for local installation and maintenance. The benefits of cloud computing are diverse and impactful. Scalability is a key advantage as organizations can easily adjust their computing resources based on fluctuating demands.



Figure 1: Advantages of Cloud Computing

Benefits of Cloud Computing

Scalability: Cloud computing offers unparalleled scalability, allowing organizations to easily scale their computing resources up or down based on demand. This elasticity ensures optimal resource utilization and cost efficiency, as organizations only pay for the resources they actually use.

Cost Optimization: Cloud computing presents cost advantages by shifting the capital expenses associated with hardware and software purchases to operational expenses based on usage. Organizations can avoid substantial upfront investments in hardware, maintenance, and upgrades, as cloud service providers handle infrastructure management.

Accessibility and Collaboration: Cloud computing promotes accessibility and collaboration by enabling users to access data and applications from anywhere, at any time, using internet-connected devices.

Flexibility and Innovation: Cloud computing empowers organizations to innovate rapidly by providing a flexible and agile IT environment. It offers a wide range of cloud services, development platforms, and tools that allow businesses to experiment, develop, and deploy applications more efficiently. The cloud's inherent scalability and resource elasticity provide the necessary foundation for exploring emerging technologies, such as machine learning, artificial intelligence, and big data analytics, to unlock new insights and drive innovation.

Enhanced Security and Reliability: Cloud service providers invest significant resources in implementing robust security measures, data encryption, access controls, and regular backups to protect data and ensure high levels of security.

Risks of Cloud Computing

Data Security and Privacy: Storing sensitive data in the cloud introduces security and privacy concerns. Organizations entrust their data to third-party cloud service

providers, raising questions about data ownership, protection, and unauthorized access. Data breaches, hacking attempts, or vulnerabilities in cloud infrastructure can potentially compromise sensitive information, leading to reputational damage and legal consequences. Strong security measures, such as encryption, access controls, and regular audits, must be implemented to mitigate these risks.

Regulatory Compliance: Cloud computing can present challenges in meeting regulatory compliance requirements, particularly in industries with strict data protection regulations. Organizations must ensure that their chosen cloud service providers adhere to relevant industry standards and compliance frameworks. They need to address data residency, privacy, and security concerns to comply with regulations governing data storage, transfer, and processing.

Service Reliability and Availability: Organizations relying on cloud services are dependent on the reliability and availability of their cloud service providers. Service disruptions, downtime, or outages experienced by cloud providers can impact business operations and lead to productivity losses. Robust service level agreements (SLAs) and business continuity plans should be in place to mitigate the risk of service interruptions and ensure appropriate backup and recovery mechanisms.

Vendor Lock-in: Cloud computing can result in vendor lock-in, making it challenging to switch between cloud service providers or migrate applications and data back to an on-premises environment. Migrating to a different cloud provider or returning to an in-house infrastructure may involve significant costs, technical complexities, and potential data transfer issues. Organizations should carefully consider the portability of their applications and data when selecting a cloud service provider to minimize vendor lock-in risks.

Data Loss and Recovery: While cloud service providers offer backup and disaster recovery capabilities, organizations should still have a comprehensive understanding of the provider's backup processes and data recovery procedures. Inadequate backup measures, human errors, or system failures can lead to data loss. Organizations must ensure they have appropriate backup strategies in place, including regular data backups, to mitigate the risk of permanent data loss.

Adoption Strategies of Cloud Computing

Evaluate Business Needs and Goals: Before adopting cloud computing, organizations should conduct a thorough assessment of their business needs, objectives, and IT requirements. This evaluation will help determine the suitability of cloud computing for their specific use cases and identify areas where cloud services can bring the most value. Understanding business priorities will guide decision-making throughout the adoption process.

Identify Cloud Service Models and Deployment Options: Organizations should carefully evaluate the various cloud service models (IaaS, PaaS, SaaS) and deployment options (public, private, hybrid, multi-cloud) to align with their specific requirements. Assessing the advantages and limitations of each model and deployment option will aid in selecting the most suitable approach for their business needs.

Choose a Reliable Cloud Service Provider: Selecting a reputable and reliable cloud service provider is crucial for successful cloud adoption. Organizations should consider factors such as provider reputation, service reliability, performance guarantees, data security measures, compliance certifications, and customer support. Evaluating these factors will help ensure a trustworthy partnership with the chosen provider.

Develop a Cloud Migration Strategy: Organizations should develop a well-defined cloud migration strategy that outlines the process of transitioning their applications, data, and infrastructure to the cloud. This strategy should include a comprehensive assessment of the existing IT landscape, identification of migration priorities, data classification, migration techniques, and a timeline for the migration process. Collaboration with internal stakeholders and cloud service provider expertise can assist in smooth and efficient migration.

Conclusion

Cloud computing has emerged as a transformative technology that offers organizations a wide range of benefits, but it also introduces certain risks and challenges. This journal article has explored the benefits, risks, and adoption strategies associated with cloud computing, providing valuable insights for organizations considering its implementation. The benefits of cloud computing include scalability, cost optimization, enhanced accessibility and collaboration, flexibility for innovation, enhanced security and reliability, and streamlined IT operations. These advantages enable organizations to optimize resource utilization, drive innovation, improve productivity, and achieve strategic goals. However, organizations must be aware of the risks involved in cloud

However, organizations must be aware of the risks involved in cloud computing, such as data security and privacy concerns, regulatory compliance challenges, service reliability and availability issues, vendor lock-in, data loss and recovery, and the lack of control and transparency. These risks highlight the importance of implementing robust security measures, ensuring compliance with regulations, establishing contingency plans, and carefully selecting cloud service providers.

To adopt cloud computing successfully, organizations should follow key strategies. These include evaluating business needs and goals, identifying the

appropriate cloud service models and deployment options, choosing a reliable cloud service provider, developing a cloud migration strategy, addressing data security and compliance requirements, implementing cloud cost management strategies, fostering a cloud-centric culture, and continuously monitoring and optimizing cloud resources.

Computing, such as data security and privacy concerns, regulatory compliance challenges, service reliability and availability issues, vendor lock-in, data loss and recovery, and the lack of control and transparency. These risks highlight the importance of implementing robust security measures, ensuring compliance with regulations, establishing contingency plans, and carefully selecting cloud service providers. To adopt cloud computing successfully, organizations should follow key strategies. These include evaluating business needs and goals, identifying the appropriate cloud service models and deployment options, choosing a reliable cloud service provider, developing a cloud migration strategy, addressing data security and compliance requirements, implementing cloud cost management strategies, fostering a cloud-centric culture, and continuously monitoring and optimizing cloud resources.

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A STUDY ON OPPORTUNITIES AND CHALLENGES OF BLOCKCHAIN TECHNOLOGIES IN HEALTH CARE

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Abstract

Blockchain is a relatively new technology for managing electronic data that has the potential to support transparency and accountability. A blockchain is a ledger of transactions where an identical copy of the ledger is visible to all the members of a computer network.

Blockchain is best suited to transactions with a lightweight digital footprint where transparency and immutability are an advantage. In the health sector, blockchains may be particularly useful for identity verification; medical and pharmaceutical supply chain management; and managing dynamic patient consent and data sharing and access permissions.

Blockchain-enabled tools are emerging to combat the COVID-19 pandemic, such as an identity management system in support of contact tracing in South Korea and a system to support sharing data and software code for research purposes. Blockchain has also been used or proposed for supply chain management for medications, medical supplies and for a future vaccine.

Hype surrounds the potential of blockchain technology in the health sector and its usefulness can be overstated. Most published research on the use of blockchain in the health sector presents theoretical frameworks, architectures, or models with few technical details. There is seldom a prototype or pilot implementation to learn from. Deployment of blockchain technology in health at a national scale is rare.

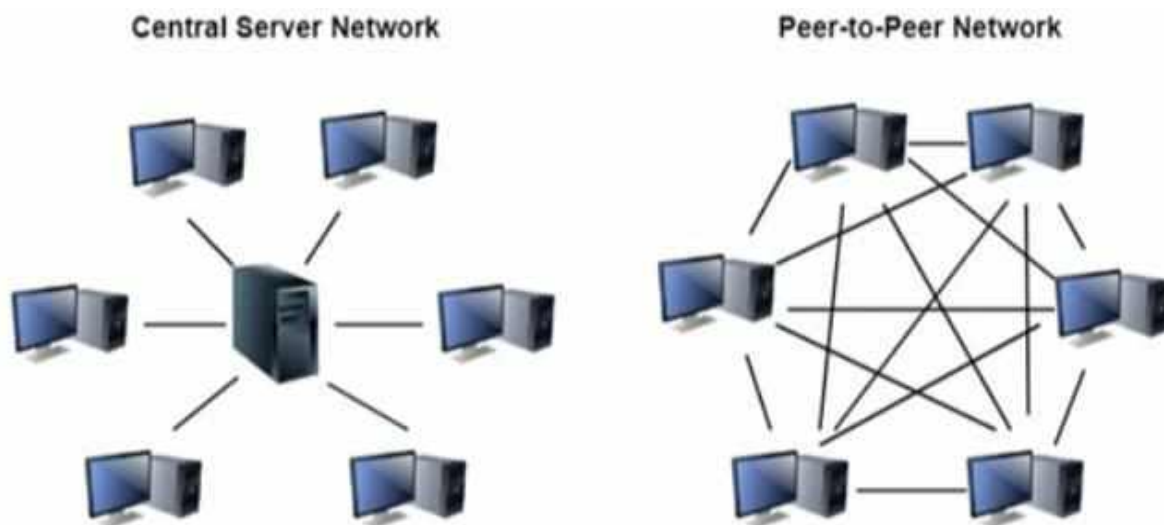
To meet information needs and policy goals, blockchain should be deployed where it is best suited and in combination with other technologies within a well-governed health information system.

Importantly, Blockchain is ill-suited to storing high-volume data due to the computational and capacity constraints of replicating the blockchain across every network participant (node). Storing large records on the blockchain, such as full electronic medical records or genetic data records, would be inefficient and costly. It is also difficult to query data within a blockchain, limiting clinical, statistical and research uses of data.

Blockchain is a Major Change from Traditional Approaches to Data Management

In a traditional database, the data are held in a single, central server (or server network) with a centralised database administrator. In contrast, blockchain is an approach to managing data where they are appended on an electronic ledger that is distributed across a peer-to-peer network with no central administration of the data

Centralised Versus a Distributed, Peer-To-Peer Network



In a blockchain, data such as a sales transaction record or a medical record are stored in blocks. When the data to complete a block have been entered, the block is added to the chain of previous blocks and a new block is created for the next data entry. Blockchains are decentralised and can have an unlimited number of participants in a network, such as a global network of vendors and purchasers of medical equipment. All participants in a blockchain have a full copy of the blockchain, which is continually updated and synchronised as new blocks are added. A node is a computer/device that stores or provides access to a copy of the blockchain. All the records in a blockchain are visible to all the participants in the blockchain network.

Blockchain Fits Situations where Transparency and Immutability of the Data are Needed

Blockchain is best suited to recording transactions with a lightweight digital footprint where transparency and immutability are an advantage. In other words, it is best suited to situations where there is less trust among participants in a network and where the size of data blocks is relatively small. Situations in health care where blockchain may be particularly useful include identity verification of patients, providers or suppliers; supply chain management; and management of dynamic patient consent to data uses. Blockchain is, however, ill-suited to storing high-volume data due to the computational and capacity constraints of replicating the blockchain across every network participant (node). Storing large records on the blockchain, such as full electronic medical records or genetic data records, would be inefficient and costly.

Personal health data are sensitive and subject to legislations protecting data privacy in OECD countries. Storing them 'on chain' and thus, by definition, visible to

all other network participants would be a high risk to data privacy, even if records were de-identified.¹ Even storing metadata about personal health data (data about data) on chain, while technically feasible, raises data privacy concerns because of the potential for indirectly disclosing patient identities and because the data cannot be erase

The visibility of the data in a blockchain risks contravening data privacy principles of data minimisation and use limitation (OECD, 2013). Compliance may be addressed if the blockchain is private and permissioned, which is where all the blockchain network nodes are known to one another and nodes must be authorised to view and add to the blockchain. Further, some network nodes may be approved access to only a portion of the ledger.

The distributed ledger makes it difficult for data subjects, such as patients or providers, to exercise rights that are related to the behaviour of the data controller because there is no single data controller, such as one organisation that is the custodian of the data, but rather network nodes that each hold a copy of the data. In the EU Data Protection Regulation, rights related to the behaviour of a data controller include the right to access your personal data, to correct them, to be informed about the processing of them, to object to processing of them and to have them erased. Further, the 'append only' aspect of blockchain that is the inability to change or erase data from the chain, is incompatible with the EU Data Protection Regulation right to erasure (Panel for the Future of Science and Technology, 2019) and has the potential to conflict with privacy legislations in other jurisdictions.

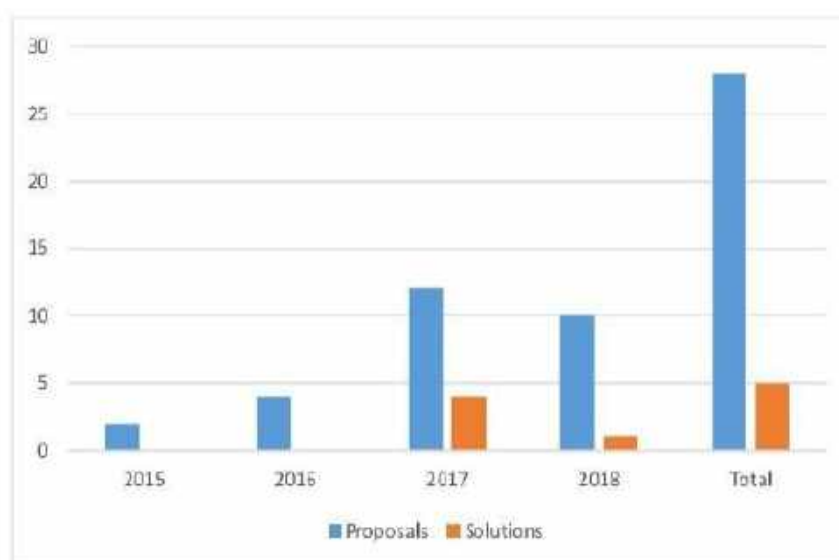
A related limitation is that, unlike conventional databases, distributed ledgers are difficult to search for specific terms or information. This limits their utility as information repositories for clinical as well as research purposes. User interfaces are still quite rudimentary and in the early phases of development (Vazirani, 2019) and this limits deploying blockchain-enabled ledgers at scale. Given that blockchain is a nascent technology, technological fixes may still emerge as the technology begins to be applied more regularly and across a range of sectors.

Blockchain Applications in the Health Sector are Limited

Despite some growth in published research on the uses of blockchain in the health sector, the state of play is still immature. Most research presents novel blockchain frameworks, architectures or models but technical details about the blockchain elements used are rarely provided and there is seldom any prototype or pilot implementation to learn from. Deployment of blockchain technology in health at a national scale is rare. There are examples from some countries, such as Estonia and Malta, of how blockchain technologies offer useful features such as data security protection and management of patient consent. The most promising applications of

blockchain in the health care sector are for identity management, dynamic patient consent, and management of supply chains for medical supplies and pharmaceuticals, as discussed below.

Most Research Papers on Blockchain in Health Care Describe Proposals, Not Solutions



Blockchain for Management of Patient Consent and Data Access Permissions

Blockchain can enable a transparent, auditable way for individuals, using their unique credentials and encryption key, to allow other parties to access their personal health data. This includes granting authority for health professionals, service providers and other relevant actors (e.g. researchers and social care providers) to access their medical records and other information for the purposes of direct health care delivery or to permit research, statistical or other secondary uses of their data. Given that electronic data can be used and re-used ad infinitum, and new research questions and purposes for data use continually emerge, the incremental or 'dynamic' consent enabled by blockchain provides a highly useful alternative to 'blanket or one-time-only' consent models. If an individual decides to change their terms of permission or consent, the changes can be added as a new block that overrides the previous instructions on the chain.

The Malta biobank is using a blockchain technology called Dwarna to manage dynamic consent of individuals to the usage of their bio specimens in research studies (Mamo N, 2019). The Dwarna web portal stores individuals' consent in a blockchain to create a permanent/immutable record. It increases trust in donating samples to the biobank by allowing individuals to have control over which studies they will participate in and allowing them to withdraw consent and to request that bio specimens be destroyed. MedRec is a blockchain-enabled system from the

Massachusetts Institute of Technology's media lab that associates a medical record with viewing permissions and data retrieval instructions for external databases (MedRec, 2020). It uses blockchain 'smart contracts' to record patient-provider interactions. Once a provider creates a record, it is verified, and the patient authorizes its viewing permissions. The party receiving new information receives an automated notification, and an encrypted pointer to the new medical record. Permissions are stored on the chain. This system allows patients to access and control their data. So far, it has been successful with medications, blood tests, vaccination histories, and other therapeutic interventions

A trustworthy record of data ownership is the goal of RadBit, which allows patients to keep possession of their medical images along with an immutable chain of custody (Nichol, 2017). Temporary keys ("tokens") can be created by users of the blockchain and passed on to health care providers and insurance companies, providing them temporary access. The token is independent of the data, containing only authorization commands, and is verified and validated by adding them to the chain, triggering the dispatch of required reports. Potential ways to improve the integrity are to use blind signatures, which reinforce protection from tampering as well as confirming the sender's and viewer's identities, or to use signatures from multiple authorities.

Blockchain technologies for patient consent and permissions for data sharing and access are being deployed to improve recruitment and retention as well as patient and participant empowerment in biomedical research (Dubovitskaya A, 2019). Two notable blockchain-backed efforts in the pharmaceutical ecosystem are the Innovative Medicines Initiative (IMI) Blockchain Enabled Healthcare (IMI 2018) Project and the Pharmaceutical Users Software Exchange (PhUSE) Blockchain Project.

Blockchains could be used as a secure way to control the flow of personal data in the recruitment of participants to clinical trials (Angeletti F, 2017). A blockchain may protect the interests of both the individual, who can keep their data private until an agreement is reached, and the research team, which can trust that it is acquiring useful and authentic data.

A new blockchain application called Research Foundry has emerged to enable management of consent and permissions for the sharing of and access to health data, metadata, software code and other products connected with health research, including research related to the COVID-19 pandemic (Burstiq, 2020).

It aims to facilitate cross-border collaboration in a way that ensures participants remain in compliance with applicable data privacy law. In this solution, network nodes control what data they wish to make visible to other participants. For

example, metadata about a data repository may be shared with all participants while the health data repository remains private and not visible to the nodes on the blockchain. When there is an agreement to share all or part of a repository with other specific nodes then the sharing can be facilitated. The technology provider cannot access the private data repository without the explicit permission of the data owner.

Blockchain for Managing Medical and Pharmaceutical Supply Chains

The most common use of blockchain across industries is for managing product supply chains. In the health sector, block chains are beginning to be used to manage supply chains for medications, clinical supplies, blood products, and medical devices.

Applications of Blockchain in this Sphere Include the Following (Clauson KA, 2018)

- Product identification: a unique product identifier may be validated more easily and quickly (e.g. in case of product failure).
- Tracing: manufacturers, distributors or dispensers can use a distributed ledger that automatically verifies relevant information.
- Product verification: verifies the authenticity of a product and enables public and private actors to detect products suspected as counterfeit, unapproved, or dangerous.
- Notification and response: enable a secure system to notify regulatory authorities of non-compliant products or transactions.

Conclusion

Blockchain technology could transform the healthcare industry's IT infrastructure from centralized, isolated, and small-scale systems to distributed, decentralized and worldwide systems, which could dramatically improve the quality of care provided and eliminate costly administrative inefficiencies.

1. Fit-for-purpose. Blockchain is an enabling, general-purpose digital technology. It should be evaluated on its merits and applied where it is the best application for the problem at hand, after comparing it to alternative solutions.
2. Governance and regulatory alignment. Blockchain-based solutions have particular features that must be evaluated in terms of the compliance of the solution with laws, regulations and data governance frameworks.
3. Incremental integration. Blockchain-enabled solutions should be considered in relation to existing systems and technologies. Blockchain should complement and leverage existing systems and be tested incrementally in a controlled environment before large-scale implementation.

4. Education, awareness and user-based design. Blockchain requires a new way of thinking about data and information. Users of this technology, including patients and the public, must be educated regarding the features of this technology and the implications of its use for data ownership, access and privacy.

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DIGITAL INDIA: TRANSFORMING INDIA THROUGH TECHNOLOGY AND CONNECTIVITY

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Abstract

Digital India is an initiative launched by the Government of India with the vision to empower the citizens, bridge the digital divide and transform the nation into a knowledge-based economy. This innovative program aims to promote the potential of technology and connectivity to create a digitally inclusive society, foster economic growth and enhance the government. The Digital India initiative encompasses a wide array of projects and policies, all aimed at utilizing the power of digital technology to bring about socio-economic change. One of the key pillars of this transformation is the establishment of a robust digital infrastructure, including high-speed internet connectivity, digital payment systems, and e-governance platforms. By promoting the adoption of digital technologies across sectors, Digital India seeks to enhance efficiency, transparency, and accessibility in the government services and public administration. This abstract examines the key objectives, strategies, and impact of the Digital India campaign, highlighting its role in driving socio-economic development and bridging the digital divide. For the government, businesses and the public, digital innovation is an opportunity to relate each other. In India 75% of the global digital talent has become the digital capabilities hub of the world. India is known as the powerhouse of software. The availability of electronic government services to citizens in India is comparatively low. This program is designed to ensure that the government services accessible to the poor and oppressed people through electronic means, hence, fastening the services rendered and improving the quality of life to even the lowest stratum of the society.

Keywords: E- Governance, Digital India, Connectivity, Digital Infrastructure Innovation, Digital Payment

Introduction

Digital India (Ministry of Electronics & Information Technology, Government of India, 2016) “The digital India programme is a flagship programme of the government of India with a vision to transform India into a digitally empowered society and knowledge economy”

Digital India attracted more than 4lakh crore investment and generated more than eighteen lakh job opportunists at its launch. Second highest import category in India is electronics goods in country. This fact is indigestible because India has

largest number of IT professional and very large MSME (Micro, small and Medium) scoter still it has not developed its capabilities to manufacture in this sector. Government has made the policy with a vision to make net zero import of this category. This aim will be achieved by Digital India: transforming India through technology and connectivity programme to boost manufacturing and increases domestic demand.

The three main focuses of the digital India program are improving digital infrastructure, providing services online, and promoting digital literacy. This action will significantly advance technology and provide the groundwork for plans to expand internet connectivity even to the most isolated rural areas of the nation. All government services, including those for managing a bank account, finances, safety and security, cyberspace, distant learning, etc., will now be supported by digital infrastructure.

Background

Digital India Program was launched by Prime Minister Narendra Modi on July1, 2015. In the inaugural speech of this program, he has mentioned his dream from digital India i.e., for driving innovation, knowledge is strength and empowers the people, access of information knows no barrier, government is open & governance is transparent, technology ensures the citizen government interface is incorruptible, governmental services are easy and efficiently available to citizens on mobile devices, government productivity engaged with people through the social media, quality education reaches the most inaccessible corners driven by digital learning, quality health care to remotest region powered by e health care, mobile enable emergency services ensures personal security, cyber security is integral part of national security, mobile & e-banking ensures financial inclusion, world looks to India for next big idea, etc.

Digital Technology and Connectivity

Developing a new technology strategy using digital technology in an existing business context help us to solve the problems. Human civilization has been going through digital evolutions since the beginning of time. In education, virtual learning environments and distance learning have opened up programmes to students to learn the concepts. Public services are also becoming more accessible and accountable through digital technology. Technological advancement helps the society to make our lives easier. Today Digital technologies control every aspect of our lifestyle from small to large thing, and we cannot do without it. Digitisation of the Indian economy has impacted our lives in various ways. Digital technology also positively impacts our culture's fundamental aspects, including health care, law

enforcement, art, education, mobility, and religion. In health care sector, the adoption of technology has led to better diagnosis and treatment of patients. It enables health practitioners to **store and retrieve data relating to a patient's health records.**

Growth of Technology

All around the world, technology is continuing to become a part of everyday life, and its capabilities are increased rapidly. There are over 600,000 new internet users each day, on average. Technology has changed major sectors over the past 20 years, including media, climate action and healthcare. That has only continued to increase as more and more data is added to the digital world. The technology sector is a huge investment opportunity for investors worldwide. Technology is associated with innovation and invention and it is now integrated into all other existing sectors like health, financial, real estate, or manufacturing. Innovative technology ideas can create a huge trend only to fade out quicker than it was expected.

Objectives

- High speed internet service provided to rural areas
- To make government services available to citizens of India electronically by online infrastructure improvement.
- To transform the whole country into digitally interested community and knowledge economy.
- To bring efficiency and transparency in governance using information technology and connectivity.

Technology's Role in Economic Development

Time is Money

Technology and connectivity can save the time it takes to produce a good or deliver a service, contributing to the overall profits of a business.

Efficiency

Technology and connectivity can contribute to the efficiency of a business's output rate, allowing for larger quantities of products to be moved or of services to be rendered.

Specialization

Technology and connectivity has led to an increase in the specialization of jobs within a business and contributing to the efficiency with which a business is able to run.

Research

Better technology has lead to further research into every sector of business and science, which can benefit from all sorts of technological advancements.

The Internet and International Trade

Information technology is the most important element in the success and growth of international trade and job market growth, allowing businesses to share information and conduct trade in less time.

Covid-19

During the pandemic has sparked the need for the digitalization of small and medium businesses. The COVID era is known for the rapid growth of digital business models that have also effective revenue flow. The employees have started working from home. Many businesses are affected on a large scale. Government approaches and to use digital communication channels to provide reliable information to the people. Online platform connects millions of students and workers to their schools and office from home during the spread of COVID-19.

Opportunities

Recognizing opportunities enabled by digital technology (DT) has become a competitive necessity in today's digital world. Digital technology can support innovation. Technology has been changing the ways by how production is conducted and how employment opportunities are distributed to the people. The ultimate goal of digital technology is to make life easier by applying scientific and engineering knowledge to solve every problem.

1. Social Connectivity

Digital technology makes it easy to stay in touch with friends, family, even if you are in another part of the world. You can express your thoughts and feelings through words, video, audio, and exchange other media. Through video conferencing we can interact lively with the person to whom we want to speak.

2. Automation

Digital technology is increasingly going machines smarter. The machines no longer need humans to operate them, freeing up workers from tasks for instances selling the products from manufacturer to retailer without an involvement of intermediary.

3. Learning Opportunities

Anybody with access to the internet instantly has access to a huge proportion of the world's knowledge over the web. Lessons and courses can now be delivered virtually online to students and employees. Most of the world's population and learn directly from sources, for example, if you are trying to register foreign events, or learning a new language. Digital technology can also be easier to use for people with disabilities and often give them regular access.

4. Communication Speeds

Internet speeds have developed since the early days. Ever faster broadband facilitates the transfer of large amounts of information across the web. Making use of internet it possible to gush video and audio in real-time, send large data files, and access data from virtually anywhere in the world.

5. Employment Jobs

People are more able to start up multiple jobs thereby opening up multiple streams of income for themselves and with interested group of people. The relative ease of digital publishing has opened up many self-employment opportunities for both the young and old generation people. Other job opportunities abound in the digital economy for software developers, web designers, writers, and telecom workers.

6. Entertainment

The entire entertainment industry and the way that people entertain themselves has been increased with the digital technology. People enjoy through social media or playing computer games. Traditional media like radio stations also developed and the television media industry use the technologies to compete in the emerging business world.

7. Warfare

Advances in technology mean that wars can increasingly be fought remotely, avoiding the risks associated with having soldiers physically present drones and missile technology are effectively used, and most machinery used in warfare is being gradually becoming increasingly automated.

Conclusion

In conclusion, the Digital India initiative is a visionary and transformative program that aims to harness the power of technology to drive economic growth, enhance governance, and improve the lives of citizens. Throughout this paper presentation, we have explored various aspects of Digital India, including its objectives, key components, opportunities, and role.

The initiative's multi-faceted approach has been successful in bridging the digital divide and empowering citizens, especially in rural and remote areas, by providing them with access to digital services and information. The rapid expansion of internet infrastructure, digital literacy programs, and the promotion of e-governance have significantly contributed to creating a digitally inclusive society.

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ROLE OF TECHNOLOGY IN NEP 2020

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Abstract

Practical learning is prioritized above theoretical learning in NEP 2020. No of their socioeconomic status, gender, or handicap, the new educational policy enables every student to receive a quality education. The employment of various learning methods and experiments by teachers is made possible through NEP 2020.

Keywords: NEP 2020, Technology, National Development.

Introduction

Realizing one's full potential, creating a just and fair society, and advancing global progress all depend on education. The secret to India's sustained rise and leadership on the international stage in terms of economic growth is to ensure that everyone has access to high-quality education. Social justice and equality, technological development, international cooperation, and cultural preservation.

National Education Policy 2020

Full human potential, the creation of a fair and just society, and the advancement of national development all depend on education. India's continuous rise depends on ensuring that everyone has access to high-quality education, and the country's education policy places special focus on helping each person realize their creative potential. It is founded on the idea that education must foster not only the development of cognitive abilities—both the "foundational capacities" of literacy and numeracy and "higher-order" cognitive abilities, such as critical thinking and problem solving—but also the development of social, ethical, and emotional abilities and dispositions.

The rich heritage of ancient and eternal Indian knowledge and thought has been a guiding light for this Policy. The pursuit of knowledge (Jnan), wisdom (Pragyaa), and truth (Satya) was always considered in Indian thought and philosophy as the highest human goal. The aim of education in ancient India was not just the acquisition of knowledge as preparation for life in this world, or life beyond

schooling, but for the complete realization and liberation of the self. World-class institutions of ancient India such as Takshashila, Nalanda, Vikramshila, Vallabhi, set the highest standards of multidisciplinary teaching and research and hosted scholars and students from across backgrounds and countries. The Indian education system produced great scholars such as Charaka, Susruta, Aryabhata, Varahamihira, Bhaskaracharya, Brahmagupta, Chanakya, Chakrapani Datta, Madhava, Panini, Patanjali, Nagarjuna, Gautama, Pingala, Sankardev, Maitreyi, Gargi and Thiruvalluvar, among numerous others, who made seminal contributions to world knowledge in diverse fields such as mathematics, astronomy, metallurgy, medical science and surgery, civil engineering, architecture, shipbuilding and navigation, yoga, fine arts, chess, and more. Indian culture and philosophy have had a strong influence on the world. These rich legacies to world heritage must not only be nurtured and preserved for posterity but also researched, enhanced, and put to new uses through our education system.

Features of National Education Policy 2020

1. Ensuring Universal Access at All Levels of schooling from pre-primary school to Grade 12;
2. Ensuring quality early childhood care and education for all children between 3-6 years;
3. New Curricular and Pedagogical Structure (5+3+3+4);
4. No hard separations between arts and sciences, between curricular and extra-curricular activities, between vocational and academic streams;
5. Establishing National Mission on Foundational Literacy and Numeracy;
6. Emphasis on promoting multilingualism and Indian languages; The medium of instruction until at least Grade 5, but preferably till Grade 8 and beyond, will be the home language/mother tongue/local language/regional language.
7. Assessment reforms - Board Exams on up to two occasions during any given school year, one main examination and one for improvement, if desired;
8. Setting up of a new National Assessment Centre, PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development);
9. Equitable and inclusive education - Special emphasis given on Socially and Economically Disadvantaged Groups (SEDGs);
10. A separate Gender Inclusion fund and Special Education Zones for disadvantaged regions and groups;
11. Robust and transparent processes for recruitment of teachers and merit based performance;
12. Ensuring availability of all resources through school complexes and clusters;

13. Setting up of State School Standards Authority (SSSA);
14. Exposure of vocational education in school and higher education system;
 - Increasing GER in higher education to 50%;
15. Holistic and Multidisciplinary Education with multiple entry/exit options;
 - NTA to offer Common Entrance Exam for Admission to HEIs;
 - Establishment of Academic Bank of Credit;
16. Setting up of Multidisciplinary Education and Research Universities (MERUs);
 - Setting up of National Research Foundation (NRF);
17. 'Light but Tight' regulation;
 - Single overarching umbrella body for promotion of higher education sector including teacher education and excluding medical and legal education- the Higher Education Commission of India (HECI)-with independent bodies for standard setting- the General Education Council; funding-Higher Education Grants Council (HEGC); accreditation- National Accreditation Council (NAC); and regulation- National Higher Education Regulatory Council (NHERC);
 - Expansion of open and distance learning to increase Gross Enrolment Ratio (GER).
 - Internationalization of Education
 - Professional Education will be an integral part of the higher education system. Stand-alone technical universities, health science universities, legal and agricultural universities, or institutions in these or other fields, will aim to become multi-disciplinary institutions.
 - Teacher Education - 4-year integrated stage-specific, subject- specific Bachelor of Education
 - Establishing a National Mission for Mentoring.
 - Creation of an autonomous body, the National Educational Technology Forum (NETF) to provide a platform for the free exchange of ideas on the use of technology to enhance learning, assessment, planning, administration. Appropriate integration of technology into all levels of education.
 - Achieving 100% youth and adult literacy.
 - Multiple mechanisms with checks and balances will combat and stop the commercialization of higher education.
 - All education institutions will be held to similar standards of audit and disclosure as a 'not for profit' entity.
 - The Centre and the States will work together to increase the public investment in Education sector to reach 6% of GDP at the earliest.

- Strengthening of the Central Advisory Board of Education to ensure coordination to bring overall focus on quality education.

Salient Features of NEP Related to Higher Education

The new NEP has been introduced with an aim to normalize changes in the system from school level to college/university level. Keeping in mind the developing scenario, education content henceforth, will focus on key-concepts, ideas, applications and problem-solving angles. The National Education Policy is expected to bring positive and long-lasting impact on the higher education system of the country. The fact that foreign universities will be allowed to open campuses in India is a commendable initiative by the government. This will help the students experience the global quality of education in their very own country. The policy of introducing multi-disciplinary institutes will lead to a renewed focus on every field such as arts, humanities and this form of education will help students to learn and grow holistically. Thus, students will be equipped with stronger knowledge base.

The introduction of single common entrance test is another positive step which will reduce the stress of multiple competitive exams and ease off the pressure of preparing for so many of them. It will also ensure a level playing ground for all student applicants going forward. Establishing Academic Bank of Credit (ABC) is definitely a robust idea to store the academic credits that students earn by taking courses from various recognized higher education institutions. A student can earn scores by completing a course and these will be credited to the ABC account. One can then transfer these credits if he/she decides to switch colleges.

If a student ever drops out for some reasons, these credits will remain intact which means he/she can come back years later and pick up from where the student had left. The new higher education regulatory structure will ensure that distinct administrative, accreditation, financing, and academic standard-setting roles are performed by separate, autonomous, and empowered bodies. These four structures will be established as four independent verticals within a single umbrella institution, India's Higher Education Commission (HECI). There are a lot of reforms and new developments which have been introduced by NEP in the higher education sector. Some of the salient features are:

Single Regulatory Body for Higher Education

The NEP aims to establish Higher Education Commission of India which will be the single regulatory body except for legal and medical education.

Multiple Entry and Exit Programme

There will be multiple entry and exit options for those who wish to leave the course in the middle. Their credits will be transferred through Academic Bank of Credits.

Tech- Based Option for Adult Learning Through Apps, TV Channels

Quality technology-based options for adult learning such as apps, online courses/modules, satellite-based TV channels, online books, and ICT-equipped libraries and Adult Education Centres, etc. will be developed.

E-courses to be Available in Regional Languages

Technology will be part of education planning, teaching, learning, assessment, teacher, school, and student training. The e-content to be available in regional languages, starting with 8 major languages – Kannada, Odia, Bengali among others to join the e-courses available in Hindi and english.

Foreign Universities to Set-Up Campuses in India

World's top 100 foreign universities will be facilitated to operate in India through a new law. According to the HRD Ministry document, "such (foreign) universities will be given special dispensation regarding regulatory, governance, and content norms on par with other autonomous institutions of India."

Common Entrance Exam for All Colleges

The common Entrance exam for all higher education institutes to be held by National Testing Agency (NTA). The exam will be optional.

A Higher Education Council of India (HECI) will be set up to regulate higher education. The council's goal will be to increase gross enrollment ratio. The HECI will have 4 verticals:

- a) National Higher Education Regulatory Council (NHERC), to regulate higher education, including teacher education, while excluding medical and legal education.
- b) National Accreditation Council (NAC), a "meta-accrediting body".
- c) Higher Education Grants Council (HEGC), for funding and financing of universities and colleges. This will replace the existing National Council for Teacher Education, All India Council for Technical Education and the University Grants Commission.
- d) General Education Council (GEC), to frame "graduate attributes", namely the learning outcomes expected. It will also be responsible in framing a National

Higher Education Qualification Framework (NHEQF). The National Council for Teacher Education will come under the GEC, as a professional standard setting body (PSSB).

Detailed Analysis of Impact of NEP on Higher Education

Regulatory System of Higher Education

A significant change in NEP 2020 is the proposal to set up the Higher Education Commission of India (HECI), as an umbrella body for higher education, excluding medical and legal education. This will usually bring out a question that what will happen to the present UGC and AICTE? HECI is aiming at reforming the higher education sector; the Bill will separate the Academic and Funding aspects of the sector. According to the new Bill, HECI will not have any financial powers. The funding processes which were handled by the University Grants Commission (UGC) will be taken care by the Ministry of Education, previously known as the Ministry of Human Resource Development (MHRD). This change however is expected to clear the regulatory mess in India's Higher Education system. HECI is expected to have four independent verticals - National Higher Education Regulatory Council (NHERC) for regulation, General Education Council (GEC) for standard-setting, Higher Education Grants Council (HEGC) for funding, and National Accreditation Council (NAC) for accreditation. To have uniformity in education standards, a single umbrella body was always a requirement and this has been a vision of numerous educationists. This is considered as the right step in streamlining education policy. However, to ensure quality of higher education, institutes must be measured based on relevant parameters like research, industry linkages, placements and academic excellence, etc. If the HECI can manage this, the benefits to its biggest stakeholder, the youth of India, might be significant.

Graded Accreditation and Graded Autonomy

The concept of "empowerment and autonomy to innovate" is one of the key features in NEP 2020 which supports a "phasing out" strategy from Affiliated Colleges to Autonomous Institutions. The increased flexibility offered to autonomous institutions also gives hope in curriculum enrichment. It also says that with appropriate accreditations, Autonomous degree-granting Colleges could evolve into Research-intensive or Teaching-intensive Universities, if they so aspire. The announcement of setting up Multidisciplinary Education and Research Universities (MERUs) in the country gives more hope. These institutions will be at par with the existing IITs and IIMs and will aim to showcase multidisciplinary education for the Indian students. Another important change the NEP 2020 suggests that the National Testing Agency will serve as a premier, expert, autonomous testing organization to

conduct entrance examinations for undergraduate and graduate admissions and fellowships in Higher Education Institutions. The high quality, range, and flexibility of the NTA testing services will enable most universities to use these common entrance exams - rather than having hundreds of universities each devising their own entrance exams - thereby drastically reducing the burden on students, universities and colleges, and the entire education system. It will be left up to individual universities and colleges to use NTA assessments for their admissions. It also surely helps the students to easily transfer their degrees and credits to universities abroad.

Conclusion

Education gives us self respect and makes us respected in the society. Education is the light. It takes us out of darkness and shows us right path and provide us opportunities to brighten our future. Education helps an individual to earn better opportunities in life and helps open the doors of success.

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INVESTIGATING THE CONSEQUENCES OF GST FILING: AN ANALYTICAL STUDY ON SMALL SCALE INDUSTRY IN COIMBATORE

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Abstract

Goods and Services Tax (GST) was implemented in India in 2017. It is a kind of indirect tax that is comprehensive and unified throughout the country. GST is levied on the supply of goods and services in India and it is a kind of tax based on consumption of goods and services. Multiple indirect taxes such as excise duty, service tax, value-added tax, etc., have been replaced by GST. GST has brought a significant impact on the Indian Economy. The impact of GST has always been a debating factor therefore, our main objective of the study is to understand the perception of small-scale entrepreneurs on GST filing procedures. The study has been based on primary data collected from 120 small-scale industries located in Coimbatore, India. Primary data has been analyzed by using statistical tools such as simple percentage analysis, and T-test. Based on our analysis small-scale entrepreneurs feel that GST is a fair and satisfactory tax system. It is also concluded that small-scale businesses feel that the tax burden is higher and many entrepreneurs do not have enough awareness about filing GST, they require the assistance of chartered accountants or others to file GST.

Keywords: GST, Small-scale industries, GST Filing, Consequences.

Introduction

Goods and Services Tax is referred to as GST. It is an indirect tax imposed in India on the provision of goods and services. Multiple federal and state taxes, including excise duty, service tax, value-added tax (VAT), and others were replaced by the GST when it was introduced on July 1, 2017. By establishing a uniform tax structure throughout the nation, the GST was implemented with the intention of streamlining the taxing system. It adheres to the "One Nation, One Tax" tenet, simplifying the tax collection procedure and lowering tax barriers across states (Wikipedia). Under the GST regime, different goods and services are categorized into various tax slabs, namely 0%, 5%, 12%, 18%, and 28%, with certain items attracting lower rates or exemptions (Cleartax). There are various forms such as GSTR-1, GSTR-3B, GSTR-2A, GSTR-4, GSTR-9, and GSTR-10. In addition to these forms, there are various other forms such as GSTR-5 for non-resident taxpayers,

GSTR-6 for input service distributors, GSTR-7 for tax deducted at source (TDS), and GSTR-8 for tax collected at source (TCS). To avoid penalties and interest fees, it is crucial to submit these documents and returns by the deadlines. Taxpayers must submit these forms and returns using the GST portal in order to complete the entire GST filing procedure in India, which is totally online.

GST filing refers to the process of reporting and submitting the necessary GST returns to the tax authorities. Businesses that have registered for GST must submit regular reports that include information on their sales, purchases, and taxes paid. As a result, the tax system is transparent and the government can monitor tax compliance and revenue collection. GST filing has implications for businesses, including small-scale industries, as it affects their compliance requirements, documentation, and financial management. The impact of GST filing on small-scale industries can vary, depending on factors such as their scale of operations, industry sector, and ability to adapt to the new tax regime.

Small-scale businesses are essential to the growth of a region's economy since they provide jobs and foster innovation and growth in general. The relevance of these businesses in the context of the Coimbatore area is very high, which is renowned for its thriving industrial sector made up of a variety of small-scale companies. The Goods and Services Tax (GST) was a fundamental adjustment to the Indian taxation system. However, its impact on small-scale industries, particularly in the Coimbatore district, remains relatively understudied. Therefore, the study attempts to close this research gap and provide valuable insights into the consequences of GST filing on small-scale industries in the district.

The research also offers useful information to stakeholders interested in promoting the growth and development of small-scale industries, such as governments, industry associations, and other stakeholders. The study's conclusions also aid in the creation of efficient policies and initiatives that will increase the resiliency and sustainability of these businesses in the Coimbatore district. Thus it is critical to investigate how GST filing affects small-scale industries in order to comprehend the difficulties and opportunities they face, evaluate how well the GST system fosters their expansion, and spot potential areas for improvement that would reduce the burden of compliance and boost competitiveness.

Statement of the Problem

Despite the implementation of Goods and Services Tax (GST) in India, there is a lack of comprehensive understanding regarding the specific effects of GST filing on small-scale industries operating within the Coimbatore district. The problem lies in the limited research conducted on this topic, which hinders the identification of the challenges and opportunities faced by these enterprises in complying with GST

regulations, understanding the financial implications, and assessing the overall impact on their business operations and competitiveness. Therefore, there is a need to investigate and address the gap in knowledge regarding the consequences of GST filing on small-scale industries within Coimbatore district, in order to provide valuable insights for policymakers and stakeholders in formulating effective strategies for their sustainable growth and development.

Objective of the Study

The study mainly focuses on the following objective

- To identify the demographic factors of the respondents.
- To understand the perception of small-scale entrepreneurs on GST filing procedures.

Research Methodology

The study takes a mixed-methods approach. This approach will allow for a comprehensive understanding of the topic by combining quantitative and qualitative data collection and analysis. Both primary and secondary data will be used in the study.

Primary data will be collected through surveys and interviews with small-scale industry owners, managers, and relevant stakeholders. The survey will include structured questions to gather quantitative data from 120 respondents in the city of Coimbatore, on variables such as compliance costs, financial performance, and competitiveness. Interviews will provide qualitative insights into the challenges faced by small-scale industries in relation to GST filing. Secondary data sources, including government reports, industry publications, and existing studies, will be utilized to supplement the primary data and provide additional context for the research. Using software tools such as SPSS, and Excel, the research makes analysis of the data collected using various tools such as Percentage analysis, Descriptive statistics, as well as t-tests.

Review of Literature

Ankita Dutta (2020) conducted a research titled 'The Impact of GST on the Micro Small and Medium Enterprises in Jharkhand'. The principle objective of this research is to identify the impact of GST on the MSME in Jharkhand. This article states that Jharkhand stands 12th in the contribution of MSMEs in GDP, and also it has a large Industrial base. The article also directs the four different rates, they are 5%, 12%, 18%, and 28%.

Sharma and Saini (2019) conducted a study on 'Awareness and impact of GST among small business owners'. The study finds that there is a huge need for CA

consultancy and detected that E-way bills will be beneficial for business. This study concludes that even though they are aware of the GST, these small businessmen were not that satisfied with the rates. The study also strongly advocates that GST will help to improve the pace of the economy.

Sharma (2017) has done research on the title 'A Study of Impact of GST on Micro, Small and Medium enterprise'. The study investigated the importance of small business microeconomic growth, and especially job creation, the high administrative and compliance costs of including a large number of small entities in the tax system. The study found that there is a high level of tax evasion because of high compliance costs for small industries.

Data Analysis and Interpretation

Table 1 Demographic Analysis

S. No	Factors	Description	No	Percent
1.	Gender	Female	47	39.2
		Male	73	60.8
Total			120	100
2.	Age	18 - 30 years	38	31.7
		31 - 50 years	57	47.5
		Above 50 years	25	20.8
Total			120	100
3.	No. of employees of the firm	Less than 10	10	8.3
		11 - 15	23	19.2
		16 - 20	34	28.3
		21 - 25	15	12.5
		Above 25	38	31.7
		Total	120	100

(Source Primary Data)

Interpretation

Table 1 depicts that there are 47 female respondents, which accounts for 39.2% of the total, while there are 73 male respondents, representing 60.8% of the total. This indicates that there is a higher proportion of male respondents compared to female respondents in the dataset. Considering the age factor, the largest group consists of respondents aged between 31 and 50 years, with 57 individuals, comprising 47.5% of the total. The second-largest age group is between 18 and 30 years, with 38 respondents, representing 31.7% of the total. The smallest age group is above 50 years, with 25 respondents, accounting for 20.8% of the total. the majority of

respondents (28.3%) are associated with firms having 16 to 20 employees, with 34 individuals. The next most common category is firms with more than 25 employees, accounting for 31.7% of the total, represented by 38 respondents. The categories of firms with less than 10, 11 to 15, and 21 to 25 employees make up 8.3%, 19.2%, and 12.5% of the total, respectively.

Table 2: Annual Indirect tax

Year	Less than 50 Lakhs (in %)	50 lakhs - 1 crore (in %)	1 crore - 10 crore (in %)	10 crore - 25 crore	Total (%)
2017-2018	29.5	24.7	35.5	10.3	100.0
2018-2019	36.7	22.5	38.3	2.5	100.0
2019-2020	36.7	14.1	47.5	1.7	100.0
2020-2021	26.7	24.2	43.3	5.8	100.0
2021-2022	29.2	24.5	44.2	2.1	100.0

(Source: Primary data)

Interpretation

In the financial year 2017-2018, 29.5% of businesses had an annual indirect tax of lesser than 50 Lakhs, while 24.7% had a turnover between 50 Lakhs and 1 crore. The category of businesses with an annual indirect tax between 1 crore and 10 crore accounted for 35.5%, and those between 10 crore and 25 crore represented 10.3% of the total.

Moving to the financial year 2018-2019, the proportion of businesses with an annual indirect tax of lesser than 50 Lakhs increased to 36.7%, while the percentage for the 50 lakhs to 1 crore category decreased to 22.5%. The category of businesses with an annual indirect tax between 1 crore and 10 crore grew to 38.3%, and the group with an annual indirect tax between 10 crore and 25 crore decreased to 2.5%.

In the subsequent financial year 2019-2020, the percentage of businesses with an annual indirect tax of lesser than 50 Lakhs remained at 36.7%, but the percentage for the 50 lakhs to 1 crore category decreased to 14.1%. The category of businesses with an annual indirect tax between 1 crore and 10 crore saw a significant increase to 47.5%, while the group with an annual indirect tax between 10 crore and 25 crore decreased to 1.7%.

For the financial year 2020-2021, the proportion of businesses with an annual indirect tax of lesser than 50 Lakhs decreased to 26.7%, while the percentage for the 50 lakhs to 1 crore category increased to 24.2%. The category of businesses with a turnover between 1 crore and 10 crore saw a further increase to 43.3%, and the group with an annual indirect tax between 10 crore and 25 crore increased to 5.8%.

In the most recent financial year 2021-2022, the percentage of businesses with an annual indirect tax of lesser than 50 Lakhs increased to 29.2%, while the percentage for the 50 lakhs to 1 crore category remained stable at 24.5%. The category of businesses with an annual indirect tax between 1 crore and 10 crore increased to 44.2%, and the group with an annual indirect tax between 10 crore and 25 crore decreased to 2.1%.

Table 3 Annual Gross Profit

Year	Less than 50 Lakhs (in %)	50 lakhs - 1 crore (in %)	1 crore - 10 crore (in %)	10 crore - 25 crore	Total (%)
2017-2018	30.0	23.3	34.2	12.5	100.0
2018-2019	30.8	18.3	47.5	3.3	100.0
2019-2020	32.5	29.5	34.2	3.8	100.0
2020-2021	32.5	29.8	34.2	3.5	100.0
2021-2022	33.3	27.5	36.7	2.5	100.0

(Source: Primary data)

Interpretation

In the financial year 2017-2018, 30.0% of businesses had an annual gross profit of less than 50 Lakhs, while 23.3% had a gross profit between 50 Lakhs and 1 crore. The category of businesses with a gross profit between 1 crore and 10 crore accounted for 34.2%, and those with a gross profit between 10 crore and 25 crore represented 12.5% of the total.

Moving to the financial year 2018-2019, the proportion of businesses with a gross profit of less than 50 Lakhs increased slightly to 30.8%, while the percentage for the 50 lakhs to 1 crore category decreased to 18.3%. The category of businesses with a gross profit between 1 crore and 10 crore saw a significant increase to 47.5%, and the group with a gross profit between 10 crore and 25 crore decreased to 3.3%.

In the subsequent financial year 2019-2020, the percentage of businesses with a gross profit of less than 50 Lakhs increased to 32.5%, while the percentage for the 50 lakhs to 1 crore category also increased to 29.5%. The category of businesses with a gross profit between 1 crore and 10 crore remained at 34.2%, and the group with a gross profit between 10 crore and 25 crore increased to 3.8%.

For the financial year 2020-2021, the proportion of businesses with a gross profit of less than 50 Lakhs remained at 32.5%, while the percentage for the 50 lakhs to 1 crore category increased slightly to 29.8%. The category of businesses with a gross profit between 1 crore and 10 crore remained stable at 34.2%, and the group with a gross profit between 10 crore and 25 crore decreased slightly to 3.5%.

In the most recent financial year 2021-2022, the percentage of businesses with a gross profit of less than 50 Lakhs increased to 33.3%, while the percentage for the 50 lakhs to 1 crore category decreased to 27.5%. The category of businesses with a gross profit between 1 crore and 10 crore increased to 36.7%, and the group with a gross profit between 10 crore and 25 crore decreased to 2.5%.

Table 4: Level of Agreeability of the Respondents

Factors	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
GST legislation is a fair tax system and satisfactory.	31.7	30.8	18.3	13.3	5.8
The present system is more beneficial / easier than the early tax system	8.3	10.0	42.5	25.8	13.3
GST helped in reducing the tax cascading effect.	4.2	5.8	19.2	47.5	23.3
GST eliminates multiple taxes.	34.2	14.2	16.7	25.0	10.0
GST made tax payment simpler	0.8	5.8	15.8	40.8	36.7
Necessary amendments are introduced in a timely manner in the legislation	0.8	5.8	18.3	35.8	39.2
The government is taking corrective measures for the flexibility in the current taxation system	0.8	4.2	27.5	40.8	26.7
The threshold limit for registration and exemption under GST needs to be revised	50.8	22.5	12.5	7.5	6.7
GST registration procedures are user friendly and easy for beginners	1.7	4.2	33.3	37.5	23.3
The GST filing procedure is easy and useful.	6.7	5.0	30.8	38.3	19.2

GSTN return filing portal & Refund process is simple and easily adaptable.	0.8	5.8	28.3	35.0	30.0
The introduction of GST made evasion of indirect Taxes more difficult.	48.3	30.8	13.3	5.0	2.5
GST saves time and is cost-effective.	0.8	4.2	25.0	38.3	31.7
GST made starting a business easy.	2.5	7.5	15.8	43.3	30.8

(Source: Primary Data)

Interpretation

From Table 4 It is interpreted that 30.8 percent of the respondents strongly agree that GST legislation is a fair tax system. 42.5 percent of the respondents are neutral that the present system is beneficial /easier than the early tax system. 47.5 percent of the respondents disagree that GST helped in reducing the tax cascading effect. 34.2 percent of the respondents strongly agree that GST eliminates multiple taxes. 40.8 percent of the respondents disagree that GST made taxpayment simpler. 39.2 percent of the respondents strongly disagree that Necessary amendments are introduced in a timely manner in the legislation. 40.8 percent of the respondents disagree that the government is taking corrective measures for flexibility in the current taxation system. 50.8 percent of the respondents strongly agree that the threshold limit for registration and exemption under GST needs to be revised. 37.5 percent of the respondents disagree that GST registration procedures are user-friendly and easy. 38.3 percent of the respondents disagree that the GST filing procedure is easy and useful. 35.0 percent of the respondents disagree that the GSTN return filing portal & Refund process is simple. 48.3 percent of the respondents strongly agree that the introduction of GST made evasion of indirect taxes more difficult. 38.3 percent of the respondents disagree that GST saves time and is cost-effective. 43.3 percent of the respondents disagree that GST made starting a business easy. 40.0 percent of the respondents strongly disagree that the entire process of taxation becomes simpler.

Suggestions

- Enhance efforts to educate and communicate the benefits, fairness, and functioning of the GST system to the public. This can help address the neutral or negative perceptions and create a better understanding of the system's

impact.

- Continuously strive to simplify the GST procedures, particularly in areas where respondents express dissatisfaction. Improving the user-friendliness of registration, filing, and refund processes can alleviate concerns and enhance compliance.
- Policymakers should focus on introducing necessary amendments to the GST legislation in a timely manner.
- Consider revising the threshold limits for GST registration and exemption based on the feedback received.

Conclusion

The study provides valuable insights into the perceptions and opinions surrounding various aspects of the Goods and Services Tax (GST) system. The data reveals a diverse range of perspectives among respondents, highlighting both positive and negative sentiments toward the fairness, benefits, simplicity, and effectiveness of the GST system. It underscores the need for continuous efforts in communication, education, and simplification to address concerns and improve the user experience. Policymakers should focus on timely amendments, transparency, flexibility, and stakeholder engagement to ensure the GST system evolves in line with the changing needs of businesses and the economy. Additionally, supporting small businesses, revising threshold limits, and continuously evaluating the system's impact is vital for fostering a conducive environment for businesses and ensuring the successful implementation of the GST framework. By incorporating these suggestions, policymakers can work towards a more transparent, efficient, and widely accepted GST system that contributes to economic growth and benefits society as a whole.

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IMPACT OF DIGITAL PAYMENT ON FINANCIAL INCLUSION IN INDIA

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Abstract

Financial inclusion is defined as the process of ensuring people are getting financial services and financial products when they required it. Financial inclusion includes access to financial products and services like bank accounts, insurance, remittance & payment services, Credit loans, etc. Now a day, banking industries are focused on the growth of financial inclusion. "Digital Payment" is a new banking technology introduced by the banking industries with the aim of providing financial services to its customers in an easy way. Banking industries are providing digital finance/ digital payment services to their customers. Digital payments make financial transactions easy with an electronic medium. It helps the users to do their transactions conveniently at any time anywhere with their mobile phone, computer, internet, or cards that are linked to their bank account. It creates a cashless economy that avoids handling cash in physical form. Google Pay, Paytm, and PhonePe are the most commonly used digital payment Apps. Digital payment supports financial inclusion, where individuals and businesses can access their financial products and services that fulfil their financial needs – transactions, payments, credit loans, and savings in a sustainable way. A bank account holder can make use of digital payment which leads to financial inclusion. The Digital payment system provides controlling customer personal finance, making financial decisions. The first step towards broader financial inclusion is being able to access to a transaction account and that allows people to deposit money, send and receive money.

Keywords: Financial Inclusion, Digital Finance, Digital Payment, Financial Products, Financial Services.

Introduction

This study is focused on how Digital payment systems create an impact on financial inclusion. G-20 and the world bank drive for the growth of financial inclusion in developing countries to reduce poverty levels in developing economies. The importance of digital payment and financial inclusion for the betterment of our people seeking the attention of the world because digital payment work for individuals, businesses, and the economy by ensuring financial inclusion. Digital payment and financial inclusion provide benefits to financial services users, Government, and the economy. In India, the Reserve Bank of India aims to ensure that the payment & money transaction system should be safe, efficient & accessible worldwide. This vision is to encourage and create a cashless society and ensure financial inclusion. With the introduction of digital payment, users can make their payments like electricity bills, recharging, money transfer, and various ticket

booking at anytime anywhere with a single click. This gives inclusive growth to financial inclusion. Financial inclusion is a process of ensuring people are getting financial services and financial products when they required them. With the introduction of the Digital Payment system, banking industries ensure that all their customers are getting financial services when they needed. Financial inclusion is targeted at giving sustainable financial services to the unbanked and underbanked groups. It promotes people to open a bank account and create strong and more sustainable economic growth and development. That's why many countries give priority to achieving financial inclusion.

Access to digital payment systems provides a wider range of financial services such as online banking, mobile banking, e-wallets, mobile wallets, credit and debit cards, etc. It provides easy and convenient financial transactions to customers. Even though the new technology seeking the attention of many people, some people are holding back from adopting the new system because of some kind of negative perception like security problems, poor networks, lack of user knowledge of technology and etc.

Objectives

The main purpose of the study is to know what impact is created by digital payment systems on financial inclusion

Research Methodology

The research study is totally theoretical in nature. Secondary sources and published articles were extensively used for the collection of data. Distinctively used sources were various web articles.

Data Collection

The research paper depends upon secondary sources of information. To prepare the research paper, the required data is extensively used, as it is theoretical in nature.

Growth of Digital Payment System and Financial Inclusion in India

In India's economy, the digital payments system makes positive changes in the financial transaction of the country. The demonetization policy in India in 2016 had a significant impact on the Indian economy, which accelerated the growth of the digital payment system in India. till demonetization only 10% of all transactions are done through digital payment methods, but after demonetization that number has grown to above 20%. this demonetization movement in India led to the promotion and adoption of digital payment systems. Digital Payment systems become important in India in recent years, as the country saw rapid growth in the adoption

of internet access and smartphones. This led to the usage of digital payment methods like UPI, mobile wallets, and card payments. Even though there are still many people who hold onto cash transactions. The government's initiatives for digital payment systems are a significant step towards achieving the goal of a cashless society. One of the major initiatives taken by the Indian government is the launch of a Unified Payments Interface (UPI), which provides real-time inter-bank transactions, and the Bharat Interface for Money (BHIM) app, which simplifies the process of making digital transactions.

There are many households in India that do not have access to financial services. They are not aware of banks and their functions. To make changes in this scenario, Financial Inclusion has emerged with the aim of offering banking and financial services to every individual in society without any discrimination. It is a transparent system by offering financial assistance without any unfair treatment or hidden transactional costs. Financial inclusion becomes easier with the help of a digital payment system. Digital payment systems ensure and help people to access their bank accounts and make transactions with a smartphone and internet access.

Significance Digital Payment and Financial Inclusion

- Digital payment platforms, and smartphone apps are important components that encourage financial inclusion in unbanked areas.
- They enable customers to make and receive payments, view and manage their finances.
- The benefits of digital financial inclusion include access to financial services, cheaper transactions, and personalized financial services.

Digital Payment Improving Financial Inclusion in India

- Reducing barriers to entry with lower-cost digital services:- Compared to traditional banking, digital banking services are cheaper to manufacture, distribute and support
- Providing specific client services that are easy to access and easy to use:- digital payments provide personalized service to meet the specific needs, preferences, and expectations of individual users.
- Reducing the risk of theft or loss:- Digital services offer a safe and secure alternative to holding cash, particularly for businesses that primarily engage with cash transactions.
- Open Banking and New Payments Models:- Evolving business models, regulatory policies, open banking, and new payment methods also have implications for financial inclusion.

Advantages of Digital Payment System

- **Instant and convenient mode of payment:** Unlike cash, money can be transferred to the beneficiary account using digital payment methods like BHIM-UPI and IMPS. Moreover, using the BHIM-UPI mode, one can effect a digital transaction via mobile phone using a mobile number or an easy-to-remember virtual payment address. It enabled access to multiple Bank accounts in a single mobile app, facilitating ease of payments.
- **Enhanced financial inclusion:** Digital payments offer anytime, anywhere access to accounts, thus making it easy for citizens to receive payments in their accounts and to also make payments using their phones. People who may have been deterred by the time, and traveling cost involved in physically accessing a bank outlet for transactions can now conveniently access the bank account digitally and get various benefits of being part of the formal banking system and becoming financially included. Recently launched UPI 123PAY enables feature phone users to make digital transactions through UPI in assisted voice mode, facilitating digital transactions and financial inclusion in rural areas.
- **Improved speed and timely delivery:** With the help of digital payment methods, transactions can be done quickly and within a reasonable time.
- **Bharat Bill Payment System:** Bharat Bill Payment System (BBPS) provides an easily accessible bill payment service to consumers via multiple channels like Internet banking, mobile banking, mobile apps, BHIM-UPI, etc.
- **Enhanced Credit Access:** it provides access to formal financial services, including credit. Banks and other lending institutions can utilize digital transaction histories to take cashflow-based lending decisions for both retail lending and lending to businesses, including small businesses that may face difficulty in getting credit in the absence of verifiable cashflows.
- **Safe and secure:** Digital payments across India are secure as multiple levels of authentication are required for making transactions.

Problems Faced by the Users

Users are facing some challenges in the digital payment system, these challenges will affect financial inclusion also.

- Poor internet connectivity
- Card data security
- Technological illiteracy
- Technical problems
- Limitations on amount and time
- Password threats

Conclusion

Digital payment systems create a big impact on financial inclusion. it makes people to access financial services easily irrespective of their boundaries. There are a number of initiatives taken by the government to increase digital payment, which also become the reason for the growth of financial inclusion. Unified Payments Interface (UPI), Bharat Interface for Money (BHIM) app, and various online payment apps like Gpay, PhonePe, and Paytm provide financial services to users. Compare to the traditional banking system, Digital payment platforms ensure that most people receive the banking services that they needed. The digital payment system provides specific client services, enables customers to make and receive payments, Enhance Credit Access, etc. Even though this digital financial inclusion has some drawbacks like Poor internet connectivity, Technological illiteracy, Technical problems, and Card data security. Poor connectivity issue is rectified by UPI 123PAY, which enables facilitating digital transactions and financial inclusion in rural areas. One of the major issues faced by users is technological illiteracy. By giving awareness and training to people on how to handle digital financial services is the remedy to remove this problem. Here it noted that, When compared to the traditional banking system, the digital payment system is the proper way to ensure financial inclusion.

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DIGITAL SKILLS AND UPSKILLING: BRIDGING THE DIGITAL DIVIDE

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Abstract

In an increasingly interconnected world, digital skills have become essential for individuals and societies to thrive. However, the digital divide, which refers to the gap between those who have access to and proficiency in digital technologies and those who do not, remains a significant challenge. This essay explores the importance of digital skills in various aspects of life, including employment, education, and civic engagement. It highlights the consequences of the digital divide, particularly for marginalized communities. To bridge this gap and ensure equal opportunities for all, upskilling in digital skills is identified as a critical solution. The essay discusses the significance of upskilling programs provided through formal education, vocational training, and community-based initiatives. It emphasizes the role of governments, educational institutions, and private organizations in promoting accessible upskilling opportunities and addressing barriers to digital inclusion. The abstract concludes by underscoring the necessity of continuous upskilling initiatives and collaborative efforts to overcome the digital divide and create a more inclusive and equitable digital society.

Keywords: Digital skills, Upskilling, Bridging, Digital Divide and Technological Advancements.

Introduction

In the rapidly evolving era of technological advancements, digital skills have become an indispensable requirement for individuals and societies to thrive. These skills encompass the ability to navigate, utilize, and leverage digital technologies effectively. However, the existence of the digital divide poses a critical challenge, as it creates a gap between those who have access to and proficiency in digital technologies and those who do not. This divide has far-reaching socioeconomic implications, contributing to disparities in education, employment, and overall quality of life. The digital divide not only hinders individuals from fully participating in the digital economy and society but also perpetuates existing inequalities. Marginalized communities, including low-income individuals, rural populations, and older adults, are disproportionately affected, lacking the necessary resources and knowledge to harness the benefits of digital technologies. This exclusion denies them opportunities for economic growth, educational advancement, and social inclusion.

To address this pressing issue and foster digital inclusion, upskilling in digital skills has emerged as a crucial necessity. Upskilling refers to the process of acquiring new or improving existing skills to meet the demands of a rapidly changing technological landscape. By equipping individuals with the necessary digital competencies, upskilling initiatives have the potential to bridge the digital divide and ensure equal opportunities for all. The importance of digital skills cannot be overstated. In today's interconnected world, they are essential for effective communication, collaboration, and accessing information. Proficiency in digital tools and platforms enables individuals to navigate and make sense of the vast digital landscape, empowering them to engage with online communities, learn new subjects, and broaden their horizons.

Moreover, digital skills are closely tied to employability and job prospects. Many industries now require digital literacy as a fundamental requirement, as technology plays an increasingly prominent role in various job functions. Without adequate digital skills, individuals may face limited career opportunities and struggle to adapt to the evolving job market. Digital skills are not solely confined to technical abilities; they also foster critical thinking, problem-solving, and creativity. These skills enable individuals to adapt to technological changes, innovate, and contribute meaningfully to society. By nurturing digital literacy, individuals can become lifelong learners, continuously upgrading their skills and staying abreast of emerging technologies. To bridge the digital divide effectively, upskilling programs play a pivotal role. These programs can be implemented through various channels, including formal education, vocational training, and community-based initiatives. Governments, educational institutions, and private organizations must collaborate to provide accessible upskilling opportunities tailored to the diverse needs of individuals. By integrating digital skills into school curricula and adult education programs, early adoption and lifelong learning can be promoted, empowering individuals with the necessary tools for digital inclusion.

Partnerships between the public and private sectors are also crucial in addressing the digital divide. These partnerships can help provide affordable access to digital devices, internet connectivity, and digital literacy training. By tackling the barriers of affordability, accessibility, and digital literacy, a more equitable digital society can be fostered. However, bridging the digital divide requires sustained efforts to overcome various barriers. Affordability remains a significant concern, as access to digital devices and internet connectivity can be costly for marginalized communities. It is imperative to implement initiatives that provide affordable or subsidized options to ensure equitable access for all. Moreover, upskilling programs must be designed to cater to individuals with varying levels of digital literacy. Tailoring programs to

diverse needs and skill levels, while providing necessary support structures such as mentorship programs and technical assistance, can foster an inclusive and supportive learning environment. In conclusion, digital skills are essential for individuals and societies to thrive in the digital era. However, the digital divide presents significant challenges, perpetuating inequalities and limiting opportunities for marginalized communities. To bridge this divide and ensure equal access to digital technologies, upskilling in digital skills has emerged as a crucial necessity. By emphasizing the importance of digital skills, providing accessible upskilling opportunities, and addressing barriers, we can create a more inclusive and equitable digital society, where everyone has the opportunity to participate, succeed, and contribute to the digital economy and society at large.

Importance of Digital Skills

- a. In today's interconnected world, digital skills have become indispensable for communication, collaboration, and accessing information. The ability to navigate digital platforms and effectively use digital tools is essential for individuals to engage in various aspects of daily life. Digital skills empower individuals to participate fully in the digital economy and society, enabling them to communicate with others, collaborate on projects, and access a wealth of information and resources available online. Without these skills, individuals may face barriers in connecting with others, accessing opportunities, and staying informed in the rapidly evolving digital landscape.
- b. The significance of digital skills extends beyond personal connectivity. They also play a pivotal role in enhancing employability and job prospects. In today's job market, digital literacy has become a fundamental requirement across many industries. Employers seek individuals who possess the necessary digital skills to navigate technological tools, analyze data, and adapt to digital workflows. Individuals lacking proficiency in digital skills may encounter limited career opportunities, as they may be overlooked in favor of candidates with the necessary digital competencies. By acquiring and honing digital skills, individuals can enhance their employability, broaden their career prospects, and navigate the demands of the modern workplace.
- c. Digital skills foster critical thinking, problem-solving, and creativity, which are essential for individuals to thrive in a rapidly changing technological landscape. As technology continues to evolve, individuals need to adapt and embrace new tools and platforms. Digital skills enable individuals to approach challenges with a critical mindset, analyze information effectively, and find innovative solutions. Moreover, digital skills nurture creativity by providing individuals with the means to express themselves, create digital

content, and engage in digital art forms. By fostering critical thinking, problem-solving, and creativity, digital skills empower individuals to adapt to technological changes, remain agile in their approach to learning, and become lifelong learners in the digital age.

- d. Access to digital skills is not only crucial for personal and professional development but also for effective civic engagement. Digital platforms have transformed the way individuals participate in their communities and exercise their rights. Digital skills enable individuals to engage in online discussions, contribute to social causes, and advocate for change through digital activism. Moreover, digital literacy allows individuals to access government services, participate in online voting, and stay informed about social and political issues. By equipping individuals with digital skills, we empower them to exercise their rights effectively, engage in democratic processes, and have a voice in shaping the future of their communities and societies.

In summary, digital skills have become essential in today's interconnected world. They facilitate communication, collaboration, and access to information, enabling individuals to participate fully in the digital economy and society. Furthermore, digital skills enhance employability, foster critical thinking and creativity, and enable effective civic engagement. Acquiring and upskilling in digital skills is crucial for individuals to navigate the complexities of the digital age, seize opportunities, and contribute meaningfully to the digital ecosystem.

The Digital Divide

- a. The digital divide encompasses various dimensions, reflecting the disparities in access to technology, connectivity, digital literacy, and affordability. Access to technology refers to the availability of devices such as computers, smartphones, and tablets, which are essential for engaging with digital platforms and services. Connectivity involves the accessibility and reliability of internet infrastructure, including broadband connections, that enable individuals to connect to the digital world. Digital literacy encompasses the knowledge and skills required to effectively use digital technologies, including basic computer skills, internet navigation, and critical evaluation of online information. Lastly, affordability refers to the financial barriers that individuals face in acquiring necessary digital tools and accessing internet services. The digital divide is a complex issue that requires attention to all these dimensions to ensure equitable access to the benefits of the digital age.
- b. Marginalized communities bear the brunt of the digital divide, as they face disproportionate barriers in accessing digital technologies and the opportunities

they offer. Low-income individuals often struggle to afford the necessary devices and internet services, limiting their access to information, educational resources, and job opportunities. Rural populations face challenges related to infrastructure, as remote areas may have limited or unreliable internet connectivity. Moreover, older adults may experience difficulties in adopting and navigating digital technologies due to generational gaps in digital literacy. The digital divide perpetuates existing inequalities, leaving marginalized communities at a significant disadvantage and hindering their ability to participate fully in the digital society.

- c. The digital divide is closely intertwined with existing social inequalities, exacerbating disparities in education, economic development, and social inclusion. In the realm of education, unequal access to digital technologies and internet connectivity hampers students' ability to engage in online learning, access educational resources, and develop essential digital skills. This educational disadvantage can further widen the achievement gap, hindering the educational attainment of marginalized students. Economically, the digital divide restricts job opportunities for individuals lacking digital skills, limiting their earning potential and perpetuating income inequalities. Additionally, limited access to digital platforms and online services hinders marginalized communities' ability to participate in e-commerce, digital banking, and other digital economic activities. Socially, the digital divide creates barriers to social inclusion and civic participation, as individuals without digital access may miss out on social networks, online communities, and opportunities for digital activism. Thus, addressing the digital divide is crucial for reducing social inequalities, promoting educational equity, fostering economic development, and ensuring equal access to opportunities for all members of society.

In conclusion, the digital divide encompasses multiple dimensions, including access to technology, connectivity, digital literacy, and affordability. Marginalized communities bear the greatest burden of this divide, limiting their access to essential services and opportunities. The digital divide exacerbates existing social inequalities, hindering educational attainment, economic development, and social inclusion. To achieve a more equitable society, concerted efforts are required to bridge the digital divide and ensure equal access to digital technologies, connectivity, and digital literacy for all individuals, irrespective of their socioeconomic backgrounds.

Upskilling to Bridge the Digital Divide

- a. Upskilling programs are vital in equipping individuals with the necessary digital competencies to thrive in the digital age. These programs can be

implemented through various channels, including formal education, vocational training, or community-based initiatives. Formal education institutions, such as schools and universities, can integrate digital skills into their curricula, offering courses or specialized programs to develop digital literacy. Vocational training programs can provide targeted training in specific digital skills required for various industries and job roles. Community-based initiatives, such as workshops or online learning platforms, can offer accessible and flexible upskilling opportunities for individuals from diverse backgrounds. By providing upskilling programs through multiple avenues, individuals can choose the path that best suits their needs and aspirations, enhancing their digital competencies and increasing their opportunities in the digital landscape.

- b. Governments, educational institutions, and private organizations play crucial roles in facilitating upskilling opportunities and ensuring their accessibility. Governments can establish policies and allocate resources to support the development and implementation of upskilling programs. Educational institutions can collaborate with industry partners to design curriculum that aligns with the evolving needs of the job market. They can also provide resources, such as specialized facilities or laboratories, to enhance hands-on learning experiences. Private organizations, including technology companies and training providers, can contribute by offering training programs, mentorship opportunities, or scholarships. Collaborations between these stakeholders can lead to the creation of comprehensive and inclusive upskilling initiatives that address the needs of diverse individuals and industries.
- c. Integrating digital skills into school curricula and adult education programs is essential in fostering early adoption and lifelong learning. By incorporating digital skills education from an early age, schools can empower students with the necessary competencies to navigate the digital world confidently. This integration can include teaching basic computer skills, online safety, digital citizenship, and more advanced topics such as coding or data analysis. Adult education programs can offer opportunities for individuals to upskill or reskill in digital technologies, ensuring that people of all ages have the chance to participate in the digital economy. By emphasizing digital skills in educational programs, individuals are equipped with the foundation and motivation to become lifelong learners, continually adapting to emerging technologies and driving digital inclusion.

- d. Partnerships between the public and private sectors are instrumental in bridging the digital divide by providing affordable access to devices, internet connectivity, and digital literacy training. Governments can collaborate with technology companies or internet service providers to make devices and connectivity more accessible and affordable, particularly for marginalized communities. Public-private partnerships can establish community centers or digital hubs in underserved areas, offering resources and training programs to enhance digital literacy. Additionally, private organizations can sponsor digital literacy initiatives, providing training, mentorship, or scholarships to individuals who lack access to resources. By working together, public and private sectors can leverage their respective strengths and resources to ensure that no one is left behind in the digital revolution.
- e. Continuous upskilling and reskilling initiatives are essential to keep pace with evolving technologies and ensure individuals remain relevant in the digital era. Technology is rapidly evolving, and new digital skills are constantly emerging. Therefore, upskilling programs must be designed to provide ongoing support, enabling individuals to update their skills and adapt to technological advancements. Continuous upskilling initiatives can include professional development opportunities, online courses, or micro-credential programs that offer specialized training in specific digital skills. By promoting a culture of lifelong learning and providing avenues for continuous upskilling, individuals can stay competitive, embrace new technologies, and contribute to the digital economy effectively.

In summary, upskilling programs are critical in equipping individuals with digital competencies. Governments, educational institutions, and private organizations play important roles in providing accessible upskilling opportunities and tailoring programs to meet diverse needs. Emphasizing digital skills in school curricula and adult education programs promotes early adoption and lifelong learning. Partnerships between public and private sectors can bridge the digital divide by providing affordable access to devices, connectivity, and digital literacy training. Continuous upskilling initiatives are necessary to keep pace with evolving technologies. By investing in upskilling and reskilling programs, individuals can thrive in the digital era and contribute to a digitally inclusive society.

Overcoming Barriers to Upskilling

- a. Ensuring equitable access to upskilling opportunities requires addressing the affordability of digital devices and internet connectivity. Many individuals, particularly those from marginalized communities, face financial constraints that hinder their ability to acquire the necessary devices and access reliable internet

services. Therefore, initiatives that promote affordable options for digital devices and internet connectivity are crucial. Governments, in collaboration with private organizations, can implement subsidy programs or provide low-cost devices and internet plans to make them more accessible to underserved populations. By addressing affordability barriers, individuals can have equal opportunities to participate in upskilling programs and acquire essential digital competencies.

- b. Tailoring upskilling programs to cater to diverse needs and skill levels is essential for engaging individuals with varying levels of digital literacy. Recognizing that individuals may enter upskilling initiatives with different starting points and learning preferences, programs should offer flexibility and customization. Providing a range of course options and skill levels allows individuals to choose programs that align with their current abilities and learning goals. Moreover, incorporating adaptive learning approaches, such as personalized learning paths or assessments, can help individuals progress at their own pace and focus on areas that require improvement. By tailoring upskilling programs, individuals are more likely to feel engaged, motivated, and successful in their learning journeys.
- c. Facilitating the upskilling process and creating a supportive learning environment requires the provision of support structures. Mentorship programs can connect learners with experienced professionals who can guide and support them throughout their upskilling journey. Online communities and forums provide platforms for learners to collaborate, share insights, and seek assistance from peers. Technical assistance, such as dedicated helplines or online support, can address technical issues or answer questions related to the learning material. By establishing support structures, individuals can overcome challenges, receive guidance, and feel supported, which contributes to their overall success and satisfaction in upskilling programs.
- d. Promoting awareness about the benefits of digital skills and debunking misconceptions is crucial in encouraging individuals to embrace upskilling opportunities. Some individuals may hold misconceptions or reservations about acquiring digital skills, such as the belief that it is too complex or not relevant to their lives. By raising awareness about the practical applications and advantages of digital skills, individuals can understand how these competencies can enhance their personal and professional lives. Highlighting success stories of individuals who have benefited from upskilling initiatives can serve as inspiration and demonstrate the tangible outcomes of acquiring digital skills. Additionally, addressing common misconceptions and providing accurate information can alleviate concerns and motivate individuals to take the first step towards

upskilling. By promoting awareness and dispelling misconceptions, individuals can recognize the value and significance of acquiring digital skills and be more inclined to engage in upskilling opportunities.

In conclusion, addressing the affordability of digital devices and internet connectivity, tailoring upskilling programs to diverse needs, providing support structures, and promoting awareness about the benefits of digital skills are all crucial in encouraging individuals to embrace upskilling opportunities. By ensuring equitable access, personalizing learning experiences, providing support, and fostering understanding, upskilling initiatives can effectively engage individuals from various backgrounds and skill levels. Ultimately, these efforts contribute to bridging the digital divide and empowering individuals to acquire the digital competencies necessary for success in the digital era.

Conclusion

The digital divide presents formidable obstacles to societal progress and individual empowerment. This divide refers to the gap between those who have access to and proficiency in digital technologies and those who do not. It encompasses various dimensions, including access to technology, connectivity, digital literacy, and affordability. The consequences of the digital divide are far-reaching, hindering educational attainment, economic growth, and social inclusion. However, upskilling in digital skills holds great promise in bridging this gap and forging a more inclusive digital society. Emphasizing the importance of digital skills is a crucial step towards narrowing the digital divide. In today's digital age, these skills have become essential for communication, collaboration, and accessing information. By acknowledging the significance of digital skills, we can collectively prioritize their acquisition and foster a mindset that recognizes their transformative potential. This awareness can drive initiatives and policies that promote digital skill development as a fundamental aspect of education and professional growth.

Providing accessible upskilling opportunities is vital in ensuring that all individuals have the chance to acquire the necessary digital competencies. Governments, educational institutions, and private organizations play pivotal roles in creating and implementing such programs. Through collaborations and strategic investments, upskilling initiatives can be designed to reach marginalized communities, low-income individuals, and rural populations who face the greatest challenges in accessing digital resources. These programs can be delivered through formal education, vocational training, or community-based platforms, providing flexibility and catering to diverse learning needs. Addressing barriers is equally important in bridging the digital divide and facilitating upskilling. Affordability remains a significant obstacle, as digital devices and internet connectivity can be

expensive. By implementing policies and programs that ensure affordable access to devices and connectivity, we can alleviate financial constraints and make digital skills attainable for all. Moreover, tailored upskilling programs that consider varying levels of digital literacy empower individuals at different skill levels to engage and progress in their learning journeys. Additionally, establishing support structures such as mentorship programs, online communities, and technical assistance cultivates a supportive learning environment that nurtures confidence and fosters continuous growth.

Bridging the digital divide is not solely a matter of equity; it is a driving force behind economic growth, social inclusion, and overall human development. In the digital era, possessing digital competencies opens doors to employment opportunities, entrepreneurial ventures, and innovative solutions. By equipping individuals with these skills, we empower them to participate fully in the digital economy, contributing to productivity and economic advancement. Moreover, bridging the digital divide enhances social inclusion, as it enables individuals to access essential services, engage in civic activities, and exercise their rights effectively. Inclusivity in the digital realm translates into more equitable and participatory societies, where diverse voices are heard, and opportunities are extended to all. In conclusion, upskilling in digital skills holds immense potential to bridge the digital divide and create a more inclusive digital society. By recognizing the importance of digital skills, providing accessible upskilling opportunities, and addressing barriers, we can ensure that all individuals have the necessary competencies to thrive in the digital age. Bridging the digital divide is not only a matter of equity but also a key driver of economic growth, social inclusion, and overall human development. By embracing upskilling in digital skills, we pave the way for a future where everyone can harness the benefits of the digital world, contributing to a more prosperous and inclusive global community.

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DIGITAL FINANCIAL INCLUSION

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Abstract

The goal of digital financial inclusion, the components of digital financial inclusion, the providers of digital financial services, the instruments for digital financial inclusion, the benefits of digital financial inclusion, the risks of digital financial inclusion, and the regulatory issues related to digital financial inclusion are all highlighted in the paper along with their advantages and disadvantages. It also offers suggestions for how to make digital financial inclusion beneficial to everyone. The study finishes by providing some recommendations for practice and policy in the ecosystem of digital money.

Keywords: Digital Finance, Financial Inclusion, Digital Financial Inclusion.

Introduction

The discussion of digital financial inclusion is the focus of this study. Everything necessary to understand digital financial inclusion is included in the paper. The number of online financial services applications has grown and is still expanding over time. For their own use or to better serve banks' customers, many of the digital apps used to provide financial services are created by technology or financial technology businesses.

Definition and Goal of Digital Financial Inclusion

Definition of Digital Financial Inclusion

By providing financial services to unbanked people utilizing devices that have a digital interface, such as a mobile phone or other digital devices, digital financial inclusion entails integrating unbanked individuals into the formal financial system. Offering digital financial services to the underserved and financially excluded groups as well as employing a mobile phone or other digital devices to promote access to digital financial services are all parts of digital financial inclusion .

Goal of Digital Financial Inclusion

The objective of digital financial inclusion is to make financial services available through digital channels to all people, households, businesses, and governments. This will reduce poverty, increase financial intermediation, and help the world achieve its sustainable development goals.

Components of Digital Financial Inclusion

Banks, non-bank financial institutions, financial technology (Fintech) businesses, and technology firms may all offer digital financial services. The following are some of the elements of digital financial inclusion:

- Digital Device
- Retail Agents
- Additional Financial Services
- A digital transactional platform
- The backend server
- The Customers

Providers and Instruments for Digital Financial Inclusion

Types of Digital Financial Services Providers for Digital Financial Inclusion

These four digital financial service providers for digital financial inclusion need three components to function effectively, namely digital trading platform, dealer network and the client's access device. With these three components, digital financial services can be made available to excluded and underserved customers.

Instruments for Digital Financial Inclusion

Some tools or instruments for digital financial inclusion include:

- i. e-money accounts
- ii. debit cards
- iii. credit cards
- iv. mobile money
- v. internet banking
- vi. retail point of Sale (PoS) terminals
- vii. agent networks

Benefits of Digital Financial Inclusion

- Provides access to all types of official financial services – payments, transfers, savings, credit, insurance, securities, and more.
- Encourage digital payments, transfers, savings, credit, insurance and investments;

- Incentivize government-to-personal digital payments, such as conditional cash transfers and unconditional cash transfers etc
- Reducing digital transaction costs for customers and digital financial service providers;
- It promotes economic empowerment by enabling property ownership and capital accumulation;
- It increases women's economic participation;

Risks and Regulatory Issues of Digital Financial Inclusion

- Risks of digital financial inclusion
- New digital financial services will require a different regulatory treatment and could make the regulatory ecosystem too complex; etc
- Rising digital transaction costs will affect poor customers with very low incomes;
- Data privacy and security issues will arise as a result of the use of new data types;.
- Customers unfamiliar with digital financial services are vulnerable to exploitation and abuse;

Regulatory Issues

- Inclusion of digital finance will pose many challenges for regulators, especially banking and telecommunications regulators.
- Challenges in drafting anti-terrorism financing legislation;etc
- Legal loopholes in cryptocurrency and digital currency regulation;
- Consumer protection issues;
- Weak payment system regulations

Digital Financial Inclusion: Making it Work

1. Regulators should continuously renegotiate the fee structure for using digital trading platforms, as this will help attract more people to use digital financial services in the long run;
2. Use artificial intelligence to remove systemic biases that are primarily responsible for financial exclusion in the financial system. With proper scrutiny and oversight, AI tools can be used to remove biases from processes, systems, and decisions that put unbanked adults at risk. disadvantaged by low income, ethnicity or race;
3. Actors of digital financial inclusion must provide easy-to-access and easy-to-use digital financial services;

4. Digital financial service providers should have internal security measures in place to minimize data theft, identity theft or loss of funds caused by malicious actors and cybercriminals go out;
5. Digital financial service providers need to deliver data-driven insights to customers. Digital financial service providers should use large volumes of digital data at their disposal and with their permission, to educate and advise clients on the need to improve habits savings and the ability to make sensible purchases before they are not made;
6. Regulators should embrace the new open banking and payments model as they can expand both the breadth and depth of digital financial services in ways that promote inclusive digital finance.

Limitations of Digital Technology in Promoting Financial Inclusion

It Lacks the Human Touch

Inclusion of digital finance eliminates the human middleman, or human contact, between the customer and the financial service provider. Instead of talking to a real person during financial transactions, people will interact with an app that offers very limited options and may not have the options the customer wants. It will strengthen their desire to speak to a human representative of financial institutions like many people appreciate and cherish the opportunity to speak with a customer service representative who can guide them through their financial transactions and who can help them resolve complaints.

A Garbage-In-Garbage-Out (GIGO) Approach to Financial Inclusion

Many digital finance applications are adopting the GIGO (garbage in garbage) system to promote financial inclusion. Households using digital financial services can make mistakes in the input data by adding zeros, e.g. make a digital transfer of \$100,000 when the intention is to transfer only \$1,000.

Conclusion

The document revisited the digital financial inclusion agenda to provide insights into what digital financial inclusion is. The document identified digital financial inclusion, then outlined the purpose of digital financial inclusion, components of digital financial inclusion, digital financial service providers, comprehensive digital financial instruments, benefits of digital financial inclusion, risks of digital financial inclusion, financial inclusion and legal issues related to digital financial inclusion, among others.

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ROLE OF TECHNOLOGY IN NEP 2020

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Abstract

Role of technology in NEP 2020 With the approval of the Union Cabinet for National Education Policy 2020, the country, after 34 years, has got its new education policy. There is a lot of emphasis given on the integration of technology in NEP 2020 as technology can serve as an important factor which can pave the way for a holistic development. In NEP 2020, a special emphasis is also given on the regional languages as E-courses will be developed in the same. Moreover, virtual labs will also be developed. It is pertinent to mention here that a National Educational Technology Forum (NETF) is also being created. NEP-2020 is a revolutionary step taken towards the upliftment of education system. Technology, which has entered in almost every sphere of life, makes things accessible and there is a growing need to embrace technology in the education sector as well. Constructive steps are being taken towards the implementation of the same and NEP 2020 has paved the way for it through various digital platforms being proposed. In this paper, we will try to discuss the multiple aspects of the policy with a special focus on technology and its implementation.

Keywords: Technology, Multilingualism, Accessibility, ICT.

Introduction

New technologies involving artificial intelligence, machine learning, block chains, smart boards, handheld computing devices, adaptive computer testing for student development, and other forms of educational software and hardware will not just change what students learn in the classroom but how they learn, extensive use of technology in teaching and learning, removing language barriers, increasing access for Divyang students, and educational planning and management.

Methods for Enhancing the NEP 2020 School Education System with Technology

E-learning plays a crucial role in the educational systems of many emerging nations. It has numerous intrinsic advantages. Technology will be applied in a variety of ways to improve the procedures and overall experience once the new education policy is put into place in India.

The National Education Policy (NEP), which aims to strengthen the Indian educational system holistically, would require ongoing and crucial contributions from the edtech sector to meet its goal of providing high-quality and accessible education throughout the nation.

The following are some tech-based strategies to support the NEP 2020 School Education Policy:

1. Using Cloud Tech to Store and Retrieve Records with Ease

Academic records like degrees and diplomas must be stored and retrieved, which is a lengthy process in Indian universities and schools.

It is difficult to manage the volume of documents, and there is always a chance that paper-based data will become damaged.

Utilising cutting-edge cloud storage technology like our Integrated School Platform almost eliminates this risk. The school's ability to keep, maintain, and update student records will be quicker and more accurate.

2. Using Virtual Digital Platforms to Manage Digital Exams More Easily

Conducting tests and internal evaluations proves laborious and time-consuming in many institutions and universities.

Additionally, it uses a lot of resources. Such problems can be handled effectively by using virtual and digital exams and tests. The teachers can save a lot of time, and it is less demanding on them.

3. Enable Effective Learning through Digital Tools

The use of digital tools and apps by students to enhance learning is emphasised in the new education policy.

Apps, both free and paid, can be used to administer internal tests and participate in virtual classrooms. Teachmint enables schools to plan out, schedule, and conduct exams from a single platform with our Integrated School Platform (ISP).

Digital tools are helpful even in emergency scenarios like natural calamities and pandemics that necessitate the closure of schools.

Projects and assignments can be shared in real-time between professors and students using platforms like Teachmint.

Everyone will find it simpler as a result of the declining cost of internet connections and the growing use of 5G networks throughout the nation.

4. Harnessing Tech to Make Learning Accessible for the differently qualified

The use of technology indicated in the NEP School education system will make learning more adaptable for students with specific needs or disabilities (autism

victims and those with ADHD, etc.). The pervasiveness of ongoing education makes the educational setup difficult.

When technology is used in a significant way, these children stand to gain a lot from it. They require a fast internet connection and the use of cell phones or PCs. These make it simple for students to show up to class when they're not feeling well.

This guarantees that students do not fall behind their friends when dealing with illnesses that need a longer stay at home.

5. Digitisation for Cost-Effective Training & Education

According to the NEP School Education System, implementing technology solutions in the educational system will enable schools and universities to save a large number of funds.

They will administer tests with less paper and spend less money on printing. The money saved will be useful for improving the technology setup and providing teachers with training.

Key Notes

India's education system is expected to undergo a historic change as a result of the proposed NEP 2020 School Education. The upcoming educational system will be highly reliant on technology, which is anticipated to improve both teaching and learning. Additionally, the NEP School education system promotes industry-academia cooperation to close the competency gaps and assure employability by preparing students for the real world.

This emphasises the significance and applicability of incorporating edtech solutions into the Indian educational system. When colleges and businesses collaborate, it frequently produces top-notch research, and creative solutions, and reduces expenses.

To make this possible, it might be necessary to develop a common edtech platform that encourages new connections, forges new ties, and forms new alliances.

Challenges

Undoubtedly, the policy has remarkably integrated technology into teaching but there are certain concerns towards which the attention must be drawn. The implementation of the policy is no less than an uphill task. There was a survey conducted (July 2017-June 2018) on 'Household Social Consumption: Education'.

The sample included 64,529 rural households and 49,238 urban households. This sample was collected from 8,097 villages and 6,188 blocks of India. In the survey, it was found that the literacy rate among persons of age 7 and above was about 77.7%.

In rural areas, it was 73.5% while in urban it was 87.7%. There was also a difference in the literacy rate of males and females, 84.7% and 70.3% respectively [1].

In order to integrate technology in education, it is important that all students have access to technology, at least they should have smart phones, computers with internet access. Unfortunately, the underprivileged students do not have access to same and that is one of the main challenges to overcome. There lies another challenge in handling the network issues, power cuts and controlling the unethical practices.

Another challenge comes in the form of accepting the transformation from the traditional rote learning system to the technology driven critical thinking and experimental learning system. This will require a change in the attitude of the stakeholders and continuous efforts are needed to be made to understand and implement this new vision.

To fulfil the upcoming requirements, there is a strong need of digitally competent teachers. Moreover, there is an unavailability of digital resources infrastructure and there are a number of subjects which face a limitation as far as teaching through digital space is concerned. For the successful implementation of the policy, centre and states need to work together as the implementation of the policy and the integration of technology come with challenges. There is still a lot of technological advancement that needs to be done and a long way has still to go.

NEP 2020 is seen as the most comprehensive education policy of the century and can bring a number of positive transformations in the present education system.

Conclusion

India is moving positively in becoming digitally enriched. A massive progress can be seen in this direction. However, every big reform need time and one has to be patient and wait for the result. The complete integration of technology in education will require a bit of time as making it accessible in remote areas will be a little time-consuming task. But slowly and gradually it will be attained.

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PROBLEMS AND PROSPECTIVE OF WOMEN ENTREPRENEURSHIP IN INDIA

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Abstract

Without a doubt, female entrepreneurship increases the prosperity of the country as a whole and of the family as a whole particular. In terms of their willingness to engage in activities that were once thought to be exclusively for men, women today have shown that they are unmatched in terms of their ability to contribute to the expansion of the economy. A crucial part of an impoverished nation's economic development is being played by entrepreneurs. Women entrepreneurs organise sectors for a variety of reasons, including their expertise and knowledge, their aptitude for business, and a strong desire to make a difference. According to the World Bank, investing more in women's businesses than in those of males promotes a country's economic development. promoting female entrepreneurship.

Keywords: Women Entrepreneurship, Problems, Prospective, Economic Development.

Introduction

Women entrepreneurship refers to the pursuit of business ventures, startups, or enterprises by women, with the goal of creating and managing businesses for profit or social impact. It involves women taking on the role of entrepreneurs, founders, or business leaders, and actively participating in the creation, development, and growth of their businesses. Historically, women have faced numerous challenges and barriers in entering the business world. Societal norms, gender bias, lack of access to finance, limited educational opportunities, and traditional gender roles have often hindered women from taking up entrepreneurial roles. However, over the years, there has been a significant shift in perceptions, and more women are now breaking barriers and defying stereotypes to establish successful businesses.

Women entrepreneurship is not just about economic empowerment; it also plays a crucial role in promoting gender equality and social progress. When women are given the opportunity to become entrepreneurs, they can contribute to economic growth, create jobs, drive innovation, and bring fresh perspectives to various industries.

In many parts of the world, including developing countries, governments and organizations have recognized the importance of promoting women entrepreneurship and have introduced various initiatives, policies, and support systems to encourage women to start and grow their businesses. Access to finance, mentorship programs, networking events, and skill development initiatives are some of the ways in which women entrepreneurs are being supported.

Women entrepreneurs have been making significant strides across diverse sectors, including technology, healthcare, finance, education, fashion, and social entrepreneurship. Their success stories inspire and pave the way for other women to pursue their entrepreneurial aspirations.

While progress has been made, there are still challenges to overcome, such as gender biases in the business ecosystem and the need for better work-life balance. However, the growing presence of women entrepreneurs and their contributions to society are transforming the landscape and creating a more inclusive and equitable business environment.

Objectives of the Study

1. To understand the women entrepreneurship in India.
2. To know the problems of women entrepreneurs in India.

Research Methodology

The current analysis is based on a thorough examination of secondary information gathered from numerous books, National & International journals and books, both public and private that are focused on different facets of women entrepreneurs and are available online and in libraries. Additionally, this research is a desk study based on secondary data from numerous books, magazines, and websites.

Women Entrepreneurship in India

Women entrepreneurship in India has been steadily growing over the years, with more and more women taking the initiative to start and run their own businesses. Despite facing various challenges, such as societal norms, gender bias, access to finance, and limited networking opportunities, Indian women have been making significant strides in the entrepreneurial landscape. Here are some key aspects of women entrepreneurship in India:

1. **Rise in Women Entrepreneurs:** There has been a noticeable increase in the number of women entrepreneurs in India across various sectors, including technology, fashion, healthcare, education, and social enterprises. Women are now breaking traditional barriers and venturing into diverse industries.
2. **Government Initiatives:** The Indian government has launched several initiatives and schemes to support women entrepreneurs. Programs like "Stand-Up India" and "Mudra Yojana" aim to provide financial assistance and promote women-led enterprises.
3. **Access to Finance:** Access to finance remains a significant challenge for women entrepreneurs in India. Many women lack collateral or financial

history, making it difficult to secure loans. However, microfinance institutions and women-centric banks have been playing a vital role in bridging this gap.

4. **Women's Self-Help Groups (SHGs):** Self-Help Groups have been instrumental in empowering women in rural areas to become entrepreneurs. These groups provide financial support, skill development, and collective decision-making platforms for women to start small businesses.
5. **Technology and E-commerce:** The rise of technology and e-commerce platforms has opened up new opportunities for women entrepreneurs. Many women are leveraging digital platforms to reach a broader customer base and grow their businesses.
6. **Social Impact:** Women entrepreneurs in India are often focused on creating social impact and addressing societal challenges. Many startups are working on solutions related to healthcare, sanitation, education, and women's empowerment.
7. **Networking and Mentorship:** The importance of networking and mentorship cannot be underestimated. Women-led organizations, networking events, and mentorship programs are helping women entrepreneurs connect, learn, and grow.
8. **Challenges:** Women entrepreneurs still face gender-based challenges, such as balancing family responsibilities and work, social expectations, and biases in the business ecosystem. More efforts are needed to address these issues and create a supportive environment.
9. **Success Stories:** Many Indian women entrepreneurs have achieved remarkable success and recognition both nationally and internationally. Their success stories serve as inspiration for other aspiring women entrepreneurs.

In recent years, the Indian society's perception of women in business has been gradually evolving, and there is increasing recognition of the potential women entrepreneurs hold in driving economic growth and social progress. With continued support from the government, private sector, and society at large, women entrepreneurship in India is expected to witness even more significant growth in the coming years.

Problems of Women Entrepreneurs in India

Women entrepreneurs in India face various challenges that can impede their entrepreneurial journey and success. These challenges are often shaped by social, cultural, economic, and institutional factors. Here are some of the key problems faced by women entrepreneurs in India:

1. **Gender Bias and Stereotypes:** Deep-rooted gender bias and societal stereotypes can hinder women's access to opportunities and resources.

Women often face skepticism and lack of support, as traditional norms may consider entrepreneurship as a male-dominated domain.

2. **Limited Access to Finance:** Access to finance remains a significant challenge for women entrepreneurs in India. Banks and financial institutions may be hesitant to provide loans or capital to women-owned businesses, citing lack of collateral or financial history.
3. **Family and Societal Expectations:** Women often face the burden of balancing family responsibilities with business pursuits. Societal expectations of women's roles as caregivers and homemakers can affect their ability to dedicate time and effort to their ventures.
4. **Lack of Networking Opportunities:** Networking is crucial for business growth and access to resources. However, women entrepreneurs may have limited networking opportunities, particularly in male-dominated industries, which can impact their access to potential investors, mentors, and customers.
5. **Work-Life Balance:** Balancing business responsibilities with family commitments can be challenging for women entrepreneurs. The lack of adequate support systems and affordable childcare options adds to the difficulties.
6. **Inadequate Infrastructure and Support Services:** The absence of supportive infrastructure, such as incubation centers, accelerators, and training programs tailored to women's needs, can hinder their entrepreneurial journey.
7. **Legal and Regulatory Hurdles:** Navigating complex legal and regulatory procedures can be daunting, particularly for women who might have limited experience or access to legal assistance.
8. **Limited Market Access:** Women entrepreneurs may face barriers in accessing markets, especially in industries where male-dominated networks and biases prevail.
9. **Lack of Role Models:** The scarcity of prominent women role models in the entrepreneurial space can deter aspiring women entrepreneurs and limit their vision of what is possible.
10. **Lack of Confidence and Self-Belief:** Socio-cultural factors can sometimes impact women's self-belief and confidence in their entrepreneurial abilities, leading to self-doubt and hesitation to take risks.
11. **Cultural Stigma:** In some conservative communities, women starting and running businesses may face cultural stigma and resistance.

Despite these challenges, women entrepreneurs in India have shown resilience and determination, and their contributions to the economy and society are increasingly recognized. To overcome these obstacles, there is a need for targeted

policies, mentorship programs, access to finance, and awareness campaigns that promote women entrepreneurship and create a more inclusive and supportive ecosystem. With the right support and opportunities, women entrepreneurs can play a significant role in driving India's economic growth and empowerment.

Prospective of Women Entrepreneurs in India

The prospects for women entrepreneurs in India are promising and hold significant potential for economic growth, social progress, and gender equality. Despite the challenges they face, women entrepreneurs are making remarkable strides and contributing to various sectors of the Indian economy. Here are some key perspectives that highlight the promising future for women entrepreneurs in India:

1. **Rising Numbers:** The number of women entrepreneurs in India has been steadily increasing over the years. More and more women are breaking traditional barriers and pursuing entrepreneurship as a viable career option.
2. **Government Support:** The Indian government has recognized the importance of promoting women entrepreneurship and has introduced various initiatives, schemes, and policies to support women-led businesses. Programs like "Stand-Up India" and "Mudra Yojana" provide financial assistance and facilitate access to credit for women entrepreneurs.
3. **Access to Finance:** With the rise of microfinance institutions, women-centric banks, and alternative lending platforms, access to finance for women entrepreneurs is gradually improving. This enables them to fund their business ideas and scale their ventures.
4. **Technology and E-commerce:** The digital revolution has opened up new opportunities for women entrepreneurs in India. Technology and e-commerce platforms have provided them with access to a broader customer base and simplified business operations.
5. **Social Impact:** Women entrepreneurs in India often focus on creating social impact through their businesses. They are involved in initiatives related to healthcare, education, women's empowerment, and environmental sustainability.
6. **Networking and Mentorship:** Women-centric networking events, mentorship programs, and support groups are helping women entrepreneurs connect, learn, and access valuable guidance from experienced mentors.
7. **Education and Skill Development:** Increasing emphasis on education and skill development for women has empowered them with the knowledge and expertise required to succeed in the entrepreneurial world.

8. **Diversity and Innovation:** Women entrepreneurs bring diverse perspectives and innovative ideas to the business landscape, driving creativity and differentiation in the market.
9. **Changing Societal Perceptions:** There has been a gradual shift in societal perceptions regarding women in business. As successful women entrepreneurs gain visibility and recognition, they challenge stereotypes and inspire other women to pursue entrepreneurial paths.
10. **Global Recognition:** Indian women entrepreneurs have gained international recognition and have been featured on various platforms for their innovative ventures and contributions to the global business community.
11. **Role Models:** The emergence of successful women entrepreneurs in India serves as a source of inspiration and motivation for aspiring female entrepreneurs, paving the way for a new generation of leaders.
12. **Diverse Sectors of Entrepreneurship:** Women entrepreneurs are venturing into diverse sectors, from technology and finance to fashion and social entrepreneurship, further expanding the breadth and impact of their contributions.

Overall, the future for women entrepreneurs in India looks promising as the ecosystem becomes more supportive and inclusive. With continued efforts from the government, private sector, and society at large, women entrepreneurs are expected to play an increasingly significant role in shaping India's entrepreneurial landscape and driving economic growth and social transformation.

Conclusion

Women entrepreneurship is a critical and empowering aspect of economic development and social progress. Over the years, women entrepreneurs have made significant strides, breaking barriers and challenging societal norms. The rise of women-led businesses has not only brought economic benefits but has also led to positive social and cultural changes. One of the key advantages of women entrepreneurship is the promotion of gender equality. By taking leadership roles and running successful businesses, women challenge traditional gender roles and demonstrate their competence in various industries. This serves as an inspiration for future generations of women, encouraging them to pursue their dreams and ambitions without limitations. Moreover, women entrepreneurs contribute to the growth of the global economy. Their businesses create jobs, foster innovation, and drive economic development in both developed and developing nations. When women are given equal opportunities to participate in the economy, it leads to a more inclusive and sustainable economic growth.

Additionally, women entrepreneurs often focus on addressing social issues and contributing to their communities. They tend to be more socially responsible, prioritizing ethical practices, and supporting causes such as education, health, and environmental sustainability. This commitment to social impact helps in creating a more compassionate and caring business ecosystem. Despite the progress made in recent years, women entrepreneurs still face challenges like access to funding, limited networking opportunities, and cultural biases. Governments, organizations, and society as a whole must continue to support and empower women entrepreneurs through mentorship programs, financial assistance, and policy reforms that promote gender equality.

In conclusion, women entrepreneurship is an essential force driving positive change in the global economy and society. As more women break barriers and establish successful businesses, the world becomes more equitable, prosperous, and socially conscious. Embracing and nurturing women's entrepreneurial potential benefits us all and paves the way for a brighter and more inclusive future.

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CLOUD COMPUTING

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Abstract

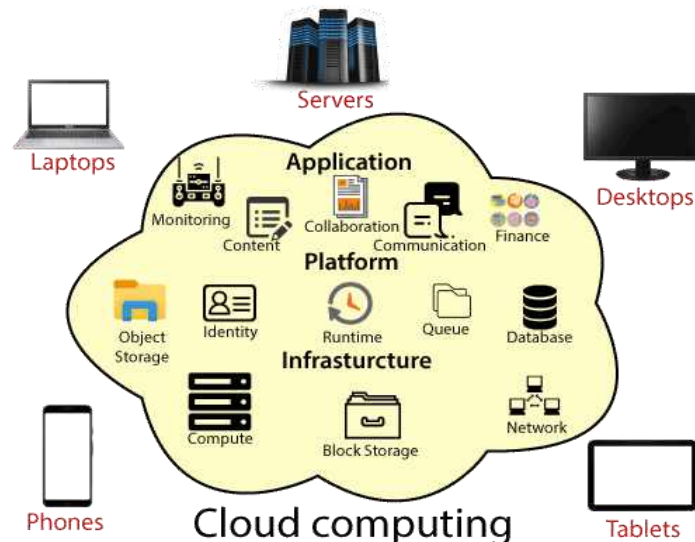
Cloud computing is a paradigm that provides on-demand access to shared computing resources over the internet. It offers scalability, reliability, and high performance without complex infrastructure management by customers. Cloud computing has three main service models: Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS). These services can be deployed on different types of clouds: private, public, community, and hybrid clouds. Cloud computing has many applications in various domains such as e-commerce, education, health care, social media, and scientific research. Cloud computing also faces many challenges in terms of security, privacy, trust, interoperability, standardization, and regulation. Cloud computing is an active area of research and development that aims to address these challenges and explore new opportunities for innovation.

Keywords: Cloud Computing, Service Models, Types of Clouds, Applications, Challenges, Research and Development.

Introduction to Cloud Computing

Cloud Computing is the delivery of computing services such as servers, storage, databases, networking, software, analytics, intelligence, and more, over the Cloud (Internet). Cloud Computing provides an alternative to the on-premises datacentre. With an on-premises datacentre, we have to manage everything, such as purchasing and installing hardware, virtualization, installing the operating system, and any other required applications, setting up the network, configuring the firewall, and setting up storage for data. After doing all the set-up, we become responsible for maintaining it through its entire lifecycle.

But if we choose Cloud Computing, a cloud vendor is responsible for the hardware purchase and maintenance. They also provide a wide variety of software and platform as a service. We can take any required services on rent. The cloud computing services will be charged based on usage.

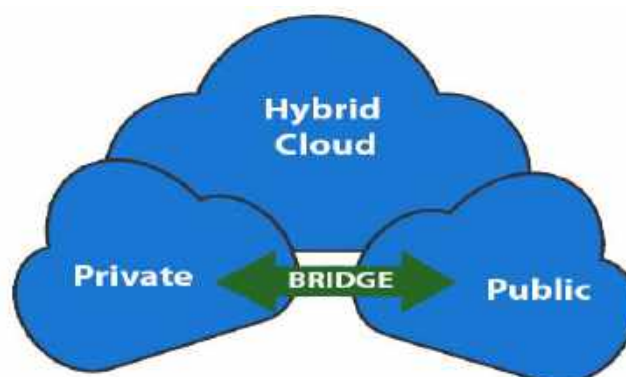


The cloud environment provides an easily accessible online portal that makes handy for the user to manage the compute, storage, network, and application resources. Some cloud service providers are in the following figure.

Advantages of Cloud Computing

- **Cost:** It reduces the huge capital costs of buying hardware and software.
- **Speed:** Resources can be accessed in minutes, typically within a few clicks.
- **Scalability:** We can increase or decrease the requirement of resources according to the business requirements.
- **Productivity:** While using cloud computing, we put less operational effort. We do not need to apply patching, as well as no need to maintain hardware and software. So, in this way, the IT team can be more productive and focus on achieving business goals.
- **Reliability:** Backup and recovery of data are less expensive and very fast for business continuity.
- **Security:** Many cloud vendors offer a broad set of policies, technologies, and controls that strengthen our data security.

Types of Cloud Computing



- **Public Cloud:** The cloud resources that are owned and operated by a third-party cloud service provider are termed as public clouds. It delivers computing resources such as servers, software, and storage over the internet
- **Private Cloud:** The cloud computing resources that are exclusively used inside a single business or organization are termed as a private cloud. A private cloud may physically be located on the company's on-site datacentre or hosted by a third-party service provider.
- **Hybrid Cloud:** It is the combination of public and private clouds, which is bounded together by technology that allows data applications to be shared between them. Hybrid cloud provides flexibility and more deployment options to the business.

Types of Cloud Computing Service

- **Infrastructure as a Service (IaaS):** In IaaS, we can rent IT infrastructures like servers and virtual machines (VMs), storage, networks, operating systems from a cloud service vendor. We can create VM running Windows or Linux and install anything we want on it. Using IaaS, we don't need to care about the hardware or virtualization software, but other than that, we do have to manage everything else. Using IaaS, we get maximum flexibility, but still, we need to put more effort into maintenance.



- **Platform as a Service (PaaS):** This service provides an on-demand environment for developing, testing, delivering, and managing software applications. The developer is responsible for the application, and the PaaS vendor provides the ability to deploy and run it. Using PaaS, the flexibility gets reduced, but the management of the environment is taken care of by the cloud vendors.
- **Software as a Service (SaaS):** It provides a centrally hosted and managed software services to the end-users. It delivers software over the internet, on-demand, and typically on a subscription basis. E.g., Microsoft One Drive, Dropbox, WordPress, Office 365, and Amazon Kindle. SaaS is used to minimize the operational cost to the maximum extent.

Applications of Cloud Computing

1. Online Data Storage

Cloud Computing allows storage and access to data like files, images, audio, and videos on the cloud storage. In this age of big data, storing huge volumes of business data locally requires more and more space and escalating costs. This is where cloud storage comes into play, where businesses can store and access data using multiple devices. The interface provided is easy to use, convenient, and has the benefits of high speed, scalability, and integrated security.

2. Backup and Recovery

Cloud service providers offer safe storage and backup facility for data and resources on the cloud. In a traditional computing system, data backup is a complex problem, and often, in case of a disaster, data can be permanently lost. But with cloud computing, data can be easily recovered with minimal damage in case of a disaster.

3. Big Data Analysis

One of the most important applications of cloud computing is its role in extensive data analysis. The extremely large volume of big data makes it impossible to store using traditional data management systems. Due to the unlimited storage capacity of the cloud, businesses can now store and analyze big data to gain valuable business insights.

4. Testing and Development

Cloud computing applications provide the easiest approach for testing and development of products. In traditional methods, such an environment would be time-consuming, expensive due to the setting up of IT resources and infrastructure, and needed manpower. However, with cloud computing, businesses get scalable and flexible cloud services, which they can use for product development, testing, and deployment

5. Antivirus Applications

With Cloud Computing comes cloud antivirus software which is stored in the cloud from where they monitor viruses and malware in the organization's system and fixes them. Earlier, organizations had to install antivirus software within their system and detect security threats.

6. E-Commerce Application

Ecommerce applications in the cloud enable users and e-businesses to respond quickly to emerging opportunities. It offers a new approach to business leaders to

make things done with minimum amount and minimal time. They use cloud environments to manage customer data, product data, and other operational systems.

7. Cloud Computing in Education

E-learning, online distance learning programs, and student information portals are some of the key changes brought about by applications of cloud computing in the education sector. In this new learning environment, there's an attractive environment for learning, teaching, experimenting provided to students, teachers, and researchers so they can connect to the cloud of their establishment and access data and information.

Challenges of Cloud Computing

Security and privacy: Cloud computing involves storing and processing sensitive data on remote servers that may not be fully secure or trustworthy. Users have to rely on the cloud service providers to protect their data from unauthorized access, breaches, leaks, or misuse. Users also have to comply with the legal and ethical regulations of data protection in different regions and countries¹²³⁴.

Cost management: Cloud computing can reduce the upfront costs of acquiring and maintaining IT infrastructure, but it can also incur hidden or unexpected costs due to under-optimization of resources, degraded performance, sudden spikes, or unused resources. Users have to monitor and control their cloud spending and usage to avoid overspending or wasting resources²³.

Lack of resources and expertise: Cloud computing requires skilled and experienced professionals who can design, develop, deploy, and manage cloud applications and services. There is a shortage of such talent in the market, and users have to invest in training and hiring qualified staff or outsourcing their cloud needs to third-party vendors²³.

Governance and control: Cloud computing involves sharing and delegating some of the responsibilities and authority over the IT resources to the cloud service providers. Users have to ensure that they have adequate governance and control mechanisms in place to oversee the performance, quality, security, compliance, and availability of their cloud resources. Users also have to deal with the complexity and diversity of multiple cloud providers, services, and platforms²³.

Compliance: Cloud computing has to comply with various standards, regulations, policies, and laws that govern the use of IT resources in different domains, industries, and countries. Users have to ensure that their cloud applications and services meet the requirements of their specific domain or industry,

such as health care, education, finance, or government. Users also have to deal with the challenges of data sovereignty, localization, and jurisdiction¹²³.

Interoperability and portability: Cloud computing involves using different types of cloud services and platforms from different vendors that may not be compatible or interoperable with each other. Users have to ensure that their cloud applications and services can communicate and exchange data with other cloud or non-cloud systems without losing functionality or quality. Users also have to ensure that their cloud applications and services can be easily moved or migrated from one cloud provider or platform to another without losing data or performance¹²³⁵.

Downtime: Cloud computing relies on the availability and reliability of the internet connection and the cloud service providers. Users have to face the risk of downtime or disruption of their cloud applications and services due to network failures, power outages, cyberattacks, natural disasters, or human errors. Users have to ensure that they have backup plans and contingency measures in place to minimize the impact of downtime on their business operations and customer satisfaction ²⁵⁴.ING

Conclusion

Cloud computing is a way of delivering computing resources as a service over the internet. It has many advantages such as scalability, reliability, flexibility, and cost-efficiency. However, it also has some challenges such as security, privacy, cost management, governance, compliance, interoperability, portability, and downtime. Cloud computing is the future of computing, and we should embrace it with awareness and caution.

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RE-ENVISIONING INDIA @ 2047: INITIATIVES FOR GLOBAL LEADERSHIP

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Abstract

The abstract presents an overview of a comprehensive vision for India's future as a global leader in the year 2047. As India marks its centennial anniversary of independence, the nation stands on the cusp of transformative change, aiming to propel itself to the forefront of the international stage. This visionary paper outlines a set of initiatives that will harness India's vast potential across various domains, fostering sustainable growth, inclusive development, and responsible global leadership. The paper begins by delving into India's historical journey, tracing its achievements and challenges since independence. It highlights the nation's diverse cultural fabric, democratic ethos, and entrepreneurial spirit, which form the foundation for re-envisioning India's trajectory towards 2047.

Keywords: *Vishwa guru, sustainable development, energy and environment and global leadership*

Introduction

The vision of India in the year 2047 - a nation with a renewed sense of purpose, poised to take on the mantle of global leadership. "Re-envisioning India @ 2047: Initiatives for Global Leadership" is a transformative journey that charts the course for India's progress, prosperity, and prominence on the world stage. In the next two and a half decades, India will have traversed an incredible path, transforming itself from a developing nation into an economic and technological powerhouse. This ambitious vision is grounded in the principles of inclusivity, sustainability, and innovation. As we look ahead, we must recognize the challenges of the past and harness our collective strengths to build a brighter, more equitable future. At its core, "Re-envisioning India @ 2047" focuses on five key initiatives that will shape our nation's journey to global leadership:

- 1. Economic Resurgence:** We envision a self-reliant and dynamic economy that fosters entrepreneurship and innovation, embraces sustainable practices, and empowers every citizen to be a participant in India's growth story. A robust infrastructure and investment-friendly policies will attract global partnerships and fuel economic progress.
- 2. Knowledge and Skill Revolution:** Education will be the cornerstone of our nation's transformation. We will establish a world-class education system that nurtures creativity, critical thinking, and problem-solving skills. This will equip our citizens to meet the challenges of the future and lead India's knowledge economy.

3. **Technology and Innovation Hub:** India will emerge as a hub for cutting-edge research and innovation across sectors, including artificial intelligence, renewable energy, biotechnology, and space exploration. Through strategic collaborations with international partners, we will drive global technological advancements.
4. **Sustainable Development:** As a responsible global leader, India will prioritize sustainability and environmental conservation. We will champion green initiatives, combat climate change, and promote renewable energy adoption to secure a greener and healthier planet for generations to come.
5. **Cultural Diplomacy:** India's rich cultural heritage will act as a bridge that connects us with the world. Through cultural exchanges, we will foster understanding, empathy, and harmonious relationships with other nations, promoting peace and unity across the globe."Re-envisioning India @ 2047: Initiatives for Global Leadership" is not just a lofty ambition but a roadmap to be realized through the collective efforts of every citizen. It calls for unity, dedication, and a shared commitment to progress. Together, we will shape a future where India stands tall as a global leader, contributing positively to the world's development and inspiring generations to come.

Sustainable Development

Sustainable Development plays a crucial role in re-envisioning India's path towards global leadership by 2047. Sustainable Development refers to meeting the needs of the present without compromising the ability of future generations to meet their own needs. By adopting sustainable practices across various sectors, India can address environmental, social, and economic challenges, leading to long-term prosperity and global recognition. Here's how Sustainable Development initiatives can help India in its journey towards global leadership:

1. **Environmental Conservation:** Sustainable Development emphasizes responsible use of natural resources, pollution control, and climate action. By promoting green technologies, renewable energy sources, and sustainable agricultural practices, India can reduce its carbon footprint and combat climate change. Taking a lead in environmental conservation will not only benefit the country but also position India as a global champion of sustainability.
2. **Social Inclusion and Equity:** Sustainable Development encourages inclusive growth and social equity. By focusing on poverty alleviation, healthcare, education, and empowering marginalized communities, India can create a society where everyone has equal access to opportunities. This commitment to social welfare will earn India respect and admiration on the global stage.

3. **Global Partnerships:** Sustainable Development is a global agenda, and India's active participation in international forums and collaborations will enhance its global leadership status. By cooperating with other nations, sharing best practices, and contributing to global sustainable development goals, India can showcase its commitment to building a better world for all.
4. **Urban Planning and Infrastructure:** As India's urban centers grow, Sustainable Development can guide smart urban planning and infrastructure development. Creating sustainable cities with efficient public transport, green spaces, and eco-friendly buildings will not only improve the quality of life for citizens but also serve as a model for other countries facing similar urbanization challenges.
5. **Circular Economy and Resource Efficiency:** Embracing a circular economy model, where products are designed for longevity, reuse, and recycling, can reduce waste and conserve resources. By implementing resource-efficient practices, India can demonstrate its dedication to a sustainable future, attracting international attention and admiration.
6. **Education and Awareness:** Raising awareness about Sustainable Development through education and public campaigns will foster a culture of sustainability among the population. An informed and conscious citizenry can drive sustainable practices, support policymakers' decisions, and contribute to India's global leadership efforts. By integrating Sustainable Development into its policies, India can showcase its commitment to responsible and inclusive growth, becoming a role model for other nations. This transformation will not happen overnight, but through persistent efforts and collective action, India can position itself as a global leader in sustainable development by 2047.

Knowledge and Skill Revolution

A Knowledge and Skill Revolution refers to a transformative shift in the education and training landscape that empowers individuals with the necessary knowledge, skills, and competencies to adapt to changing times and contribute effectively to society and the economy. In the context of India's development and aspirations for global leadership, such a revolution can play a crucial role in several ways:

1. **Economic Growth and Innovation:** A well-educated and skilled population can drive innovation and economic growth. India could become a hub for cutting-edge research, technology, and startups, attracting foreign investments and fostering indigenous innovation.

2. **Competitive Workforce:** A highly skilled workforce will make India's labor market more competitive globally. This could lead to increased employability and higher income levels for its citizens.
3. **Global Trade and Investment:** With a knowledge-driven economy, India can become a preferred destination for global businesses looking to leverage a skilled workforce and vibrant market.
4. **Sustainable Development:** Emphasizing knowledge and skills in areas like renewable energy, sustainable agriculture, and environmental conservation could position India as a leader in addressing global challenges like climate change.
5. **Social Development and Inclusivity:** A focus on education and skill development can lead to greater social inclusion by providing equal opportunities for all, irrespective of their backgrounds, leading to reduced poverty and inequality.
6. **Soft Power and Diplomacy:** A knowledge and skill-oriented approach can enhance India's soft power and influence on the global stage, strengthening diplomatic relations and partnerships with other countries.

To achieve this vision by 2047, India should consider a multi-pronged approach, which may include the following initiatives:

1. **Education Reforms:** Implementing reforms in the education system to emphasize practical skills, critical thinking, and creativity alongside traditional academic knowledge.
2. **Vocational Training:** Enhancing vocational training programs to equip the workforce with job-specific skills demanded by industries.
3. **Investment in Research and Development:** Increasing funding for research and development across various sectors to drive innovation and technological advancements.
4. **Public-Private Partnerships:** Collaborating with private sector entities to bridge the gap between academia and industry and to ensure that educational programs align with industry needs.
5. **Digital Infrastructure:** Investing in robust digital infrastructure to promote e-learning, online courses, and remote education, especially in remote and underserved regions.
6. **Promotion of Entrepreneurship:** Encouraging and supporting entrepreneurs to foster innovation and create new ventures that can contribute to economic growth.
7. **International Collaboration:** Collaborating with other nations, institutions, and organizations to share knowledge, expertise, and best practices.

Social Development and Inclusivity

It's essential to note that achieving these goals requires sustained commitment and dedication from all stakeholders, including the government, private sector, educational institutions, and civil society. Additionally, adaptability to evolving technologies and global trends will be crucial in ensuring that India remains on the path of growth and leadership in the ever-changing world.

- 1. Economic Growth and Stability:** Social development and inclusivity ensure that economic growth is equitable and benefits all segments of society. When marginalized groups have access to opportunities, education, and resources, they can actively participate in the economy. This leads to a more robust and stable economic foundation, fostering India's status as a reliable and attractive investment destination.
- 2. Human Capital Development:** By focusing on social development, India can nurture its human capital effectively. Investing in education, healthcare, and skill development empowers the workforce, making them more productive and innovative. A skilled and healthy workforce is a critical asset for India's global leadership aspirations.
- 3. Fostering Innovation and Entrepreneurship:** Inclusive policies foster innovation by providing diverse perspectives and ideas. When individuals from different backgrounds and regions have equal access to opportunities, they can contribute unique insights, leading to a more vibrant and dynamic innovation ecosystem. This fosters entrepreneurship, driving India's technological advancements and competitiveness on the global stage.
- 4. Strengthening Diplomatic Relations:** Demonstrating a commitment to social development and inclusivity enhances India's reputation on the international stage. It sends a positive message to other nations and can foster stronger diplomatic ties. Nations often prefer to collaborate with countries that prioritize the well-being of their citizens and address social challenges.
- 5. Peace and Stability:** Inclusivity and social development can reduce social disparities and minimize conflicts arising from inequality. A more harmonious and inclusive society is better equipped to handle internal challenges, which contributes to national stability. As a stable nation, India can effectively engage in global affairs and initiatives for promoting peace and cooperation.
- 6. Sustainable Development Goals (SDGs):** Social development and inclusivity are fundamental to achieving the United Nations' Sustainable Development Goals. By actively pursuing these goals, India can showcase its commitment to global welfare, positioning itself as a responsible global leader that addresses pressing global challenges.

7. **Cultural Diplomacy:** Inclusivity celebrates India's diverse cultures and traditions, fostering cultural diplomacy. Embracing diversity can lead to greater cultural understanding and cooperation with other countries, building stronger bonds and respect on the global stage.
8. **Soft Power Projection:** A socially inclusive and developed nation has a higher soft power quotient. Soft power refers to the ability to influence others through attraction and persuasion rather than force. By projecting its achievements in social development and inclusivity, India can enhance its soft power and become an inspirational model for other countries. In summary, social development and inclusivity are essential pillars in India's journey towards global leadership. They not only contribute to the country's internal growth and stability but also enhance its reputation and influence in the international community. By 2047, a socially developed and inclusive India can inspire the world and actively contribute to solving global challenges, earning its place as a global leader.

In the year 2047, India aims to emerge as a Vishwa Guru, a global leader that promotes peace, prosperity, and progress while embracing its rich cultural heritage and values. Here are some initiatives that India can undertake to achieve this vision of global leadership:

1. **Healthcare and Wellness:** India will prioritize healthcare and wellness initiatives, ensuring accessible and affordable healthcare for all its citizens. The country will also actively participate in global health efforts, contributing to research, disease prevention, and the development of life-saving medical treatments.
2. **Digital Transformation:** India will continue to embrace technology and innovation, promoting a digital-first approach across sectors. The country will encourage startups and digital entrepreneurs to create solutions for global challenges.
3. **Diplomacy and Peacekeeping:** India will play an active role in international diplomacy, seeking peaceful resolutions to conflicts and promoting cooperation among nations. The country will be a strong advocate for the United Nations and other global forums, contributing to peacekeeping missions and humanitarian aid.
4. **Cultural Diplomacy:** India will leverage its rich cultural heritage to foster better global understanding and appreciation. Initiatives like cultural exchanges, festivals, and cultural centers will be promoted to strengthen people-to-people ties between India and other nations.
5. **Inclusive Governance:** India will promote inclusive governance, where every citizen's voice is heard and considered. The country will uphold democratic

principles, ensuring transparency, accountability, and the protection of human rights.

6. Space Exploration: India will continue to advance its space exploration programs, contributing to scientific discoveries and space research. Collaborations with other space-faring nations will be pursued to jointly explore the frontiers of space.
7. Global Poverty Eradication: India will actively participate in global efforts to eradicate poverty and uplift the underprivileged. Sharing its successful poverty alleviation strategies, India will work with other nations to implement sustainable development goals.
8. Disaster Management and Humanitarian Aid: India will enhance its disaster management capabilities and extend humanitarian aid to nations in times of crises, reinforcing its commitment to global solidarity and support.
9. Cyber security and Data Protection: India will champion efforts to strengthen global cyber security and data protection measures, safeguarding the digital world from cyber threats and ensuring the responsible use of technology. Through these initiatives and a commitment to progress and peace, India aspires to be a guiding light, a Vishwa Guru, inspiring other nations towards sustainable development, inclusivity, and prosperity.

Vision Healthcare and Wellness

Vishwa Guru" or a global leader can be greatly enhanced by focusing on healthcare and wellness, especially concerning vision and eye care. Here are some initiatives that can contribute to India's global leadership in this domain:

1. Universal Eye Care Access: Implementing a comprehensive and accessible eye care system that covers all citizens, regardless of their socio-economic status, will be a crucial step. This can include establishing eye care centers and mobile clinics in rural and remote areas, where access to healthcare might be limited.
2. Technological Advancements: Investing in cutting-edge technology and research for eye care can lead to improved diagnosis, treatment, and surgical procedures. This will ensure that India stays at the forefront of medical advancements and attracts patients from around the world seeking top-notch eye care services.
3. Medical Tourism Promotion: Leveraging India's advanced healthcare facilities and skilled medical professionals, the country can actively promote medical tourism for eye-related treatments. Offering high-quality and cost-effective services to international patients can significantly boost India's reputation as a global healthcare destination.

4. **Telemedicine and E-health Initiatives:** Developing robust telemedicine platforms and e-health initiatives can help reach a broader population, including those in remote areas. Virtual consultations and remote monitoring of patients can improve access to eye care services and foster better patient outcomes.
5. **Research and Innovation:** Encouraging research and innovation in the field of ophthalmology will lead to the development of new treatments, medications, and assistive technologies for vision-related issues. Government and private sector collaboration can play a vital role in fostering research and bringing innovations to the market.
6. **Eye Health Education:** Promoting awareness about eye health and preventive measures will be essential in reducing the burden of avoidable blindness and visual impairments. Educational campaigns can focus on regular eye check-ups, eye protection, and healthy lifestyle habits to maintain good vision.
7. **Collaboration with Global Organizations:** Partnering with international organizations and research institutions will facilitate knowledge exchange, access to resources, and the adoption of best practices in eye care. Such collaborations can also open up avenues for joint research and training programs.
8. **Focus on Preventive Care:** Prioritizing preventive eye care through regular eye screenings in schools, workplaces, and communities can help detect and address vision issues early on, preventing further complications.
9. **Inclusive Approach:** Ensuring that eye care services are inclusive and cater to the needs of vulnerable populations, such as the elderly, children, and individuals with disabilities, will reflect positively on India's commitment to universal healthcare and global leadership. By taking these initiatives and prioritizing vision healthcare and wellness, India can strengthen its position as a global leader in healthcare and contribute significantly to the well-being of its citizens and the world at large.

Disaster Management and Humanitarian Aid

Disaster Management and Humanitarian Aid play a crucial role in helping India achieve its vision of becoming a "Vishwa Guru" (world leader) by 2047 and taking initiatives for global leadership. Here are some ways in which these efforts contribute to India's vision:

1. **Strengthening Resilience:** Disaster Management focuses on enhancing the country's ability to withstand and recover from natural and man-made disasters. By building resilient infrastructure, preparedness plans, and response mechanisms, India can ensure that its development progress is not

derailed by frequent disasters. A resilient nation can better handle crises and continue its progress towards global leadership.

2. **International Cooperation:** By actively participating in global humanitarian aid efforts, India can establish itself as a responsible and compassionate global player. Offering assistance to other countries during disasters fosters goodwill and strengthens diplomatic ties, positioning India as a reliable partner in the international community.
3. **Regional Influence:** Effective disaster management and humanitarian aid contribute to India's leadership role in the South Asian region. As neighbouring countries often face similar challenges, India can provide expertise, resources, and support, earning the trust of its neighbours and becoming a regional leader.
4. **Innovation and Expertise:** By investing in disaster management research, technology, and training, India can become a hub of expertise in this field. This expertise can then be shared with other countries facing similar challenges, positioning India as a knowledge leader and a go-to resource for disaster management solutions.
5. **Addressing Global Challenges:** Through humanitarian aid initiatives, India can contribute to addressing global challenges, such as poverty, hunger, health crises, and climate change. Active involvement in tackling these issues demonstrates India's commitment to being a responsible global leader.
6. **Fostering National Unity:** Disaster management and humanitarian aid efforts often require coordination and collaboration among various government agencies, NGOs, and citizens. These endeavours can foster a sense of national unity and pride in contributing to the well-being of fellow citizens and the global community.

Overall, Disaster Management and Humanitarian Aid initiatives can significantly contribute to India's vision for 2047 as a Vishwa Guru by showcasing its leadership, compassion, and capability to address global challenges, thereby strengthening its position on the world stage.

Conclusions

Re-envisioning India @ 2047: Initiatives for Global Leadership" outlines a bold and ambitious roadmap for India to become a global leader in various spheres by the year 2047. This vision envisions India not only as an economic powerhouse but also as a nation that leads in promoting peace, sustainability, innovation, and social progress on the global stage. Through a multifaceted approach, India seeks to harness its demographic dividend, rich cultural heritage, and technological prowess

to address the challenges and opportunities of the 21st century. This involves investing in education, research, and development to foster innovation and build a highly skilled workforce capable of driving cutting-edge industries.

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GENDER EQUALITY AND WOMEN'S EMPOWERMENT

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Abstract

The word gender refers to the economic, social, and cultural characteristics and opportunities of being male or female. Being a male or female is not just a matter of different biological and physical features in most cultures. This paper discusses the importance of gender equality in achieving women's empowerment goals. Gender Equality and empowerment of women are two facets of the same coin. The progress toward gender equality that requires women 's empowerment and vice-versa. Both have multiple dimensions that generate a wide range of indicators together throughout the past. Gender equality and women 's empowerment have been specifically recognized over the past decades as vital not only to the welfare of nations but also to social and economic growth. Globally, women have fewer opportunities for economic participation than men, less access to basic and higher education, greater risks to health and safety, and less representation on the political level. This paper examines the scenario of gender inequality in present-day pandemic situations in India and the forms of inequalities. This paper highlights the importance of gender equality in women empowerment, gender inequality in development, and gender mainstreaming in development. This research aims to assess progress in India towards the twin goals of gender equality and women empowerment; this research also focuses on the determinants of identified gender equality measures and women empowerment. The study states that there is clear evidence that gender equality can promote economic growth.

Keywords: Gender, Attributes, Empowerment, Inequality, Economic Development.

Introduction

Gender equity is the process of being fair to women and men. To ensure fairness, strategies and measures must often be available to compensate for women's historical and social disadvantages that prevent women and men from otherwise operating on a level playing field. Equity leads to equality. Gender equality requires equal enjoyment by women and men of socially-valued goods, opportunities, resources and rewards. Where gender inequality exists, it is generally women who are excluded or disadvantaged in relation to decision-making and access to economic and social resources. Therefore a critical aspect of promoting gender equality is the empowerment of women, with a focus on identifying and redressing power imbalances and giving women more autonomy to manage their own lives. Gender equality does not mean that men and women become the same; only that access to opportunities and life changes is neither dependent on, nor constrained by, their sex. Achieving gender equality requires women's empowerment to ensure that

decision making at private and public levels and access to resources are no longer weighted in men's favour, so that both women and men can fully participate as equal partners in productive and reproductive life.

Analysis of a global survey of 21,980 firms from 91 countries indicates that women's participation in positions of corporate leadership may enhance firm performance. The connection may either reflect the payoff to nondiscrimination or the fact that women are increasing the variety of skills in business. The role of women in corporate financial regulation is positively associated with the firm characteristics such as size and regional characteristics as girls' math performance, lack of patriarchal attitudes towards female executives, and the availability of paternal leave. The findings don't affect the board's gender quotas on companies. Quality but they say this more generally may be the payoffs of policies that promote women rising through the corporate ranks.

Objectives

The main objectives of this work are to

1. To study the importance of Gender Equality in economic development.
2. To determine the factors considered for women Empowerment in the Covid-19 pandemic.
3. To identify the key issues and challenges for women empowerment and Gender Equality.

Importance

Gender Equality Gender equality is directly related to sustainable development and is essential to ensuring human rights for all. Gender equality is very important to achieve the aim of empowering women. The overarching aim of gender equality is a world where women and men enjoy in all aspects of life have the same opportunities, rights and obligations. Equality between men and women exists when both sexes can participate equally in the distribution of power and influence; have equal opportunities for financial freedom through employment or the establishment of businesses, enjoy equal access to education and ability to grow personal goals, interests and talents; share responsibility for the home and children and are free of coercion.

Gender equality is important in the sense of population and development programs because it will allow women and men to make choices that have a more positive effect on their sexual and reproductive health and that of their spouses and families. Decisions on topics such as marriage age, the timing of pregnancies, the use of contraceptives, and the use of inappropriate female behaviors can be improved with the achievement of gender equality.

However, it is necessary to note that where there is gender discrimination, women are usually excluded or disadvantaged as regards decision making and access to economic and social capital. A crucial aspect of fostering gender equality is also an emphasis on recognizing and redressing power imbalances and granting women greater flexibility in handling their responsibilities. This will encourage them to make decisions and take actions to achieve and preserve their sexual and reproductive health. Gender equality and empowerment of women do not mean that men and women become the same; only that access to resources and improvements in life is neither contingent on their gender nor limited by it.

Gender equality reaching means improvements for both men and women alike. More equal partnerships must be based on a redefinition of women's and men's rights and obligations in all areas of life, including family, workplace, and society at large. Therefore, it is important not to ignore gender as an element of the social identity of men. Indeed, this fact is always ignored because the tendency is to consider male characteristics and attributes as the custom and those of women as a variation of the norm.

Yet gender affects men's lives as much as women. Societal standards and traditions surrounding "masculinity" and men's expectations as representatives, husbands, or sons impose pressure on men and influence their behavior. Men are too often forced to focus on the family's material needs, rather than on the caring and nurturing tasks are given to women. Family and later school socialization promote risk-taking behavior among young men, and this is often reinforced by peer pressure and media stereotyping. Thus, the lifestyles demanded by men's roles often result in their being more at risk of morbidity and mortality compared to women. Such threats include those linked to injuries, abuse, and drug use.

Gender Equality and Women's Empowerment

Gender equality means a world where women and men in all aspects of life experience the same opportunities, results, freedom, and obligations. Gender equality happens when both sexes can participate equally in the allocation of power and influence; have equal opportunities for financial freedom through employment or the establishment of businesses; have equal access to education and the opportunity to develop personal ambitions. The empowerment of women is a vital component of fostering gender equality, with an emphasis on recognizing and redressing power imbalances and allowing women more flexibility to control their own lives. The empowerment of women is necessary for sustainable development and the realization of human rights for all. Where the status of women is small, family size appears to be high, making it harder for families to thrive.

Population and growth programs, reproductive health services are more successful when addressing women's educational opportunities, status and empowerment. Once women are empowered, it benefits whole families, and these benefits also have rippling effects on future generations. The positions that men and women play in society are not decided biologically and are socially determined, evolving and changeable. While they can be justified as involving culture or faith, these positions differ widely depending on the place and change over time.

Key Issues and Linkages

Reproductive Health

Women are more vulnerable to reproductive-health problems for both physiological and social reasons than men. Reproductive health problems in developing countries, including maternal mortality and morbidity, are a major – but preventable – cause of death and disability for women. Failure to provide information, services and conditions to help women protect their reproductive health, therefore, constitutes discrimination based on gender and a violation of women's health and life rights.

Stewardship of Natural Resources

Women in India are generally responsible for obtaining water, food, and fuel and supervising the health and diet of their families. Therefore, they prefer to bring everything they know about nutrition into immediate action and protect the ecosystem and natural resources.

Economic Empowerment

In India, there is more poverty amongst women than men. Gender inequalities exist in part because most of the unpaid labor within families and societies fall on women's shoulders and because they face racial discrimination.

Educational Empowerment

Approximately two-thirds of India's illiterate adults are female. Higher educational rates for women are closely correlated with lower infant mortality and lower fertility, as well as higher educational and economic opportunities for their children.

Political Empowerment

In fundamental civil and human rights, in access to or ownership of the land or other resources, in jobs and earnings and social and political participation, social and legal systems often do not guarantee women equality. Domestic abuse laws are still not followed on the women's behalf.

Empowered Women's Characteristics

1. Empowered women define their attitude, values and behaviours in relation to their own real interest. They have autonomy because they claim their freedom from existing male hierarchies, whether they live in traditional societies or modern industrial societies.
2. Empowered women maintain equal mindedness. They act out roles that challenge male dominance. They respond as equals and co-operate to work towards the common good.
3. Empowered women use their talent to live fulfilling lives. They not only survive the harshness of their own subjugation but also transcend their subjugation.
4. Empowered women maintain their strength on the face of pressures from the religion and work and contribute towards the empowerment of all women.
5. Empowered women define their values and formulate their beliefs themselves, they do not derive their sense of being from male authorities nor do they live vicariously through men.

Factors for Women Empowerment

Why is it important to NOT leave women behind in the prevailing scenario?

The pandemic deepens pre-existing gaps and reveals and exploits vulnerabilities in social, political, and economic systems. While frontline health professionals, nurses, outreach assistants, online teachers, social workers, managers, police, media staff, care providers, women have made important contributions, they are also one of the hardest hits.

'The pandemic is deepening pre-existing inequalities, exposing and exploiting vulnerabilities in social, political, and economic systems'. While women have been making crucial contributions as frontline health workers, nurses, sanitation workers, online teachers, social workers, administrators, police personnel, media personnel, care providers, they are also one amongst the hardest hit.

1. Social Factors

The extra burden of household work /unpaid care work for women and girls.

Rising GBV and safety threats – India has reported cases of increased domestic abuse and violence against intimate partners. 1 in 3 women experiences physical or sexual harassment primarily by an intimate partner. In India, the global data is complemented by the recently concluded (2015-2016) NFHS-4 data at the national level which shows that 28.8% of ever-married women have experienced spousal violence. The problem is getting ever more serious as life-saving and community programs, including one-stop trauma centers, mental wellbeing, and psychosocial

community, police, and justice programs, etc., are all overwhelmed as health care professionals are overburdened and distracted with coping with COVID-19. The United Nations Secretary-General Antonio Guterres called for a “ceasefire” to address the “horrificing global surge in domestic violence” On 6 April 2020.

Impact on women at the bottom of the pyramid including migrant workers, single women/mothers; the aged and elderly; women with disabilities; SOGI, etc. is more glaring as they encounter double or triple layers of inequality based on their sex, socioeconomic situation and other specific conditions.

The impact of the pandemic has had an impact on farmers who are grappling with food availability, food access, and food utilization thus, leading to food insecurity. The food cycle disruptions affect women’s health and nutrition status thereby, making them the invisible face of hunger.

2. Economic Factors

In any humanitarian crisis, manmade or natural-women in the economic sphere are still left behind. Not only does this affect their livelihoods but it also raises the gender disparity in terms of employment, jobs, salaries, and opportunities.

Women will be pushed back to poverty after this phase gets over. In India, 93% of women are engaged in the informal sector / have unskilled jobs and low wages that contribute to 50% of the economy. They are the ones who lose their jobs first and with no social security and job security, their road to recovery is an arduous and challenging task.

3. Health Factors

Social norms and cultural traditions present greater health risks for women and girls as they are the last to seek medical assistance or prompt treatment in any crisis. The specific needs of women healthcare workers like menstrual hygiene needs, psychosocial support, household responsibilities apart from personal protective equipment are usually side-lined amidst this chaos.

Interrupted access to sexual and reproductive health – in any crisis whether natural or man-made, financial resources are usually diverted from essential/routine health services to tackle the crisis at hand. Pre- and post-natal health care and contraceptives, sexual and reproductive health services, etc. are some of the services that lag thereby, having an impact on women’s overall wellbeing.

The mitigation strategies need to be defined in a manner wherein, they not only look at the health aspects but, also the economic aspects and thereby, help in building women’s buoyancy. Or else, we stand at the risk of going back by decades, as COVID19 may reverse the gains made so far on realizing gender and human rights of women and girls.

Conclusion

From the above discussion, it could be seen that gender equality is very important to achieving women's empowerment targets. It is noted that in India, women have been exposed to various forms of oppression and disabilities despite the enjoyment of the developmental benefits arising from disempowerment. Therefore, women's advancement may be possible by gender achievement.

The following steps can be considered for fostering gender equality in socio-economic growth. Alternate metrics include the OECD's Social Institutions Gender Index (SIGI), which in 2012 ranked India 56th out of 86, an increase from its 96th out of 102 ratings in 2009. The SIGI is a measure of unequal social structures that are drivers of injustice, rather than the unjust effects themselves. Within the same vein, UNDP released the Gender Inequality Index and ranked India 132 out of 148.

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ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING IMPLICATIONS AND APPLICATIONS

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Abstract

Within the last decade, the application of “artificial intelligence” and “machine learning” has become popular across multiple disciplines, especially in information systems. The two terms are still used inconsistently in academia and industry – sometimes as synonyms, sometimes with different meanings. With this work, we try to clarify the relationship between these concepts. We review the relevant literature and develop a conceptual framework to specify the role of machine learning in building (artificial) intelligent agents. Additionally, we propose a consistent typology for AI-based information systems. We contribute to a deeper understanding of the nature of both concepts and to more terminological clarity and guidance – as a starting point for interdisciplinary discussions and future research.

Keywords: *Artificial Intelligence, Machine, Learning.*

Introduction

Artificial intelligence (AI) is the ability of machines to replicate or enhance human intellect, such as reasoning and learning from experience. Artificial intelligence has been used in computer programs for years, but it is now applied to many other products and services. For example, some digital cameras can determine what objects are present in an image using artificial intelligence software. In addition, experts predict many more innovative uses for artificial intelligence in the future, including smart electric grids.

AI uses techniques from probability theory, economics, and algorithm design to solve practical problems. In addition, the AI field draws upon computer science, mathematics, psychology, and linguistics. Computer science provides tools for designing and building algorithms, while mathematics offers tools for modeling and solving the resulting optimization problems. Although the concept of AI has been around since the 19th century, when Alan Turing first proposed an “imitation game” to assess machine intelligence, it only became feasible to achieve in recent decades due to the increased availability of computing power and data to train AI systems.

History of Artificial Intelligence

With so much attention on modern artificial intelligence, it is easy to forget that the field is not brand new. AI has had a number of different periods, distinguished by whether the focus was on proving logical theorems or trying to mimic human thought via neurology. Artificial intelligence dates back to the late 1940s when computer pioneers like Alan Turing and John von Neumann first started examining how machines could “think.” However, a significant milestone in AI occurred in 1956 when researchers proved that a machine could solve any problem if it were allowed to use an unlimited amount of memory. The result was a program called the General Problem Solver (GPS).

Over the next two decades, research efforts focused on applying artificial intelligence to real-world problems. This development led to expert systems, which allow machines to learn from experience and make predictions based on gathered data. Expert systems aren’t as complex as human brains, but they can be trained to identify patterns and make decisions based on that data. They’re commonly used in medicine and manufacturing today. A second major milestone came in 1965 with the development of programs like Shakey the robot and ELIZA, which automated simple conversations between humans and machines. These early programs paved the way for more advanced speech recognition technology, eventually leading to Siri and Alexa.

The initial surge of excitement around artificial intelligence lasted about ten years. It led to significant advances in programming language design, theorem proving, and robotics. But it also provoked a backlash against over-hyped claims that had been made for the field, and funding was cut back sharply around 1974. The early years of the 21st century were a period of significant progress in artificial intelligence. The first major advance was the development of the self-learning neural network. By 2001, its performance had already surpassed human beings in many specific areas, such as object classification and machine translation. Over the next few years, researchers improved its performance across a range of tasks, thanks to improvements in the underlying technologies.

Artificial Intelligence & Machine Learning

Artificial Intelligence is the most trending field of computer science. However, with all the new technology and research, it’s growing so fast that it can be confusing to understand what is what. Furthermore, there are many different fields within AI, each one having its specific algorithms. Therefore, it’s essential to know that AI is not a single field but a combination of various fields.

Artificial Intelligence (AI) is the general term for being able to make computers do things that require intelligence if done by humans. AI can be broken down into

two major fields, Machine Learning (ML) and Neural Networks (NN). Both are subfields under Artificial Intelligence, and each one has its methods and algorithms to help solve problems.

Machine Learning

Machine learning (ML) is a type of artificial intelligence (AI) that allows software applications to become more accurate at predicting outcomes without being explicitly programmed to do so. Machine learning algorithms use historical data as input to predict new output values.

Recommendation engines are a common use case for machine learning. Other popular uses include fraud detection, spam filtering, malware threat detection, business process automation (BPA) and Predictive maintenance.

Types of Machine Learning

Classical machine learning is often categorized by how an algorithm learns to become more accurate in its predictions. There are four basic approaches: supervised learning, unsupervised learning, semi-supervised learning and reinforcement learning. The type of algorithm data scientists choose to use depends on what type of data they want to predict.

Supervised Learning

In this type of machine learning, data scientists supply algorithms with labeled training data and define the variables they want the algorithm to assess for correlations. Both the input and the output of the algorithm is specified.

Unsupervised Learning

This type of machine learning involves algorithms that train on unlabeled data. The algorithm scans through data sets looking for any meaningful connection. The data that algorithms train on as well as the predictions or recommendations they output are predetermined.

Semi-supervised Learning

This approach to machine learning involves a mix of the two preceding types. Data scientists may feed an algorithm mostly labeled training data, but the model is free to explore the data on its own and develop its own understanding of the data set.

Reinforcement Learning

Data scientists typically use reinforcement learning to teach a machine to complete a multi-step process for which there are clearly defined rules. Data scientists program an algorithm to complete a task and give it positive or negative cues as it works out how to complete a task. But for the most part, the algorithm decides on its own what steps to take along the way.

How Does Machine Learning Work?

A Machine Learning system learns from historical data, builds the prediction models, and whenever it receives new data, predicts the output for it. The accuracy of predicted output depends upon the amount of data, as the huge amount of data helps to build a better model which predicts the output more accurately.

Implications & Applications of Artificial Intelligence

The revolutionary power of computers to “learn” from large datasets and use this information to make predictions is unprecedented. Loosely defined under the umbrella of artificial intelligence (AI), these complex systems are already applied in multiple contexts: at home, at work, in decisions about loans and college admissions, in vehicles and transportation systems, in weapons, in surveillance, in healthcare, and in policing and judicial sentencing. Future applications of AI could extend even further, encompassing most aspects of our lives.

As we stand on the cusp of a technological revolution, opportunities abound to harness these technologies for social good: AI-based systems may have the capacity to scan social media across platforms and across the globe to warn of imminent environmental disasters, disease outbreaks, or political upheavals, using this information in ways that individuals may not have intended or even realized were possible. They have the potential to remove human bias from judicial decisions about sentencing; AI-based systems could optimize diagnostics and therapeutics through analysis and correlations of immense swaths of patient data. But for the benefits to be equitably enjoyed by every member of society, public attitudes toward AI among marginalized and vulnerable populations must be better understood. AI innovations must be intentionally and responsibly developed, and their application must address the possible disparity of impact new technologies have on disadvantaged populations. In response to these challenges and opportunities, the American Association for the Advancement of Science (AAAS) and its partners are launching the (AI)²: Artificial Intelligence – Applications/Implications initiative, the goal of which is to affect the development and application of AI in ways that alleviate, rather than exacerbate, social inequalities.

Applications of Machine Learning

Machine learning is a buzzword for today's technology, and it is growing very rapidly day by day. We are using machine learning in our daily life even without knowing it such as Google Maps, Google assistant, Alexa, etc. Below are some most trending real-world applications of Machine Learning:

1. Image Recognition

Image recognition is one of the most common applications of machine learning. It is used to identify objects, persons, places, digital images, etc. The popular use case of image recognition and face detection is, Automatic friend tagging suggestion:

2. Speech Recognition

While using Google, we get an option of "Search by voice," it comes under speech recognition, and it's a popular application of machine learning. Speech recognition is a process of converting voice instructions into text, and it is also known as "Speech to text", or "Computer speech recognition." At present, machine learning algorithms are widely used by various applications of speech recognition. Google assistant, Siri, Cortana, and Alexa are using speech recognition technology to follow the voice instructions.

3. Traffic Prediction

If we want to visit a new place, we take help of Google Maps, which shows us the correct path with the shortest route and predicts the traffic conditions. Real Time location of the vehicle from Google Map app and sensors. Average time has taken on past days at the same time.

4. Self-Driving Cars

One of the most exciting applications of machine learning is self-driving cars. Machine learning plays a significant role in self-driving cars. Tesla, the most popular car manufacturing company is working on self-driving car. It is using unsupervised learning method to train the car models to detect people and objects while driving.

5. Stock Market Trading

Machine learning is widely used in stock market trading. In the stock market, there is always a risk of up and downs in shares, so for this machine learning's long short term memory neural network is used for the prediction of stock market trends.

6. Medical Diagnosis

In medical science, machine learning is used for diseases diagnoses. With this, medical technology is growing very fast and able to build 3D models that can predict the exact position of lesions in the brain. It helps in finding brain tumors and other brain-related diseases easily.

7. Automatic Language Translation

Nowadays, if we visit a new place and we are not aware of the language then it is not a problem at all, as for this also machine learning helps us by converting the text into our known languages. Google's GNMT (Google Neural Machine Translation) provide this feature, which is a Neural Machine Learning that translates the text into our familiar language, and it called as automatic translation.

The technology behind the automatic translation is a sequence to sequence learning algorithm, which is used with image recognition and translates the text from one language to another language.

Methods of Artificial Intelligence

Logic, Problem-Solving

Early researchers developed algorithms that simulate humans' step-by-step reasoning when solving puzzles or making logical deductions. By the late 1980s and 1990s, AI research had developed methods for dealing with uncertain or incomplete information, employing concepts from probability and economics. For difficult problems, algorithms can require enormous computational resources-most experience a "combinatorial explosion": the amount of memory or computer time needed for problems of a certain size becomes astronomical. The search for more efficient problem-solving algorithms is a high priority.

Knowledge Representation

Knowledge representation and knowledge engineering are central to AI research. Many of the problems that machines are expected to solve will require extensive world knowledge. The things AI needs to represent are objects, properties, categories, and relationships between objects; situations, events, states, and times; Cause and Effect; Knowledge about knowledge (what other people know about what we know); and many other, less well-researched domains. A representation of "what exists" is an ontology: the set of objects, relations, concepts, and so on about which the machine knows. The most general is upper ontology, which attempts to provide a foundation for all other knowledge.

Planning

Intelligent agents must be able to set goals and achieve them. They need a way to envision the future - a representation of the state of the world and make predictions about how their actions will change it - and be able to make choices that maximize the utility (or "value") of the options available.

In classical planning problems, the agent can assume that it is the only system acting in the world, allowing the agent to be certain of the consequences of its actions.

However, if the agent is not the only actor, it requires that the agent reason under uncertainty. It calls for an agent to assess its environment, make predictions, evaluate its predictions, and adapt based on its assessment.

Learning

Machine learning, a fundamental concept of AI research since the field's inception, is the study of computer algorithms that automatically improve through experience. Unsupervised learning is the ability to find patterns in a stream of input. Supervised learning includes both classification and numerical regression. After seeing several examples of things from several categories, classification is used to determine which category something falls into. Regression attempts to construct a function that describes the relationship between inputs and outputs and predicts how the outputs should change as the inputs change.

Social Intelligence

Effective computing is the study and development of systems that can detect, interpret, process, and simulate human. It is an interdisciplinary field spanning computer science, psychology, and cognitive science. While the origins of the field can be traced to early philosophical inquiries into emotion, the more modern branch of computer science originated from Rosalind Picard's 1995 paper on "effective computing".

Creativity

A sub-field of AI addresses creativity theoretically (philosophical, psychological perspective) and practically (the specific implementation of systems that produce novel and useful outputs). Some related areas of computational research include artificial intuition and artificial thinking.

General Intelligence

Many researchers think that their work will eventually result in a machine with artificial general intelligence, combining all the skills described above and exceeding human capacity in most or all of these areas. Some believe that such a project may require anthropomorphic features such as artificial consciousness or an artificial brain.

Conclusion

AI is at the centre of a new enterprise to build computational models of intelligence. The main assumption is that intelligence (human or otherwise) can be represented in terms of symbol structures and symbolic operations which can be programmed in a digital computer. There is much debate as to whether such an appropriately programmed computer would be a mind, or would merely simulate one, but AI researchers need not wait for the conclusion to that debate, nor for the hypothetical computer that could model all of human intelligence. Aspects of

intelligent behaviour, such as solving problems, making inferences, learning, and understanding language, have already been coded as computer programs, and within very limited domains, such as identifying diseases of soybean plants, AI programs can outperform human experts. Now the great challenge of AI is to find ways of representing the common sense knowledge and experience that enable people to carry out everyday activities such as holding a wide-ranging conversation, or finding their way along a busy street. Conventional digital computers may be capable of running such programs, or we may need to develop new machines that can support the complexity of human thought.

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PROMOTING GENDER EQUALITY AND WOMEN'S EMPOWERMENT: STRATEGIES FOR SUSTAINABLE DEVELOPMENT

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Abstract

Gender equality and women's empowerment are crucial components of sustainable development. This conference paper aims to explore the importance of gender equality and women's empowerment, analyze the challenges faced in achieving these goals, and propose strategies for promoting gender equality and empowering women. The paper will discuss the benefits of gender equality, including its impact on social, economic, and political spheres. It will also examine the barriers and challenges that hinder progress in achieving gender equality and women's empowerment. The paper will then present strategies and best practices for promoting gender equality, including legal and policy frameworks, education and awareness programs, economic empowerment initiatives, and the role of technology and innovation. The paper will conclude by highlighting the importance of multi-stakeholder collaboration and the need for sustained efforts to achieve gender equality and women's empowerment.

Keywords: *Gender equality, women's empowerment, sustainable development, challenges, strategies, best practices, multi-stakeholder collaboration.*

Introduction

Gender equality and women's empowerment are not only fundamental principles of human rights but also essential for achieving sustainable development. They are interconnected and mutually reinforcing concepts that aim to create a society where individuals of all genders have equal rights, opportunities, and access to resources. Gender inequality undermines social progress, limits human potential, and hampers economic growth. Therefore, promoting gender equality and women's empowerment is crucial for creating a just, inclusive, and sustainable world. Gender equality encompasses the equal treatment and valuing of individuals, irrespective of their gender identity or expression. It involves challenging and transforming discriminatory social norms, stereotypes, and attitudes that perpetuate unequal power relations between men and women. Women's empowerment, on the other hand, focuses on providing women with the tools, resources, and opportunities to

participate fully in all aspects of life, including social, economic, and political spheres. It aims to enable women to make decisions, exercise their rights, and contribute to the well-being and development of their families, communities, and societies.

Promoting gender equality and women's empowerment is essential for several reasons. First, it is a matter of human rights and social justice. All individuals, regardless of their gender, deserve equal rights, dignity, and respect. Gender-based discrimination and violence not only violate these rights but also perpetuate cycles of inequality and injustice. Second, gender equality and women's empowerment have significant economic implications. Numerous studies have shown that countries with greater gender equality tend to experience higher levels of economic growth and development. When women are empowered and have equal access to education, healthcare, and economic opportunities, they can contribute to economic productivity, innovation, and competitiveness. Closing the gender gap in employment and entrepreneurship can unlock the untapped potential of women, leading to increased productivity, higher incomes, and poverty reduction. Third, gender equality and women's empowerment are crucial for achieving the United Nations Sustainable Development Goals (SDGs). Many of the SDGs, such as ending poverty, promoting quality education, ensuring good health and well-being, and fostering sustainable economic growth, are closely linked to gender equality. Progress in these areas is significantly influenced by the status and empowerment of women.

However, despite the progress made in promoting gender equality, numerous challenges persist. Discriminatory laws, policies, and social norms continue to perpetuate gender inequality. Women and girls face barriers in accessing education, healthcare, and economic opportunities. Gender-based violence and harmful practices, such as child marriage and female genital mutilation, still exist in many parts of the world. Achieving gender equality requires addressing these challenges through comprehensive strategies and actions.

Effective Strategies for Promoting Gender Equality and Women's Empowerment Include

1. Legal and policy frameworks: Governments should enact and enforce laws and policies that protect women's rights, eliminate discrimination, and promote gender equality. This includes legislation against gender-based violence, equal pay for equal work, and promoting women's political participation and leadership.
2. Education and awareness: Investing in quality education for all, with a focus on eliminating gender disparities, is crucial. Education plays a vital role in

challenging stereotypes, promoting gender equality values, and empowering individuals to challenge discriminatory practices.

3. Economic empowerment: Creating an enabling environment for women's economic empowerment is essential. This includes promoting equal access to credit, resources, and markets, supporting women-owned businesses, and providing vocational training and entrepreneurship programs.
4. Health and well-being: Ensuring women's access to quality healthcare services, including sexual and reproductive health services, is crucial. This involves promoting comprehensive sexuality education, addressing maternal mortality, and providing reproductive rights and services.
5. Social norms and attitudes: Challenging harmful gender norms and promoting positive attitudes towards gender equality is essential. This can be achieved through public awareness campaigns, engaging men and boys as allies, and promoting gender equality in households, communities, and media.

In conclusion, promoting gender equality and women's empowerment is crucial for achieving sustainable development. It requires concerted efforts from governments, civil society organizations, the private sector, and individuals. By addressing the challenges and implementing effective strategies, we can create a world where gender equality is a reality, and women are empowered to fulfill their potential and contribute to a better future for all.

Importance of Gender Equality and Women's Empowerment

Gender equality is a fundamental principle that underpins inclusive societies and plays a pivotal role in achieving the United Nations' Sustainable Development Goals (SDGs). It encompasses ensuring equal rights, opportunities, and access to resources for individuals of all genders, challenging discriminatory practices, and promoting social justice. Promoting gender equality is crucial for reducing poverty and inequalities. When women have equal access to education, healthcare, and economic opportunities, they can actively participate in the workforce, generate income, and lift themselves and their families out of poverty. Closing the gender gap in employment and entrepreneurship can lead to increased productivity, economic growth, and poverty reduction. Moreover, gender equality helps address social and economic inequalities by removing barriers that limit the potential of women and hinder their contributions to society.

Gender equality also enhances overall well-being and quality of life for all individuals. When women are empowered, they can exercise control over their bodies and reproductive rights, make informed decisions about their health, and access essential healthcare services. This leads to improved maternal and child

health outcomes, reduced mortality rates, and enhanced overall health indicators for communities. Additionally, gender equality fosters a more inclusive and diverse society where everyone's voices are heard, respected, and valued, resulting in a more harmonious and cohesive social fabric. Women's empowerment, a key component of gender equality, involves providing women with the tools, resources, and opportunities to participate fully in social, economic, and political spheres. Empowered women become agents of change within their families, communities, and nations. When women are educated, they can contribute to informed decision-making, advocate for their rights, and actively participate in civic and political processes. Their increased participation in leadership positions leads to more inclusive policies and decision-making that better address the needs and interests of diverse populations. Furthermore, women's empowerment positively impacts families and communities. Studies have shown that when women are empowered, they invest in the well-being and education of their children, leading to improved intergenerational outcomes. Empowered women also contribute to community development by initiating and leading social and economic initiatives, promoting social cohesion, and fostering sustainable development.

Promoting gender equality and women's empowerment requires concerted efforts at various levels. Governments play a crucial role in enacting and implementing policies and laws that protect women's rights, address gender-based violence, and ensure equal opportunities in education, employment, and leadership positions. Civil society organizations and community-based initiatives can raise awareness, provide support services, and advocate for gender equality. The private sector can promote gender-responsive policies, equal pay for equal work, and diverse and inclusive work environments. Education plays a pivotal role in empowering women and promoting gender equality. Providing girls and women with quality education equips them with knowledge, skills, and confidence to challenge gender stereotypes, participate in decision-making processes, and pursue their aspirations. Access to education helps break the cycle of poverty and discrimination, enabling women to overcome barriers and contribute to social and economic development. In conclusion, gender equality and women's empowerment are vital for creating inclusive societies and achieving sustainable development. They promote social justice, reduce poverty and inequalities, enhance overall well-being, and contribute to the betterment of families, communities, and nations. Achieving gender equality requires the commitment and collaboration of governments, civil society organizations, the private sector, and individuals. By valuing and empowering women, we can create a world where everyone has equal rights, opportunities, and access to resources, fostering a more equitable and prosperous future for all.

Challenges in Achieving Gender Equality and Women's Empowerment

Gender equality is a fundamental principle that underpins inclusive societies and plays a pivotal role in achieving the United Nations' Sustainable Development Goals (SDGs). It encompasses ensuring equal rights, opportunities, and access to resources for individuals of all genders, challenging discriminatory practices, and promoting social justice. Promoting gender equality is crucial for reducing poverty and inequalities. When women have equal access to education, healthcare, and economic opportunities, they can actively participate in the workforce, generate income, and lift themselves and their families out of poverty. Closing the gender gap in employment and entrepreneurship can lead to increased productivity, economic growth, and poverty reduction. Moreover, gender equality helps address social and economic inequalities by removing barriers that limit the potential of women and hinder their contributions to society.

Gender equality also enhances overall well-being and quality of life for all individuals. When women are empowered, they can exercise control over their bodies and reproductive rights, make informed decisions about their health, and access essential healthcare services. This leads to improved maternal and child health outcomes, reduced mortality rates, and enhanced overall health indicators for communities. Additionally, gender equality fosters a more inclusive and diverse society where everyone's voices are heard, respected, and valued, resulting in a more harmonious and cohesive social fabric. Women's empowerment, a key component of gender equality, involves providing women with the tools, resources, and opportunities to participate fully in social, economic, and political spheres. Empowered women become agents of change within their families, communities, and nations. When women are educated, they can contribute to informed decision-making, advocate for their rights, and actively participate in civic and political processes. Their increased participation in leadership positions leads to more inclusive policies and decision-making that better address the needs and interests of diverse populations.

Furthermore, women's empowerment positively impacts families and communities. Studies have shown that when women are empowered, they invest in the well-being and education of their children, leading to improved intergenerational outcomes. Empowered women also contribute to community development by initiating and leading social and economic initiatives, promoting social cohesion, and fostering sustainable development. Promoting gender equality and women's empowerment requires concerted efforts at various levels. Governments play a crucial role in enacting and implementing policies and laws that protect women's rights, address gender-based violence, and ensure equal

opportunities in education, employment, and leadership positions. Civil society organizations and community-based initiatives can raise awareness, provide support services, and advocate for gender equality. The private sector can promote gender-responsive policies, equal pay for equal work, and diverse and inclusive work environments. Education plays a pivotal role in empowering women and promoting gender equality. Providing girls and women with quality education equips them with knowledge, skills, and confidence to challenge gender stereotypes, participate in decision-making processes, and pursue their aspirations. Access to education helps break the cycle of poverty and discrimination, enabling women to overcome barriers and contribute to social and economic development. In conclusion, gender equality and women's empowerment are vital for creating inclusive societies and achieving sustainable development. They promote social justice, reduce poverty and inequalities, enhance overall well-being, and contribute to the betterment of families, communities, and nations. Achieving gender equality requires the commitment and collaboration of governments, civil society organizations, the private sector, and individuals. By valuing and empowering women, we can create a world where everyone has equal rights, opportunities, and access to resources, fostering a more equitable and prosperous future for all.

Strategies for Promoting Gender Equality and Women's Empowerment

Strengthening Institutions and Accountability: It is important to strengthen institutions responsible for promoting gender equality and women's empowerment. This includes establishing gender equality commissions or departments, creating monitoring and evaluation mechanisms, and ensuring accountability for gender-related policies and programs. Institutional capacity building is also crucial to ensure effective implementation of gender-responsive initiatives.

Engaging Men and Boys: Achieving gender equality requires the active participation and support of men and boys. Engaging men in discussions and initiatives that promote gender equality can help challenge harmful gender norms and behaviors, foster empathy, and create inclusive environments. It is important to promote positive masculinities and encourage men's involvement as allies in advancing gender equality.

International Cooperation and Partnerships: Global collaboration and partnerships are vital for promoting gender equality and women's empowerment. Governments, civil society organizations, and international bodies should work together to share best practices, resources, and knowledge. Supporting initiatives that promote gender equality in different countries can lead to collective progress and exchange of experiences.

Data Collection and Research: Collecting sex-disaggregated data and conducting research on gender-related issues is essential for evidence-based policymaking and program development. Robust data collection can help identify gaps, monitor progress, and evaluate the impact of interventions aimed at promoting gender equality.

Social Norms and Cultural Change: Addressing deep-rooted social norms and cultural practices that perpetuate gender inequality is crucial. This requires engaging with communities, religious leaders, and influencers to challenge harmful practices, promote positive attitudes towards gender equality, and foster cultural change.

Continuous Monitoring and Evaluation: Regular monitoring and evaluation of gender equality initiatives are essential to track progress, identify gaps, and make necessary adjustments. By monitoring the impact of policies and programs, it is possible to ensure that efforts are effective and responsive to the evolving needs and challenges in advancing gender equality and women's empowerment.

In conclusion, achieving gender equality and women's empowerment requires a multi-faceted approach that encompasses legal and policy frameworks, education and awareness programs, economic empowerment initiatives, technological innovation, institutional strengthening, engaging men and boys, international cooperation, data collection and research, addressing social norms, and continuous monitoring and evaluation. By adopting these strategies and working collectively, societies can create a more equitable and inclusive world where all individuals, regardless of their gender, can realize their full potential and contribute to sustainable development.

Conclusion

Promoting gender equality and women's empowerment is not only a moral imperative but also a strategic investment for sustainable development. Gender equality is recognized as a fundamental human right and is crucial for achieving the United Nations' Sustainable Development Goals (SDGs). It is a key driver of economic growth, social progress, and peace. Addressing the challenges of discrimination, stereotypes, and limited access to resources and opportunities is fundamental to advancing gender equality. Legal and policy frameworks play a critical role in promoting and protecting women's rights. Governments must enact and enforce laws that eliminate gender-based discrimination, promote equal opportunities, and ensure equal pay for equal work. These frameworks should also address violence against women, including domestic violence, sexual harassment, and harmful traditional practices.

Education and awareness programs are vital for challenging gender stereotypes, promoting gender equality values, and fostering critical thinking. Schools and

educational institutions should provide inclusive and gender-responsive curricula that teach respect, tolerance, and gender equality from an early age. Comprehensive sexuality education can help address harmful gender norms, promote healthy relationships, and prevent gender-based violence. Economic empowerment initiatives are key to closing the gender gap in economic participation and decision-making. Equal pay for equal work, promoting women's entrepreneurship, supporting women-owned businesses, and providing access to credit and financial services are essential. Financial literacy and entrepreneurship training can empower women to start and manage businesses, access markets, and achieve economic independence.

Technology and innovation can accelerate progress towards gender equality. Leveraging digital platforms can provide women with access to information, financial services, and markets, enabling them to overcome traditional barriers and participate more fully in economic activities. Technological advancements can also facilitate remote work, enabling women to balance work and family responsibilities and overcome geographical limitations. However, achieving gender equality requires sustained efforts and multi-stakeholder collaboration. Governments, civil society organizations, the private sector, and individuals must work together to challenge discriminatory practices, change societal norms, and promote women's rights. It is crucial to involve men and boys as allies in promoting gender equality, as they play a pivotal role in transforming traditional gender roles and behaviors. Continuous monitoring and evaluation are essential to track progress, identify gaps, and make necessary adjustments. Collecting sex-disaggregated data, conducting research, and measuring indicators of gender equality can inform evidence-based policymaking and program development. Regular assessments can help identify areas that require further attention and ensure that efforts are effective and responsive to the evolving needs and challenges in advancing gender equality. In conclusion, promoting gender equality and women's empowerment is a complex and multifaceted endeavor. It requires addressing the challenges of discrimination, stereotypes, and limited access to resources and opportunities through legal and policy frameworks, education and awareness programs, economic empowerment initiatives, and leveraging technology and innovation. Sustained efforts and multi-stakeholder collaboration are essential for achieving meaningful progress and creating a more equitable and inclusive society where everyone can fully realize their rights and potential, regardless of their gender.

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WOMEN ENTREPRENEURSHIP DEVELOPMENT IN INDIA

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Abstract

Women are an important part in achieving inclusive growth in an economy. In economic development entrepreneurship plays an important role. In India only a very few women participated in entrepreneurial activities till 1980. In 1980 "New Delhi Declaration and Plan of Action" focus development of entrepreneurial skills among women. In 1980-1990 many institutional initiatives were taken for women entrepreneurship. In 1990 after the liberalization, opportunities were recognized and started flourish for women entrepreneurs. The concept and classification of women entrepreneur is discussed. Analysis of hurdles faced by women and various government schemes available for women entrepreneurship is also studied. The few stories of successful women entrepreneurship are also shared. Finally, the conclusion came more rural and lower middle-class women should be supported with more entrepreneurial opportunities for overall growth in the economy.

Keywords: Women Entrepreneurship, Economy, Women Empowerment, Government.

Introduction

Large number of women entrepreneurs have setting up their business. But setting up these were not easy for them, they have faced a lot of difficulties and barriers to become successful. They have to face many challenges and hurdles coming in their way to create a successful business venture. Discrimination in the male dominated society, putting more efforts to prove their credibility. Women choose different style of entrepreneur than men.

Shanta Kahlil Chandra said the women focus more on relationships and believe in intuitions while serving a business, whereas men prefer logical thinking and efficacy. The strength of recognizing the hidden opportunities make them able to gain edge over men. The important part and characteristic in women are "Motherhood skills" which she can easily transfer to job. It includes monitoring, guiding and share information. In developing countries business women have general characteristics like:

1. More concentrated to market sectors as low entry level barriers and less communication required.
2. More focus on services, trade and manufacturing activities

3. Small businesses having five or less than five employees
4. High work experience by owners
5. Traditional technologies were used
6. Mostly employee family people
7. Work at home preferable
8. Household responsibilities affect business growth
9. Less literacy rate by owners and low education.

Women Entrepreneurship in India

There is a provision of equal rights for both men and women in the constitution. 34% of women are involved in industrial activities in India. Women own only 13.6% enterprises. Most of the women worked in unorganized sector. 1975 year was declared as an International year of women. In Mexico, 1975 it was declared that it has been sought equalities between men and women in all the development activities. In next five-year plan India adopted "New Delhi Declaration and Plan of Action" which emphasized on industrial training to women. Since then many government institutions in every state formulated new plans and policies regarding credit and market facilities to provide training facilities for women. Later on, these institutions are formed in each district with different industrial centers. In the year 1995 a different department was setup for the development of Women Entrepreneurship in all states.

MoSPI, released the 6th economic census, In India women creates only 14% of the overall entrepreneurship. A study by Mc Kinsey has shown that India's GDP can rise by 16-60% by 2025 if woman participates equally in the economy which means an addition of \$2.9 trillion in the economy.

Objective of Women Entrepreneurs

- WEP aims to build an ecosystem for women across India to realize their entrepreneurial aspirations, scale-up innovative initiatives and chalk-out sustainable, long-term strategies for their businesses.
- It aims to power a vibrant entrepreneurial ecosystem through an enabling network of industry collaborations, partnerships, mentors and peer-to-peer connect.
- It aspires to substantially increase the number of women entrepreneurs who will create and empower a dynamic New India.
- It aims to address the bottlenecks faced by both aspiring and established women entrepreneurs by streamlining information across government and private sector schemes and initiatives.

- To provide for an interactive website to act as a dedicated resource and knowledge base.

Three Pillars of Women Entrepreneurs

- *Ichha Shakti*– motivating aspiring entrepreneurs to start their enterprise).
- *Gyaan Shakti*– providing knowledge and ecosystem support to women entrepreneurs to help them foster entrepreneurship.
- *Karma Shakti*– providing hands-on support to entrepreneurs in setting-up and scaling up businesses.

NITI Ayog has built the platform in association with ShopClues.com, Mann Deshi Foundation, ASSCOM, CII, FICCI, SIDBI and Facebook.

Classification of Women Entrepreneurs

The women entrepreneur enterprise are defined as, “A small scale industrial unit or industry –related service or business enterprise, managed by one or more women entrepreneurs in a concern, in which they will individually or jointly have a share capital of not less than 51% as shareholders of the private limited company, members of co-operative society”. Women entrepreneurs are classified on the different basis like:

1. On the Basis of Industries, They Work In

- organized and unorganized sector
- traditional and modern industries
- urban and rural areas
- small scale and large-scale industries
- joint venture and single women

2. On the basis of practice of their entrepreneurial activities

- Ist category – entrepreneurs established their ventures in big cities having high level of professional and technical qualifications involved in trading of non -traditional items with good financial resources.
- IInd category – women entrepreneurs” setup their businesses in towns and cities withrequired education involved in trading both traditional and non -traditional items and services like beauty services, clinics, kindergarten etc.
- IIIrd category-women entrepreneurs illiterate or partially illiterate, financially weak and involved in small scale tertiary business such as agriculture, horticulture, fisheries, animal husbandry, dairies, fisheries, hand looms etc.

Challenges Faced by Women Entrepreneurs in India

From physical to social many challenges are faced by Indian women while beginning an entrepreneurial venture.

- **Attitude and social support**

Society plays an important role in women entrepreneurial success. The most common problem faced by women is non-cooperation of family member especially by spouse/ other family members. Besides this family hurdles, dual responsibility; risk appetite etc. has to face by her in the business.

- **Marketing**

sold their products at less price because of less knowledge about market and price. Middlemen exploits them. She needs to be updated on market price, logistics, margin etc. Government should provide field training to them.

- **Finance**

It is a major resource for any business. Women should have knowledge about different government schemes and various money lending options available so they can easily start their ventures without capital constraints. Else they have to use their savings which is also a constraint for them.

- **Operational**

Women struggles at the operational stage as they don't have adequate knowledge about raw materials, optimum use of resources, infrastructure facilities. They majorly lacks in Technical skills and knowledge.

- **Mobility**

In the conservative Indian society, there is always an issue with mobility of the women. Women mobility is very limited. She is dependent for mobility on other family members

- **Multiple Responsibilities**

Women manages many responsibilities from daughter to being a grandmother, she plays different roles. They do multiple works at home. Taking care of their children and elders is also involved. Beyond all these, she has to look after his business also which is a challenge for her.

- **Unawareness of the supports and various government schemes**

provides number of measures to protect women and support them through different schemes but many women are unaware of them. Women entrepreneurs can use the training and development programs provided by the government. NGOs play important role in communicating the government schemes to the needy. Women entrepreneur must be aware of these different government schemes and should develop their business through them. Still awareness is less in context to the women entrepreneurs.

Indian Government Initiatives To Empower Women through Five Year Plans

- First five-year plan (1951-1956) establishment of Centre social welfare board, organization of Mahila Mandal and various community development programmers were a few steps taken in this direction. Second five-year plan (1956-1961) empowerment of women was closely linked with overall approach of intensive agricultural development programmers.
- Third and fourth five-year plan (1961-1966)(1969-1974) female education as the major welfare scheme used.
- Fifth five-year plan (1974-1979) women in need of income and protection were trained. This was coincided with International Women's Decade and the submission of report to the committee on the status of women in India. In 1976 women welfare and department bureau was set up under the ministry of social welfare.
- Sixth five-year plan (1980-1985) a visible shift in welfare to development was noticed. It recognized lack of access to resources as growth impending factor.
- Seventh five-year plan (1985-1990) need of gender equality and empowerment recognized.
- Emphasis was on qualitative aspects such as confidence inculcation, generation of awareness regards to right sand training in skills for better employment
- Eighth five-year plan (1992-1997) focused on women empowerment through Panchayat raj institutions.
- Ninth five-year plan (1997-2002) women components plan was made, under this not less than 30% funds were marked for women specific programmed.
- Tenth five-year plan (2002-2007) national policy of women empowerment (2001) aims at empowering women ensuring survival, protection and development of women and children through rights-based approach.
- Eleventh five-year plan (2007-2012) give much emphasis on credit facilities, marketing facilities and technical training. Government programme and marketing supports are provided through government industrial centers located in each district.1.5 billion dollars was allotted for providing loans to women entrepreneur.
- Twelfth five-year plan (2012-2017) gives more emphasis on removing the social and gender gap in school enrolment and education sector. It also worked on enhancement of higher access to education.

Key Government Schemes and Programmes to Develop Women entrepreneurship

- Integrated Rural Development Programme (IRDP)- The main objective of IRDP is to increase the income generation capability of the women in the families below the poverty line.
- Training of Rural Youth for Self-Employment (TRYSEM)-TRYSEM is a sub – plan of IRDP. It gives training to the youth / young unemployed men & women for Self-employment. The trainees get a stipend of Rs. 150 per month during training period. In this programme 40 % of total seats are reserved for women. About 5 million women have been trained form its inception till now.
- Development of Women & Children In Rural Areas (DWCRA)-DWCRA is the Rural Development Department's scheme to support women's income generation activities through a group of 15 to 20 women each. This programme launched in 1982. The main objective of this programme is to strengthen the economy of rural women by giving them loan and economic assistance to develop their skills, efficiency and abilities to meet their liabilities effectively.
- Norwegian Agency for International Development (NORAD)- It was established in 1982 – 83 to help the educated & uneducated women financially in non-traditional areas of businesslike electronics, computer programming, manufacturing of watches, printing, readymade garments. About one million women were benefited by NORAD Programme.
- Support to Training and Employment Programme- STEP was started in 1987 with the objective to provide training to rural women for increasing their production capacity and income generation. In this programme, they give training in the areas of traditional business like – agriculture, milk, fisheries, handlooms, khadi development.
- Assistance to Rural Women In Non – Farm Development (ARVIND)- The National Bank of Agriculture & Rural Development (NABARD) has started this programme. It provides loan up to Rs. 10 lakhs to the women who work collectively in agriculture for their economic development.
- RashtriyaMahilaKosh(RMK)-RMK was established in 1992 with a fund of Rs. 31 Crore to meet the needs of poor women by giving them loans. RMK is also organizing training, apprenticeship and orientation programmers for trainers under the Indian Mahila Block Societies (IMPS). The objectives of RMK is that credit becomes a widely known and used facility for enhancement of the daily income of poor women. The experience of RMK is that the women would have been able to double or triple their daily income with the credit support

of Rs. 2500 to Rs. 5000. The activities followed may be dairying, petty shop keeping and investment on the agricultural operations.

- Indira MahilaYojna(IMY)-IMY was launched in August, 1995. Its main objective is to give a forward thrust to education, awareness, income generation capacity and empowerment to women.
- Self Employed Women's Association (SEWA) - This institution is based in Ahmadabad. SEWA guides women in rural areas in the use of their own resources to the maximum both physical and financial. It has helped many women from the rural areas of Gujarat and Rajasthan in marketing their hand embroidered Tie & Dye materials both in India and abroad. A commendable job of SEWA is where the rural women entrepreneurs are sent to countries like Australia, Europe and United States for promoting their products
- Self - Help Groups (SHG)- SHG's play a vital role in rural development in general and for rural women in particular. Each SHG comprises 15 - 20 members & has a group leader. Each member of the group contributes money & keeps it in bank in the name of the Group. Group can obtain loan from the bank. The rules & regulations are developed by the group of members. The SHGs are linked with the banks for the external credit inflow. Self Help Group associated with micro credit is the element for the development of any country.

Other Schemes to Develop the Entrepreneurs

1. Khadi And Village Industries Commission (KVIC)
2. Prime Minister's RojgarYojana (PMRY)
3. Entrepreneurial Development programme (EDPs)
4. Management Development programme
5. Women's Development Corporations (WDCs)
6. Marketing of Non-Farm Products of Rural Women (MAHIMA)
7. Trade Related Entrepreneurship Assistance and Development (TREAD)
8. NGO's Credit Schemes
9. Micro & Small Enterprises Cluster Development Programme (MSE-CDP).
10. National Bank for Agriculture and Rural Development's Schemes
11. Rajiv Gandhi MahilaVikasPariyojana (RGMVP)
12. Priyadarshini Project- A programme for Rural Women Empowerment and Livelihood in Mid Gangetic Plains.
13. Mahila SamitiYojana
14. MahilaVikas Nidhi
15. Micro Credit Scheme

16. SIDBI,,s MahilaUdyam Nidhi
17. MahilaVikas Nidhi
18. SBI,,s shree Shakti Scheme.

Few Successful Women Entrepreneurs of India – An Overview

This section gives brief profile of few successful Indian Women Entrepreneurs who established large scale and medium scale enterprises.

1. Dr. KiranMazumdar-Shaw, Chairman & Managing Director of Biocon Ltd. She established Biocon India with a capital of Rs.10, 000in her garage in 1978 – the initial action was to extract an enzyme from papaya. She didn't get loan to expand the business as there is no such provision of loan to women entrepreneur in those days. By her strong intuition and perseverance, she fought well and today her company is the pharmaceutical firm in India.
2. MallikaSrinivasan, Chairman and CEO of TAFE- Tractors and Farm Equipment. TAFE incorporated in 1960. When she joined TAFE, it's worth was US \$2million. Now it has grown to US \$1.6 Billion. This is 3rd largest tractor manufacturing company in the World. In 1999, she won India's first business women of the year award from BBC. In 2012, she awarded Forbes India Women leader of the year.
3. Simone Tata – Chairman of TRENT Ltd. She is French by birth, wife of late Naval Tata and step mother of Ratan Tata. In 1960 she headed Lakme -a small subsidiary of Tata oil mills ltd. In 1996, it becomes India's leading cosmetics company. f fashion in India. At present she is the Chairperson of Trent Limited, a subsidiary of Tata Group.
4. Dr.Preeta Reddy, Managing Director of Apollo Hospitals. Apollo Hospitals is one of the largest healthcare brands of India. Dr.Preeta Reddy, a cardiologist, joined Apollo in 1989. She is instrumental behind the growth of a small hospital in to one of the largest conglomerates.
5. Jyoti Ramnath – Founder of Crafymygift.com. She started this venture while she was studying at IIMBangalore. It provides exclusive gifts for customers on request. It has wide range of corporate customers in India.
6. Vinita Singh – Founder of Quetzal She is an Electrical engineer from IIT-Madras. Quetzal provides educational content to B-Schools and Secondary schools. It also runs India's largest MBA test preparation portal
7. . Annamma JoesphKottukappally – Founder of Annan's is the chain of bakeries and confectionaries in Kerala. In 1995 she started business. Today Ann's is leading bakery chain in Kerala with revenue more than Rs.100 crores.

Conclusion

It's a welcome sign that women entrepreneurship participation has increased at a noticeable rate.

Various strategies are being formed in the economy to brought the equal opportunities in all scopes for Indian women and laws are enacted with equal opportunities and rights in education, political processes and employment. But only a small section of women is benefitted by the government developmental activities and that is urban middle class which is more benefitted with government schemes. Rural Women Entrepreneurship should need some attention now. As Nearly 70% of workforce involved in agriculture related activities, rural women entrepreneurship development will empower women and improve village economy and as a whole improve country's economy. Awareness about available opportunities, Training programme and financial assistance should be spread through media. Women entrepreneurship must be changed with updated entrepreneurial skills and training to meet the trends and challenges of global markets. It should also helps in excellence in entrepreneurial arena with competency to strive and sustain in the market. If everyone wants to come forward and support the women and understands their important role in business, then soon the conservative and thought process can be beat which is the greatest barrier in our country's development process

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ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING: IMPLICATIONS AND APPLICATIONS IN COMMERCE

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Abstract

Artificial intelligence (AI) and machine learning (ML) have emerged as powerful technologies with significant implications and applications in the field of commerce. This essay explores the implications of AI and ML in commerce, including their impact on customer experience, business operations, and decision-making processes. It also discusses the applications of AI and ML in various sectors of commerce, such as retail, e-commerce, marketing, supply chain management, and finance. Moreover, the essay examines the challenges and ethical considerations associated with the use of AI and ML in commerce, highlighting the need for responsible and transparent practices.

Keywords: *Artificial Intelligence, Machine Learning, Commerce, Implications, Applications.*

Introduction

Artificial intelligence (AI) refers to the development of computer systems capable of performing tasks that typically require human intelligence, such as visual perception, speech recognition, decision-making, and problem-solving. Machine learning (ML), on the other hand, is a subset of AI that focuses on enabling computer systems to learn from data and improve their performance without explicit programming. The integration of AI and ML in commerce has been rapidly increasing in recent years. Businesses are leveraging these technologies to gain a competitive edge, enhance customer experiences, streamline operations, and make data-driven decisions. The growing importance of AI and ML in commerce can be attributed to several factors.

- **Increasing Data Availability:** The digital age has generated vast amounts of data from various sources, including customer interactions, online transactions, social media, and sensors. AI and ML algorithms can analyze and extract valuable insights from these data sets, providing businesses with a deeper understanding of their customers, markets, and operations.
- **Advanced Analytics and Predictive Capabilities:** AI and ML techniques enable businesses to analyze large and complex datasets to identify patterns,

correlations, and trends. This allows for the development of predictive models that can anticipate customer preferences, market trends, and demand patterns. By leveraging these capabilities, businesses can make proactive and informed decisions, leading to improved performance and competitiveness.

- **Automation and Efficiency:** AI and ML technologies automate repetitive tasks and processes, freeing up human resources for more strategic and value-added activities. For example, chatbots can handle customer inquiries, machine learning algorithms can automate data entry and analysis, and robotic process automation (RPA) can streamline routine tasks. This automation improves efficiency, reduces errors, and enhances overall productivity.
- **Personalization and Customer Experience:** AI and ML algorithms can analyze vast amounts of customer data to personalize recommendations, offers, and experiences. By understanding customer preferences, behaviors, and needs, businesses can deliver targeted and relevant content, products, and services, thereby enhancing customer satisfaction and loyalty.
- **Competitive Advantage:** The integration of AI and ML in commerce allows businesses to stay ahead of the competition by leveraging advanced technologies for innovation, product development, and service delivery. Organizations that effectively harness AI and ML can gain insights, optimize processes, and create unique value propositions that differentiate them in the marketplace.

Overall, the growing importance and integration of AI and ML in commerce stem from their potential to drive business growth, enhance customer experiences, and enable data-driven decision-making. As these technologies continue to advance, their influence on commerce is expected to expand further, transforming industries and shaping the future of business.

Implications of AI and ML in Commerce

a. Enhanced Customer Experience

- **Personalized recommendations and tailored experiences:** AI and ML algorithms analyze customer data to understand preferences, behaviors, and purchase history. This enables businesses to deliver personalized recommendations, targeted advertisements, and tailored experiences that align with individual customer needs and preferences.
- **Chatbots and virtual assistants for customer support:** AI-powered chatbots and virtual assistants provide 24/7 customer support, addressing customer queries and providing instant assistance. These intelligent systems can handle routine inquiries, resolve issues, and guide customers through the purchasing process, enhancing customer satisfaction and reducing response times.

b. Improved Business Operations

- Automation of routine tasks and processes: AI and ML technologies automate repetitive tasks, such as data entry, document processing, and inventory management. This reduces human error, speeds up processes, and frees up employees' time to focus on higher-value activities.
- Predictive analytics for demand forecasting and inventory management: ML algorithms can analyze historical sales data, market trends, and external factors to predict future demand patterns. This enables businesses to optimize inventory levels, reduce stockouts, and improve supply chain efficiency, resulting in cost savings and improved customer satisfaction.

c. Enhanced Decision-Making

- Data-driven insights for strategic planning and decision-making: AI and ML algorithms analyze large volumes of data to identify trends, patterns, and correlations. This provides businesses with valuable insights for strategic planning, market analysis, and product development. Data-driven decision-making helps businesses stay agile, identify growth opportunities, and make informed choices.
- Real-time analytics for dynamic pricing and risk management: ML algorithms can analyze real-time market data, competitor prices, and customer behavior to optimize pricing strategies. Dynamic pricing allows businesses to respond to market changes, maximize revenue, and remain competitive. ML algorithms can also identify potential risks and fraud patterns, enabling businesses to proactively mitigate risks and protect against fraudulent activities.

By leveraging AI and ML in these areas, businesses can enhance customer experiences, streamline operations, and make more informed and data-driven decisions. This ultimately leads to improved business performance, increased efficiency, and a competitive advantage in the rapidly evolving commerce landscape.

Applications of AI and ML in Commerce**a. Retail and E-Commerce**

- Intelligent product recommendations: AI and ML algorithms analyze customer data, purchase history, and browsing behavior to provide personalized product recommendations. This enhances the shopping experience, increases customer engagement, and drives sales.

- Predictive customer behavior analysis: ML algorithms analyze customer data to predict buying patterns, preferences, and customer churn. This enables businesses to tailor marketing strategies, optimize inventory, and improve customer retention.

b. Marketing and Advertising

- Targeted marketing campaigns: AI and ML algorithms analyze customer data, demographic information, and online behavior to create targeted marketing campaigns. This ensures that marketing efforts reach the right audience, resulting in higher conversion rates and improved ROI.
- Sentiment analysis and social media monitoring: AI and ML technologies can analyze social media posts, customer reviews, and feedback to gauge sentiment and monitor brand reputation. This helps businesses understand customer perceptions, identify emerging trends, and respond effectively to customer feedback.

c. Supply Chain Management

- Optimization of logistics and inventory management: AI and ML algorithms optimize supply chain operations by predicting demand, optimizing routing and transportation, and improving inventory management. This reduces costs, improves efficiency, and minimizes stockouts and excess inventory.
- Predictive maintenance and demand forecasting: ML algorithms can analyze data from sensors and equipment to predict maintenance needs and optimize maintenance schedules. This helps businesses reduce downtime, increase asset lifespan, and improve overall supply chain performance.

d. Finance and Banking

- Fraud detection and prevention: AI and ML algorithms analyze large volumes of financial data to identify patterns and anomalies that may indicate fraudulent activities. This helps financial institutions detect and prevent fraud, safeguard customer accounts, and maintain trust.
- Credit scoring and risk assessment: ML algorithms analyze customer data, credit histories, and financial information to assess creditworthiness and determine risk levels. This enables financial institutions to make informed lending decisions and manage risks effectively.

These are just a few examples of how AI and ML are transforming various aspects of commerce. By harnessing the power of these technologies, businesses can gain a competitive edge, enhance operational efficiency, and deliver personalized experiences to their customers.

Challenges and Ethical Considerations

- a. **Data privacy and security:** The integration of AI and ML in commerce raises concerns about the privacy and security of customer data. Businesses must ensure that proper measures are in place to protect sensitive information, comply with data protection regulations, and maintain customer trust. Encryption, secure data storage, and robust access controls are crucial in safeguarding data privacy and preventing unauthorized access or breaches.
- b. **Bias and fairness in AI algorithms:** AI algorithms learn from historical data, and if that data is biased, it can perpetuate unfair outcomes and discrimination. It is essential to address bias and ensure fairness in AI systems. This involves using diverse and representative training datasets, employing algorithmic fairness techniques, and conducting regular audits to detect and mitigate bias.
- c. **Transparency and explainability of AI systems:** AI algorithms can be complex and difficult to interpret, leading to concerns about their transparency and accountability. Businesses need to ensure that AI systems are explainable, meaning the reasoning behind their decisions can be understood. This promotes trust, enables users to understand how AI systems work, and facilitates regulatory compliance. Techniques such as model explainability and interpretability can provide insights into the decision-making process of AI algorithms.

Addressing these challenges is crucial to harnessing the full potential of AI and ML in commerce. Businesses should prioritize ethical considerations, establish clear guidelines and standards, and involve diverse stakeholders in the development and deployment of AI systems. By promoting data privacy, fairness, and transparency, businesses can build trust, mitigate risks, and maximize the benefits of AI and ML in commerce.

Conclusion

The integration of AI and ML in commerce raises concerns about the privacy and security of customer data. Businesses must ensure that proper measures are in place to protect sensitive information, comply with data protection regulations, and maintain customer trust. Encryption, secure data storage, and robust access controls are crucial in safeguarding data privacy and preventing unauthorized access or breaches. AI algorithms learn from historical data, and if that data is biased, it can perpetuate unfair outcomes and discrimination. It is essential to address bias and ensure fairness in AI systems. This involves using diverse and representative training datasets, employing algorithmic fairness techniques, and conducting regular audits to detect and mitigate bias.

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TECHNOLOGY STARTUPS: INNOVATION AND GROWTH IN EMPLOYMENT

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Abstract

This paper explores the relationship between technology startups, innovation, and growth. Technology startups play a crucial role in driving economic growth and technological advancements in various industries. By fostering a culture of innovation, startups introduce disruptive technologies, challenge traditional business models, and generate new opportunities. This paper examines the key factors contributing to the success of technology startups, the innovation processes they employ, and the strategies they adopt to achieve sustained growth. Furthermore, it discusses the impact of startups on the economy and society, as well as the challenges they face. The findings of this research provide insights into the significance of technology startups as drivers of innovation and growth.

Keywords: *Technology Startups, Innovation, Growth, Entrepreneurship, Disruptive Technologies.*

Background and Significance of Technology Startups

With the emergence of the fourth industrial revolution and the evolution of technology, there has been a notable shift in business models and structures. Consequently, technology startups have garnered significant attention due to their pivotal role in fostering employment opportunities and driving innovation. A crucial driving force behind technology startups is the pursuit of radical innovations that can lead to transformative changes in employment dynamics. Historical experiences of job displacement resulting from technological advancements during previous industrial revolutions have prompted ongoing concerns about the intricate relationship between innovation and employment. These concerns stem from the necessity to strike a balance between the macroeconomic benefits derived from technological innovation and the individual satisfaction associated with navigating job transitions, thereby ensuring sustainable socio-economic growth. Additionally, apprehensions arise regarding the potential job displacement caused by the rapid advancement of high-end technologies, such as artificial intelligence and the internet of things, as they have the capacity to replace both physical and intellectual labor.

Technology startups have the potential to materialize this phenomenon by ushering in the emergence of new job opportunities and driving changes in existing

ones. In light of these transformative shifts, our attention shifts from solely focusing on the quantity of labor, as measured by factors such as the unemployment rate, to considering the qualitative aspects of employment, including education and working hours. Thus, it becomes imperative to assess not only the quantitative impact of technology startups on employment but also their qualitative implications. Technology startups are primarily driven by their emphasis on possessing and leveraging advanced technology, founded on a deep understanding of its potential. They are commonly defined as entities that create products and services through the development and utilization of cutting-edge technology. Numerous research reports have demonstrated the positive effects of technology startups on employment growth and performance. Nevertheless, ongoing debates persist regarding the precise impact of entrepreneurship on employment status.

These arguments prompt inquiries into the ways technology startups influence changes in employment and foster innovation. While technology startups are expected to have a quantitative impact on employment creation, there is limited research addressing their effects on the quality of employment. Additionally, little attention has been given to investigating the relationship between technology startups and the outcomes of innovation in relation to employment. To address these research questions and shed light on the role technology startups can play in employment and innovation, this study aims to accomplish the following objectives. First, it will examine the impact of technology startups on employment change, specifically focusing on qualitative aspects. Second, it will explore how employment changes influence innovative performance. Lastly, it will assess the technological innovation exhibited by technology startup companies, considering both product and process innovation, in relation to employment change.

Literature Review

Impact of technology and employment

David B. Audretsch and Julie Ann Elston (2004) conducted a study on "Can institutional change Impact High- Technology firm growth? Evidence from Germany's Neuer Markt." The study investigated to facilitate the transition of the German economy from traditional manufacturing industries to emerging technologies, a dedicated segment of the Frankfurt exchange was established in 1997 known as "Der Neue Markt." This study presents compelling evidence that not only did numerous new firms secure funding from the Neuer Markt, but also, for the first time in recent history, Germany achieved the milestone of enabling smaller firms to outpace larger ones in terms of growth. These findings indicate that the implemented policies not only successfully promoted the emergence of a new breed of companies that might not have otherwise existed, but also transformed the sources of growth and innovation within the German economy.

Andrew A. Toole , Dirk Czarnitzki , and Christian Rammer (2014) conducted a study on “University Research Alliances, Absorptive Capacity, and the Contribution of Startups to Employment Growth”. The study investigated the impact of university research alliances and other cooperative links with universities on the growth of startup employment. The startup's "scientific absorptive capacity" plays a crucial role in leveraging the benefits of university research alliances, but it may not be as significant for other university connections. Additionally, quantify the overall contribution of startup firms to employment and attribute the employment gains to both university research alliances and other university connections. The findings indicated substantial contributions to employment growth from university research alliances and other university connections. However, the scientific absorptive capacity is particularly critical for university research alliances. Among the startup population, only 7% maintained a university research alliance. Nevertheless, within this group, 3.4% of the total jobs created can be attributed to their alliances. These outcomes highlight the importance of university connections for job growth, with university research alliances playing a significant role in fostering job creation for firms that have established such alliances.

Employment and Innovation

Seungku Ahn , Kwon-Sik Kim , Kwang-Hoon Lee (2022) conducted a study on Technological capabilities, Entrepreneurship and Innovation of Technology based Startups: The resource based View”. The study investigated Despite large-scale financial support of the government, there is increasing criticism about the inefficiency of public R&D investment that fails to lead directly to technological innovation of technology-based start-ups. This paper analyzes the factors that influence technological innovation in Korean technology-based start-ups based on the resource-based view (RBV). The empirical analysis combines ordinary least squares and ordered probit analysis of data collected from 248 technology-based start-ups in Korea. The analysis results statistically confirm the effects of technological capabilities and entrepreneurship on technological innovation. First, a start-up’s technological capabilities measured by patents and technological competitiveness have significant positive effects on technological innovation, while the effect of having an in-house R&D department for technological innovation is not significant. Second, entrepreneurship has a significant positive effect on the technological innovation of a start-up, and this positive effect has a moderating effect that further promotes the positive effect of technological competitiveness on technological innovation.

Michela Piccarozzi (2017) conducted a study on “Does Social Innovation Contribute to Sustainability? The Case of Italian Innovative Start-Ups” This study

investigated to find out start-ups, alongside other enterprises, play a significant role in driving technological advancements, commercialization, and national economic development. As firms serve as the epicenter of innovation within a society, it is crucial to understand their dynamics. In Italy, recent regulatory measures have focused on establishing a framework for defining and regulating innovative start-ups. Of particular interest are innovative start-ups with a social vocation, which have received limited attention in existing literature. This paper has a dual objective: firstly, to examine the relationship between social innovation and sustainability within these businesses, and secondly, to explore avenues for enhancing sustainability through them.

To achieve these objectives, the researchers analyzed Italian cases of innovative start-ups using content analysis applied to the Social Impact Assessment Documents provided by the firms. The findings reveal that these documents explicitly address social innovation and sustainability in various ways. However, they do not explicitly establish a direct link between social innovation and sustainability. Nevertheless, a careful examination of these documents uncovers a clear association between social innovation and the three dimensions of sustainability: economic, social, and environmental. This realization presents an opportunity for better management and integration of social innovation with sustainability objectives.

Statement of the Problem

Technology startups play a critical role in driving innovation and economic growth, often serving as key engines of job creation. As these startups evolve and scale, their ability to innovate becomes crucial not only for their survival but also for their continued expansion and success. However, the relationship between employment changes within technology startups and their innovative performance remains a complex and underexplored area of research. Hence this study aims to increase an understanding the impact of tech- startups on employment change in order to contribute towards the influence in innovative performance considering both product and process innovation.

Objectives of the Study

The specific objectives of the study are as follows:

- To examine the impact of technology startups on employment change.
- To explore how employment changes influence innovative performance.
- To assess the technological innovation exhibited by technology startup companies, considering both product and process innovation.

Nature and Source of Data

The secondary data on several aspects of the activities of the technology startups in employment change were collected from different sources.

Impact of Technology Startups on Employment Change

Job Creation: Technology startups have been significant contributors to job creation. A study by the Kauffman Foundation found that startups, including those in the technology sector, accounted for a substantial portion of net job creation in the United States. These startups often require a range of specialized skills, leading to the creation of jobs in fields such as technology, software development, data analysis, marketing, and sales.

High-Growth Potential: Technology startups have the potential for rapid growth and scalability, which can result in increased employment opportunities. As startups secure funding and expand their operations, they often hire new employees to support their growth strategies. This can lead to job creation not only within the startup itself but also in the surrounding ecosystem, as startups collaborate with or supply services to other businesses.

Industry Disruption: Technology startups often introduce disruptive innovations that reshape traditional industries. While this disruption may lead to job losses in some sectors, it can also create new job opportunities in emerging industries. For example, the rise of ride-sharing startups has transformed the transportation sector, leading to the creation of jobs for drivers, as well as in areas such as app development, customer support, and vehicle maintenance.

Regional Economic Growth: Technology startups can contribute to regional economic growth. Concentrations of startups, often referred to as "startup ecosystems" or "innovation hubs," can attract investment, talent, and resources to a region, leading to increased employment opportunities and economic development.

It is important to note that while technology startups have a positive impact on employment change, the specific effects can vary depending on factors such as the startup's industry, business model, and market conditions. Additionally, there may be challenges and risks associated with startup employment, such as job instability and the potential for business failures.

Influence of Employment Changes Through Innovative Performance

• Measuring Innovative Performance in Technology Startups

In today's fast-paced and highly competitive business landscape, technology startups face the constant challenge of driving innovation to stay ahead. Measuring innovative performance is critical for startups to evaluate the effectiveness of their innovation strategies, identify areas for improvement, and demonstrate their

competitive advantage. However, various metrics and approaches are used to measure innovative performance in technology startups, considering both quantitative and qualitative measures which includes:

- ❖ **Key Performance Indicators (KPIs) for Innovative Performance:** One of the primary ways to measure innovative performance is through key performance indicators (KPIs) that provide quantifiable insights. These KPIs include:
 - ❖ **Research and Development (R&D) Expenditure:** The amount of investment allocated to R&D activities reflects a startup's commitment to innovation. Tracking R&D expenditure allows startups to assess their level of investment in developing new technologies, products, or services.
 - ❖ **Time-to-Market for New Innovations:** The speed at which a startup can bring innovations to market is crucial in competitive industries. Measuring the time taken from ideation to commercialization helps assess the startup's efficiency and agility in executing innovative projects.
 - ❖ **Customer Satisfaction and Feedback:** Feedback from customers regarding the usability, effectiveness, and overall satisfaction with a startup's products or services provides valuable insights into the success and impact of their innovations.
- **Employee Engagement and Motivation in Driving Innovation**

In today's highly competitive and rapidly evolving business landscape, innovation has become a key driver of success for organizations, particularly in the technology sector. While the importance of innovation is widely recognized, harnessing the creative potential of employees is crucial for driving meaningful and sustainable innovation. By understanding how engaged and motivated employees contribute to innovation and identifying strategies to enhance their involvement, organizations can create an environment that nurtures innovation and fuels growth.
- **The Link Between Employee Engagement, Motivation, and Innovation**
 - ❖ **Employee Engagement:** Employee engagement refers to the emotional commitment and dedication employees have toward their work and organization. Engaged employees are passionate, motivated, and fully invested in their roles, which creates an ideal foundation for innovation.
 - ❖ **Employee Motivation:** Motivation is the internal drive that influences employees' behavior and effort. Motivated employees are more likely to exhibit proactive behaviors, take risks, and generate innovative ideas.
 - ❖ **Risk-Taking and Experimentation:** Motivated employees exhibit a willingness to take calculated risks and experiment with new ideas, pushing boundaries and driving disruptive innovations.

- ❖ **Problem-Solving and Creativity:** Engaged employees are more likely to display higher levels of problem-solving skills and creative thinking, allowing them to identify novel approaches and generate innovative solutions.
- **Technological innovation exhibited by technology startup companies, considering both product and process innovation**
 - ❖ **Product Innovation in Technology Startups:** Product innovation refers to the creation and introduction of new or improved products that address market needs, solve problems, or provide novel solutions. Technology startups exhibit various forms of product innovation, such as:
 - ❖ **Disruptive Technologies:** Startups often introduce disruptive technologies that challenge existing products and market dynamics. These innovations can redefine industries, create new markets, and revolutionize customer experiences.
 - ❖ **New Features and Functionality:** Startups continuously enhance and evolve their products by adding new features and functionalities. This allows them to stay ahead of competitors, meet changing customer demands, and deliver superior user experiences.
 - ❖ **User-Centric Design:** Technology startups prioritize user-centered design methodologies, ensuring their products are intuitive, user-friendly, and provide seamless interactions. This customer-centric approach drives innovation by considering user needs and preferences.
 - **Process Innovation in Technology Startups:** Process innovation involves introducing new methods, techniques, or approaches to improve operational efficiency, enhance productivity, and streamline workflows. Technology startups exhibit process innovation in several ways:
 - ❖ **Agile Development Methodologies:** Startups often embrace agile development methodologies, such as Scrum or Kanban, to enhance flexibility, collaboration, and responsiveness during product development cycles. This iterative approach accelerates innovation and enables rapid product iterations.
 - ❖ **Lean Startup Principles:** Startups adopt lean startup principles, emphasizing the rapid validation of ideas, experimentation, and learning from customer feedback. This lean approach minimizes waste, maximizes resource utilization, and speeds up the innovation cycle.
 - ❖ **Automation and Digitalization:** Technology startups leverage automation and digitalization to optimize processes, reduce manual tasks, and improve efficiency. By automating routine activities, startups can allocate more time and resources to innovation and strategic initiatives.

Technological innovation exhibited by technology startups encompasses both product and process innovation. Startups introduce disruptive technologies, enhance product features, and prioritize user-centric design to create innovative products that address market needs. Simultaneously, they embrace agile methodologies, lean principles, and digitalization to optimize processes, enhance efficiency, and drive operational excellence. The synergy between product and process innovation enables startups to gain a competitive edge, deliver superior user experiences, and fuel sustained growth. By continually pushing the boundaries of technological innovation in both product and process domains, technology startups shape industries, inspire change, and pave the way for the future of innovation.

Findings of the Study

The study aimed to examine the impact of technology startups on employment change, explore how employment changes influence innovative performance, and assess the technological innovation exhibited by technology startup companies, considering both product and process innovation. The findings are as follows:

- **Impact of Technology Startups on Employment Change**
 - ❖ Technology startups have a significant impact on employment change by creating new job opportunities. They often require a diverse range of skills and expertise, leading to job creation in areas such as software development, data analysis, digital marketing, and customer support.
 - ❖ Startups also contribute to employment change through their ability to adapt and disrupt traditional industries, leading to the transformation or displacement of certain job roles. This dynamic nature of startups can lead to job reallocation and retraining of employees.
- **Influence of Employment Changes on Innovative Performance**
 - ❖ Employment changes play a crucial role in shaping the innovative performance of technology startups.
 - ❖ The recruitment and retention of highly skilled and talented employees are vital for startups to foster a culture of innovation. Hiring individuals with diverse backgrounds and expertise brings fresh perspectives and promotes creative problem-solving.
- **Technological Innovation Exhibited by Technology Startup Companies**
 - ❖ Technology startups exhibit both product and process innovation to drive their competitive advantage.
 - ❖ Product innovation is a key focus for startups, as they aim to develop new or improved offerings that address market needs, provide unique value propositions, and disrupt existing industries. Startups leverage emerging technologies and user-centric design principles to create innovative products with enhanced features and functionalities.

- ❖ Process innovation is critical for startups to optimize their operations, enhance efficiency, and accelerate their innovation cycles. Startups adopt agile development methodologies, lean startup principles, and automation to streamline workflows, improve collaboration, and reduce time-to-market.

Overall, the findings of the study highlight the profound impact of technology startups on employment change, the significance of employment changes in driving innovative performance, and the emphasis placed on both product and process innovation by startups to stay competitive and drive growth. These insights contribute to our understanding of the dynamics of technology startups and their role in shaping innovation and employment in the modern economy.

Conclusion

Technology startups play a crucial role in driving innovation, fostering economic growth, and shaping employment landscapes. This essay has explored the relationship between technology startups, innovation, and employment, highlighting the significant impact of startups on employment change and the role of innovation in driving growth. The findings demonstrate that startups create new job opportunities, require diverse skills, and contribute to job reallocation and transformation in various industries.

Moreover, the study has emphasized the importance of innovation in technology startups. Startups leverage product and process innovation to differentiate themselves, disrupt markets, and gain a competitive edge. They prioritize user-centric design, employ emerging technologies, and adopt agile and lean methodologies to develop innovative products and optimize their operations. This commitment to innovation drives economic growth, fuels industry evolution, and attracts talent.

Technology startups continue to be powerful drivers of innovation and employment growth. Further research and exploration of policy frameworks, entrepreneurial ecosystems, technological disruption, skills development, sustainability, and social impact will contribute to a deeper understanding of the role of technology startups in shaping innovation and employment landscapes, driving economic growth, and addressing societal challenges.

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WOMEN ENTREPRENEURS IN DIGITAL INDIA

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Abstract

The role of women in the business landscape has evolved significantly in recent years, particularly in the context of Digital India's transformative initiatives. The government's Digital India campaign has provided a robust platform for women entrepreneurs to leverage technology, bridge gender disparities, and tap into various opportunities. This paper aims to analyze the emergence and impact of women entrepreneurs in the digital sector in India, highlighting their contributions to the economy and society. The study draws on a comprehensive review of existing literature, data's and to investigate the challenges and opportunities faced by women entrepreneurs in the digital ecosystem. However, the study also showcases inspiring success stories of women who have overcome these barriers to create innovative businesses and disrupt traditional industries. The study concludes by highlighting the importance of fostering an enabling environment that supports and nurtures women entrepreneurs in the digital space.

Keywords: *Women entrepreneurs, Digital India, Digital economy, Gender equality, Digital transformation.*

Introduction

A woman's from half of the society. The pressure of domestic work such as home- making, child care and health care makes it efficient, if not impossible, for India women to engage in the entrepreneurial actives. But the remarkable success of wide-spread e-commerce, helps many women in marketing their long-cherished of becoming entrepreneurs in the reality. Women entrepreneur is one who incubates new ideas starts her enterprise added value to society based on their independent initiative. She is self confident and has faith in herself and her abilities. She has the strength to bring the change and overcome resistance. The increasing presence of women as entrepreneurs has led to significant business and economic growth in the country. Women-owned business enterprises are playing a prominent role in society by generating employment opportunities in the country, bringing in demographic shifts and inspiring the next generation of women founders. With a vision to promote the sustainable development of women entrepreneurs for balanced growth in the country, Startup India is committed towards strengthening women entrepreneurship in India through initiatives, schemes, creation of enabling

networks and communities and activating partnerships among diverse stakeholders in the startup ecosystem.

In recent years, the emergence of digital India has led to a significant transformation in various sectors, including entrepreneurship. One of the most notable developments has been the rise of women entrepreneurs who are making remarkable strides in the digital landscape. Women in India are breaking traditional barriers and embracing technology to build successful ventures, contributing significantly to the nation's economic growth and empowerment of women. The digital revolution in India has opened up unprecedented opportunities for women to leverage technology, access information, and connect with a global audience. Empowered with digital tools and platforms, women entrepreneurs are not only establishing innovative businesses but also driving social change and gender equality.

Women Entrepreneurs in India

Women who start and run their own businesses are considered female entrepreneurs. A woman entrepreneur is one who improves the lives of economically and socially disadvantaged women in society. Go describes women entrepreneurs as "a business owned and controlled by women that creates jobs for its employees." Encouraging women to initiate and sustain enterprises could play a pivotal role in uplifting India's economy and bring about improvements on various social indicators linked to the quality of life and well-being of families. Being inextricably tied with care giving roles at home, like caring for children, preparing food, etc, also means that women tend to prioritize the well-being of their families and therefore spend a considerable portion of their income on ensuring better education for their children along with the health and nutrition of family members. The Landscape Study on Women Entrepreneurship by EdelGive Foundation shows that women entrepreneurs spend most of their income on food (65%), children's education (53%), clothing (51%) and health/medical facilities (24%), which results in better educated and healthier generations. Moreover, past studies have indicated that promoting women's participation in employment and entrepreneurship in India can potentially increase the country's gross domestic product (GDP) by \$0.7 trillion by 2025. Yet, despite the positive impact that women's entrepreneurship has on societal development and women's empowerment, the contribution of women to India's GDP is estimated at 17% as compared to the global average of 37%, with the share of women-led micro, small and medium enterprises (MSMEs) being a meager 14% .

The women entrepreneurs have leveraged technology and innovation to create successful ventures and drive social and economic change in the digital space in India:

1. **Falguni Nayar:** She is the founder of Nykaa, an e-commerce platform focused on beauty and wellness products. Nykaa has become one of the leading online beauty retailers in India.
2. **Richa Kar:** Richa Kar is the founder of Zivame, an online lingerie and intimate apparel store that has transformed the way women shop for undergarments in India.
3. **Upasana Taku:** Co-founder of MobiKwik, a digital wallet and mobile payments platform, Upasana has played a significant role in promoting cashless transactions in India.
4. **Radhika Ghai Aggarwal:** Co-founder of ShopClues, an online marketplace that connects buyers and sellers across India, offering a wide range of products.
5. **Shradha Sharma:** Founder and CEO of YourStory, a media platform that showcases stories of startups, entrepreneurs, and change-makers in India.
6. **Sabina Chopra:** She co-founded Yatra.com, one of India's leading travel portals, making it easier for people to book flights, hotels, and travel packages online.
7. **Suchi Mukherjee:** Founder of Limeroad, an e-commerce platform known for its social shopping experience, where users can create their own fashion looks and share them.
8. **Aditi Gupta:** Co-founder of Menstrupedia, a digital platform that educates people about menstruation, breaking taboos and promoting menstrual hygiene.
9. **Anisha Singh:** Founder of MyDala, a platform that provides deals and discounts on various services, making it popular among online shoppers.
10. **Neha Singh:** Co-founder of Tracxn, a startup intelligence platform that tracks data on emerging tech companies and sectors.

These women have overcome various challenges and have shown immense determination in building successful digital enterprises. They continue to inspire and encourage other aspiring women entrepreneurs in India to embrace technology and create a lasting impact in the digital ecosystem.

Women Entrepreneurs in Digital India

Women entrepreneurs in Digital India face both opportunities and challenges. It's important to note that the landscape may have evolved since then, but I'll provide insights based on the information available up to that point:

Opportunities for Women Entrepreneurs in Digital India

1. **Digitalization and E-commerce:** With the growth of Digital India initiatives, more business activities have moved online. This presents an excellent opportunity for women entrepreneurs to establish e-commerce ventures, digital marketing agencies, or online service providers.
2. **Access to a Wider Audience:** The internet allows women entrepreneurs to reach a global audience from the comfort of their homes. They can leverage social media, online marketplaces, and digital advertising to promote their businesses internationally.
3. **Government Initiatives and Support:** The Indian government has launched various schemes and programs to support women entrepreneurs, including financial assistance, skill development programs, and networking opportunities.
4. **Remote Work and Flexibility:** The digital era enables flexible work arrangements, which can be particularly advantageous for women entrepreneurs who may need to balance family responsibilities with business ventures.
5. **Empowerment through Education:** Digital platforms offer numerous educational resources, online courses, and webinars that empower women with the knowledge and skills needed to start and grow their businesses.

Challenges Faced by Women Entrepreneurs in Digital India

Despite the positive growth and progress, women entrepreneurs in Digital India also face some challenges, including:

1. **Gender Bias:** The tech industry, like many others, still faces gender bias, making it difficult for women to access funding, resources, and opportunities at times.
2. **Work-Life Balance:** Balancing entrepreneurial responsibilities with family and societal expectations can be challenging for women, affecting their entrepreneurial journey.
3. **Access to Funding:** Access to capital and venture funding remains a significant obstacle for many women-led startups in India.
4. **Digital Literacy:** While digital adoption is increasing in India, some women entrepreneurs still face challenges related to digital literacy, which can affect their ability to leverage digital tools effectively.

Despite these challenges, women entrepreneurs in Digital India are making strides, and the ecosystem is gradually becoming more inclusive and supportive. The government and various organizations are taking initiatives to encourage and

empower women to participate in the digital economy and entrepreneurship, which will likely contribute to further growth and opportunities for women in the future.

Conclusion

Women entrepreneurs in Digital India have demonstrated remarkable strength, resilience, and innovation in transforming the landscape of the country's digital economy. They have overcome various challenges, including societal norms, gender biases, and access to resources, to establish their ventures and contribute significantly to economic growth. In conclusion, the rise of women entrepreneurs in Digital India has been a powerful force for change. Their active participation in various sectors, from e-commerce to fintech, has led to the creation of job opportunities, the development of innovative solutions, and the empowerment of women in the workforce. As they continue to break barriers and pave the way for others, it is crucial for policymakers and society at large to provide adequate support, resources, and an enabling environment to further foster the growth of women-led businesses.

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ANALYSIS OF SECURITY IN MULTIPATH DISTANCE VECTOR ROUTING

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Abstract

Secured optimization with on-demand multipath distance vector (OMDVM) in mobile ad-hoc networks (MANETs) is a promising approach to improve the performance and security of MANETs. OMDVM is a routing protocol that creates multiple paths between source and destination nodes, which can help to improve reliability and performance in the event of link failures or congestion. Additionally, OMDVM can be used to implement security mechanisms such as authentication and encryption, which can help to protect MANETs from denial-of-service attacks and other malicious activity. There are a number of benefits to using OMDVM in MANETs. First, OMDVM can improve reliability by providing multiple paths between source and destination nodes. This means that if one path fails, communication can still be maintained using the other paths. Second, OMDVM can improve performance by load-balancing traffic across multiple paths. This can help to reduce congestion and improve the overall throughput of the network. Third, OMDVM can be used to implement security mechanisms, which can help to protect MANETs from malicious activity.

Keywords: Load Balancing, Efficiency, Routing.

Association of Challenges in OMDV: There are also some challenges associated with using OMDVM in MANETs. One challenge is that OMDVM can increase the overhead of the network. This is because OMDVM requires nodes to maintain information about multiple paths, which can increase the amount of data that needs to be transmitted. Another challenge is that OMDVM can be more complex to implement than other routing protocols. This is because OMDVM needs to take into account the security mechanisms that are being used, which can add to the complexity of the protocol. OMDVM is a promising approach to improving the performance and security of MANETs. However, there are some challenges associated with using OMDVM, such as increased overhead and complexity. These challenges need to be addressed before OMDVM can be widely adopted in MANETs.

Introduction

Overhead of OMDVM without Sacrificing Reliability or Performance

There are a number of ways to reduce the overhead of OMDVM without sacrificing reliability or performance. Some of these methods include: Compressed routing tables. OMDVM routing tables can be compressed to reduce the amount of data that needs to be transmitted. This can be done by using a variety of compression techniques, such as lossless compression or lossy compression. Selective routing. OMDVM can be configured to only maintain information about the most important paths. This can help to reduce the amount of overhead associated with maintaining information about all possible paths. Efficient routing algorithms. OMDVM can use efficient routing algorithms that minimize the amount of data that needs to be transmitted. This can be done by using algorithms that only transmit information about the most important changes to the network topology. It is important to note that reducing the overhead of OMDVM may also reduce the reliability or performance of the protocol. For example, if the routing tables are too compressed, it may be difficult to find a path if one of the paths fails. Similarly, if selective routing is used too aggressively, it may be difficult to maintain connectivity between nodes. Therefore, it is important to carefully balance the need to reduce overhead with the need to maintain reliability and performance.

Implementation of OMDVM Without Compromising Security

Simplified security mechanisms. OMDVM can be configured to use simplified security mechanisms, such as authentication without encryption. This can help to reduce the complexity of the protocol without compromising security.

Lightweight security protocols. OMDVM can use lightweight security protocols, such as IPsec or TLS. These protocols are designed to be efficient and easy to implement, which can help to simplify the implementation of OMDVM.

Security frameworks. OMDVM can use security frameworks, such as the Trusted Computing Group (TCG) or the Open Platform for Security (OPSEC). These frameworks provide a number of security services, such as authentication, encryption, and key management. This can help to simplify the implementation of OMDVM by offloading some of the security-related tasks to the framework. It is important to note that simplifying the implementation of OMDVM may also reduce the security of the protocol. For example, if simplified security mechanisms are used, it may be easier for attackers to compromise the security of the network. Similarly, if lightweight security protocols are used, they may not be as secure as more traditional security protocols. Therefore, it is important to carefully balance the need to simplify the implementation with the need to maintain security.

Efficient Security Mechanisms for OMDVM

Cryptographic algorithms. OMDVM can use efficient cryptographic algorithms, such as lightweight block ciphers or stream ciphers. These algorithms are designed to be efficient in terms of both computational complexity and memory footprint.

Efficient key management schemes. OMDVM can use efficient key management schemes, such as elliptic curve cryptography or password-authenticated key exchange (PAKE). These schemes are designed to be efficient in terms of both the number of messages exchanged and the amount of computation required. Efficient authentication mechanisms. OMDVM can use efficient authentication mechanisms, such as message authentication codes (MACs) or digital signatures. These mechanisms are designed to be efficient in terms of both the amount of computation required and the amount of data transmitted.

It is important to note that developing more efficient security mechanisms may also reduce the security of the protocol. For example, if less secure cryptographic algorithms are used, it may be easier for attackers to compromise the security of the network. Similarly, if less efficient key management schemes are used, it may be more difficult to manage the keys used to secure the network. Therefore, it is important to carefully balance the need to improve efficiency with the need to maintain security.

Evaluating the Performance and Security of OMDVM in Real-World Manets Simulation

OMDVM can be evaluated in simulation using a variety of tools, such as NS-3 or Omnet++. This allows researchers to evaluate the performance and security of OMDVM under a variety of conditions, such as different network topologies, traffic patterns, and security threats. Emulation. OMDVM can be evaluated in emulation using a variety of tools. This allows researchers to evaluate the performance and security of OMDVM in a more realistic environment than simulation, as it takes into account the effects of real-world factors, such as radio propagation and node mobility. Using field trials. OMDVM can be evaluated in field trials using real MANETs. This allows researchers to evaluate the performance and security of OMDVM in a real-world environment, but it can be more difficult and expensive to conduct field trials than simulation or emulation.

Each of these methods has its own advantages and disadvantages. Simulation is the most flexible method, as it allows researchers to evaluate OMDVM under a variety of conditions. However, simulation may not be as realistic as emulation or field trials. Emulation is more realistic than simulation, but it may not be as flexible. Field trials are the most realistic method, but they can be more difficult and expensive to conduct.

The best method for evaluating the performance and security of OMDVM depends on the specific research goals. If the goal is to evaluate OMDVM under a variety of conditions, then simulation may be the best method. If the goal is to evaluate OMDVM in a realistic environment, then emulation or field trials may be the best method.

Conclusion

Security is a major concern in mobile ad hoc networks (MANETs), as these networks are typically open and dynamic, making them vulnerable to a variety of attacks. Multipath distance vector (MDV) routing protocols are a popular choice for MANETs, as they can provide improved reliability and performance over single-path routing protocols. However, MDV protocols are also vulnerable to a number of attacks, such as flooding, blackhole, and grayhole attacks. MDV routing protocols are vulnerable to a number of attacks, but there are a number of security mechanisms that can be used to protect them. The use of security mechanisms can help to improve the reliability and performance of MDV routing protocols. The choice of security mechanisms depends on the specific threat model and the security requirements of the network.

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THE VALUE OF ICT RESOURCES IN HIGHER EDUCATION

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Abstract

Education in the country Preparedness for ICT usage in Effective integration of ICTs into educational system is a complex and multifaceted process that involves in educational policy and planning, infrastructure, capacity building, language and content and financing. With the paradigm shift in the curriculum, teacher acts as a facilitator in a student centred learning and ICT based education makes the teaching-learning process effective. ICT implementation has given a magnificent opportunity for the Education Implementation specialists to reanalyze what we want our future leaders of India to be like. NEP 2020, an expert committee led by former Indian Space Research Organisation (ISRO) Chief Krishnaswamy Kasturirangan were recommended the education policy which has broaden the horizon of India education system mainly focussed on technological based education which will develop in students' inventive thinking, higher- order thinking and sound reasoning, effective communication, and high productivity. This paper presents the highlights of NEP 2020 and various provisions for ICT in Teacher Education and the present status of ICT usage in Higher Education with some challenges for implementation. Lastly, some suggestions are put forward for successful implementation of ICT in teacher education in Nagaland.

Keywords: *ICT tool s, Higher Education,*

Introduction

ICT stands for Information and Communication Technology. It is defined as the application of technology in processing of information and communication which includes the use of computers and software to not only convert and store but also process, transmit and retrieve information. National policy on ICT (NCF 2005), has defined it as all devices, tools, content, resources, forums, and services, digital and those that can be converted into or delivered through digital forms, which can be deployed for realizing the goals of teaching learning, enhancing access to and reach of resources, building of capacities, as well as management of the educational system. With the merging of technologies, it has become imperative to take a comprehensive look at all possible information and communication technologies for improving teacher teacher education, teacher-educators with varying levels of awareness of and ability to use ICT in teaching process and teacher-trainees with

varied levels of exposure which led every learner to negotiate learning spaces on their own and develop their unique world views. Engage of the North Central Regional Educational Laboratory (US) has identified what it calls “21 century Skills,” which includes digital age literacy. In 2012, Zuppo provided an ICT hierarchy, where all levels of hierarchy “contain some degree of commonality in that they are related to technologies that facilitate the transfer of information and various types of electronically mediated communication.”

Objective of the Study

- To find out the present status of ICT usage in Various Colleges in
- To explore the NEP 2020 of various provisions for ICT in teacher education
- To examine the challenges for implementation of ICT
- Suggestions for future improvement for effective implementation of ICT in higher education

Methodology

The study based on secondary data and the data were collected through various websites and magazines to obtaining the Information and Communication in Technology (ICT) in teacher education and highlights the present usage of ICT in colleges based on the challenges for effective implementation.

Current Status of ICT usage in Higher Education

In this 21st century known as the digital age where different ICTs are said to help expand access to education, strengthen the relevance of education to the increasingly digital workplace. Usage of ICT is one of the way by which India’s large population base can be effectively reached. The role of a teacher plays an integral part in the learning process where teacher can utilize ICT tools to get benefits from using these tools in the area of content, curriculum, instruction and assessment.

Undertook the survey of current status of ICT usage in higher Education, the availability of educational technology related aids that are utilize for teaching-learning process and how much these ICT tools are used for educational purpose.

Demographical Information

The study had selected respondents who were around the group of 25-50 years. This set of samples was taken from both B.Ed teacher-trainees and teacher-educators comprising of 15 teacher-educators and 110 teacher- trainees from both pre-service and in-service teachers around the state. The researcher approaches the concerned college authorities and sought permission for conducting the test on the students and the educators.

Respondents' Division of ICT usage and Their Scores

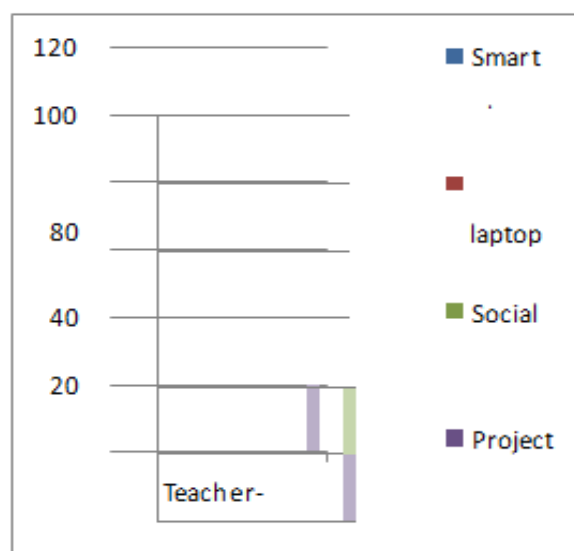


Fig.3.1. Respondents of teacher-educators' division and scores of ICT usage

Fig.3.1. indicates the division and scores of ICT usage of teacher- educators. The figure represents according to the division and scores of the teacher-educators from highest to the lowest percentage of ICT usage. The figure shows that the teacher- educators highly used of ICTs like internet, smart-phone, laptop, social media, projector and PPT during teaching. Followed by interactive white-board, Wikipedia, e-learning materials, web-camera, camera, tablet, scanner/printer, television, microphone/speaker, tele/video conferencing and lastly, least usage is tape recorder/voice recorder

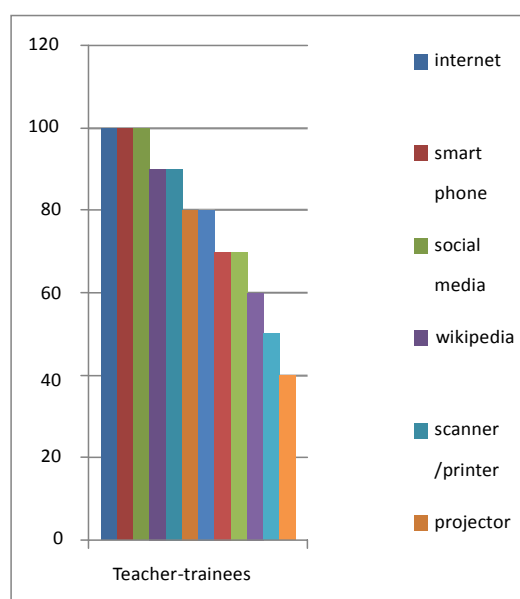


Fig.3.2. Respondents of teacher-trainees' division and scores of ICT usage

Fig.3.2. indicates the division and scores of ICT usage of teacher-trainees. The figure represents according to the division and scores of the teacher- trainees from highest to the lowest percentage of ICT. The figures shows that the teacher-trainees highly usage of ICTs like internet, Smartphone and social media. Followed by Wikipedia, scanner/printer, projector, PPT, tablet, camera, television, tape recorder/voice recorder and the least usage is e-books.

Various Provisions of NEP 2020 for ICT in Teacher Education

In recent rise of pandemics demands digital platforms on ICT based educational initiative. In this regard, the National Education Policy 2020 recognizes the importance of leveraging the advantages of technology while acknowledging its potential risks and dangers. It calls for carefully designed and appropriately scaled pilot studies to determine how the benefits of online/digital education can be reaped while addressing or mitigating the downsides. In the meantime, the existing digital platforms and ongoing ICT-based educational initiatives must be optimized and expanded to meet the current and future challenges in providing quality education for all.

- According to NEP 2020, the use of technology platforms such as SWAYAM/DIKSHA for online training of teachers will be encouraged to standardized training programmes can be administered to large numbers of teachers within a short span of time.
- The National Educational Technology Forum (NETF) will be created to provide a platform for free exchange of ideas on the use of technology to enhance learning, assessment, planning, administration, and so on, both for school and higher education.
- According to NEP 2020 that educational software will be available for both the teachers and students at all levels including students in remote areas and Divyang students. Setting of e-content for teaching and learning developed by all states in their regional languages and by NCERT, CIET, CBSE, NIOS, etc., and will be uploaded in the DIKSHA platform.
- Technological interventions for improving teaching learning and evaluation processes, supporting teacher preparation and professional development, enhancing educational access, and streamlining educational planning, management, and administration including processes related to admissions, attendance, assessments, etc.
- According to NEP 2020 that Suitable ICTs equipments will be made available to teachers at schools so that teachers can suitably integrate e-contents into teaching- learning practices.

- NPE 2020 stressed on suitable training and development for effective online educators for the teachers. It cannot be assumed that a good teacher in a traditional classroom will automatically be a good teacher in an online classroom. According to NEP 2020 emphasis on setting up the building of digital infrastructure, digital content and capacity building will be created in the Ministry to look after the e-education needs of both school and higher education. With the rapid advancement of technology, we need specialists to deliver high quality e-learning, a vibrant ecosystem has to be encouraged to create solutions that not only solve India's challenges of scale, diversity, equity, but also evolve in keeping with the rapid changes in technology, whose half-life reduces with each passing year. This centre will, therefore, consist of experts drawn from the field of administration, education, educational technology, digital pedagogy and assessment, e-governance, etc.

Given the emergence of digital technologies and the emerging importance of leveraging technology for teaching- learning at all levels from school to higher education, this Policy recommends the following key initiatives:

- a. Pilot studies for online education: Appropriate agencies, such as the NETF, CIET, NIOS, IGNOU, IITs, NITs, etc. will be identified to conduct a series of pilot studies, in parallel, to evaluate the benefits of integrating education with online education while mitigating the downsides and also to study related areas, such as, student device addiction, most preferred formats of e-content, etc. The results of these pilot studies will be publicly communicated and used for continuous improvement.
- b. Online teaching platform and tools: Appropriate existing e-learning platforms such as SWAYAM, DIKSHA, will be extended to provide teachers with a structured, user-friendly, rich set of assistive tools for monitoring progress of learners.
- c. Addressing the digital divide: According to NEP 2020, to create a digital platform, existing mass media, such as television, radio, and community radio will be extensively used for telecast and broadcasts. Such educational programs will be made available 24/7 in different languages to cater to the varying needs of the student population. A special focus on content in all Indian languages will be emphasized and required; digital content will need to reach the teachers and students in their medium of instruction as far as possible.
- d. Virtual Labs: According to NEP 2020 that existing e- learning platforms such as DIKSHA, SWAYAM and SWAYAMPRAKHA will also be supported for creating virtual labs so that all students have equal access to quality practical

and hands-on experiment-based learning experiences. The possibility of providing adequate access to SEDG students and teachers through suitable digital devices, such as tablets with pre-loaded content, will be considered and developed.

- e. Training and incentives for teachers: Teachers will undergo a diligent training in learner-centric pedagogy and develop in a way that how to become high-quality online content creators themselves using online teaching platforms and tools.
- f. Online assessment and examinations: Appropriate bodies, such as the proposed National Assessment Centre or PARAKH, School Boards, NTA, and other identified bodies will design and implement assessment frameworks encompassing design of competencies, portfolio, rubrics, standardized assessments, and assessment analytics.
- g. Blended models of learning: While promoting digital learning and education, the importance of face-to-face in- person learning is fully recognized. Accordingly, different effective models of blended learning will be identified for appropriate replication for different subjects.
- h. Laying down standards: As research on online/digital education emerges, NETF and other appropriate bodies shall set up standards of content, technology, and pedagogy for online/digital teaching-learning. These standards will help to formulate guidelines for e-learning by States, Boards, schools and school complexes, HEIs, etc.

Challenges for Implementation of ICT in Teacher Education as per NEP 2020

With the coming of new NEP 2020 has brought us into an era of new technology world to meet so many challenges in the field of education. New challenges for preparing teacher- educators and future teachers are in need to adapt to the new styles of learning method in the teaching- learning process. There are numerous problems widespread in the area of teacher education institutions in the state. In order to meet the needs of these challenges in the state teacher education, there will be a holistic development in all the spheres relating to ICT usage in the educational institutions such as policy and politics, infrastructure development, human capacity development, culture, equity, financial aspects, curriculum and pedagogy. Some of the main challenges for implementation of ICT in teacher institutions as per NEP 2020 are as follows;

- Lack of proper ICT lab facilities in the college
- Inadequate equipments of hardware and software facilities
- Lack of proper trained teacher educators and resources available for teaching ICT education

- Lack of basic knowledge for using ICTs among teacher-trainees
- Lack of proper building infrastructure for ICT related facilities
- Overcrowded classroom
- Shortage of computer for access to all the teacher- trainees in the institutions
- Lack of proper financial support from the administrative, department and the government as a whole
- Lack of proper training for the teacher-educators in relating to the use of ICTs equipments
- Poor network of Wi-Fi connectivity in the institution
- Need to update ICT related course in teacher education
- Lack of specialists and professionals to frame proper curriculum as per NEP 2020
- Lack of study materials for technical knowledge in using ICTs equipments
- Lack of teachers who are willing to integrate technology with education in their teaching.

Suggestions for Effective Implementation of ICT in Teacher Education

In this present era developing countries are facing so many challenges for preparing their societies and governments for globalization and the information and communication revolution Policy-makers, educationists, academics and concerned citizens are actively working together to make their societies competitive in the emergent information economy. Uses of ICTs in education are wide spread and it is generally believed that ICTs can empower teachers and learners, making significance contributions to learning and achievement. The main purpose of ICT implementation in education is to provide the prospect and trends of integrating and ICT into the general educational activities. Some of the suggestions for successful implementation of ICT in teacher education are as follows:

- Teacher educators should be well equipped with all the digital equipments and to enhance in using ICTs skills among teacher-trainees.
- Provide proper resource and funding in developing software and hardware facilities in the teacher education institutions.
- Professional training in ICT usage should be organized for teacher educators to keep the latest technological up to date.
- Ratios of teacher educators and teacher-trainees should be maintain so that enough assistance should be provided to teacher-trainees in using ICT tools and materials for better teaching learning process.
- Course content for ICT should be re-structuring as per NEP 2020 and should be based on action-oriented.
- Teacher education institutions should play an active participation, initiative

and compassion towards the society to enhance ICT implementation.

- Teacher educators and teacher-trainees should be aware of the social change in their teaching activities and be the part of the global change in learning and teaching modification.
- In teacher education institutions proper ICT equipment's should be provided in all the classrooms such as computers, LCT projector, internet access, television, e-white boards, etc. for effective use of technology.
- Teacher educators must play an active role in utilizing ICT facilities in their everyday lesson's transaction in order to act as role model for the teacher-trainees.
- The administrative, Higher Education department and all the concerned authorities should be collaboratively working together for organizing timely training courses on ICTs.
- Teacher education institutions must have at least one lab with fully equipped ICT facilities.
- Adequate access of internet facilities in the classrooms to enhance teaching instructions.

Conclusion

Teacher has a key role in the whole process, whereas in-case of ICT based education, various ICT tools are supplemented to make the teaching-learning process effective. There was a rise of pride created and interest generated among the teachers and students for gaining ICTs and its opportunity. ICT has the potential to remove barriers that are causing the problems of low rate of education in the country. ICT as a tool can overcome the issues of cause, less number of teachers and poor quality of education as well as to overcome time and distance barriers. In these regard teacher education play a critical role in transforming and improving educational processes and outcomes. The NEP 2020 recognizes the importance of technology while acknowledging its potential risk and dangers. NEP 2020 also stated that carefully designed and appropriately scaled pilot studies to determine the benefits of online/digital education. The existing digital platform and ongoing ICT-based educational initiative must be optimized and expanded to meet the current and future challenges in providing quality education for all.

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EXPERIENTIAL LEARNING AND SKILL DEVELOPMENT IN THE NATIONAL EDUCATION POLICY (NEP) 2020

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Abstract

The National Education Policy (NEP) 2020 acknowledges the significance of skill development and experiential learning in changing the Indian educational system. The essential components of experiential learning and skill development within the NEP 2020 are summarised in this abstract. It covers the goals, tactics, and probable effects of the policy on students' educational paths and future prospects. The National Education Plan 2020 (NEP 2020) intends to better prepare students for the difficulties of the modern world, increase their employability, and promote lifelong learning by placing an emphasis on practical knowledge, critical thinking, and a variety of abilities. The NEP 2020 aspires to develop an educational environment that equips students to become flexible, knowledgeable individuals who can contribute to society through collaborative efforts, teacher preparation, resource allocation, and ongoing evaluation.

Keywords: Experiential Learning, Skill Development, National Education Policy

Introduction

By placing a heavy emphasis on experiential learning and skill development, the National Education Policy (NEP) 2020 helped to revolutionise the Indian educational system. The NEP 2020 emphasises the importance of practical learning opportunities and the acquisition of applicable skills in recognition of the necessity for a comprehensive and holistic approach to education. In this essay, the crucial role of experiential learning and skill development in the NEP 2020 is examined, along with their significance, methods of implementation, and prospective effects on students' academic and career paths. An active learning strategy called experiential learning incorporates practical encounters, reflection, and the application of knowledge in authentic settings. It encourages pupils to actively participate in the learning process and goes beyond standard rote-based learning. This section examines the foundations of experiential learning, compares it to conventional teaching strategies, and focuses on how it can help students develop their critical thinking, problem-solving, and creative skills.

The NEP 2020 acknowledges experiential learning's crucial role in preparing students for real-world situations. This section addresses the NEP's encouragement of project-based learning, internships, and apprenticeships as well as its focus on practical knowledge and skills. It goes into more detail on how the NEP 2020 promotes the inclusion of practical applications in the curriculum, strengthening the link between academic learning and real-world application. The NEP 2020 places a strong emphasis on skill development since it wants to give pupils the abilities they'll need for lifelong learning and employment. This section emphasises the NEP's emphasis on a wide range of skills, including cognitive, social, emotional, and vocational abilities, as well as its understanding of the significance of skill development. It looks at the numerous efforts for skill development included in the NEP 2020, such as soft skills training, entrepreneurship programmes, and vocational courses, which match education with market demands and anticipated workforce needs.

Effective techniques and stakeholder participation are required for the implementation of experiential learning and skill development. The development of experiential learning resources and assessment frameworks, ensuring accessibility and inclusivity in experiential learning opportunities, teacher training programmes to support experiential learning methods, partnerships with businesses and community organisations to provide practical exposure, and more are covered in this section of the NEP 2020. Initiatives for experiential learning and skill development have the potential to have a transformative effect on students' academic and career paths. This section examines how these strategies might improve students' employability and career readiness, encourage a sense of practical application and relevance in learning, encourage lifelong learning and adaptability in a world that is changing quickly, and address social disparities by giving all students an equal chance to develop their skills.

There are difficulties in implementing experiential learning and skill development in the NEP 2020. The potential difficulties are highlighted in this section, including the necessity for efficient monitoring and assessment as well as infrastructure limitations, opposition to change, and other issues. To address these issues and guarantee the effective implementation of projects for experiential learning and skill development, it highlights the significance of ongoing collaboration between educational institutions, businesses, and policymakers. The NEP 2020 places a strong emphasis on experiential learning and skill development, emphasising the value of practical experiences and the acquisition of applicable skills. The NEP 2020 strives to construct a well-rounded educational system that equips students for the challenges of the future by encouraging experiential learning

and skill development. Effective strategy, stakeholder cooperation, and ongoing evaluation are necessary for successful implementation. The NEP 2020 can equip students to become lifelong learners, flexible professionals, and active members of society by embracing experiential learning and skill development.

Understanding Experiential Learning

Experiential Learning Principles

An educational strategy that emphasises learning by first-hand experience, reflection, and application is known as experiential learning. It is predicated on the idea that learning occurs most effectively when students are actively involved in events from the real world and can connect theory to practise. The following are some of the experiential learning tenets:

i. Active participation

Active participation in the learning process is emphasised by experiential learning, which motivates students to take part, go deeper, and try new things.

ii. Introspection

An essential part of experience learning is reflection. Students must reflect on their experiences, examine the results, and draw important conclusions.

iii. Application

The practical application of knowledge and skills in authentic situations is a key component of experiential learning. It is encouraged for students to use what they have learned to solve issues, make choices, and finish worthwhile tasks.

iv. Reaction and Improvement

Experiential learning encourages a feedback-rich atmosphere where students may use feedback to enhance their performance and understand what they did wrong.

Contrast between Traditional Rote-based Learning and Experiential Learning

Memorization and repetition of knowledge are key components of traditional rote-based learning, which is frequently referred to as passive learning and places little focus on practical application. Experiential learning, on the other hand, emphasises active participation, practical application of knowledge, and hands-on experiences. Here are some significant variations:

i. Learning Approach

In rote learning, the teacher transmits information to the students, who receive it passively and memorise it. Contrarily, experiential learning is learner-centered and encourages students to actively participate in creating their knowledge through first-hand experiences.

ii. Understanding vs. Memorization

Memorization of formulas and information is frequently prioritised in rote learning, with less focus placed on comprehending the underlying principles. By putting theory into practise and letting students see how relevant what they are learning is, experiential learning encourages better knowledge.

iii. Involvement: Active vs. Passive

Rote learning often entails passive participation, in which students passively absorb information by reading textbooks or listening to lectures. Active participation is necessary for experiential learning because it involves students engaging in practical tasks, experimentation, and problem-solving in the actual world.

iv Transferability of Skills and Knowledge

The ability of knowledge and abilities to be applied in real-world circumstances is frequently constrained by repetition-based learning. By giving students the chance to use their knowledge and skills in real-world situations, experiential learning improves the transferability of knowledge and skills and develops practical problem-solving capabilities.

Benefits of Experiential Learning in Fostering Critical Thinking, Problem-Solving, and Creativity

Students can gain much from experiential learning in terms of their ability to think critically, solve problems, and be creative. Some of the main benefits are as follows:

i. Participation and Curiosity

By actively involving students in the learning process, experiential learning piques their curiosity and motivates them to investigate and learn. Students are encouraged to question, analyse, and draw connections between ideas and experiences, which develops their critical thinking abilities.

ii. Decision-Making and Problem-Solving Capabilities

Students have the chance to experience problems and difficulties from the actual world thanks to experiential learning. Students gain problem-solving and decision-making abilities by participating in practical activities and reflecting on them. In this way, they learn how to approach complex problems and make wise decisions.

iii. Innovation and Creativity

Students are encouraged to think creatively, adapt to new circumstances, and develop creative solutions through experiential learning. Students grow in their ability to think creatively and learn to accept different points of view by working on projects and assignments that are left open-ended.

iv. Knowledge Input and Output

Experiential learning bridges the knowledge gap between theory and practise by allowing students to apply their knowledge in real-world situations. This practical application improves their comprehension, retention, and capacity to apply knowledge, ensuring its applicability and relevance in varied circumstances.

Communication and Teamwork Skills

Cooperative projects and teamwork are frequent components of experiential learning. Students learn vital interpersonal and communication skills as they cooperate, exchange ideas, bargain, and articulate their ideas clearly. Finally, experiential learning offers a distinctive method of education that emphasises participation, real-world application, and reflection. It encourages critical thinking, problem-solving, and creativity in contrast to conventional rote-based learning. Students benefit from experiential learning by developing a deeper knowledge of subjects, improving practical skills, and being better equipped to deal with obstacles in the real world.

Experiential Learning in the NEP 2020

The Focus of NEP 2020 is on Practical Skills and Knowledge

The NEP 2020 acknowledges the value of practical knowledge and skills in preparing students for issues they will face in the real world. The policy highlights the need to move away from a method centred on memorization and place more emphasis on experience learning that gives pupils useful skills. The NEP 2020 strives to make sure that students are not only well-versed in theoretical concepts but also possess the talents required to apply their knowledge effectively in real-life circumstances by emphasising practical knowledge and skills. This emphasis is in line with the changing demands of the labour market, where companies are increasingly looking for applicants who can apply their knowledge to real-world problems.

Project-based Learning, Internships, and Apprenticeships are Encouraged

The NEP 2020 encourages a variety of experiential learning techniques, including project-based learning, internships, and apprenticeships, to enhance practical knowledge and skills. In project-based learning, students work on actual projects that call for creative problem-solving, cooperation, and critical thinking. Students engage with real-world challenges through project-based learning, utilising their knowledge to come up with creative solutions and get practical experience.

Students get the chance to work in real-world environments during internships and apprenticeships, developing practical skills and gaining exposure to the

business. Students who participate in internships and apprenticeships gain a greater comprehension of professional settings, improve their employability skills, and make links between what they learn in the classroom and actual work situations. These encounters provide students the chance to learn useful skills, investigate potential career routes, and decide for themselves what they want to do in the future.

Curriculum Integration of Real-World Applications

In order to increase the practical relevance of education, the NEP 2020 places a strong emphasis on the incorporation of real-world applications into the curriculum. Student understanding of the practical applications of their learning is increased by include real-world examples, case studies, and scenarios in the curriculum. This integration fosters better comprehension and learning motivation by assisting students in making links between theoretical ideas and their application in the real world. Applying their knowledge to real-world problems helps students strengthen their problem-solving and critical thinking skills.

Bringing Classroom Knowledge to Life Experiences

The NEP 2020 places a strong emphasis on the value of integrating classroom instruction with practical application. It promotes educational institutions to forge close ties with regional businesses, trade associations, and other outside parties. Students can participate in field trips, expert talks, and interactive sessions with professionals from diverse sectors thanks to partnerships and collaborations. Students have the chance to see and learn from actual practitioners throughout these exchanges, gaining understanding of how their learning is used in real-world situations. Students gain a greater understanding of the applicability and value of their education by bridging the gap between what they learn in the classroom and what they experience in the real world.

The NEP 2020, in sum, emphasises the value of practical knowledge and skills, and it supports experiential learning strategies like project-based learning, internships, and apprenticeships. It places a strong emphasis on how real-world applications are included into the curriculum and how classroom learning is connected to outside-the-classroom experiences. The NEP 2020 strives to educate students for success in the real world by emphasising practical knowledge and skills, giving them the skills necessary for success in further education, job pathways, and life in general.

Skill Development in the NEP 2020**Recognition by NEP of the Value of Skill Development for Employment**

The NEP 2020 recognises the critical role that skill development plays in improving students' chances of finding employment after graduation. It acknowledges that a person might not be able to satisfy the changing needs of the work market with just academic knowledge. The strategy places a strong emphasis on the need to give students a varied range of abilities that go beyond academic credentials. The NEP 2020 strives to close the gap between education and employment by recognising the value of skill development for employability and ensuring that students have the skills they need to succeed in the workforce.

Put an Emphasis on a Variety of Skills, Such as Cognitive, Social, Emotional, and Vocational skills

The NEP 2020 lays a heavy emphasis on a variety of abilities to guarantee students' overall growth. It acknowledges that cognitive abilities like creativity, problem-solving, and critical thinking are essential for intellectual development and adaptability. The strategy also emphasises the value of social and emotional abilities, such as cooperation, empathy, and self-awareness, which are crucial for individual and interpersonal growth. The NEP 2020 also recognises the value of vocational skills, which give students the chance to develop real-world, career-specific skills that improve their employability.

Development of Skills Initiatives Including Soft Skills Training, Entrepreneurship Programmes, and Vocational Courses

The NEP 2020 proposes several initiatives and programmes to promote skill development. In order to give students specialised knowledge and skills in certain businesses or trades, vocational courses are established. These classes are designed to give students the hands-on experience they need to succeed in the workforce and as entrepreneurs. Additionally, entrepreneurship education fosters students' abilities to recognise possibilities, take calculated risks, and add value by encouraging them to adopt an entrepreneurial attitude. Programmes for developing soft skills emphasise the development of interpersonal skills including teamwork, adaptability, and communication that are crucial for success in the workplace.

Skill Development in Relation to Industry Needs and Future Workforce Needs

The NEP 2020 emphasises how crucial it is to match skill development with market demands and anticipated workforce requirements. In order to determine the talents that are in demand and create suitable curricula, it highlights the importance of collaboration between educational institutions and businesses. The NEP 2020

intends to close the skills gap between education and employment by coordinating skill development with industry needs. This will give students the knowledge and abilities necessary to meet the changing demands of the labour market. Additionally, this alignment aids in lowering unemployment rates, supporting economic expansion, and developing a trained workforce prepared to aid in the advancement of the nation.

In conclusion, the NEP 2020 emphasises a variety of skills, including cognitive, social, emotional, and vocational abilities, and acknowledges the importance of skill development for employment. To increase students' employability and equip them for future difficulties, the policy includes a variety of skill development initiatives, including vocational courses, entrepreneurship programmes, and soft skills training. The NEP 2020 aspires to generate a workforce that is adaptive, competent, and equipped with the skills essential to succeed in the changing workplace by coordinating skill development with industry requirements and future workforce demands.

Implementation Strategies

Teacher Training Programs to Facilitate Experiential Learning Methods

The NEP 2020 acknowledges the significance of providing teachers with the pedagogical approaches and skills they need to successfully apply experiential learning techniques in the classroom. The policy emphasises the need for thorough teacher preparation programmes that emphasise experiential learning techniques in order to achieve this. These programmes give teachers the information, methods, and tools they need to plan and carry out practical learning activities. In order to keep teachers up to date on the most recent developments and effective strategies in experiential learning, teacher training programmes also encourage ongoing professional development.

Partnerships with Business and Community Groups for Practical Exposures

To give students real-world experience, the NEP 2020 promotes partnerships between educational institutions and business/community organisations. Students have the opportunity to participate in internships, field trips, guest lectures, and mentorship programmes by forming partnerships with businesses and community organisations. Students are exposed to practical applications of their study through these partnerships, giving them new perspectives on working settings, business practises, and emerging trends. These collaborations also give students the chance to work on real-world tasks while being guided by professionals in the field. Collaborations with business and neighbourhood organisations guarantee that

students get hands-on experience and acquire the competencies sought after by employers.

Creation of Assessment Frameworks and Experiential Learning Resources

The NEP 2020 places a strong emphasis on creating resources and assessment mechanisms for experiential learning in order to assist its implementation. The development and curation of materials by educational institutions, such as activity-based modules, simulations, and real-world case studies, is encouraged. These resources give students the equipment and materials they need to properly participate in experiential learning activities. The NEP 2020 also emphasises the significance of creating evaluation systems that complement experiential learning strategies. These frameworks go beyond conventional exam-based evaluations to evaluate students' problem-solving, creativity, and critical thinking capabilities.

Making Experiential Learning Opportunities Accessible and Inclusive

The NEP 2020 places a strong emphasis on the requirement for inclusiveness and accessibility in opportunities for experiential learning. It acknowledges that every student should have equal access to practical learning opportunities, regardless of background. Educational institutions are urged to offer tools, spaces, and assistance programmes that support a variety of students, including those with impairments, those from underserved groups, and those with different learning preferences. Additionally, the policy promotes the use of inclusive practises in the planning and execution of experiential learning projects. This makes sure that every student has the chance to participate in experiential learning, profit from its transformative potential, and acquire the skills required for both their academic and professional endeavours.

The NEP 2020 concludes by emphasising the significance of teacher training programmes to support experiential learning techniques and partnership with business and community organisations for practical exposure. The policy places a strong emphasis on the creation of evaluation systems and resources for experiential learning in order to assist implementation. In addition, the NEP 2020 places a strong emphasis on the necessity of maintaining accessibility and inclusivity in experiential learning opportunities, ensuring that all students have equal access to and benefit from practical learning experiences. The NEP 2020 seeks to develop a more engaging, pertinent, and inclusive educational system that equips students for problems they will face in the real world by emphasising these elements.

Impact of Experiential Learning and Skill Development**Making Students More Employable and Career Ready**

Enhancing students' employability and job readiness is one of the NEP 2020's main goals. The policy strives to provide students with the skills and attributes that employers value by placing a strong emphasis on skill development, experiential learning, and practical knowledge. Students can gain practical exposure and hands-on experience that is relevant to their intended career routes through skill development initiatives and experiential learning opportunities. Transferable abilities, which are highly appreciated in the job market, are developed by students through these experiences and include critical thinking, problem-solving, communication, teamwork, and flexibility. The NEP 2020 intends to boost students' chances of finding meaningful jobs and effectively contributing to society by enhancing their employability and career preparation.

Increasing Students' Awareness of the Relevance and Utility of Their Learning

By focusing on experiential learning and skill development, the NEP 2020 aims to promote a sense of relevance and practical application in learning. With the aid of this strategy, kids are better able to make the link between what they learn in school and how it applies to their everyday lives. Students get a more thorough understanding of the relevance of their knowledge and abilities in real-world situations through participating in projects, hands-on activities, and problem-solving activities. Because kids can quickly perceive the value and relevance of their education, this encourages their motivation, engagement, and excitement for learning. The NEP 2020 seeks to increase students' motivation and feeling of purpose in their learning by promoting a sense of practical application and relevance.

Promoting lifetime Learning and Adaptability in a Rapidly Changing World The NEP 2020 acknowledges the value of promoting lifetime learning and acclimating to change in order to succeed in a world that is changing quickly. The policy gives children the skills they need to be lifelong learners by placing an emphasis on skill development, critical thinking, and problem-solving ability. Students that participate in experiential learning activities are encouraged to be inquisitive, investigate novel concepts, and never stop learning. The NEP 2020 also places a focus on the growth of cognitive, social, emotional, and vocational skills that improve adaptation in the face of technology breakthroughs and changing societal needs. The NEP 2020 equips students with the skills they need to succeed in a world that is changing quickly and where adaptation and lifelong learning are crucial for both personal and professional development.

Equal Opportunities for Skill Development Will Help to Address Social Disparities

By guaranteeing equal chances for skill development, the NEP 2020 seeks to address societal inequalities. It acknowledges that access to chances for quality education and skill development is frequently hampered for students from marginalised communities, economically underprivileged backgrounds, and remote locations. The emphasis of the policy is on the requirement for inclusive and equitable education, making sure that all students, regardless of their social or economic circumstances, have equal access to experiential learning and skill development projects. By tackling social inequalities, the NEP 2020 seeks to build a more just society in which every person, regardless of background, has the chance to realise their potential and advance the country.

Challenges and Way Forward

Infrastructural Constraints and Resource Allocation for Experiential Learning

Experiential learning efforts in the NEP 2020 may encounter difficulties due to budget allocation and infrastructure limitations. Hands-on learning frequently demands particular facilities, tools, and resources. However, access to these resources may be restricted for some educational institutions, particularly in rural or economically underdeveloped locations. Investment in the creation and upkeep of infrastructure that facilitates experiential learning, including fully furnished laboratories, workshops, and technologically enhanced learning spaces, is essential to overcoming these obstacles. Additionally, sufficient financial and human resource allocation is required to give students the books, equipment, and guidance they need to participate in experiential learning activities successfully.

Removing Traditional Teaching Methodologies and Resistance to Change

Stakeholders used to conventional teaching procedures may be resistant to the implementation of experiential learning approaches. Because of their unfamiliarity, potential hazards, or the perceived efficacy of conventional methods, educators, administrators, and even parents may be reluctant to adopt innovative ways. Effective communication and professional development initiatives are needed to educate stakeholders about the advantages of experiential learning and the supporting data in order to overcome opposition to change. Offering training opportunities, sharing success stories, and highlighting the advantages of experiential learning can help boost confidence and motivate stakeholders to adopt these cutting-edge approaches.

Keeping an Eye on and Assessing the Success of Initiatives for Experiential Learning

Mechanisms for monitoring and evaluating experiential learning programmes must be in place to guarantee their efficacy. It is crucial to evaluate how experiential learning affects students' knowledge, abilities, attitudes, and employability. This entails creating standards, gathering relevant data, and constructing evaluation frameworks that capture the desired learning outcomes. The efficacy of experiential learning programmes can be assessed using a variety of ways, including observations, self-assessments, performance assignments, and feedback from industry partners. Continuous improvement, the identifying of areas for strength and improvement, and evidence-based decision-making are all made possible by regular monitoring and evaluation, which also allows for the optimisation of experiential learning practises.

Continued Collaboration between Policymakers, Industries, and Educational Institutions

To build a favourable ecosystem for experiential learning, educational institutions, businesses, and policymakers must continuously collaborate. Collaboration with the business world makes it easier to match the curriculum to business requirements, ensuring that students acquire useful skills and knowledge. sector collaborations can offer chances for student interaction with real-world professionals and exposure to the sector through internships, apprenticeships, and guest lectures. When it comes to providing the resources, incentives, and policies that enable experiential learning, policymakers play a critical role in fostering an environment that supports learning. By continuing to work together, these parties can close the gap between academia and business, allowing educational institutions to adapt to shifting market demands and changing labour market demands.

Conclusion

In conclusion, the NEP 2020 promotes the relevance of relevant information, critical thinking, and practical skills by including experiential learning and skill development. The strategy's aim is to equip students with the skills they need to thrive in a world that is continually changing by prioritising chances for hands-on learning, connecting classroom lessons with real-world applications, and putting an emphasis on a variety of talents. To properly complete these initiatives, all parties involved must cooperate. Cooperation between academic institutions, businesses, and governments is vital to ensuring effective implementation, resource sharing, and adherence to industry standards. Effective teacher training programmes are essential for providing instructors with the skills and knowledge necessary to support

experiential learning methodologies. Adequate resource allocation is needed to support hands-on learning, both in terms of materials and infrastructure. Programmes for experiential learning will gain from ongoing assessment and monitoring, which will increase their effectiveness. By emphasising experiential learning and skill development, the NEP 2020 has the potential to enable students to become lifelong learners, adaptable professionals, and engaged members of society. Through the use of these cutting-edge educational strategies, we may produce a generation that can confidently and professionally manage the complexity of the future.

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WOMEN ENTREPRENEURS IN INDIA

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Abstract

Women is an important part in achieving inclusive growth in an economy. In economic development entrepreneurship plays an important role in India only a very few women participated in entrepreneurial activities till 1980. In 1980 "New Delhi Declaration and plan of Action" focus development of entrepreneurial skills among women. In 1980-1990 many institutional initiatives were taken for women entrepreneurship. In 1990 after the liberalization, opportunities were recognized and started flourish for women entrepreneurs. The concept and classification of women entrepreneur is discussed. The study was made on very government scheme women entrepreneurship and holed faced by women entrepreneurship in this regard. The few stories of successful women Entrepreneurship is also discussed in the article it is conducted that more rural and lower middle -class women should be supported with more entrepreneurial opportunities for overall growth in the economy.

Keywords: Women Entrepreneurship, Economy, Government.

Introduction

"Women entrepreneurs may be defined as the women or a group of women who initiate, organise and run a business enterprise. According to Schumpeter, "Women who innovate, imitate or adopt a business activity are called women entrepreneurs." According to the Government of India, a woman entrepreneur is defined as "an enterprise owned and controlled by a woman and having a minimum financial interest of 51 percent of the capital and giving at least 51 percent of the employment generated in the enterprise to women."

In a nutshell, we may state that women entrepreneurs are those women, who think of a business enterprise, initiate it, organise and combine the various factors of production, operate the enterprise and undertake risks and handle economic uncertainties involved in running a business enterprise.

“An enterprise owned and controlled by a women having a minimum financial interest of 51% of capital and giving at least 51% of the employment generated by the enterprise to women.” – Government of India According to Kamala Singh, A women entrepreneur is a confident, innovative and creative woman capable of achieving economic independence individually or in collaboration generates employment opportunities for others through initiating establishing and running an enterprise by keeping pace with her personal, family and social life.

In the words of Former President APJ Abdul Kalam “empowering women is a prerequisite for creating a good nation, when women are empowered, society with stability is assured.” Pandit Jawaharlal Lai Nehru has remarked “When women move forward, the family moves, the village moves and the Nation moves.”

Women Entrepreneur -in Indian Perspectives

Women entrepreneurship is the process in which women initiate a business, her all resources, undertake risks, face challenges, provides employment to others and manages the business independently.

Approximately 1/3rd of the entrepreneurs in the world are women entrepreneurs. According to definition given by Government of India- A women entrepreneur is defined as an enterprise owned and controlled by woman having a minimums financial interest of 51% of the capital and giving at least 51% employment generated to women"

Women Entrepreneurship refers to business or organization started by a woman or group of women. There has been a change in role of women due to growth in education, Urbanization, industrialization and awareness of democratic values.

Women Entrepreneurs Can Be Broadly Categorized into Five Categories

- Affluent entrepreneurs-These are daughters and wives of wealthy businessmen. These women have the financial aid and the necessary resources to start a new enterprise and take business risks.
- Pull factors-These are educated women living in urban areas with or without work experience who take the risk of a new enterprise with the help of financial institutions and commercial banks. These women take up a new business as challenge in order to be financially independent.
- Push factors-These women take up some business activity in order to overcome financial difficulties. Generally widows and single women manage an existing family business or develop a new business due to difficult family situation.
- Rural entrepreneurs-These women belong to rural areas and choose a business suiting their resources and knowledge Business carried out involves low investment, minimum risk and does not require any special skills.

- Self-employed entrepreneurs-They are uneducated women who fall below the poverty line. They choose tiny and small enterprise which are convenient to manage and adequate for the sustenance of her family.

Scope and Opportunities for Women Entrepreneurs

The modern world women has been able to overcome the hurdle of society's perception of considering them to be confined to the four walls of the house or viewing them as weak entrepreneurs caught up in limited business area such as papad making, pickle preparation food items, paintings, handicrafts, etc.

They have been able to show a remarkable shift from these small entrepreneurs at ventures to modern technology-based business ventures such as Computer services and information dissemination

1. Trading in computer stationary
2. Computer maintenance
3. Computer maintenance
4. Travel and tourism
5. Quality testing, quality control laboratories
6. Sub-assemblies of electronic products
7. Nutrition clubs in schools and offices
8. Poster and indoor plant library
9. Recreation centers for old people
10. Culture centers
11. Screen printing, photograph and video shooting
12. Stuffed soft toys, wooden toys
13. Mini laundry, community eating centers
14. Community kitchens
15. Distributing and trading of house hold provision as well as saris, dress materials, etc.
16. Job contracts for packaging of goods
17. Photocopying, typing centers
18. Beauty parlors
19. Communications centers like STD booths, cyber cafes, etc.

Role of Woman Entrepreneurs in Society

According to Pandit Jawaharlal Nehru, "When women moves forward, the family moves, the village moves, and the nation moves."

Women entrepreneurship has been recognized as an important, untapped source of economic growth during the last decade. With the spread of education and awareness, Indian women have shifted from the extended kitchen, handicrafts, and traditional cottage industries to nontraditional, higher level of activities.

In the new industrial policy, the government has laid special emphasis on the need of conducting special entrepreneurial training programs for women to enable them to start their own ventures. Financial banks and institutions have also set up special cells to assist women entrepreneurs. This has helped the women a lot in taking up the entrepreneurial activity in India.

Estimates in Europe (both European Union countries and other), indicate that there exist more than 10 million self-employed women and in the United States 6.4 million self-employed women providing employment for 9.2 million people and creating significant sales. Women entrepreneurs not only create new jobs for themselves, but also provide jobs to others. However, the participation of women entrepreneurs is less than male entrepreneurs.

Financial Assistance

Women face difficulties in getting loans from Bank and Financial Institutions for starting their business ventures. To overcome this difficulty Financial Institutions and banks have specialised schemes where finance is available to women entrepreneurs on concessional terms. Two of such important schemes are Mahila Udyog Nidhi (MUN) scheme of Small Industries Development Bank of India and Stree Shakti Package of State Bank of India.

Mahila Udyog Nidhi

This is a special scheme for the purpose of meeting the gap in the equity when women with inadequate resources venture come out to set their units. The scheme is re-finance scheme operated through State Financial Corporations and Scheduled Commercial Banks. Funds provided under the scheme are treated as equity for calculation of Debt Equity Ratio to satisfy the needs of the lending Institutions.

The scheme provides a soft loan up to 25 percent of cost of Project subject to a maximum of Rs. 2.5 lakh per project at zero interest but a service charge of only one percent is charged to meet expenses of the lending institutions. To avail this assistance the cost of project should not exceed Rs. 10 lakhs. The assistance is available to women entrepreneurs setting up new projects, expansion, modernisation, technology up gradation and diversification of an existing unit and also for rehabilitation of viable sick units in manufacturing or service sector.

Stree Shakti Package

It is a unique scheme run by State Bank of India, aimed at supporting entrepreneurship among women. It is available to enterprises where women own more than 50 percent of the share capital. The following concessions are offered under stree shakti package:

1. The margin is lowered by 5 percent as applicable to that type of industrial unit.
2. When the loan amount exceeds Rs. 2 lakhs the interest rate is lowered by 0.5 percent.
3. In case of tiny sector units no security is required for loan up to Rs. 5 lakhs. In addition women entrepreneurs receiving assistance under this package are also eligible to get financial assistance by way of interest free loans under the Equity Fund Scheme of SBI to fully meet their share of equity. It is clear that women entrepreneurs have much in common with their male counterparts. Although some of the background and personality traits are quite similar, there are differences between sexes in terms of motivation activities engaged in wide starting business venture and business skills they bring to their enterprises. Difference in type of business started can be attributed to a large part to difference in education and work history. Government has started a number of schemes to promote women enterprises and success rate of entrepreneur training programs for women is better.

Mahila Udyam Nidhi Yojana

One of the most popular government schemes for women entrepreneurs, the Mahila Udyam Nidhi Scheme, is offered by Punjab National Bank and Small Industries Development Bank of India (SIDBI). The scheme supports women entrepreneurs to set up a new small-scale venture by extending loans up to Rs. 10 lakh to be repaid in 10 years. The rate of interest charged depends upon the market rates.

Orient Mahila Vikas Yojana Scheme

Oriental Bank of Commerce launched the scheme, women with an ownership of 51 percent share capital individually or jointly in a proprietary concern can avail a loan through the Orient Mahila Vikas Yojana. There is collateral required for loans between Rs. 10 lakhs to Rs. 25 lakhs. The repayment tenure of the loan is seven years. Orient Mahila Vikas Yojana Scheme also provides a concession on the interest rate of upto 2 percent.

Cent Kalyani Scheme

The Cent Kalyani Yojana is a government scheme for women that can be availed by both existing and new entrepreneurs and self-employed women.

Micro/small enterprises like farming, agriculture, cottage industries, and retail trade are all eligible to apply for the Cent Kalyani Scheme. You do not have to provide any collateral as security or need any guarantors for this loan. The interest

rate on loans depends on market rates. The repayment tenure of the loan will be a maximum of seven years under Udyogini Scheme

The Women Development Corporation has Implemented the Udyogini

Scheme under the Government of India. This scheme promotes and motivates women's entrepreneurship among the poor by providing financial support to women. This scheme majorly supports and helps illiterate women living in rural and backward areas.

Conclusion

The role of Women entrepreneur in economic development is also being recognized and steps are being taken to promote women entrepreneurship. From these suggestions it is quite visible that for development and promotion of women entrepreneurship, in the region, there is a need for multi dimensional approach from different sector, namely from the government side, financial institutions, individual women entrepreneurs and many more, for a flexible integrated and coordinated specific approach. The principal factor in developing entrepreneurship among women is not in terms of infrastructure or financial assistance or identifying an enterprise but it is a question of clearing the ground for their movement into entrepreneurship. For ages together they have been confined to a secondary role and confined to the homes and you have to bring out so that they become self-reliant, self-respecting enterprising people. Though there are several factors contributing to the emergence of women as entrepreneurs, the sustained and coordinated effort from all dimensions would pave the way for the women moving into entrepreneurial activity thus contributing to the social and economic development of the members of the family and thereby gaining equality and equal importance for themselves.

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TECHNOLOGICAL REFORMS IN AGRICULTURE: DIGITALIZATION AND AUTOMATION

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Abstract

Technological reforms in agriculture, specifically digitalization and automation, have become prominent drivers of change in the farming industry. Digitalization involves the integration of digital technologies into agricultural operations, enabling real-time data collection, analysis, and decision-making. Automation, on the other hand, leverages robotics, artificial intelligence, and machine learning to automate labor-intensive tasks. This abstract explores the impact of digitalization and automation in agriculture, highlighting their benefits, challenges, and potential for transforming the farming sector. The adoption of these technological reforms has the potential to increase productivity, improve resource efficiency, enhance sustainability, and enable data-driven decision-making in agriculture. However, challenges such as cost, accessibility, skills, and data security need to be addressed to ensure widespread and equitable adoption. Overall, technological reforms in agriculture offer promising opportunities for increased efficiency, sustainability, and resilience in the face of global food demands.

Keywords: Technological reforms, Agriculture, Digitalization, Automation, Farming sector.

Introduction

Agriculture plays a pivotal role in sustaining human life, providing essential resources such as food, fiber, and raw materials. As the global population continues to increase and the need for sustainable agricultural practices becomes more pressing, technological advancements have become crucial to meet the rising demand for food production. In recent years, digitalization and automation have emerged as transformative forces in agriculture, revolutionizing traditional farming practices and driving significant improvements in productivity, efficiency, and sustainability. Digitalization and automation technologies have brought about a paradigm shift in the way farming is conducted. Digitalization involves the integration of digital technologies, such as sensors, Internet of Things (IoT) devices, and data analytics, into various aspects of agricultural operations. These technologies enable real-time data collection, monitoring, and analysis, providing farmers with valuable insights into weather conditions, soil health, crop growth, and

machinery performance. By harnessing this data, farmers can make data-driven decisions to optimize their farming practices and maximize yields.

Automation, on the other hand, involves the use of robotics, artificial intelligence (AI), and machine learning to automate labor-intensive tasks in agriculture. This technology has the potential to revolutionize farming practices by reducing manual labor, addressing labor shortages, and increasing operational efficiency. Robotic systems equipped with sensors and cameras can perform tasks such as planting, harvesting, pruning, and sorting with precision and accuracy. By taking over these tasks, automation reduces the physical burden on farmers and ensures consistent quality and increased efficiency in operations. The adoption of digitalization and automation in agriculture brings forth a multitude of benefits. Firstly, these technologies significantly improve productivity by optimizing farming practices. Precision agriculture techniques enabled by digitalization allow farmers to monitor and manage their crops more effectively. By utilizing real-time data on soil moisture, weather patterns, and crop health, farmers can make informed decisions on irrigation, fertilizer application, pest control, and other critical factors that impact crop growth. This targeted approach minimizes resource waste and maximizes the use of inputs, resulting in increased yields and improved productivity.

Secondly, digitalization and automation technologies enhance operational efficiency by streamlining farming processes. Digital tools and platforms enable farmers to manage their farm operations more effectively, from inventory management to task scheduling and financial analysis. These technologies automate administrative tasks, reducing manual paperwork and saving time and effort. By digitizing and automating these processes, farmers can focus more on core farming activities, leading to increased efficiency and improved overall farm management. Moreover, digitalization and automation contribute to sustainability in agriculture. Precision agriculture techniques supported by digitalization enable farmers to optimize the use of resources, such as water, fertilizers, and pesticides. By applying inputs precisely where they are needed, farmers can minimize resource waste and reduce the environmental impact of their operations. Automation technologies reduce the reliance on manual labor, addressing labor shortages and reducing the need for harmful agricultural practices.

However, the adoption of digitalization and automation in agriculture is not without challenges. One significant challenge is the cost associated with implementing these technologies. The initial investment in digital tools, sensors, machinery, and infrastructure can be a barrier for small-scale farmers or those with limited financial resources. Addressing the affordability and accessibility of these technologies is crucial to ensure that all farmers, regardless of their scale, can benefit

from the advantages they offer. Additionally, there is a need to address the skills and knowledge gap among farmers. The successful adoption and utilization of digitalization and automation technologies require farmers to have the necessary technical skills and understanding. Education and training programs should be implemented to equip farmers with the knowledge and expertise needed to leverage these technologies effectively.

Data privacy and security are also important considerations in the digitalization and automation of agriculture. With the collection and analysis of large volumes of data, it is essential to ensure that farmers' data is protected, and privacy regulations are adhered to. Farmers need to have control over their data and understand how it is used and shared with third-party providers. Thus, the technological reforms of digitalization and automation have the potential to revolutionize agriculture, bringing about significant improvements in productivity, efficiency, and sustainability. By adopting precision agriculture techniques enabled by digitalization and automating labor-intensive tasks through robotics and AI, farmers can optimize their farming practices, improve resource management, and increase yields. However, challenges such as cost, accessibility, skills, and data security need to be addressed to ensure the widespread and equitable adoption of these technologies. With continued advancements and supportive measures, digitalization and automation will continue to shape the future of farming, enabling a more efficient, sustainable, and resilient agricultural sector.

Digitalization in Agriculture

Digitalization in agriculture involves the integration of digital technologies across various aspects of agricultural operations, bringing about significant advancements in farm management, production processes, and data-driven decision-making. By harnessing technologies such as sensors, Internet of Things (IoT) devices, drones, and satellite imagery, digitalization enables farmers to gather real-time data on crucial parameters like weather conditions, soil moisture, crop health, and machinery performance. This wealth of data collected through digitalization serves as a valuable resource for farmers to optimize their farming practices. By analyzing this data, farmers can make informed decisions to enhance irrigation, fertilizer application, pest control, and other farm activities. For example, by monitoring real-time weather conditions and soil moisture levels, farmers can efficiently manage irrigation, ensuring that crops receive adequate water without wastage. Similarly, by using data on crop health and growth patterns, farmers can detect diseases or nutrient deficiencies early on and take targeted actions to address them, such as applying fertilizers or pesticides only where necessary. This precision agriculture

approach minimizes resource wastage, reduces environmental impact, and maximizes the efficient use of resources.

One key aspect of digitalization is precision agriculture, which focuses on optimizing inputs and resource management at the field level. By leveraging advanced analytics, farmers can create detailed field maps, monitor crop growth, and identify specific areas that require attention. For instance, by using satellite imagery or drones, farmers can generate precise field maps that highlight variations in soil conditions, allowing them to tailor their management strategies accordingly. By understanding these variations, farmers can apply inputs such as water, fertilizers, or pesticides with precision, addressing specific needs of different areas within the field. This targeted approach ensures that resources are allocated efficiently, minimizing wastage and optimizing crop growth. Digitalization also facilitates farm management by providing farmers with comprehensive tools for planning, monitoring, and record-keeping. Software applications and platforms enable farmers to manage inventory, track machinery usage, schedule tasks, and analyze financial performance. These digital tools streamline administrative processes, improve operational efficiency, and enhance decision-making based on accurate data analysis. Farmers can efficiently track and manage their inventories of seeds, fertilizers, and other inputs, ensuring that they have the necessary resources at the right time. They can also monitor machinery usage and performance, enabling timely maintenance and reducing downtime. The ability to schedule tasks and monitor progress digitally allows farmers to optimize their operations and allocate resources effectively. Furthermore, the analysis of financial performance data provides insights into the profitability and cost-effectiveness of different farming practices, enabling farmers to make informed decisions on resource allocation and investments.

In summary, digitalization in agriculture brings about significant advancements by integrating digital technologies into various aspects of farming operations. Real-time data collection, analysis, and application enable farmers to optimize inputs, manage resources efficiently, and make data-driven decisions. Precision agriculture techniques minimize waste, reduce environmental impact, and maximize the use of resources. Furthermore, digital tools facilitate farm management by streamlining administrative processes and providing valuable insights for better decision-making. The integration of digitalization in agriculture holds immense potential for enhancing productivity, resource efficiency, and sustainability in the farming sector.

Automation in Agriculture

Automation in agriculture involves the application of robotics, artificial intelligence (AI), and machine learning to automate tasks that have traditionally

been performed by humans. This technology has the potential to revolutionize labor-intensive processes in farming, reducing the reliance on manual labor and addressing challenges such as labor shortages, rising labor costs, and the need for increased productivity. Robotic systems are designed to perform various agricultural tasks, including planting, harvesting, pruning, and sorting. These robots are equipped with advanced sensors, cameras, and AI algorithms that enable them to navigate fields, identify ripe crops, and execute precise actions with speed and accuracy. For instance, robotic planters can accurately plant seeds at the optimal depth and spacing, ensuring consistent planting and reducing the time and effort required by human laborers. Harvesting robots can detect the ripeness of crops and perform selective harvesting, picking only the mature fruits or vegetables while leaving the unripe ones to continue growing. This automation technology not only reduces the physical burden on farmers but also ensures consistent quality and increased efficiency in agricultural operations.

Automated machines in agriculture are often equipped with sensors and cameras that enable them to navigate fields and detect specific objects or conditions. For example, machines equipped with vision systems can identify and remove weeds, reducing the need for manual weeding and minimizing herbicide usage. These machines can differentiate between crops and weeds, applying targeted actions to remove the unwanted plants while preserving the desired crops. Similarly, automated sorting systems can use machine vision to identify and sort harvested produce based on quality, size, or other parameters. This technology allows for precise sorting, ensuring that only the highest-quality produce reaches the market. The benefits of automation in agriculture extend beyond reducing manual labor. By replacing repetitive and physically demanding tasks with automated systems, farmers can redirect their efforts towards more strategic and value-added activities, such as crop management, data analysis, and decision-making. Automation technology also enables farmers to operate efficiently on a larger scale, increasing their overall productivity. With the ability to work consistently and at high speeds, automated systems can significantly reduce production cycle times, enabling farmers to meet market demands more effectively.

Moreover, automation contributes to improved operational efficiency and cost-effectiveness. Machines equipped with AI algorithms can optimize resource usage, such as water and fertilizers, by precisely applying them where needed. This targeted approach minimizes waste, reduces environmental impact, and increases resource efficiency. Additionally, automated systems can operate continuously, reducing downtime and increasing overall equipment utilization. This translates into cost savings and improved profitability for farmers. While automation holds

immense potential for transforming agriculture, challenges must be addressed for its widespread adoption. Integration and compatibility with existing farming practices and infrastructure can be complex. Ensuring that automated systems can seamlessly work alongside other components of the agricultural ecosystem is crucial for smooth implementation. Furthermore, initial investment costs and the accessibility of automation technologies can be barriers for small-scale farmers or those with limited resources. It is important to develop affordable and adaptable automation solutions that cater to the diverse needs of different farmers. Thus, automation technology in agriculture has the potential to revolutionize labor-intensive processes, reduce manual labor, and address challenges related to labor shortages and rising costs. Robots and automated machines can perform various tasks with precision and efficiency, improving productivity and reducing the physical burden on farmers. Additionally, automation contributes to operational efficiency, resource optimization, and cost-effectiveness. While challenges exist, the integration of automation in agriculture offers significant benefits and has the potential to shape the future of farming by enhancing productivity, sustainability, and overall efficiency.

AI-powered technologies have emerged as valuable tools in agriculture, capable of analyzing vast amounts of data, predicting weather patterns, optimizing crop management strategies, and identifying potential yield-limiting factors. By integrating AI with precision agriculture techniques, farmers can make data-driven decisions, improve resource allocation, and optimize crop production. The use of AI in agriculture enables the analysis of complex datasets collected from various sources, including sensors, satellites, and historical records. This data can be processed and analyzed using AI algorithms to extract valuable insights and patterns. For example, AI algorithms can analyze historical weather data, current climate conditions, and crop growth patterns to predict future weather patterns with greater accuracy. This information is crucial for farmers to plan irrigation schedules, implement pest control measures, and make informed decisions regarding crop management practices.

AI-powered technologies also provide valuable support in optimizing crop management strategies. By integrating real-time data on weather conditions, soil moisture, and crop health, AI algorithms can suggest optimal strategies for irrigation, fertilization, and pest control. For instance, by analyzing soil moisture levels and weather forecasts, AI can recommend precise irrigation schedules that ensure crops receive the right amount of water at the right time. AI algorithms can also analyze crop health data to identify signs of disease, nutrient deficiencies, or pest infestations, enabling farmers to take timely action and prevent potential yield

losses. Furthermore, AI can assist in resource allocation by optimizing the use of inputs such as water, fertilizers, and pesticides. By analyzing data on soil conditions, weather patterns, and crop growth, AI algorithms can provide recommendations on the optimal allocation of resources. For example, AI can analyze soil nutrient levels and crop nutrient requirements to suggest precise fertilizer application rates and timings. This targeted approach minimizes resource waste and reduces environmental impact while ensuring that crops receive the necessary nutrients for optimal growth.

The integration of AI with precision agriculture techniques also enables farmers to optimize crop production. By continuously monitoring and analyzing data, AI algorithms can identify yield-limiting factors, such as pest outbreaks, nutrient deficiencies, or unfavorable weather conditions, and provide actionable insights to mitigate these factors. This proactive approach allows farmers to make timely adjustments to their crop management practices, resulting in improved yields and overall production. Additionally, AI-powered technologies have the potential to enhance decision-making processes by providing real-time recommendations and insights. AI algorithms can process data from multiple sources and generate predictive models that enable farmers to make informed decisions regarding crop selection, planting schedules, and market predictions. This information allows farmers to adapt their strategies based on market demands and optimize their production plans accordingly. However, it is important to note that the successful integration of AI in agriculture requires access to quality data, reliable connectivity, and the development of AI models specific to local conditions. Ensuring data privacy and security is also crucial when utilizing AI technologies. Thus, AI-powered technologies offer significant potential in agriculture by analyzing large volumes of data, predicting weather patterns, optimizing crop management strategies, and identifying yield-limiting factors. By integrating AI with precision agriculture techniques, farmers can make data-driven decisions, improve resource allocation, and optimize crop production. The use of AI in agriculture holds promise for increasing productivity, sustainability, and profitability while helping farmers navigate the complexities of modern farming.

Benefits and Impact

The adoption of digitalization and automation in agriculture offers several benefits and has a profound impact on the farming industry.

1. **Increased Productivity:** The adoption of digitalization and automation in agriculture leads to improved productivity and better crop yields. Precision agriculture techniques enabled by digital technologies allow farmers to optimize their use of inputs such as fertilizers, water, and pesticides. By

applying these inputs precisely where needed, farmers can reduce waste and maximize the output per unit of land, water, and fertilizers. This targeted approach ensures that resources are utilized efficiently, resulting in increased productivity and higher crop yields.

2. **Cost Savings:** Digitalization and automation technologies offer cost-saving opportunities for farmers. By leveraging data and technology, farmers can make informed decisions regarding input usage, crop management, and resource allocation. This enables them to reduce input costs, optimize the use of resources, and minimize wastage. Digital tools and platforms streamline operations, improve efficiency, and eliminate unnecessary expenses. Automation technology, such as robotic systems, reduces labor costs, especially in tasks that require repetitive or physically demanding work. By automating these tasks, farmers can save on labor expenses and allocate resources more effectively.
3. **Sustainability:** Digitalization and automation contribute to sustainable agricultural practices by minimizing environmental impact. Precision agriculture techniques, made possible by digital technologies, allow farmers to reduce the use of agrochemicals by applying them precisely where needed. This targeted approach minimizes chemical runoff and potential negative effects on the environment. Additionally, digitalization enables optimized irrigation practices, conserving water by monitoring soil moisture levels and applying water only when necessary. By reducing water usage, farmers contribute to water conservation efforts. Furthermore, digital technologies facilitate targeted nutrient management, promoting soil health and reducing nutrient runoff. By minimizing waste and improving resource efficiency, these technologies help in preserving natural resources and reducing the carbon footprint of agriculture, leading to more sustainable farming practices.
4. **Enhanced Decision-making:** The availability of real-time data and advanced analytics empowers farmers to make informed decisions and optimize their farming practices. With digital tools and technologies, farmers can monitor crop health, predict yields, identify potential issues, and respond promptly to changing conditions. Real-time data on weather, soil moisture, and crop performance enables farmers to assess risks and make proactive interventions. By having access to accurate and timely information, farmers can optimize production processes, adjust resource allocation, and make informed decisions to enhance profitability. The integration of advanced analytics allows farmers to analyze complex datasets, identify patterns, and

gain valuable insights, enabling better decision-making regarding crop selection, market trends, and investment strategies.

In summary, the adoption of digitalization and automation in agriculture brings numerous benefits. It increases productivity by optimizing resource usage and maximizing crop yields. It offers cost-saving opportunities by reducing input costs, streamlining operations, and minimizing labor expenses. Digitalization and automation contribute to sustainable agricultural practices by minimizing environmental impact and promoting resource efficiency. Finally, these technologies enable enhanced decision-making by providing real-time data, advanced analytics, and insights that help farmers optimize their farming practices and improve profitability.

Challenges and Considerations

Despite the numerous benefits, the adoption of digitalization and automation in agriculture faces several challenges and considerations.

1. **Cost and Accessibility:** The adoption of digitalization and automation in agriculture often requires a significant initial investment in technology, infrastructure, and equipment. This can be a barrier for small-scale farmers or those with limited financial resources. Ensuring the cost-effectiveness and affordability of digital tools and automation technology is crucial to enable widespread adoption across the farming community. Government support, subsidies, and innovative financing models can help make these technologies more accessible to farmers of all scales.
2. **Skill and Knowledge Gap:** The successful implementation and utilization of digitalization and automation technologies in agriculture require farmers to have the necessary technical skills and knowledge. Many farmers may not be familiar with using digital tools or analyzing complex datasets. Education and training programs should be developed and provided to farmers to equip them with the skills needed to effectively utilize these technologies. Training initiatives can cover various aspects, including data management, data analysis, equipment operation, and maintenance. By empowering farmers with the necessary skills and knowledge, they can make the most of digital tools and automation technology to enhance their farming practices.
3. **Data Privacy and Security:** The use of digital technologies in agriculture generates vast amounts of data, raising concerns about data privacy and security. Farmers must ensure the protection of sensitive information, including their farming practices, financial data, and customer information. Data ownership rights should be maintained, and farmers should have control over how their data is collected, stored, and shared. Adherence to

privacy regulations and the implementation of robust cybersecurity measures are essential to safeguard farmer's data. It is crucial to establish transparent data governance frameworks that address privacy concerns and maintain the trust of farmers in using digital tools and sharing their data.

4. **Integration and Compatibility:** The integration of different digital tools and technologies can be complex, especially when they come from various vendors and operate on different platforms. Interoperability and compatibility issues need to be addressed to ensure that different systems can work together seamlessly. This allows farmers to leverage the full potential of digital tools and automation technologies without encountering data silos or technological barriers. Standardization efforts and open data exchange protocols can facilitate the integration of diverse technologies, enabling farmers to utilize them in a cohesive and efficient manner.

Addressing these challenges is crucial to ensure the widespread and effective adoption of digitalization and automation in agriculture. By making these technologies more accessible, providing training and support, addressing data privacy and security concerns, and promoting integration and compatibility, the farming community can overcome barriers and fully harness the benefits of digitalization and automation to transform their agricultural practices.

Conclusion

Digitalization and automation have the potential to revolutionize the agriculture industry, enabling farmers to embrace data-driven decision-making, optimize resource management, and enhance productivity and sustainability. The integration of digital technologies into farming practices, such as precision agriculture techniques, robotic systems, and AI-driven analytics, offers a range of benefits that can transform the way crops are grown and managed. One of the key advantages of digitalization and automation in agriculture is the ability to make data-driven decisions. By collecting and analyzing real-time data on weather conditions, soil moisture, crop health, and machinery performance, farmers can gain valuable insights that inform their decision-making processes. This enables them to optimize irrigation, fertilizer application, pest control, and other critical aspects of crop management. Data-driven decision-making minimizes resource waste, maximizes productivity, and leads to improved yields.

Furthermore, the adoption of digitalization and automation in agriculture can result in significant cost savings. By optimizing resource usage and reducing waste, farmers can reduce input costs and increase operational efficiency. Precision agriculture techniques allow for targeted application of resources, such as water, fertilizers, and pesticides, ensuring that they are applied only where needed. This

not only reduces costs but also minimizes environmental impact and promotes sustainable farming practices. Automation technology, such as robotic systems, can also reduce labor costs by automating labor-intensive tasks and addressing labor shortages. In addition to increased productivity and cost savings, digitalization and automation contribute to improved sustainability in agriculture. By utilizing precision agriculture techniques, farmers can minimize the use of agrochemicals, conserve water through optimized irrigation, and enhance soil health through targeted nutrient management. This promotes more sustainable farming practices and reduces the environmental impact of agriculture. The integration of digital technologies also facilitates environmental monitoring and data-driven compliance with environmental regulations, further enhancing sustainability efforts.

However, the adoption of digitalization and automation in agriculture is not without challenges. Cost can be a significant barrier, as the initial investment in technology, equipment, and infrastructure may be prohibitive for some farmers, particularly small-scale operations. Accessibility and affordability need to be addressed to ensure that all farmers, regardless of scale, can benefit from these technologies. Skill and knowledge gaps are another challenge, as farmers need to acquire the necessary technical skills to effectively utilize digital tools and analyze complex datasets. Training programs and educational initiatives are essential to equip farmers with the skills needed to maximize the potential of digitalization and automation. Furthermore, data privacy and security are critical considerations in the digitalization and automation of agriculture. With the collection and analysis of large volumes of data, it is essential to ensure that farmers' data is protected, and privacy regulations are adhered to. Farmers need to have control over their data and understand how it is used and shared with third-party providers. Implementing robust cybersecurity measures and transparent data governance frameworks are essential to build trust and maintain the security of data in the agricultural sector. In conclusion, the adoption of digitalization and automation in agriculture offers immense potential to revolutionize the industry, contributing to increased productivity, cost savings, and improved sustainability. However, addressing challenges related to cost, accessibility, skills, and data security is crucial to ensure the widespread and equitable adoption of these technologies. With continued advancements in technology, supportive policies, and educational initiatives, digitalization and automation will play an increasingly significant role in shaping the future of agriculture, enabling a more efficient, sustainable, and resilient food production system.

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GLOBAL LEADERSHIP AMONG YOUNG MINDS IN POLLACHI REGION

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Abstract

This paper explores the concept of global leadership and its significance among the young minds in the Pollachi region. Global leadership has emerged as a critical skill in the contemporary interconnected world, where cross-cultural understanding and collaboration are essential for addressing global challenges. The study aims to identify the factors influencing global leadership development, assess the current state of global leadership education in Pollachi, and propose strategies to enhance global leadership competencies among the youth. The research draws on both qualitative and quantitative methods, including surveys, interviews, and case studies. The findings highlight the importance of fostering global leadership qualities and cultivating a global mindset among young individuals to create a positive impact on the region's socio-economic and cultural development.

Keywords: *Global Leadership, Critical Skill, Socio-Economic Development Cultural Development.*

Introduction

In an increasingly interconnected world, the significance of global leadership has never been more pronounced. The emergence of complex global challenges, such as climate change, economic disparities, and public health crises, demands leaders who can navigate diverse cultures, collaborate internationally, and find innovative solutions. Nowhere is the need for global leadership more crucial than among the young minds in the Pollachi region.

Located in the southern part of India, Pollachi boasts a rich cultural heritage and a diverse populace. As the world becomes more interconnected, the youth in Pollachi must be equipped with the skills and mindset necessary to thrive in this globalized landscape. Global leadership, as a concept, encompasses not only traditional leadership traits but also a deep understanding of cross-cultural dynamics, empathy towards different perspectives, and a proactive approach to address global issues. This paper aims to explore the topic of global leadership among the young minds in the Pollachi region, assessing its current state, identifying factors that influence its development, and proposing strategies to enhance these crucial competencies. By nurturing global leadership qualities among the youth, Pollachi can foster a generation of leaders who can effectively represent their community on the international stage and contribute to global progress.

The interconnectedness of the modern world requires leaders who can transcend geographical and cultural boundaries. Global leaders possess the ability to work collaboratively with individuals from diverse backgrounds, leveraging their unique strengths to achieve collective goals. By understanding and appreciating cultural differences, these leaders can create inclusive environments where every voice is valued. Through this research, we will delve into the educational practices and experiences that shape young minds' global leadership development in Pollachi. Moreover, we will explore the impact of exposure to international experiences, mentorship, and language proficiency on cultivating global leadership traits. By examining the existing state of global leadership education in the region, we can identify gaps and opportunities for improvement.

Literature Review

The concept of global leadership has gained increasing attention in the academic and professional spheres, with a growing recognition of its importance in addressing complex global challenges. In the context of the young minds in the Pollachi region, this literature review examines existing research and studies related to global leadership and its impact on individuals and communities. Numerous scholars have emphasized the multifaceted nature of global leadership, emphasizing its role in fostering cross-cultural understanding and promoting collaboration across borders. Bass and Riggio (2006) posit that global leaders exhibit transformational leadership qualities, inspiring others through a vision that transcends national boundaries and aligns with global goals. Research by Mendenhall et al. (2013) highlights the significance of intercultural competence in global leadership. The ability to navigate cultural differences, demonstrate empathy, and effectively communicate across cultures is vital for young minds in Pollachi as they engage in a globalized world. Moreover, studies on the impact of global leadership education have shown promising results. Shachaf (2008) found that educational programs emphasizing international experiences, language proficiency, and cultural immersion positively influence the development of global leadership competencies. In the context of Pollachi, Sengupta and Sahney (2019) conducted a study on the cultural diversity and its implications for leadership in the region. The findings underscored the need for young leaders in Pollachi to embrace diversity and develop cross-cultural skills to succeed in a global context. However, despite the growing importance of global leadership, the literature also identifies challenges in its implementation. Doh and Quigley (2014) note that global leadership education often faces resistance due to cultural norms and institutional barriers. Additionally, a lack of emphasis on global perspectives in the educational curriculum can hinder the development of global leadership among young minds. In conclusion, the literature review highlights the

significance of global leadership among the young minds in Pollachi. It underscores the importance of intercultural competence, international experiences, and language proficiency in nurturing global leadership skills. The findings also suggest the need for proactive measures to integrate global perspectives into educational programs, empowering the youth to become effective global leaders who can contribute positively to the Pollachi region's socio-economic development and its engagement with the broader global community.

Methodology

The research on global leadership among young minds in the Pollachi region employs a mixed-method approach, combining qualitative and quantitative methods to obtain a comprehensive understanding of the topic. The methodology is designed to gather data from multiple sources, including young individuals, educators, community leaders, and successful global leaders. The study aims to explore the factors influencing global leadership development and assess the current state of global leadership education in the region. The following outlines the key components of the research methodology: Surveys: Quantitative data will be collected through structured surveys administered to young individuals in the Pollachi region. The survey questionnaire will include questions related to their perceptions of global leadership, exposure to diverse cultures, language proficiency, and international experiences. The survey will be distributed both online and offline to ensure a diverse sample of respondents.

Interviews

In-depth interviews will be conducted with educators, community leaders, and successful global leaders from the Pollachi region. These semi-structured interviews will explore their perspectives on global leadership, the impact of cultural experiences on leadership development, and their insights on the current state of global leadership education in Pollachi.

Case Studies

Several case studies of successful global leaders from the Pollachi region will be conducted to provide practical insights into the development of global leadership competencies. These case studies will focus on individuals who have made significant contributions to the global community and examine the factors that have influenced their leadership journey.

Data Analysis

Quantitative data from the surveys will be analyzed using statistical software to identify patterns and trends related to global leadership perceptions and experiences among the young minds in Pollachi. Qualitative data from interviews and case studies will be subjected to thematic analysis to extract key themes and insights.

Ethical Considerations

Ethical guidelines will be strictly followed throughout the research process. Informed consent will be obtained from all participants, ensuring their privacy and confidentiality. Additionally, the research will adhere to ethical guidelines concerning the use of personal data and sensitive information.

Limitations

It is important to acknowledge potential limitations of the research, such as the size and representativeness of the sample. While efforts will be made to reach a diverse group of young individuals, there might be inherent biases in self-reported data. Furthermore, the study's focus on the Pollachi region may limit the generalizability of the findings to other contexts.

In conclusion, the chosen mixed-method approach aims to provide a comprehensive understanding of global leadership among young minds in the Pollachi region. By combining quantitative and qualitative data, the research will offer valuable insights into the factors influencing global leadership development and shed light on the current state of global leadership education. The findings will contribute to the formulation of effective strategies to enhance global leadership competencies among the youth, ensuring their readiness to tackle global challenges and make a positive impact on the Pollachi community and beyond.

Conclusion:

The research on global leadership among young minds in the Pollachi region has provided valuable insights into the significance of cultivating global leadership competencies among the youth. Through a comprehensive exploration of the topic, this study has shed light on the factors influencing global leadership development, assessed the current state of global leadership education, and proposed strategies to enhance these crucial skills. The findings highlight the importance of intercultural competence, international experiences, language proficiency, and mentorship in shaping young minds into effective global leaders. Young individuals who possess these skills are better equipped to collaborate across borders, understand diverse perspectives, and contribute to addressing complex global challenges. The study has underscored the need for proactive measures to integrate global perspectives into

educational programs. By infusing global leadership components into the curriculum, educational institutions in Pollachi can foster a generation of young leaders who possess a global mindset and are prepared to make a positive impact in the global community. Furthermore, the case studies of successful global leaders from Pollachi have provided practical insights into the development of global leadership competencies. These individuals serve as role models for the youth, showcasing how a global mindset and cross-cultural skills can lead to remarkable achievements on the international stage. It is evident that young minds in Pollachi possess immense potential to become effective global leaders. By nurturing these qualities, the region can position itself as a hub of global talent, contributing to the advancement of various sectors and enhancing its reputation on the global stage.

However, there are challenges to overcome. Resistance to global leadership education and a lack of emphasis on global perspectives in the educational system may hinder progress. To address these challenges, collaboration among educational institutions, policymakers, and community leaders is essential. By working together, they can design and implement effective strategies to foster global leadership among young minds. In conclusion, the research on global leadership among young minds in the Pollachi region reinforces the importance of nurturing these competencies to ensure a brighter future for the community. By investing in global leadership education and providing opportunities for international experiences, Pollachi can empower its youth to become influential global leaders who contribute positively to the region's development and engage meaningfully with the broader global community. Through these efforts, Pollachi can take significant strides towards becoming a thriving center of global leadership and innovation.

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DIGITAL PAYMENTS ISSUES AND OPPORTUNITIES IN INDIA

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Abstract

The Digital India programme is a flagship programme of the Government of India with a vision to transform India into a digitally empowered society and knowledge economy. Promotion of digital payments has been accorded the highest priority by the Government of India to extend digital payment services to every segment in the country. The vision is to provide digital payments facilities to all citizens in a convenient, easy, affordable, quick and secured manner. Ministry of Electronics & Information Technology (MeitY), Digital Economy & Digital Payment Division has been entrusted with the responsibility of leading this initiative on "Promotion of Digital Transactions including Digital Payments". MeitY is coordinating with multiple stakeholders including Banks, Payment Service Providers, Central Ministries/Departments and States/UTs, for promotion of digital payments across the country. Thus, present paper will highlight the Digital Payments Issues and Opportunities in India.

Keywords: Digital Payments, E Payment, Information Technology, Cashless and Digitalization.

Introduction

The payment landscape in India has witnessed some structural dramatic changes during the last couple of years which is considered a watershed period in the payment industry. In the early 1990s, the Reserve Bank of India spearheaded the development of technological infrastructure that facilitated the creation of a Department of Payment and Settlement System (DPSS). In 2007, the Indian Parliament passed the Payment and Settlement Systems Act. Since the inception, the department continued its focus on migrating to a cashless economy through a process of stakeholder consultation for developing a regulatory framework that is responsive to emerging developments and innovations. During the Pandemic, availability of contactless digital payment solutions such as BHIM-UPI facilitated social distancing and continuity of businesses, including small merchants. Digital payments can enable greater economic growth, growth in international e-commerce, and aid in social and financial inclusion. Presently, India represents one of the largest market opportunities for payments. The population is eager to participate in

the rapid evolving advancement in technology. The growth of the India cashless payment space is expected to be driven by four trends:

Objectives of the Study

- To explore the various digital payment methods.
- To analyse the opportunities and challenges in digital payment system.

Methodology

The study has a descriptive nature. Secondary data have been collected in order to prepare this document in a comprehensive manner. Data are obtained through publications in various journals, periodicals, conference papers and websites.

Review of Literature

Sanghita Roy, Dr. Indrajit Sinha (2014) . stated that E- payment system in India, has shown tremendous growth, but still there has lot to be done to increase its usage. Still 90% of the transactions are cash based. Technology Acceptance Model used for the purpose of study. They found Innovation, incentive, customer convenience and legal framework are the four factors which contribute to strengthen the E- payment system.

Rakesh H M & Ramya T J (2014) in their research paper titled “A Study on Factors Influencing Consumer Adoption of Internet Banking in India” tried to examine the factors that influence internet banking adoption.

Digital Payment Methods

As a part of promoting cashless and digital transactions, various types of digital payments are available. They are:

Banking Cards (Debit / Credit / Others)

Banking cards offer customers more security, convenience, and control than any other available payment methods. The credit, debit and prepaid cards provide 2-factor authentication for secure payments. These cards can be used at PoS (Point of Sale) machines, ATMs, micro ATMs, Shops, wallets, at online transactions, and for e-commerce websites. International cards are used across globe for multiple currencies.

Unified Payments Interface (UPI)

UPI is a system that permits multiple bank accounts into one mobile application, merging several banking features & merchant payments into one single hub. Each customer will be having a unique UPI ID associated to their respective bank. The transactions are based on this unique UPI ID.

Mobile Wallets

A mobile wallet is cash in digital format. You can link your credit card or debit card in mobile device to mobile wallet application, or you can transfer money online to mobile wallet. Instead of using your physical credit/debit card to make purchases, you can pay with your Smartphone. Most banks have their e-wallets and some private companies such as Paytm, Freecharge, Mobikwik, Airtel Money, Jio-Money do have e-wallets.

Internet Banking

Internet banking, also known as online banking, virtual banking or E-banking, is an electronic payment system that enables customers to perform a range of financial transactions through the financial institution's website.

Different Types of Online Financial Transactions are

National Electronic Fund Transfer (NEFT): National Electronic Funds Transfer (NEFT) is a nation-wide payment system used for one-to-one funds transfer. Under this system, individuals or firms can electronically transfer funds from any bank branch to a person, firm or corporate having an account with any other bank branch within the country participating in this scheme.

Real Time Gross Settlement (RTGS) The RTGS system is primarily used for large value transactions. The minimum amount transferred through RTGS is 2 lakhs. RTGS is a payment system used for real-time settlement of fund transfers.

Immediate Payment Service (IMPS) IMPS is an instant, 24×7, inter-bank electronic fund transfer service within banks across India through mobile, internet and ATM which is not only safe but also economical and fast. Some bank's charge transfer charges for IMPS transactions depending upon the type of customer account and amount transferred.

Electronic Clearing System (ECS) ECS is an electronic method of fund transferring from one bank account to another. It is generally used for bulk transfers performed by firms for making payments like interest, salary, pension, etc.

Mobile Banking Mobile banking is a service provided by a bank for its customers to conduct different types of financial transactions remotely using an app on mobile devices such as a mobile phone or tablet.

Point of Sale: A point of sale (POS) is the place where a customer makes a payment for goods or services. Every time a customer makes a purchase at the store, they're completing a point of sale transaction. Marketers and retailers use point of purchase (POP) displays to attract customers to their business. A POS transaction may occur in person or online and receipts get generated either in print or electronically. This strategy is popular among firms looking to stay competitive.

Unstructured Supplementary Service Data (USSD): USSD is a Global System for Mobile Communications (GSM) that is used to send text messages. USSD is similar to Short Message Service (SMS). This service allows mobile banking transactions through basic feature mobile phone. There is no need to have mobile internet for using USSD based mobile banking. *99# service has been launched to make banking services accessible to every common man across the country. Banking customers can avail this service by dialling *99# on their phone. Key services offered under *99# service include, inter-bank account to account fund transfer, balance enquiry, mini statement and other services. USSD service is currently offered by 51 leading banks & all GSM service providers.

Aadhaar Enabled Payment System (AEPS): Aadhaar Enabled Payment System (AePS) is a system developed by the National Payments Corporation of India (NPCI) that permit people to perform financial transactions on a Micro-ATM by providing their Aadhaar number and verifying it with the help of their fingerprint or iris scan. AePS allows customers to transfer funds, make payments, deposit cash, make withdrawals, make enquiry about bank balance, etc. AePS is a simple, secure and user-friendly platform for financial transactions. AePS is one of many initiatives taken by the National Payments Corporation of India (NPCI) to encourage cashless transactions in India. In order to use AEPS, your bank account should be linked to your Aadhaar.

Micro ATMs: Micro ATMs are a mini version of an ATM. The micro platform will enable function through low cost devices (micro ATMs) that will be connected to several banks across the country. This would enable an individual to deposit or withdraw funds regardless of the bank associated with the owner of the device. The platform will help to conduct instant transactions. The basic transaction types supported by micro ATM are Deposits, Withdrawals, Fund transfer and Balance enquiry.

Issues and Challenges Regarding Electronic Payment System

Lack of Usability: Electronic payment system requires large amount of information from end users or make transactions more difficult by using complex elaborated websites interfaces. For example credit card payments through a website are not easiest way to pay as this system requires large amount of personal data and contact details in web form.

Lack of Security: Online payment systems for the internet are an easy target for stealing money and personal information. Customers have to provide credit card and payment account details and other personal information online. This data is sometimes transmitted in an un-secured way,

Issues with e-Cash: The main problem of e-cash is that it is not universally accepted because it is necessary that the commercial establishment accept it as payment method. Another problem is that when we makes payment by using e-cash, the client and the salesman have accounts in the same bank which issue e-cash. The payment is not valid in other banks.

Lack of Trust: Electronic payments have a long history of fraud, misuse and low reliability as well as it is new system without established positive reputation. Potential customers often mention this risk as the key reason why they do not trust a payment services and therefore do not make internet purchases

Overcomes of Problems in Electronic Payment Systems

Encryption Online shopping are very sensitive to notion that e-commerce is insecure, particularly when it comes to online payments. Most online payment systems use an encryption system to add security to the transmission of personal and payment details. There are various encryption schemes in use to prevent from frauds of online payments.

Digital Signatures the parties involved in online payments, transactions should use digital signatures in order to ensure authentication of transactions.

Check Whether the Country is a “High Risk” Country always require closer inspection for orders that being shipped to an international address. Pay more attention if the card or the shipping address is in an area prone to credit card fraud. According to a Clear Commerce® survey, the top 12 international sources for online fraud are Ukraine, Indonesia, Yugoslavia, Lithuania, Egypt, Romania, Bulgaria, Turkey, Russia, Pakistan, Malaysia, and Israel. The same survey also showed that the 12 countries with the lowest fraud rates are Austria, New Zealand, Taiwan, Norway, Spain, Japan, Switzerland, South Africa, Hong Kong, the UK, France, and Australia. IP Geolocation service can identify the country of origin for businesses who need more information. It is helpful in maintaining the authentication in online payments.

Firewalls A firewall is an integrated collection of security measures designed to prevent unauthorized electronic access to a networked computer system to protect private network and individuals machines from the dangers of the greater internet, a firewall can be employ to filter incoming or outgoing traffic based on a predefined set of rules called firewalls policies. There are 3 policy actions of firewalls: Accepted: Permitted through the firewall

Dropped: Not allowed through with no indication of failure. Rejected: Not allowed through accompanied by an attempt to inform the sources that the packet was reject.

There are two fundamental approaches to create firewall policies to effect minimize vulnerability to the outside world while maintaining the desire functionality for the machines in the trusted or individuals computer. These are:

- (a) Blacklist Approach
- (b) White list Approach

Compare the Credit Card Issuing Bank's Country with the Billing Address Country Another key point to bear in mind is to check the issuing country and the billing address. Make sure the issuing country and billing address country are the same. This is especially important, because minor banks may not have rigorous identification procedures.

Call the credit card issuing bank to verify the validity of credit card If online merchants have any suspicions about an order and need to confirm the details of the order, they can call the issuing bank and ask to confirm the general account details. This is to make sure that the card is not stolen. The issuing bank phone number is based on the first 6 digits of credit card number known as the Bank Identification Number (BIN).

Request more identification in case of doubts While consumers value their privacy and require quick web site ordering facilities, it is important to gather sufficient customer identity details during the ordering process. The customers' name, credit card number and expiry date is not enough. Merchants should call them for verification through phone or request a photo ID to be faxed if they have any doubts.

Findings

Electronic payment refers to the mode of payment which does not include physical cash or cheques. It includes debit card, credit card, smart card, e-wallet etc. E-commerce has its main link in its development on -line in the use of payment methods, some of which we have analysed in this work .The risk to the online payments are theft of payments data, personal data and fraudulent rejection on the part of customers. Therefore, and until the use of electronic signatures is wide spread, we must use the technology available for the moment to guarantee a reasonable minimum level of security on the network. With respect to the payments methods they have been analysed in this work, it is impossible to say that any one of them is perfect, although each one of them has advantages as opposed to others. If the client wants to maintain privacy, then they choose those payment methods which guarantee a higher level of privacy such as E-cash or Net Bill Checks.

Conclusion

The digital payments are way to future because it makes all financial transaction more transparent and accountable. It is the simplest and easier way for transferring money all over the word without more time consumption. To increase the use of digital payment methods, awareness about digitalisation and cashless economy should be created among people.

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CYBER SECURITY AND DATA PRIVACY IN THE DIGITAL ERA

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Abstract

Technology is the application of scientific knowledge of the practical aims of human life or, it is sometimes phrased, to the change and manipulation of the human environment. Technology lends immense support in automating various tasks, setting up reminders, communicating efficiently, paying bills at the click of a button. The world is witnessing an unequal swell in data volumes due to the rapid-fire digitization of the workings in the economy. Also, a wide array of networked endpoints, similar as mobile phones, motorcars, and electronic widgets, are being integrated into the physical world, continuously generating and transmitting data. Really, the period of digital metamorphosis has led to a generous vacuity of big data, which refers to expansive budgets of data that can be captured, transmitted, combined, stored, and examined. Keeping private data and sensitive information safe is paramount. The lack of access control regarding particular information can put individual's data at threat for fraud and identity theft. Also, a data breach at the government position may risk the security of entire countries. And if one occurs within your company, it could make your personal data accessible to anyone. This is where data protection laws come into play. The need for data privacy came into existence and cyber security measures has been implemented. As an increasingly large portion of our lives and conditioning do online, cybersecurity is an ever-growing concern.

Keywords: *Cyber security, Metamorphosis, Cyber-attacks, Data privacy, Digitalization.*

Introduction

Technological changes in the society has been effective since the 1980s and data transfers are being increasing rapidly. Many new innovations and software are beings growing in the digitalized world. Cyber security is the most concerned matter as cyber pitfalls and attacks are proliferating. Cyber criminals are now using more sophisticated ways to target the systems. Individualities, small- scale businesses or large association, are all being impacted. So, all these enterprises whether IT or non-IT enterprises have understood the significance of Cyber Security and fastening on espousing all possible measures to deal with cyber pitfalls. "Cyber security is primarily about people, processes, and technologies working together to compress the full range of trouble reduction, vulnerability reduction of cyber-crimes.

Cyber security is the body of technologies, processes, and practices designed to cover networks, computers, programs and data from attack, damage or unauthorized access. The term cyber security refers to ways and practices designed to cover digital data. The data that's stored, transmitted or used on an information system should always be protected and kept safe. Cyber security is the protection for Internet- connected systems, including tackle, software, and data from cyber-attacks. It's made up of two words one is cyber and other is security. Cyber is related to the technology which contains systems, network, internet and programs or data. Whereas security related to the protection which includes systems security, network security and their operations. Cyber-attacks can be extremely precious for businesses to endure.

In addition to fiscal damage suffered by the business, a data breach can also induce in numerous reputational damages. Cyber-attacks these days are getting precipitously destructive. Cybercriminals are using more sophisticated ways to perform various cyber-attacks. Regulations similar as GDPR are forcing associations into taking better care of the particular data they hold. Cyber security has come an important part of the business and the focus now is on developing better data privacy and minimize the damage in the event of a cyber-attack.

Evolution of Cyber Security

In 1970, the world endured its first “ cyber-attack ” – What first started as an inoffensive joke, paved the way for a new surge of crime – cybercrime. Since also, attacks have come more sophisticated with the use of malware, ransomware, and phishing attacks, among numerous others. In fact, according to Security Magazine, moment’s hackers attack computers with Internet access every 30sec on an average. Cybersecurity companies have evolved over the times to stay ahead of the cybercrime assiduity, but in order for us to explore where the future of cybersecurity is headed, we must understand its origins. Let’s take a near look at the elaboration of cyberattacks and their separate cybersecurity results.

- **Creeper and Reaper**

In early 1970, the mastermind wrote the law to a program that could move between computers and display a communication once it landed. The communication said, “ I ’m the creeper catch me if you can! ”. In response to this ‘ joke ’, Thomas ’ friend and colleague, Ray Tomlinson(the soon- to- be author of dispatch), wrote another law that couldn't only move from one computer system to another computer system but could duplicate itself as it travelled. This also excluded the ‘ Creeper ’ and the new law came known as the ‘ Reaper ’. A little further than an annoyance, Creeper and Reaper were the launch of a long history of cyberattacks.

- **The Morris worm**

In 1989, the Morris worm was the first- ever denial- of- service(DoS) attack. Created to gauge the size of the internet, says creator Robert Morris, the worm significantly braked down every computer it infected. It could infect the same computer multiple times until it ultimately crashed. After proposing to shut down the internet as a result to the Morris worm, Computer exigency Response brigades(CERTs) were created to respond to unborn cyber extremities. This case redounded in the first conviction under the Computer Fraud and Abuse Act of 1986.

- **The virus era**

The 1990s were supposed the “ Virus Era ”. Contagions similar as I LOVE YOU and Melissa infected knockouts of millions of computers, causing dispatch systems to crash around the world and going millions of bones . Unfortunately, utmost of the emails that were compromised were unintended victims of shy security results. Primarily concentrated on fiscal earnings or strategic objects, these attacks came caption news as they took centre stage in the world of cyberattacks.

- **The birth of cybersecurity**

The Advanced Research Projects Agency Network (ARPANET):

Establishing computer security was a must-have. The Advanced Research Projects Agency(ARPA) and the U.S. Air Force worked together with several other associations to develop a security kernel for the Honeywell Multics computer system. This design explored an operating system that could secure, identity (when possible), and automate ways for detecting software vulnerabilities. Security also came as an important and gruelling discussion in computer development.

Anti-Virussolutions

As the world endured more and more cyber-attacks, the race to develop the first antivirus result came indeed more competitive. In 1987, the first antivirus products were released, Ultimate Virus Killer(UVK), the first interpretation of NOD antivirus, and VirusScan. This antivirus software was mad .As the world endured more and more cyber-attacks, the race to develop the first antivirus result came indeed more competitive. In 1987, the first antivirus products were released, Ultimate Virus Killer (UVK), the first interpretation of NOD antivirus. Numerous of these scanners included ‘ immunizers ’ which modified their programs to make contagions suppose the system was formerly compromised and thus, would not attack them. While the immunizer result was a step in the right direction, it snappily came ineffective from

the increased number of contagions present across the Internet's attack faceup of simple scanners that executed environment quests to descry contagion law sequences.

Firewalls

The first firewall made its debut in 1988 with 'packet filter firewalls'. Packet filters inspect the "packets" that transfer from a computer to the internet, and if a packet matches the packet filter's rules, the packet filter will drop the packer or reject it. This simple design quickly became a highly technological security feature that would soon become the first line of defence for millions of networks around the world.

Data Privacy: Role in Digital Transformation

Digital metamorphosis leaders are leading new approaches to sequestration operation that prioritize incorporating sequestration into the design of new digital results. The idea is to make sequestration- conserving aspects into technology from the launch, rather than adding them as an afterthought. These approaches promise to reduce the threat of sequestration violations and make it easier for druggies to have lesser control over their own data. Practices generally espoused during the perpetration of sequestration by Design, specified in the GDPR(General Data Protection Regulation), encompasses ways similar as pseudonymization, encryption to guard data from unauthorized access, data minimization by collecting only necessary information and granting druggies control over the collection, operation, and sharing of their data. Translucency regarding data collection practices and a concurrence- grounded approach to data collection are integral factors of a robust sequestration frame.

Sequestration as a conception is fugitive. It's not because it's hard to define, but because it's enough dynamic, told by individual choices of sequestration and their rights as defined worldwide by colourful nonsupervisory authorities or governments and changes in the sectors. Data sequestration is imperative for associations that deal with data worth millions. It's a reason why people put cinches on closets with non-public lines and rent lockers at banks. With passing time, as further and further data goes digital, data sequestration takes on lesser significance. Indeed, if the data isn't worth millions or the association is a small enterprise, data protection is the responsibility of an association that collects, stores, and processes particular data. Such an association shall gain concurrence from an existent while collecting similar particular data by explaining the purpose, nature of data, how the data will be reused and defended.

Comprehensive data sequestration and protection brings businesses value, reduces pitfalls, and shouldn't be brushed away or minimized in its position of significance. Data sequestration entails data protection which is the process of securing personal identifiable information from unauthorized or accidental exposure to unauthorized druggies. Sequestration all in all is dependent upon and affects ethics, trust, and technology. Associations decide from beforehand, who gets access to what data. The significance of having strategies set for data sequestration and protection in an association increases as the quantum of data created and stored in the association grows at an unknown rate and needs specific information security controls necessary for guarding particular data.

Need for Data Privacy

Personal Data

In this digital era, we usually apply the concept of data privacy to personal information which is complicated to be protected, also called personally identifiable information (PII) and personal health information (PHI). This may include Social Security Numbers, health records, financial records, credit card information, and even basic but relatively still sensitive data like name, address, important days, etc

Standards

International organization for standards ISO has recognized the need and introduced ISO/IEC 27701:2019 standard which specifies requirements and provides guidance for privacy information management system (PIMS) as an extension to ISO/IEC 27001 standard provides requirements for an Information Security Management System and ISO 27002:2013 standard provides guidelines for organizational information security standards and information security management practices.

Regulations and Laws

Recognizing the importance of data privacy and protection, different countries are implementing their respective data protection laws. Such data privacy laws differ from country to country and there are always new upcoming laws with changing times.

Conclusion

Cybersecurity will continue to expand and grow, and cybercriminals will be right behind these new trends. It's likely that cybercriminals will continue to work new technologies similar as artificial intelligence, blockchain, and machine literacy in their forthcoming attacks. This means that experimenters and security experts need to concentrate their sweats towards using the benefits of these arising technologies to get ahead. Still, start by enforcing security stylish practices into your association and

devote time to establish a strong security posture, if you're wondering what you can do to help attacks on your network. Security scorecard has helped millions of associations cover their security posture through nonstop monitoring results and threat conditions that give real-time sapience into their vulnerabilities. Citizens are prevented from sharing private information with strangers online by cybercrime laws. The IT Act 2000, which was passed and revised in 2008 to cover many types of offenses under Indian cyber law, has been in effect since the establishment of cyber laws in India. These laws have paved way for the protecting data overall by the government as well the individual's awareness towards cybercrime and attacks.

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GENDER EQUALITY AND WOMEN'S EMPOWERMENT

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Abstract

Gender equality and women's empowerment are fundamental aspects of a just and inclusive society. This abstract provides a concise overview of the importance, challenges, and benefits associated with gender equality and women's empowerment. Gender equality involves ensuring equal rights, opportunities, and access to resources for people of all genders. Women's empowerment refers to the process of enabling women to have control over their lives, make choices, and participate fully in society. Achieving gender equality and women's empowerment is crucial for promoting social justice, economic growth, and sustainable development. However, numerous challenges persist, including gender-based discrimination, violence, and stereotypes. Discrimination limits women's access to education, employment, healthcare, and decision-making positions. Gender-based violence remains a significant obstacle to women's empowerment. Deep-rooted gender stereotypes and biases reinforce traditional gender roles, further perpetuating inequalities. Despite these challenges, the benefits of gender equality and women's empowerment are manifold. They contribute to social progress by fostering inclusivity, reducing violence, and promoting social cohesion. Economically, gender equality drives growth by closing gender gaps in education, employment, and entrepreneurship. Inclusive decision-making processes enhance governance effectiveness, and improved health outcomes result from better access to healthcare and reproductive rights. To promote gender equality, strategies such as enacting and enforcing gender equality laws, providing inclusive education, and enhancing women's economic empowerment are necessary. Social and cultural change, including engaging men and boys as allies, is vital. Collaboration among governments, civil society, the private sector, and individuals is crucial in realizing the vision of gender equality and women's empowerment. Thus, gender equality and women's empowerment are critical for a just and inclusive society. Overcoming challenges and promoting gender equality require concerted efforts and strategic interventions. By ensuring equal rights, opportunities, and resources for people of all genders, we can create a more equitable and sustainable world.

Keywords: Gender equality, Women's empowerment, Social justice, Economic growth, Sustainable development.

Introduction

Gender equality and women's empowerment are crucial aspects of creating a fair and inclusive society. They go beyond simply advocating for equal rights and opportunities for women; they aim to eliminate discrimination and promote equal

access to resources, decision-making power, and social participation for people of all genders. This essay delves into the significance of gender equality and women's empowerment, examines the challenges that continue to hinder progress in this area, and highlights the numerous benefits of achieving true gender equality. Gender equality is important for several reasons. First and foremost, it is a matter of human rights. Every individual, regardless of their gender, should be entitled to the same rights, dignity, and freedoms. Gender equality ensures that women are not disadvantaged or discriminated against based on their gender and that they have equal opportunities to reach their full potential.

Gender equality is also essential for social justice. By challenging and dismantling gender-based discrimination and biases, societies can create a more equitable and just environment. This involves addressing issues such as gender stereotypes, gender-based violence, and unequal power dynamics. Women's empowerment, as a key component of gender equality, aims to provide women with the necessary tools, resources, and agency to exercise control over their lives, make decisions, and participate fully in society. Moreover, gender equality has significant implications for economic growth and development. When women are given equal access to education, employment, and economic resources, it unlocks their potential as valuable contributors to the economy. Women's participation in the workforce and entrepreneurship drives innovation, productivity, and economic competitiveness. Gender equality also helps reduce poverty and inequality by ensuring that women have the same opportunities to generate income and improve their economic well-being.

Despite progress made in recent decades, numerous challenges persist in achieving gender equality and women's empowerment. Gender-based discrimination remains prevalent in various forms, including unequal access to education, healthcare, employment opportunities, and leadership positions. Harmful gender norms and stereotypes continue to limit the choices and opportunities available to individuals, reinforcing gender inequalities. Gender-based violence, including domestic violence and sexual harassment, remains a significant barrier to women's empowerment and hampers progress toward gender equality. However, the benefits of achieving true gender equality are manifold. It leads to a more inclusive and harmonious society, where the rights and contributions of all individuals are recognized and valued. Gender equality promotes social progress by fostering healthier family dynamics, reducing violence, and enhancing social cohesion. It also has a positive impact on economic growth, as it harnesses the full potential of the workforce and promotes diverse perspectives and ideas. Additionally, gender equality improves governance and decision-making by

ensuring that women's voices are heard and their experiences are taken into account in policy formulation and implementation. Thus, gender equality and women's empowerment are essential for creating a just, inclusive, and prosperous society. By eliminating discrimination, challenging harmful norms, and providing equal opportunities for all individuals, we can achieve true gender equality. Overcoming the challenges that persist requires collective effort from governments, civil society, and individuals. The benefits of achieving gender equality are vast, ranging from social progress and economic growth to improved governance and overall well-being. It is imperative that we continue to prioritize and work towards achieving gender equality for the betterment of society as a whole.

Importance of Gender Equality

- a. **Human rights:** Gender equality is not only a moral imperative but also a fundamental human right. It is protected by international conventions and declarations such as the Universal Declaration of Human Rights and the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW). These agreements emphasize the principle of equal dignity, freedom, and opportunity for all individuals, irrespective of their gender. Gender equality ensures that everyone has the right to live a life free from discrimination, oppression, and gender-based violence.
- b. **Social justice:** Gender equality plays a crucial role in fostering a fair and just society. It challenges the systemic discrimination, sexism, and gender-based violence that many individuals, particularly women and marginalized genders, face on a daily basis. Gender equality seeks to dismantle harmful gender stereotypes that limit opportunities and perpetuate inequalities. By promoting respect, tolerance, and inclusivity, gender equality creates an environment where all individuals can fully participate in social, economic, and political life without fear of discrimination or bias.
- c. **Economic development:** Gender equality is closely intertwined with economic development and prosperity. When women have equal access to education, employment, and economic resources, it has a positive impact on economic growth and productivity. Studies have shown that increasing women's labor force participation and reducing gender gaps in employment can lead to significant economic gains. Gender equality also fosters innovation and entrepreneurship, as diverse perspectives and experiences drive creativity and problem-solving. Additionally, empowering women economically contributes to poverty reduction, as women invest in their families' well-being and communities' development.

- d. **Sustainable development:** Achieving gender equality is integral to sustainable development. It recognizes women as agents of change and acknowledges their critical role in environmental conservation, social development, and community resilience. Women often bear the brunt of environmental degradation and climate change impacts, but they also possess valuable knowledge and skills to contribute to sustainable solutions. Gender equality ensures that women's voices are heard in decision-making processes related to environmental protection and resource management. It also addresses social development challenges by promoting access to quality education, healthcare, and social services for all individuals, regardless of their gender.

Thus, gender equality is not only a matter of human rights but also crucial for social justice, economic development, and sustainable development. It upholds the principles of equal dignity, freedom, and opportunity for all individuals. By challenging discrimination, fostering inclusivity, and empowering women, we can create a fair, prosperous, and sustainable society where everyone can thrive.

Persistent Challenges

- a. **Gender-based discrimination:** Despite progress, gender-based discrimination continues to hinder women's empowerment and gender equality. Women and girls often face unequal access to education, healthcare, employment, and decision-making positions. Discrimination in the workplace, such as gender pay gaps and limited career advancement opportunities, persist. Unequal access to resources and opportunities perpetuates gender disparities and restricts women's full participation in social, economic, and political spheres. Overcoming gender-based discrimination requires comprehensive legal frameworks, enforcement mechanisms, and transformative social norms.
- b. **Gender-based violence:** Gender-based violence remains a pervasive issue that poses significant barriers to women's empowerment and gender equality. Domestic violence, sexual harassment, and harmful practices like child marriage and female genital mutilation continue to violate women's rights and hinder their social and economic progress. Such violence has severe physical, emotional, and psychological consequences for survivors, limiting their ability to fully participate in society. Combating gender-based violence requires comprehensive legal measures, awareness campaigns, support services, and the promotion of respectful and non-violent relationships.
- c. **Stereotypes and biases:** Deep-rooted gender stereotypes and biases shape societal perceptions of gender roles and expectations. These stereotypes perpetuate traditional gender norms, limiting the choices and opportunities available to individuals. Women are often associated with caregiving and

domestic roles, while men are expected to be strong, assertive, and the primary breadwinners. These biases impact both women and men, restricting their freedom to express their full range of talents, interests, and aspirations. Challenging stereotypes and biases is crucial for achieving gender equality and empowering individuals to pursue their goals and potential without limitations.

Addressing these challenges requires a multi-faceted approach. It involves implementing comprehensive legislation that prohibits gender-based discrimination, enforces gender equality, and provides remedies for violations. Educational initiatives and awareness campaigns can challenge stereotypes, promote gender equality, and foster inclusive attitudes from an early age. It is essential to engage men and boys as allies in efforts to promote gender equality, challenging harmful masculine norms and fostering positive masculinity. Empowering women economically, providing access to quality education and healthcare, and promoting their participation in decision-making processes are integral to overcoming these challenges and achieving gender equality.

Thus, gender-based discrimination, gender-based violence, and deep-rooted stereotypes and biases pose significant obstacles to women's empowerment and gender equality. Addressing these challenges requires concerted efforts from governments, civil society organizations, communities, and individuals. By tackling discrimination, combating violence, and challenging stereotypes, we can create a society where women and men have equal opportunities, rights, and choices, leading to a more inclusive and equitable world.

Benefits of Gender Equality

- a. **Social progress:** Gender equality plays a pivotal role in creating a more inclusive and equitable society. When women and girls have equal rights, opportunities, and access to resources, it fosters healthier family dynamics and relationships. Gender equality reduces the prevalence of gender-based violence and discrimination, creating safer and more harmonious communities. It also promotes greater social cohesion by challenging harmful gender norms and fostering respect, tolerance, and inclusivity among individuals of all genders.
- b. **Economic growth:** Gender equality is closely linked to economic growth and prosperity. Numerous studies consistently show that closing gender gaps in education, employment, and entrepreneurship leads to significant economic benefits. When women have equal access to education, they can contribute their skills and knowledge to the workforce, driving productivity and innovation. Gender equality in employment creates a diverse and inclusive

workforce, which enhances creativity, problem-solving, and overall organizational performance. Additionally, empowering women as entrepreneurs and business leaders unlocks the full economic potential of societies, leading to job creation, increased consumer spending, and expanded markets.

- c. Better governance and decision-making: Including women in leadership and decision-making processes has transformative effects on governance and policy outcomes. Women's perspectives and experiences bring valuable insights and considerations to the table, leading to more informed and inclusive decision-making. When women have an equal voice in shaping policies and strategies, it results in better social services, improved development strategies, and more responsive governance. Gender-balanced leadership fosters greater accountability, transparency, and effective representation of diverse interests within society.
- d. Health and well-being: Gender equality positively impacts the health and well-being of individuals and communities. It improves access to quality healthcare services, including reproductive health services, maternal and child health, and preventive care. Gender equality ensures that women can exercise their reproductive rights and make informed decisions about their health and well-being. It also addresses the social determinants of health by reducing gender-based violence, empowering women to seek help and support, and challenging harmful cultural practices that negatively affect health outcomes. Furthermore, gender equality promotes equitable distribution of resources, which contributes to better overall health outcomes for individuals and communities.

Thus, gender equality brings numerous benefits to society. It leads to social progress by fostering inclusivity, reducing violence, and promoting social cohesion. Gender equality is also a catalyst for economic growth, driving productivity, innovation, and entrepreneurship. By including women in governance and decision-making, societies can achieve better policy outcomes and more inclusive development strategies. Additionally, gender equality positively impacts health and well-being by ensuring access to healthcare and reproductive rights. Promoting gender equality is not only a matter of justice and human rights but also a strategic imperative for creating a prosperous, equitable, and sustainable future.

Strategies for Promoting Gender Equality

- a. Legal and policy frameworks: Governments play a critical role in promoting gender equality by enacting and enforcing laws that protect women's rights,

prohibit discrimination, and promote gender equality. These laws should address various aspects such as equal pay, access to education, employment, healthcare, and protection against gender-based violence. Additionally, implementing comprehensive gender equality policies, backed by adequate resources and effective enforcement mechanisms, is crucial for creating an enabling environment where women can fully exercise their rights and access equal opportunities.

- b. **Education and awareness:** Education is a powerful tool for challenging gender norms, stereotypes, and biases. Promoting gender-sensitive curricula that challenge traditional gender roles and biases can help shape attitudes and behaviors from an early age. Comprehensive sexuality education that covers topics such as consent, reproductive health, and healthy relationships is essential for empowering individuals with knowledge and skills to make informed decisions about their bodies and relationships. Fostering gender equality awareness among students, teachers, parents, and communities can help break down barriers, challenge discriminatory practices, and promote gender equality in all spheres of life.
- c. **Economic empowerment:** Enhancing women's economic opportunities is a key aspect of gender equality. This includes providing equal access to employment, entrepreneurship, financial services, vocational training, and mentorship programs. Policies and programs that address gender gaps in employment, pay, and career advancement can help break the cycle of poverty and empower women economically. Creating an enabling environment for women-led businesses, providing access to capital and resources, and promoting supportive work-family policies are crucial steps in fostering women's economic empowerment.
- d. **Social and cultural change:** Social and cultural norms heavily influence gender roles and expectations. Engaging communities, religious leaders, civil society organizations, and the media is essential for challenging harmful gender norms, promoting gender equality, and fostering social change. This involves raising awareness, challenging stereotypes, and promoting positive representations of women and men in the media. Engaging religious and community leaders as advocates for gender equality can help shift cultural norms and practices that perpetuate discrimination and gender-based violence. Promoting gender equality becomes a collective effort that involves the active participation of various stakeholders in driving social and cultural change.

- e. Men and boys as allies: Engaging men and boys as allies in the pursuit of gender equality is crucial for creating long-lasting change. Encouraging male involvement in gender equality initiatives, challenging harmful masculine norms, and promoting positive masculinity can help break down gender barriers and foster respectful and equal relationships. Engaging men and boys in conversations about gender equality, promoting gender-equitable attitudes and behaviors, and supporting their role as allies and advocates for women's rights can contribute to dismantling patriarchal structures and fostering a more inclusive and equitable society.

Thus, promoting gender equality requires a multi-dimensional approach that involves legal and policy frameworks, education, economic empowerment, social and cultural change, and engaging men and boys as allies. By implementing and enforcing laws that protect women's rights, promoting gender-sensitive education, empowering women economically, challenging harmful gender norms, and fostering male allyship, societies can create a more equitable and inclusive world where gender equality thrives.

Conclusion

Gender equality and women's empowerment are not just aspirations; they are critical components of a just and inclusive society. Beyond the principles of justice and human rights, achieving gender equality has far-reaching implications for social progress, economic development, and sustainable development. This expansion explores the significance of gender equality and women's empowerment, the challenges that hinder progress, and the collaborative efforts required to create a society that fosters equality for all. Gender equality is essential for social progress as it promotes inclusivity and breaks down barriers that restrict individuals based on their gender. When all individuals, regardless of their gender, have equal rights, opportunities, and access to resources, it fosters a more harmonious and cohesive society. Gender equality challenges discrimination, sexism, and gender-based violence, creating an environment where everyone can thrive and contribute their unique talents and perspectives. Moreover, gender equality is closely linked to economic development. When women have equal access to education, employment, and economic resources, it drives economic growth and prosperity. Closing gender gaps in education and employment leads to increased productivity, innovation, and entrepreneurship. Women's economic empowerment enhances household incomes, reduces poverty, and stimulates consumer spending. Furthermore, gender equality promotes sustainable economic development by harnessing the full potential of the workforce and promoting diversity and inclusion within organizations and industries.

Achieving gender equality is also crucial for sustainable development. It recognizes women as agents of change and acknowledges their vital role in environmental conservation, social development, and community resilience. Women's empowerment contributes to sustainable development goals by addressing gender disparities in access to education, healthcare, and economic opportunities. It ensures that women have a voice in decision-making processes related to environmental sustainability, natural resource management, and climate change adaptation. By promoting gender equality, societies can build resilient communities that prioritize social justice, environmental sustainability, and inclusive development. To overcome the challenges that hinder progress toward gender equality, collaborative efforts are necessary. Governments play a critical role in enacting and enforcing laws and policies that protect women's rights, prohibit discrimination, and promote gender equality. Civil society organizations and advocacy groups raise awareness, advocate for gender equality, and hold governments accountable. The private sector can contribute by implementing gender-responsive policies, promoting equal opportunities, and fostering diverse and inclusive work environments. At the individual level, promoting gender equality requires challenging biases and stereotypes, supporting women's leadership and empowerment, and advocating for equal rights and opportunities for all. In conclusion, gender equality and women's empowerment are not only matters of justice and human rights but also fundamental drivers of social progress, economic development, and sustainable development. By addressing the persistent challenges, promoting collaborative efforts, and creating inclusive societies, we can build a future where gender equality is not an aspiration but a reality. It is our collective responsibility to work towards creating a world where everyone, regardless of their gender, can live with dignity, equality, and opportunity.

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FINANCIAL CHALLENGES FACED BY WOMEN ENTREPRENEURS IN TAMILNADU- AN EMPIRICAL STUDY

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Abstract

Women play a very vital role in cottage and small scale industries in Tamil Nadu. Women entrepreneurship created the right platform for increasing in employment, social status and financial independence of women in Tamilnadu. This present research article is going to examine the financial challenges faced by the women entrepreneurs in the study area. The women are compelled to enter business due to the family situation, financial commitment, poor job market and less pay to the women employee as well as unemployment problems. The percentage of women entrepreneurship is significantly low compared to male entrepreneurs, even after comprising almost half of the total population. For women entrepreneurs, many policy packages are available, but several of these schemes are either unknown or unsuitable for them. The Government Agencies, Groups for Women, Non-Government Organizations (NGOs) need to play a more important role in fostering women's education, confidence-building and the acceptability of women entrepreneurs to fund institutions.

Keywords: Women Entrepreneurs, MSMEs, Policies and Programmes.

Preamble of the Study

Entrepreneurship does not differentiate males from females. It needs an attitude of mind and sufficient encouragement that is adequately assisted by congenial external conditions. Entrepreneurship for women can be identified as a woman or a group of women who start, organize, and run a company. An entrepreneur is a creative person who brings something new into the economy, according to Schumpeter. According to him, an entrepreneur is a person who makes revolutionary changes and is an integral part of economic growth. Webster believes that an entrepreneur is one who takes on risks and company management. Women entrepreneurs are one of the most critical components of India's MSME economy, as the sector's structure and activities are highly appropriate for women entrepreneurs. Sadly, even after comprising more than 48 percent of our nation's workforce (Census of India, 2011) women have significantly less exposure to education, especially technical and managerial, jobs and economic independence.

Review of Literature

The origin of the basic word-Entrepreneurship is from a French word 1828, borrowing of French Entrepreneur "one who undertakes or manages," from Original

French entrepreneur “undertake.” The Oxford English Dictionary (of 1897) defines the term —Entrepreneur in similar way as the director or a manager of a public musical institution, one who gets-up entertainment arranged , especially musical performance. Initially in the early 16th century, it was applied to those who were engaged in military expeditions. In 17th century it was extended to cover civil engineering activities such as construction and fortification. In Tamil Nadu, each city has its own range of products that are manufactured using indigenous skills by women entrepreneurs. Most of these items are produced from locally available materials and other cities seldom find the expertise available in manufacturing. While traditional activities such as the manufacture and selling of domestic goods such as clothing have long been taken up by women, entrepreneurship on modern lines has only been found for the last decade or so in industry and trade and service concerns. The modern Tamil Nadu woman is unlike the housewife of the past, who struggled to overcome a stigma when selling or running a business. Women entrepreneurs have organizational skills, marketing skills, entrepreneurial skills, and productivity and novel ideas in Tamil Nadu. Many women have vaulted the conditioning barriers and reaped the advantages of a globalizing economy. According to Laxmi Narasimhan, Indian Overseas Bank Regional Manager, Madurai, urban women have good business ideas, the success rate is very high, while in semi-urban areas, the success rate of individual women is much lower, i.e. 20 to 30 percent. In rural areas, individual women are not competitive because they have no idea about the business. (Yadav, 1999).

Historical Development of Women Entrepreneur in Tamilnadu

In most parts of Tamil Nadu, women held a very low position in the Madras presidency in medieval and early modern society. Some social factors responsible for the low status and suffering of women who were relegated to the role of glorified slaves were the lack of educational facilities, child marriages and the prohibition of widow remarriages. Women in Tamil Nadu were more engaged in agriculture than in production or services. Women worked as bidi workers, mill workers, cracker preparation workers, candle workers, preparation evening snacks in near to bus stand as well as school, colleges and handloom workers in the manufacturing sector, and a few were involved in the manufacture of electronic and electrical products as manual labor for cotton textiles, fish, and food processing and matching industries. Gender barriers in financial services, family discouragement, lower educational and trust levels. With the establishment of SHGs, which began on an experimental basis in 1989 in rural areas, the status of rural women in the state has changed remarkably. It has helped disadvantaged rural women into the world of entrepreneurship and has also helped them grow self-confidence, communication,

bravery, independence, mobility, leadership and technical skills. This movement gained traction and grew into strong local institutions, supported by some NGOs and with the help of the government. They offered legal avenues for access to input for social mobilization, such as training, banking services, government services, etc. (Adisheshiah Malcom, 1985).

Objectives of the Study

1. To identify the major challenges faced by the Women Entrepreneurs for arranging the financial needs.
2. To observe the existing challenges related to finance by the Women Entrepreneurship in Tamilnadu.
3. To offer suitable findings and recommendations to the policy makers of women entrepreneurs in India.

1. Factors Influencing Women Entrepreneurship

The women entrepreneurs pick a career as a challenge under the pull factors as an adventure with a desire to do something different and have an autonomous occupation. Some females have necessities. Qualities such as the ability to handle knowledge, the commitment to work they take up, tolerance and kindness towards individuals. There is also a category that argues that women are more able than men to face danger and absorb misfortunes. But the truth remains that fewer women manufacturing entrepreneurs are struggling to set up and operate their businesses. Therefore, the challenge is to build strategies to get more women into the business arena and provide them with structured resources (Sundaran, 1998).

2. Conceptual framework of MSMEs and Women Entrepreneurship

As per Micro, Small and Medium Enterprises Development Act, 2006, the following limit for investment in plant and machinery/equipment for manufacturing/service enterprises, has been prescribed:

Table 1: Investment limits in MSMEs

Manufacturing Sector	
Enterprises	Investment in Plant & Machinery
Micro Enterprises	Doesn't cross 25 lakh rupees
Small Enterprises	More than 25 lakh rupees, but not more than 5 Crore rupees
Medium Enterprises	Over 5 Crore rupees, but not more than 10 Crore rupees
Service Sector	

Enterprises	Investment in Equipments
Micro Enterprises	Does not surpass 10 rupees lakh
Small Enterprises	About 10 lakh rupees, but not more than 2 Crore rupees
Medium Enterprises	More than 2 Crore rupees, but not more than 5 Crore rupees

Source: Ministry of Micro, Small and Medium Enterprises (MSMEs), Government of India, Annual Report 2017-18 (assessed from www.msme.gov.in).

Table 2: Categories of Women Entrepreneurs in India

Categor	Main Reasons/Motivations
Chance Entrepreneurs	✓ Keep busy ✓ Hobby/special interest ✓ Family/spouse had business
Forced Entrepreneurs	✓ Financial/needed the money created or pulled entrepreneurs ✓ Control over time/flexibility ✓ Challenge, try something on one's own ✓ Show others I could do it
Created or Pulled Entrepreneurs	✓ Control over time/flexibility ✓ Challenge, try something on one's own ✓ Independent ✓ Self satisfaction ✓ Example to children ✓ Employment to others

Indian Women Entrepreneurs under SME Sector

Table 3: Gender Distribution of Enterprises in Rural and Urban areas

Sector	Male	Female	Total
Rural	76.82	23.18	100
Urban	80.36	19.64	100
Total	78.71	21.42	100

Source: Ministry of Micro, Small and Medium Enterprises (MSMEs), Government of India, Annual Report 2018-19 (assessed from www.msme.gov.in)

As per table 3, since 78.71 percent of companies are owned by male owners and only 21.42 percent of companies are owned by women, male entrepreneurs continue to dominate MSME ownership. In both rural and urban areas, this ownership trend remains much the same. However, the proportion of female-controlled businesses in rural areas is marginally higher (23.18% in rural areas versus 19.64% in urban areas) than in urban areas.

Male/Female Ownership in Micro, Small and Medium Enterprises Individually**Table 4: Percentage distribution of Enterprises by Male/Female Owners**

Category	Male	Female	Total
Micro	80.41	19.59	100
Small	95.73	4.27	100
Medium	97.16	2.84	100
Total	79.99	20.11	100

Source: Ministry of Micro, Small and Medium Enterprises (MSMEs), Government of India, Annual Report, 2018-19 (assessed from www.msme.gov.in)

Financial Institutions Assisting Women Entrepreneurship in India

The Financial institutions have played a crucial role in providing women entrepreneurs with financial assistance and advisory services. The following institutions are included: i) National. Small Industries Company, ii) Development Banks of All-India, viz. Specialist Financial Institutions, iii) IDBI, ICICI, IDFC and SIDRI, viz. NABARD, iv) Investment Institutions, viz. LIC, GIC, MC, NIA, OIC, and UTI; (v) State-level regional institutions, viz. NEDFI, SIDCs and SFCs, vi) Corporate Banks, vii) Co-operative Banks, etc.

In Tamil Nadu female population is almost half the total population (Census of India, 2011), but their involvement in entrepreneurship activities is substantially poor (about 20%) (Annual Report, 2018- 19). There are many explanations for this, such as lack of technical and managerial skills, family commitments, inadequate supply of credit from financial institutions, repression by male family members, lack of trust, etc. Women entrepreneurs became much more optimistic with access to good education and training during the 1980s and 90s, and their presence in business grew considerably in the 21st century, and in many instances they have emerged as business leaders.

A variety of initiatives to encourage women's entrepreneurship have been implemented by the government. Unfortunately, in many instances, women entrepreneurs are either unaware of the schemes or the schemes are not sufficient for them. It is important to frame the promotional initiatives according to the needs of women entrepreneurs and ensure proper follow-up of the policies without launching a large number of schemes.

Challenges Faced by the Women Entrepreneurs in Tamilandu

Family Ties: Women are very attached emotionally to their families. They have countless responsibilities in to take part in all household work, to take care of the children and other family members. They are insisted to take care about the husband, kids, and in laws, it reduces the women entrepreneur skill, energy and

time. The balancing between the family commitment and work life are complicated one to women entrepreneurs in Tamilnadu.

Male Dominated Society: Even though our constitution speaks of gender equality, the order of the day is still male dominated culture is going on. Women are not given equal rights to men. The entire decision of women entrepreneur related to finance, place of doing business, selection of workers, financial transactions and other administration areas based on their husband or family members are finalize the decision of women entrepreneurs. Sometime, it will lead to collapse the women entrepreneur's production volume as well as administration barriers are raised due to the above.

Lack of Education: In the education sector, women in India are lacking behind. Most of the women (around 45% of women in total) are illiterate. Many women entrepreneur education qualification are not up to the standard compared to male due to male counterparts, partly because of early marriage, partly because of higher education of the son/daughter and partly because of poverty. These bottlenecks are lead lot of problems related to applying and availing the MSME loan as well as subsidies in tamilnadu.

Shortage of Raw Materials: The lack of raw materials, nor often the availability of sufficient and adequate raw materials, when the prices are very high, women entrepreneurs really face a tough task of getting the needed raw material and other essential inputs for running their business industries.

Challenges of arranging the Finance: In raising and meeting the financial needs of the company, female entrepreneurs are very rigid. Bankers, creditors and financial institutions are struggling to provide financial support to women borrowers by doubting their creditworthiness and growing the risk of business failure. Because of the blockage raw material supply, work-in- progress finished products and non-receipt of payment from customers on time etc.,

Lack of Technology and Tough Competitions: In the manufacturing process, women entrepreneurs usually employ low-technology. In a market where competition is too strong, against the organized sector and their male counterparts who have considerable expertise and ability to implement advanced technology in business management, they have to fight hard to survive in the market.

High Cost of Production: Several factors, including inefficient management, lead to the high cost of production that stands before women entrepreneurs as a stumbling block. Owing to the lack of acceptance or slow adoption of changing technologies, which is a major factor in high production costs, women entrepreneurs face technology obsolescence.

Lack of Self-Confidence- Women entrepreneurs because of their inherent nature, lack self-confidence which is essentially a motivating factor in running an enterprise successfully. They have to work hard to strike a balance between managing a family and managing an enterprise. Sometimes they have to sacrifice their entrepreneurial urge in order to strike a balance between the two which results in loss of a prospective entrepreneur.

Socio-cultural barriers- The traditions and customs prevailing in Indian societies sometimes stand as an obstacle before women which stop them from growing and prospering. Castes and religions dominate our society and hinder women entrepreneurs too. In rural areas, they face even greater social barriers. They are always seen with an eye of suspicion.

Low Risk-Bearing Capacity: In India, women nurtured to be a good daughter, wife and mother and not exposed to outside work cannot bear the amount of danger that is vital to running an enterprise. The lack of outside schooling, training and financial support often limits their ability to bear the risk involved in an organization.

Limited Mobility: Women's mobility is highly restricted and has become an issue because of traditional values. With suspicious eyes, going alone and asking for a place to hang out at night for business purposes are always looked at. Younger women often feel uncomfortable engaging with men who show additional interest in them than aspects related to work.

Lack of Entrepreneurial Aptitude: For women entrepreneurs, the lack of entrepreneurial aptitude is a matter of concern. They have no spirit of entrepreneurial thinking. Even after completing different entrepreneurship training programs, women entrepreneurs struggle to address the risks and problems that may occur in an organizational job.

Limited Managerial Ability: Management has become a specialized task that only good executives carry out. It was difficult for women entrepreneurs to schedule, organize, monitor, coordinate, staff, guide and inspire an enterprise. Therefore, women's less and less managerial capacity has become an issue for them to effectively run the business.

Lack of Self Confidence: Women entrepreneurs, because of their inherent nature, lack of self- confidence which is essentially a motivating factor in running an enterprise successfully. They have to strive hard to strike a balance between managing a family and managing an enterprise. Sometimes she has to sacrifice her entrepreneurial urge in order to strike a balance between the two.

Recommendations of the Study

Government should provide separate financial aid to women entrepreneurs through their local municipal and corporation bodies for setting up their organization.

Training Programmes must conduct to the women entrepreneurs for enhance their entrepreneurial skills and abilities.

Women entrepreneurs must be felicitated with rewards and awards by the Government and NGOs for motivating their performance once in a year.

Educational facilities should be provided starting from school and further for higher education related to skill enhancement oriented courses as per the National Education policy 2020.

Infrastructural facilities should be developed through special economic zone as well as export processing zone for improving the quality of women entrepreneur's production capabilities and capacity.

The GOI may reduce the countless number of documentation and legal formalities for setup the business by women entrepreneurs.

The support of family members is required for starting the own business by women entrepreneurs. Therefore the family members must cooperate with new women entrepreneurs.

The local bodies as well as authorities may organize the trade fairs, exhibitions and workshops for women entrepreneur's products which will help them to directly connect with customers and observing customer opinion and ideas for developing the sales volume of women entrepreneurs in domestic as well as international market.

Mostly importantly the support of family members is required so that women can move out of their homes with confidence. They can give better output when it is known to them that their decisions are supported by their family.

Organization of fairs, exhibitions and workshops for women entrepreneurs which will help them to connect with each other and share ideas and problems. It will also provide guidance to new women entrepreneurs who can take help and suggestions from their already established counterparts.

Making provision for marketing and sales assistance so that women entrepreneurs are not cheated by middle men.

Conclusion of the Study

The Government schemes, incentives and subsidies have stimulated and provided support measures to women entrepreneurs in all over the India. Meanwhile, there are plenty of challenges are faced by the women entrepreneurs related to arranging the financial needs wants of women entrepreneurs in India.

Especially in tamilnadu women entrepreneurs are facing hug problems or hurdles related to arranging he seed capital to start up the new business by the women entrepreneurs in Tamilnadu. Apart from the financial crisis, they are facing Family restriction, Lack of Finance, Education, Role Conflict, Unfavorable Environment, and Lack of persistent Nature, Lack of Mental strength and Lack of Information. The GOI extend financial assistance through Stand-Up India Scheme, Mahila Coir Yojana, Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE), Prime Minister's Employment Generation Programme (PMEGP), Udyam Shakti Portal and Economic Empowerment of Women Enterprises and Start-up by Women. Still there is a bottleneck related to arrangement of seed capital and venture capital by women entrepreneurs due to the gap between policy makers, bankers, NGO and women entrepreneurs in tamilnadu. Therefore, the systematic approach and policy should develop fro protect the women entrepreneurs skill, knowledge, creativity, innovative ideas in to business opportunities in near future by all the stake of the society for improvement of the society as well as increase employment opportunities in around urban and rural areas.

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GOVERNMENT SUPPORT MECHANISMS: SUBSIDIES, INSURANCE, AND MARKET INTERVENTIONS

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Abstract

Government support mechanisms such as subsidies, insurance, and market interventions play a crucial role in promoting economic development, managing risks, and achieving social objectives. This abstract provides a concise overview of these mechanisms, highlighting their purposes, benefits, and potential drawbacks. Subsidies are financial assistance provided by the government to specific industries or individuals to stimulate economic growth, investment, and innovation. While subsidies can be beneficial in promoting competitiveness and job creation, they can also lead to market distortions and inefficiencies if not carefully managed. Insurance programs supported by the government offer financial protection against unforeseen events, providing individuals and businesses with a safety net and enhancing economic resilience. However, ensuring affordability, addressing moral hazard, and managing claims are important considerations for the success of insurance mechanisms. Market interventions involve direct government actions to influence market outcomes and correct market failures. These interventions can promote competition, protect consumers, and address externalities. Nevertheless, striking a balance between market efficiency and social objectives is crucial to avoid unintended consequences and excessive government interference. Thus, government support mechanisms are essential tools for fostering economic growth, managing risks, and pursuing social goals. Careful design, implementation, and monitoring are necessary to maximize their benefits and mitigate potential drawbacks.

Keywords: *Government support mechanisms, Subsidies, Insurance, Market interventions, Economic development.*

Introduction

Government support mechanisms play a crucial and indispensable role in fostering economic development, ensuring stability, and mitigating risks within various sectors of an economy. These mechanisms, namely subsidies, insurance, and market interventions, are designed to address market failures, promote growth, and achieve specific socio-economic objectives. Understanding their purposes, benefits, and potential drawbacks is essential for comprehending their impact on the overall economy. Subsidies are financial assistance provided by the government to specific industries, businesses, or individuals. They serve multiple purposes, such as

promoting investment, encouraging innovation, and addressing social or environmental concerns. By reducing costs or providing financial incentives, subsidies stimulate economic activity and attract investment, ultimately leading to job creation and increased productivity. They can also facilitate the growth of strategic sectors, foster technological advancements, and enhance international competitiveness. However, subsidies must be carefully managed to avoid market distortions, over-reliance on government support, and potential inefficiencies in resource allocation.

Insurance mechanisms supported by the government play a crucial role in managing risks and ensuring stability in various sectors. These mechanisms provide financial protection against unexpected events, such as natural disasters, accidents, or health emergencies. By spreading risks across a larger pool of participants, insurance programs enhance risk management and promote economic resilience. They offer individuals and businesses a safety net, allowing them to recover from losses and maintain financial stability. Furthermore, insurance mechanisms instill confidence, encourage investment, and facilitate long-term planning by reducing uncertainty. However, ensuring affordability, accessibility, and effective claims management are critical challenges in designing and implementing insurance programs. Market interventions, another important government support mechanism, involve direct actions to influence market outcomes when market failures or social objectives need to be addressed. These interventions can take various forms, including price controls, trade restrictions, public procurement, and regulations. They aim to promote competition, protect consumers, correct externalities, and ensure social equity. Market interventions can break monopolies or oligopolies, prevent anti-competitive practices, and safeguard consumers from exploitation. They can also address environmental concerns, public health issues, and socio-economic disparities. However, effective implementation requires a careful balance between market efficiency and social objectives to prevent unintended consequences such as market distortions, reduced innovation, or excessive government interference. Thus, government support mechanisms, including subsidies, insurance, and market interventions, are essential tools for fostering economic development, ensuring stability, and mitigating risks within various sectors. Subsidies promote investment, innovation, and sectoral growth but must be managed to avoid inefficiencies. Insurance mechanisms provide financial protection, enhance risk management, and instill confidence, yet affordability and effective claims management are key challenges. Market interventions address market failures, promote competition, and protect consumers, but striking the right balance is crucial to avoid unintended consequences. By understanding these

mechanisms' purposes, benefits, and potential drawbacks, policymakers can formulate effective strategies to achieve economic growth, stability, and social objectives.

Subsidies

Subsidies play a vital role in the government's efforts to promote growth, investment, and innovation while addressing market failures or achieving specific social objectives. They are a form of financial assistance provided by the government to support specific industries, businesses, or individuals. Subsidies can take various forms, including direct cash grants, tax incentives, reduced interest rates on loans, or government guarantees. One of the primary benefits of subsidies is their ability to stimulate economic activity. By reducing costs or providing financial incentives, subsidies encourage businesses to expand their operations, invest in research and development, and create new job opportunities. For example, subsidies can help companies offset their initial capital costs, making it more affordable for them to invest in advanced technologies or machinery. This, in turn, enhances productivity and competitiveness, driving economic growth.

Subsidies also play a crucial role in fostering the development of critical industries. For instance, subsidies can be targeted towards renewable energy sectors to incentivize the adoption of clean and sustainable technologies. By providing financial support, subsidies make these industries more competitive and economically viable, promoting their growth and reducing reliance on traditional, environmentally harmful sources of energy. Moreover, subsidies can be used strategically to support industries of strategic importance or those that contribute significantly to national development goals. They can be designed to encourage domestic manufacturing, promote exports, or facilitate the growth of small and medium-sized enterprises (SMEs). By providing financial assistance, subsidies can help these industries overcome initial barriers, such as high production costs or limited access to capital, and enable them to compete more effectively in the global market. However, subsidies also come with potential drawbacks and challenges. One concern is the risk of market distortions. If not carefully managed, subsidies can create an uneven playing field by favoring certain industries or companies over others, leading to market inefficiencies and unfair competition. Additionally, there is a risk of subsidies becoming a long-term crutch, where businesses become overly reliant on government support instead of focusing on improving efficiency and competitiveness. Hence, it is crucial for governments to regularly evaluate the effectiveness and impact of subsidies and consider implementing measures to minimize these risks. Thus, subsidies are a significant government support mechanism aimed at promoting growth, investment, and innovation while

addressing market failures or achieving social objectives. By reducing costs and providing financial incentives, subsidies stimulate economic activity, encourage business expansion, and foster the development of critical industries. However, careful monitoring and evaluation are essential to ensure that subsidies are targeted effectively, minimize market distortions, and promote long-term sustainability.

However, subsidies are not without potential drawbacks, and it is important to address these concerns for effective implementation. One significant concern is the potential for market distortions. When subsidies are provided selectively to specific industries or companies, it can create an uneven playing field, favoring certain players over others. This can result in market inefficiencies, reduced competition, and hinder overall economic growth. Industries that do not receive subsidies may struggle to compete against those that do, leading to an imbalance in the market and potentially stifling innovation and entrepreneurship. Another drawback of subsidies is the risk of creating dependency. If businesses become overly reliant on government support, they may become complacent and less motivated to improve their productivity or competitiveness. This can hinder their ability to adapt to changing market conditions and innovate to meet consumer demands. Over time, a culture of dependency on subsidies can impede the development of a resilient and self-sustaining business ecosystem.

To address these concerns, it is crucial to carefully manage the allocation of subsidies. Transparency and fairness in the selection process are essential to ensure that subsidies are allocated based on clear and objective criteria, without favoritism or bias. Governments must establish robust monitoring and evaluation mechanisms to assess the effectiveness and impact of subsidies, ensuring that they are achieving their intended objectives. Regular reviews and adjustments may be necessary to align subsidies with changing market dynamics and emerging priorities. Additionally, it is important to strike a balance between providing support and encouraging self-reliance. Subsidies should be designed to be temporary or gradually phased out as businesses develop and become self-sufficient. This approach incentivizes businesses to seek long-term sustainability and continuously improve their operations rather than relying indefinitely on government assistance. Overall, while subsidies can provide valuable support to industries and stimulate economic growth, their potential drawbacks must be carefully managed. By promoting transparency, fairness, and effectiveness in the allocation and evaluation of subsidies, governments can mitigate the risks of market distortions, inefficiencies, and dependency. This ensures that subsidies serve as catalysts for sustainable growth and competitiveness, rather than perpetuating reliance on government support.

Insurance

Government-supported insurance programs play a critical role in managing and mitigating risks faced by individuals, businesses, or sectors. These programs provide financial protection against unforeseen events such as natural disasters, accidents, or health emergencies. Insurance mechanisms can be mandatory, as in the case of social security programs, or voluntary, such as crop insurance for farmers. The advantages of insurance programs are manifold. First and foremost, they provide individuals and businesses with a safety net, offering financial support to help them recover from unexpected losses and maintain financial stability. This is particularly crucial in times of crises or emergencies when individuals or businesses may face significant financial burdens. Insurance mechanisms alleviate these burdens, providing a cushion to cope with the aftermath of adverse events. Furthermore, insurance mechanisms enhance risk management and promote economic resilience by spreading risks across a larger pool of participants. By pooling resources and distributing risks, insurance programs reduce the impact of individual losses and ensure that the burden is shared collectively. This promotes stability and safeguards against catastrophic financial consequences, thereby contributing to overall economic well-being.

Moreover, insurance fosters confidence and encourages investment. By mitigating the fear of catastrophic events, insurance mechanisms provide individuals and businesses with a sense of security. This, in turn, promotes a favorable business environment, stimulates investment, and encourages economic growth. Insurance coverage allows individuals and businesses to take calculated risks and pursue entrepreneurial endeavors, knowing that they have a safety net to fall back on. However, the design and administration of insurance programs come with challenges. One significant challenge is ensuring affordability and accessibility for all. In many cases, insurance premiums can be prohibitive, particularly for low-income individuals or small businesses. Governments must strive to make insurance coverage affordable and inclusive, especially in developing economies, by implementing appropriate subsidy mechanisms or risk-pooling arrangements. Additionally, adequate funding, accurate risk assessment, and effective claims management are crucial for the sustainability and success of insurance mechanisms. Governments need to allocate sufficient resources to support insurance programs and ensure their long-term viability. Rigorous risk assessment mechanisms are necessary to accurately calculate premiums and evaluate potential liabilities. Furthermore, efficient claims management processes must be in place to facilitate timely and fair compensation for insured individuals or businesses. Furthermore, insurance programs must address issues of moral hazard

and adverse selection. Moral hazard refers to the risk that insured individuals or businesses may act irresponsibly or take greater risks due to the perceived protection offered by insurance coverage. Adverse selection refers to the situation where those individuals or businesses with a higher likelihood of making claims are more inclined to seek insurance coverage. Governments and insurance providers must implement measures to prevent these risks, such as risk-based pricing, comprehensive risk assessments, and appropriate regulations. Thus, government-supported insurance programs provide crucial financial protection against unforeseen events, offering individuals and businesses a safety net and promoting economic resilience. However, ensuring affordability, accessibility, and effective administration pose challenges that must be addressed. Adequate funding, accurate risk assessment, and careful claims management are essential for sustainable insurance mechanisms. Furthermore, measures to prevent moral hazard and adverse selection are necessary to maintain the integrity and effectiveness of insurance programs.

Market Interventions

Market interventions are direct actions taken by the government to influence market outcomes, particularly in cases of market failures or when pursuing social objectives. These interventions can encompass a range of measures such as price controls, trade restrictions, public procurement, or regulations that aim to promote competition and protect consumers.

One primary purpose of market interventions is to address monopolies or oligopolies, ensuring fair competition and preventing the exploitation of consumers. By imposing regulations or enforcing antitrust laws, governments can foster an environment where multiple players can compete on an equal footing, leading to improved product quality, competitive pricing, and increased consumer choice. These interventions promote market efficiency and encourage innovation and investment by preventing dominant market players from stifling competition.

Market interventions can also be employed to correct externalities, such as pollution. Governments may impose taxes or regulations to internalize the costs of negative externalities, encouraging firms to adopt cleaner technologies or practices. By implementing these interventions, governments seek to protect the environment, improve public health, and promote sustainable development. These measures incentivize businesses to incorporate social and environmental considerations into their operations and contribute to a more sustainable and equitable society. Another purpose of market interventions is to promote social equity by ensuring access to essential goods or services, particularly for underserved areas or vulnerable populations. Governments can implement policies that mandate the provision of

basic necessities like healthcare, education, or utilities, thereby reducing inequalities and enhancing social welfare. Market interventions in this context aim to bridge the gap between those who have limited access to vital services and those who can afford them, thereby fostering inclusivity and reducing disparities.

However, implementing market interventions effectively can be challenging. It requires careful analysis, monitoring, and evaluation to strike the right balance between market efficiency and social objectives. Poorly designed or excessive interventions can lead to unintended consequences. For instance, excessive regulations or price controls can stifle competition, discourage investment, and impede innovation. Excessive government interference may also create market distortions, reducing the efficiency and effectiveness of market mechanisms. To ensure successful market interventions, transparency and accountability are crucial. Governments should communicate the rationale and objectives behind the interventions and ensure that the decision-making process is transparent and based on sound economic principles. Additionally, ongoing monitoring and evaluation of the interventions are necessary to assess their effectiveness, make necessary adjustments, and prevent unintended consequences.

A thorough understanding of market dynamics is essential for effective market interventions. Governments need to consider the interplay of various factors, including supply and demand dynamics, consumer behavior, and industry structures. By considering these factors, governments can design and implement interventions that strike the right balance between market efficiency and achieving social objectives. Thus, market interventions are direct government actions aimed at influencing market outcomes to address market failures or pursue social objectives. They can promote fair competition, protect consumers, correct externalities, and enhance social equity. However, careful analysis, monitoring, and evaluation are required to implement market interventions effectively and prevent unintended consequences. Transparency, accountability, and a deep understanding of market dynamics are vital for successful market interventions that strike a balance between market efficiency and achieving societal goals.

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competition, protect consumers, correct externalities, and enhance social equity. However, careful analysis, monitoring, and evaluation are required to implement market interventions effectively and prevent unintended consequences. Transparency, accountability, and a deep understanding of market dynamics are vital for successful market interventions that strike a balance between market efficiency and achieving societal goals.

Conclusion

Government support mechanisms, such as subsidies, insurance, and market interventions, play a pivotal role in fostering economic development, managing risks, and promoting social objectives. These mechanisms are essential tools that governments utilize to shape market outcomes and achieve desired socio-economic outcomes. While each mechanism has its unique benefits and potential drawbacks, their effective design, implementation, and monitoring are crucial for attaining the desired outcomes. Subsidies are a common government support mechanism that aims to promote growth, investment, and innovation while addressing market failures or fulfilling social objectives. By providing financial assistance to specific industries, businesses, or individuals, subsidies encourage economic activity and incentivize businesses to expand their operations, invest in research and development, and create jobs. Subsidies can also foster the development of critical industries by making them more competitive and sustainable. However, careful management is required to prevent market distortions, inefficiencies, and over-reliance on government support.

Government-supported insurance programs provide individuals and businesses with financial protection against unforeseen events and risks. Insurance mechanisms, whether mandatory or voluntary, offer a safety net that helps individuals and businesses recover from unexpected losses and maintain financial stability. By spreading risks across a larger pool of participants, insurance programs enhance risk management and promote economic resilience. Moreover, insurance mechanisms foster confidence, encourage investment, and reduce uncertainty by mitigating the fear of catastrophic events. However, ensuring affordability, accessibility, and effective administration pose challenges that must be addressed for the sustainability and success of insurance mechanisms. Market interventions are direct actions taken by the government to influence market outcomes when market failures occur or specific social objectives need to be pursued. These interventions can include price controls, trade restrictions, public procurement, or regulations aimed at promoting competition, protecting consumers, correcting externalities, or ensuring social equity. Market interventions can address issues such as monopolies or oligopolies, ensuring fair competition and preventing the exploitation of

consumers. They can also correct externalities by imposing taxes or regulations to mitigate pollution or other negative impacts. Moreover, market interventions can promote social equity by ensuring access to essential goods or services, particularly for underserved areas or vulnerable populations. However, striking the right balance between market efficiency and social objectives is essential to prevent unintended consequences, such as market distortions, reduced innovation, or excessive government interference.

To effectively utilize these government support mechanisms, it is crucial for policymakers to strike a balance between market forces and societal goals. Governments must carefully design and implement these mechanisms, considering the specific contexts, objectives, and potential risks involved. Transparency, accountability, and continuous monitoring are necessary to ensure the proper allocation of resources, prevent misuse or exploitation, and evaluate the effectiveness of the interventions. By employing these mechanisms judiciously, governments can provide the necessary support to industries, protect the interests of citizens, and foster sustainable economic growth. In conclusion, government support mechanisms, including subsidies, insurance, and market interventions, are indispensable tools for fostering economic development, managing risks, and promoting social objectives. While these mechanisms have their own benefits and drawbacks, their proper design, implementation, and monitoring are essential to achieve desired outcomes. By striking a delicate balance between market forces and societal goals, governments can effectively support industries, protect citizens, and ensure sustainable economic growth.

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UNLOCKING THE POTENTIAL OF DEEP LEARNING FOR POULTRY DISEASE DIAGNOSIS: INNOVATIONS AND OPPORTUNITIES FOR THE FUTURE

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Abstract

India has the capability to end up a pacesetter in artificial intelligence (AI) due to its massive pool of gifted engineers, researchers, and entrepreneurs, in addition to its growing investment in AI studies and improvement. India can increase its funding in AI research and improvement to guide the development of current technologies and programs. Artificial intelligence (AI) and machine learning (ML) have great implications in diverse fields, along with healthcare, finance, transportation, manufacturing, customer service, and education. AI and ML techniques may be used to analyze massive amounts of facts, make correct predictions and recommendations, automate responsibilities, and offer personalized reports. But, there are also concerns around the capacity impact of AI and ML on employment, privacy, and security. As those technology preserve to adapt, it's far essential to cautiously take into account their implications and to develop policies and guidelines that make certain their accountable use. Deep mastering has good sized implications in healthcare, as it has the ability to enhance diagnosis, remedy planning, and sickness prevention. Chicken disease prevention is essential for public health and safety due to the fact illnesses that affect chicken will have widespread economic and public fitness influences.

Keywords: *Artificial Intelligence, Machine Learning, Disease Prevention, Poultry.*

Introduction

Artificial intelligence (AI) has had a good sized effect on deep studying in healthcare by permitting extra correct and efficient analysis of medical data. This could include investment for academic research, authorities-led projects, and personal region partnerships. India can consciousness on developing a professional group of workers in AI by using growing the supply of AI schooling and schooling packages. India has taken numerous steps to pay attention on disease prevention in rooster. The Indian authorities have launched the country wide chicken development software (NPDP) to sell the improvement of the rooster industry inside the United States. The program includes measures to enhance sickness prevention and manage, which include the development of biosecurity measures and the

merchandising of vaccination packages. The Indian authorities have established ailment surveillance systems for hen to reveal and manipulate the spread of sicknesses. Those systems encompass the country wide Animal disease Reporting gadget (NADRS) and the national Animal fitness Surveillance software (NAHSP).

In studies and improvement established several research establishments and centers of excellence inside the field of hen technology and animal health. These establishments recognition on research into disease prevention, genetics, nutrients, and other elements of rooster farming. This scoping overview intends to systematize the empirical studies that focuses on the impact already witnessed in the area.

Improved Diagnosis

It is able to analyze scientific pix and pick out patterns and anomalies that may be hard for human medical doctors to come across. This can result in greater accurate and well-timed diagnoses, and assist to improve affected person results. Deep learning can be used to investigate snap shots of fowl to perceive signs and symptoms of disease including lesions, rashes, and different abnormalities. This can help to improve the accuracy and speed of prognosis, and permit early remedy of the sickness. Including temperature, humidity, and air excellent to pick out conditions which could contribute to ailment outbreaks. It's to discover potential ailment outbreaks before they occur and enable preventive measures to be taken. AI has various implications in chicken illnesses.

Personalized Treatment

Analyze huge amounts of affected person statistics to develop personalized remedy plans based on person characteristics consisting of genetic make-up, way of life, and scientific history. This may result in greater effective and centered treatments, and help to enhance patient consequences. Personalized treatment in fowl the use of deep mastering may be finished through analyzing large amounts of statistics from character birds to develop centered remedy plans based totally on their particular traits and needs.

Drug Discovery

To look at chemical compounds and expect their capacity efficacy as pills. This could accelerate the drug discovery manner and cause the development of more effective remedies. In chemical substances to pick out the most probable and effective against a particular pathogen. This can assist to prioritize compounds for in addition testing and improvement.

Predictive Analytics

As we find patient data to predict outcomes and identify patients who may be at risk of developing certain diseases. This can enable healthcare providers to take proactive measures to prevent disease, and help to improve patient outcomes. By analyzing data on animal health, environmental conditions, and other risk factors, predictive models can identify patterns and early warning signs of disease, enabling farmers to take proactive measures to prevent the spread of disease and minimize economic losses.

Administrative Efficiency

AI can automate administrative tasks such as data entry and record keeping, freeing up healthcare providers to focus on patient care. This can help to improve the efficiency of healthcare delivery and reduce costs. To improve administrative efficiency in poultry farming by automating routine tasks, reducing errors, and improving data management and analysis.

Improved Efficiency

In medical data in a fraction of the time it would take a human to do so. This can help healthcare providers to make faster and more accurate diagnoses, develop more personalized treatment plans, and identify potential health risks before they become more serious. Efficiency in poultry farming by enabling farmers to make data-driven decisions and optimize management practices based on real-time information. This technology has the potential to improve disease detection and treatment in poultry flocks, leading to improved animal health and productivity.

Reduced Costs

By automating administrative tasks and improving efficiency, AI can help to reduce healthcare costs. Additionally, by enabling more accurate diagnoses and treatments, AI can help to reduce the need for expensive and unnecessary medical procedures. Deep learning can be used to identify early signs of disease in poultry flocks, allowing farmers to take proactive measures to prevent the spread of disease and minimize economic losses.

Enhanced Research

For medical data from clinical trials and other sources to identify patterns and trends. This can help to accelerate the development of new treatments and improve our understanding of disease. By analyzing data on symptoms, environmental conditions, and other factors, deep learning models can identify the disease and recommend appropriate treatments. This can help researchers to develop new diagnostic tools and treatments for poultry diseases.

Improved Patient Outcomes

By enabling more accurate and personalized diagnoses and treatments, AI can help to improve patient outcomes. This can lead to better health outcomes, reduced morbidity and mortality, and improved quality of life for patients. Optimize treatment protocols by analyzing data on disease incidence, treatment outcomes, and other factors. By optimizing treatment protocols, farmers can improve treatment outcomes and reduce the severity of the disease, leading to improved patient outcomes.

Ethical and Responsible Development

The developed and deployed AI is an ethical and responsible manner. This includes ensuring that patient data is kept secure and private and that AI systems are developed without bias or discrimination. Farmers can collect and record data on their flocks, including animal health status, breed, age, weight, and environmental conditions such as temperature, humidity, and ventilation. This data can be used to train deep learning models and improve the accuracy of predictions.

Table 1 provides an overview of the relevant tasks per group of workers. As can be seen, the main differences can be found regarding the key tasks and responsibilities for each role.

Problem	Role	Tasks and Responsibilities
Infectious Diseases	Poultry Veterinarian	Provide guidance on disease prevention and control
Nutritional Deficiencies	Poultry Nutritionist	Provide guidance on feed management.
Genetic Disorders	Poultry Breeder	Develop and maintain breeding programs to produce healthy high- quality chicks
Facility Management	Poultry Farm Manager	Ensure compliance with regulatory requirements and industry standards
Behavioral Issues	Poultry Production Worker	Provide appropriate feed and water

Objectives

The context of poultry diseases is to develop accurate and reliable predictive models that can help to identify and diagnose diseases in poultry flocks. By

analyzing large amounts of data on factors such as flock behavior, environmental conditions, and disease symptoms, deep learning models can identify patterns and make predictions about the likelihood of disease outbreaks or the presence of specific diseases. There are three main types of learning in deep learning: supervised learning, unsupervised learning, and reinforcement learning. Overall, the different types of learning in deep learning offer a range of techniques and tools for developing accurate and efficient models for a variety of tasks. Transfer learning can reduce training time, improve generalization and performance, reduce data requirements, and provide flexibility for a range of applications.

Poultry Farming Resistance in India

Fieldwork in India to investigate poultry practices that drive antibiotic resistance shows that by keeping a systems approach in mind one can get closer to the root cause of challenges. These challenges might run far deeper than initial observations and assumptions make visible. Changing use patterns requires system-wide adaptation, including acceptance of alternatives to antibiotic growth promoters (APGs), increased vaccination, and improved natural immunity. In turn depend on better farm hygiene and welfare conditions to reduce infection and thus the need for treatment. The impact of higher temperatures on poultry growth rates and egg production is acknowledged,⁶ but climate pressures on poultry farming can influence many of the aforementioned approaches to poultry health and disease control. Climate pressures also affect how biosecurity is enacted. Most birds are raised in open sheds from which disease-carrying rodents and wild birds are hard to keep out. Temperatures in closed sheds would be uncomfortably high without environmental control,⁹ but powering such sheds is challenged by pressures on the energy system: power cuts are common and in some rural areas, electricity from the national grid is rationed for agricultural use.

Environmental Perception

There is a perception that birds raised in environmentally controlled, cooler temperatures could be more susceptible to heat-related mortality during transport to, and while on sale, at live markets. If correct, this will require a concurrent shift to near farm processing plants, chilling plants, and cold chain storage, substantially increasing the carbon footprint of the farm-to-fork food chain and the cost of meat to consumers. The Indian consumer preference for buying live birds at market would also need to change. The poultry system thus faces a number of interrelated stressors from climate change. A planetary health lens, through which the entire system is approached, could offer potential solutions. Local building materials and traditional practices that could mitigate heat stress and spread of disease risk being overlooked

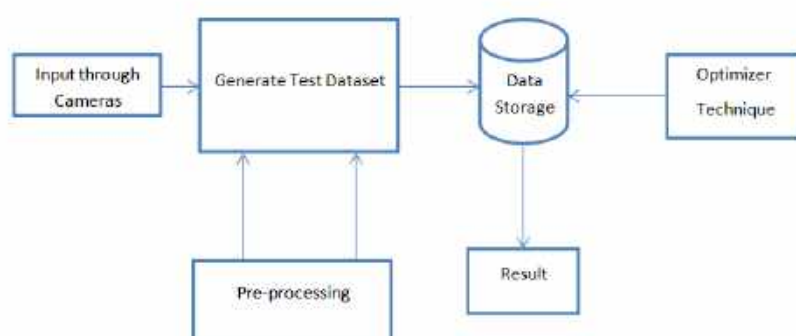
if poultry systems are approached only from the perspective of modernizing the Indian system to Global North standards. Energy policies might need to readdress how rural areas are able to use self-generated energy. The intensive production of chickens has been identified as one of the markers of the Anthropocene.¹⁰ Chickens sit at an intersection of food systems, environmental change, global health, and biodiversity. Understanding this intersection and the pressures on the systems to which it connects could suggest potential adaptations to other stressed systems as well as helping to preserve the efficacy of antibiotics into the future.

Limitation and Future Work

Deep learning models can be very complex, making it difficult to understand how they arrive at their predictions. This can be a significant limitation in areas such as medicine, where it is important to understand the reasoning behind a diagnosis or treatment recommendation. Overall, deep learning is a rapidly evolving field with many exciting opportunities and challenges. By addressing the limitations and exploring new applications and techniques, researchers and practitioners can continue to advance the state-of-the-art in deep learning and make progress on a wide range of important problems.

Experiments on Transfer Learning

Transfer learning in deep learning is a popular technique that involves using a pre-trained model as a starting point for developing a new model for a related task. Instead of training a new model from scratch, transfer learning allows developers to leverage the knowledge and expertise of an existing model to improve the accuracy and efficiency of a new model.



The poultry disease diagnostics research workflow involves a series of steps that begin with background research and data collection, and end with the deployment and monitoring of a diagnostic model. A rigorous and systematic workflow, researchers and practitioners can develop accurate and reliable tools for diagnosing poultry diseases, leading to better outcomes for the animals and the industry as a whole.

Conclusion

The study presents a great potential for the development of accurate and reliable diagnostic models for poultry diseases. By leveraging large datasets and powerful machine learning algorithms, researchers and practitioners can develop models that can accurately diagnose diseases based on a range of factors, including clinical signs, environmental conditions, and genetic markers. By advancing the state-of-the-art in deep learning and developing new diagnostic tools, researchers and practitioners can help to improve poultry health, reduce disease transmission, and promote sustainable farming practices.

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ENTREPRENEURSHIP AS A TOOL FOR SUSTAINABLE DEVELOPMENT

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Abstract

Entrepreneurship is regarded as a force of change, innovation and development in the modern era. Entrepreneurship has achieved a worldwide recognition as an effective resource which helps the country in achieving sustainable economic development. This paper reviews about how the entrepreneurial development is significant to one nation's sustainable growth and development. This study aims at studying the aspects of the entrepreneurship which aids to the sustainable development of the economy. This study also provides a clear view on the facilities provided by the government for the development of the entrepreneurs. The ultimate goal of this study is to showcase to every individual those who are unaware that entrepreneurship is excellent opportunity to excel themselves in the field of the business.

Keywords: *Entrepreneurship, Sustainable Economic Development, Innovation, Effective Resource, Entrepreneurial ability.*

Introduction

Entrepreneurship is an activity of setting up a business and taking on financial risks in the hope of a profit. Entrepreneurship is connected with land, labour, capital and natural resources in order to earn profit. The entrepreneurial vision is defined by the discovery of new and innovative ideas and taking enormous risks and these are regarded as an indispensable tool for the sustainable development of the economy. The study on the Entrepreneurship as a tool for Sustainable Development is carried out using the various Secondary Data Collected through the use of various sources available from the websites and magazines. The study was made to bring a structural changes in the minds of the people about the entrepreneurship which is a best passport to contribute to the sustainable development and which also aids to the increase in the standard of living of the individual.

Objectives of the Study

The main objectives of the Study on “**Entrepreneurship as a tool for Sustainable Development**” is as follows:-

- To study about the awareness towards the field of the Entrepreneurship
- To analyse the various facilities that are provided by the Government of India.

Literature Review

- It is a well-known fact that social entrepreneurship arises chiefly from the reality that environmental and social degradation results from the failure of markets; in fact, the entrepreneurship literature argues that opportunities are inherent in market failure. A synthesis of such literature suggests that environmentally and socially relevant market failures represent opportunities for achieving profitability while simultaneously reducing environmentally degrading economic behaviours. It also implies conceptualizations of sustainable and environmental entrepreneurship that detail how entrepreneurs seize the opportunities that are inherent in environmentally relevant market failures. Four types of market imperfections (in efficient firms, externalities, flawed pricing mechanisms, and information asymmetries) contribute at once to environmental degradation but also provide significant opportunities for the creation of radical technologies and innovative business models. These opportunities establish the foundations for an emerging model of sustainable entrepreneurship, one which enables founders to obtain entrepreneurial rents while simultaneously improving social and environmental conditions both locally and global. **(Dean and McMullen, 2007)**.
- In the context of globalized business, economic behaviour is no longer the individual company's sole domain. Business action has in-creakingly come to affect and be affected by the actors and companies in the global chain; thus, legal, operational, ethical, and other challenges Sustainable Entrepreneurship in Asia necessarily arise **(Andersen & Skjoett-Larsen, 2009)**.
- The domain and characteristics of sustainable entrepreneurship have now been made clear to us: the core motivation is to contribute to solving societal and environmental problems through the realization of a successful business, while the main goal is to create sustainable development through entrepreneurial corporate activities. The role of economic goals is both as a means and as an end, while the organizational development challenges from a small contribution to a large one for sustainable development **(Schaltegger & Wagner, 2011)**.

Entrepreneurship

Entrepreneurships a methodology of thinking new and innovative ideas. The individual who undertakes these activities by setting up new business ventures is regarded as an “entrepreneur”. Entrepreneur is deemed as an innovator, risk bearer and organizer and the individual who controls the entire affairs of the business. Entrepreneur brings the world into the consideration that what he/she could bring brand new ideas to the world class business. Entrepreneurs are the persons who spurred the sustainable economic development to grow better and better in the modern era of the 21st century. The concept of entrepreneurship are highly risky and the individuals must ponder new and innovative ideas that keep a compatible performance of the business. For example, a coin has two sides, likewise even in entrepreneurship also we have two facets i.e.) positive and negative. Entrepreneurs can be interpreted as builders, innovators, opportunist and specialist. Entrepreneurs are one of the key pillars of the nation as they contribute nearly 37percent to India’s GDP growth rate. Entrepreneurs contribute to sustainable economic development by providing better employment facilities and they also extend their support by fostering innovation and also by generating profits.

Sustainable Development

Sustainable development is termed as an approach towards the economic progress and economic development of a nation. Sustainable development is a development that satisfies the present needs without compromising the ability of the future generation to come across their personal needs. For example using recycles items or renewable resources while constructing a building is considered as Sustainable Development. The 5P principle is used to bring about a sustainable development to a nation. The 5P’s i.e.) “People, Partnership, Peace, Planet and Prosperity must be integrated towards achieving the sustainable economic development. The main feature of the Sustainable Development is that it would improve the quality of the human life.

Entrepreneurship as a Tool for Sustainable Development

Entrepreneurship is regarded as one of the foremost tool for an economy for achieving the sustainable development. In recent days the emerging economies in the world are facing many problems like social, economic, cultural, etc. These problems could be tackled by using a simple tool named “entrepreneurship”. The concept of entrepreneurship provide a clear solution which is innovative and new. So that the problems faced by an economy can be tackled easily and the economic progress of an economy will also be stable. Entrepreneurs undertake their business ventures depending on what the economy is in need for. So that the situation of

scarcity can be absolutely avoided. Entrepreneurs can be regarded as one of the mainstay of the economic development of a nation. They plan their strategy as per the requirements of the people and contribute to the economic development of a nation. The field of entrepreneurship is extending its operation day by day and it has its impact in the Indian economy and the contributions are countless. Entrepreneurship serves as one of the best tool for the economic sustainable development. Entrepreneurs may also face some hazards which affect their business ventures. But the Government of India provides multiple facilities like loans, subsidies, practical training, awareness programs and also other kind of financial assistance which may help them to bring back their business to the normal situation. The facilities provided by the government of India to the betterment of the entrepreneurial aid is discussed in the upcoming section.

Environmental Sustainability

Sustainable business initiatives can communicate to social, corporate and environmental sustainability. Mutually, they involve examining business processes and practices in terms of people, planet and profit. And looking for ways to create a positive impression in each of these areas. While improving working conditions and protecting the environment are certainly excellent goals, they haven also proven to be good business strategies. For example, implementing environmentally sustainable practices and green supply chain management have the potential to abolish waste and create cost savings, leading to a stronger bottom line. In addition, with many consumers dedicated to “going green,” eco-friendly businesses often value from favourable public opinion and greater customer loyalty. Some well-known and highly successful companies are proving to be leaders in the fields of environmental sustainability and green supply chain management



Proposed strategies of sustainable environmental management.

Government Schemes to the Entrepreneurial Development

Job creation is one of the emerging social problems in the modern economy. But the Entrepreneurs fill up that space by nurturing themselves into new business ventures. This kind of action paves the way for the job opportunities to the people across the country. These entrepreneurs are motivated by the governments various plans and policies that aid to the entrepreneurial development. The government extend its support to the entrepreneurs in the form of financial assistance, insurance, trainings, business loans, special incentives are provided to the budding entrepreneurs. With the tremendous demographic factors, the government undertakes various measures to raise entrepreneurs and create jobs to the entire nation and world. The tremendous efforts taken by India for promoting Entrepreneurship is listed below:

- Startup India
- Stand in India
- Trade related Entrepreneurship Assistance and development(TREAD)
- Pradhan Mandhri Kaushal Vikash Yojna(PMKVY)
- New Gen Innovation and Entrepreneurship Development Centre (New Gen IEDC)

Startup India

Startup India initiative was propounded by the government of India with the view of encouraging the future entrepreneurs by the way of mentoring, nurturing and by also providing financial assistance. This methodology was put into force from January 2016 at Vijay Bhawan, New Delhi. This action plan focuses on Simplification and Handholding, Funding support and incentives, Industry academia partnership and incubation.

- It also offer startup funding pool upto 10,000 crore.
- It reduces the patent registration fees.
- It provides enhanced bankruptcy code for a period of 90 days.
- It also provides the freedom from tax upto 3 years from the date of its accomplishment.
- The startup India initiative paves the way for the budding entrepreneurs. It also provided Value added course to its applicants so that they would get an exposure towards the field of entrepreneurship

Stand in India

The concept of "Stand-up India" was propounded in 2015 by the Government with the view to support the Entrepreneurs from the Scheduled caste and Scheduled

tribes so that there would be no Caste based tribulations. This Scheme was put into force for the purpose of having entrepreneurs from different sections of the people. The proposal offers loan facilities ranging from 10 lakh to 1 crore for the people from SC and ST category and also, they extend their support to the women who are especially outside the farm sector. This scheme keenly focuses on the manufacturing, trading and other agricultural activities.

Trade Related Entrepreneurship Assistance and Development Centre (Tread)

This scheme plan was propounded by the government of India during its 9th five year plan with the view to foster the women entrepreneurs who are in the field of non-farming activities. This plan extend its support to women through NGO's and ensure that they assist them by providing credit accessibility and other counselling and training facilities. This scheme provides a pathway to aspiring women entrepreneurs by extending its support by providing enormous orientation programs. This was propagated with the view of ensuring the empowerment of women entrepreneurship via trade related trainings and other associated activities. Tread's has given accessibility of credit assurance upto 30 percent of the loan amount which has its limit upto 30 lakhs. The trainings and other counselling services are provided by the MSME sector, EDI'S, NISSET and NGO'S.

Pradhan Mandhri Kaushal Vikash Yojna (PMKVY)

PMKVY is a scheme which is one of the flagship initiative made to the young and aspiring entrepreneurs. This initiative was propounded by the Ministry of Skill Development and Entrepreneurship (MSDE) on 16th July, 2016, New Delhi. This initiative is a skill based and certified course which paves the way for the entrepreneurship by training youths by whom the nation's economy grew better and better. PMKVY approximately trains nearly about 18 lakh candidates. The training program have been made on the basis of the National Occupational Standards (NOS).

New Gen Innovation and Entrepreneurship Development Centre (New Gen IEDC)

New Gen IEDC mission was made out especially in many educational institutions with a view to promoting the entrepreneurial culture during the time of the academics. This methodology of promoting entrepreneurship is done for engendering wealth and creating multiple career opportunities. This scheme also envisages the inculcation of innovation driven entrepreneurial class and it also aids to promote the knowledge oriented entrepreneurial development. This scheme also aims in developing the sustainable development of the economy by the way of

promoting young and new entrepreneurs with highly skilled and with meticulous efforts and with eminent innovations.

Companies are gradually incorporating SDGs into their responsible business actions. Of the top 100 companies studied, 80% of the companies have mapped their responsible business actions to SDGs. Key action themes for companies include renewable energy, water, waste and data privacy

Energy

Renewable energy utilization has geared up pushed by the move towards net zero. Solar energy continues to be the preferred renewable energy source for companies. Many policy related changes are happening in the renewable energy space – around e-mobility and bio fuel.

Water

Use of water in operations and its access in society is a focus for companies. Water related programs for supply chain are still at a nascent stage.

Waste

Initiatives to manage e-waste, municipal waste and plastic reuse & recycling continue to trend upwards.

Data

Customer data and its privacy has become a material aspect in the operations of services companies; new laws are getting formulated.

Insights

Clean Revenue

The practice of generating ‘clean revenue’ from products and services that are not harmful to people and the environment, through waste to wealth practices, as well as the use of shared platforms, is new but catching on in India. An example of this is the joint venture CERO established in FY 2020 between Mahindra Accelo (a subsidiary of Mahindra & Mahindra) and MSTC. The JV recycles vehicles as well as facilitates the clean and efficient disposal of vehicles.

Carbon Neutrality

In India a few companies such as Godrej Consumer Products, Tech Mahindra, Infosys, TCS, Tata Motors, and Mahindra & Mahindra are committed to achieve carbon neutrality. Some such as TCS have already met their targets of halving their specific carbon footprint by 2020. Tata Power’s commitment to achieve carbon neutrality by 2050 led it to announce its decision in 2019 to completely phase out its thermal power business by moving into renewable sources of energy by 2050.

Gender Parity

Not only maintaining a balanced headcount, corporate India needs to have a stronger intent and greater implementation prowess to offer equal access to leadership, equal wages for equal work, matching roles to aspirations by breaking stereotypes, and have an unbiased approach to maternity and parenthood, for all.

Business Case on Transformation into Sustainability

As an exciting live role model for business model transformation, ITC has progressively increased its non-tobacco business towards a majority of non-tobacco products that are socially and environmentally responsible.

Case Analysis

The concept of entrepreneurship with a clear case analysis is **“Few ‘Indian’ takers for Pollachi woman’s eco-friendly coconut shell products”**

Radha Lakshmi a 29-year-old woman who’s residing in Pollachi is turning out to be successful entrepreneur in South India. She had an innovative masterpiece idea on using the waste coconut shells which is usually thrown out as garbage. She had transfigured such waste item into beautiful tea cups, wine cups, ice cream cups, soap boxes, spoons and candle holders. She had her startup in her own village named “Arasampalayam Pirivu” which is one of the non-descriptive villages near Kinathukadavu. Her Products had got a remarkable name in foreign countries like Singapore, Malaysia, Japan, Russia, USA and other countries. She had mentioned that her motto was to bring a better substitute to the slow poison name “Plastic”. Radha now plans to turn out her startup into an MNC like a firm and her motto is to provide employment facilities to hundreds of people in near future. Radha- being a middle-class woman is now a successful entrepreneur in Pollachi is withstanding as an example for too many women who are being idle at home with multiple innovative ideas.

Source: <https://www.dtnext.in/>

Conclusion

While sustainable development remains ambiguously defined and controversial, it has emerged as an influential concept for entrepreneurship policy, practice, and theory. However, while entrepreneurship has been cited as a significant conduit for a more sustainable society, there remains considerable uncertainty regarding the nature of this role and how it will unfold. We outlined recent research in the area, acknowledging that the majority of studies exploring the relationship between sustainable development and entrepreneurship have been published outside of the mainstream entrepreneurship journals, and suggest that this special issue is a first

step in filling this void. However, while papers in this special issue provide a major step in this direction, there remain considerable opportunities for further research.

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TECHNOLOGICAL REFORMS IN AGRICULTURAL GROWTH

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Abstract

In India, Agriculture is an important sector. It plays a vital role in the process of economic development in less developed countries like India. In Indian economy, it is indispensable for the substance and Growth. The Critical issues that plague Indian agriculture at present are the knowledge deficit and infrastructure deficit, especially in the rural areas. Now a days, Problems are related to irrigation infrastructure. In this, Lack of delivery mechanisms are the Major Issue in India. So, we not have effective delivery mechanisms. There are many Numbers of schemes. The Agricultural need to be increased so that farmers an get more remuneration from the same piece of land with less labours

Keywords: *Agriculture, Infrastructure and India.*

Introduction

In Indian there are 1.3 billion people, and it ranks second in terms of the agricultural output. In 2021, the gross value added (GVA) was accounted 16.4% in forestry and fishing sector. In country's population, there are more than 50% of serving primary source of livelihood. These sector accounts for majority of the poor of the country. Over 58 percent of the rural households depend on agriculture.

In Demand side factors include, awareness and knowledge about technology, that access to credit and relevant inputs, risk implications and marginal returns. In Supply side factors includes, policy support, investment in agricultural research and extension system, availability of infrastructure, and institutional arrangements for the delivery and benefit sharing of technologies.

Importance

The crops produced in this manner are sufficient because of the expanding population. The reforms after independence are consequently given priority. The agricultural development helping crop producers or farmers by offering various forms of support in the agricultural industry. This delevopment includes offering security, assisting with research, using cutting-edge methods, preventing pests, and promoting diversity.

Agricultural technology assists farmers in overcoming operational challenges such as financing, supplies, and crop productivity. The farmers can increase overall production, reduce their impact on natural ecosystems, and ensure safer growing conditions. Agricultural technology provides farmers with improved worker facilities, increased efficiencies, and low prices.

Roles Agricultural Technologies

During 1960s, the institutional approach was shelved to make the way for the technocratic approach only to remerge during post liberalization period. The main motto behind these initiatives was to improve farmers access to institutional credit. A large number of institutional agencies are involved in the disbursement of credit to agriculture. A large number of formal institutional agencies like co-operatives, Regional Rural Banks (RRBs), Non-banking Financial institutions(NBFIs), Self-help Groups(SHG),etc.

Agricultural technology plays a crucial role in the agriculture industry by helping farmers overcome various challenges they face in their day-to-day operation. It helps farmers in various aspects of their farming operations. From increasing crop production to reducing water, fertilizer, and pesticides to improving working conditions for farm workers. and it plays a vital role in making the agriculture industry more efficient and sustainable.

Roles of agricultural reforms are,

- Precision agriculture
- Climate prediction through AI
- Use of *sensor* in agriculture
- Biotechnology in agriculture
- Digital solution for *financing* and *supplies*
- E-commerce solutions for selling *agricultural products*.

Impacts

It Increase in agricultural products both import and export. Technologies can enable the transition of modern agriculture in the field. While some technologies have transformed the way we operate, there is a need for spreading technological advancements in agriculture like, artificial intelligence and machine vision. Farmer can have ready availability of weather information and disaster warnings. The three main aspects of agricultural reforms are liberalization, privatization and globalization. Agriculture is the primary source of income in rural India, and any reforms will have a direct impact on the nation's economy and vice versa. Agriculture reform has a significant impact on the following areas:

- Increase in agricultural products both import and export.
- Improvements in agricultural technology and rural infrastructure are two areas where progress is being made.
- Agricultural methods are becoming more prevalent
- Agriculture and food security prices are maintained.

Merits and Demerits

Merits	Demerits
Productivity is boosted by Technology and they reduce the time.	Excessive Use of Fertilizers and Pesticides.
Water supply becomes easy by using Modern Technology.	High Maintaining Cost.
Modern machines can control the efforts of farmers.	It is efficient but has many side effects and drawbacks.
Better marketing and exposure to the price. And irrigational technology.	Lack of practical knowledge the farmers cannot handle the machines properly.
Low run of chemicals and also waste materials into seas and water.	The robotic machine could not change their culture, we have to set their Programmes manually.
Decrease the use of water, fertilizers which keeps the prices down. And improve the fertility of the soil.	Improve the scouting programmes.
Facilities in online trading and E-commerce. And suitable for the campus environment.	Most of the farmers are illiterates so they are unable to use the modern machines.

Conclusion

The food and agriculture sector Is crucially important in the green growth. Because it is major user of land water and marine resource. And biodiversity has important linkages and agriculture has given so much to society. In India technological it is rapidly growing field with potential boost food security and create new jobs and rural development. The region has had to face problems of food insecurity. In some countries have needed food aid for IDPs and refugees.

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BRIDGING THE DIGITAL TRANSFORMATION WITH ARTIFICIAL INTELLIGENCE ON MEDICAL REPRESENTATIVES IN THE SALES PROFESSION

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Abstract

Medicines have become a basic necessity in today's competitive world. There are also a lot of intermediaries involved in medical consumption like medical companies, whole salers, retailers, medical representatives, physicians, and the ultimate consumers. There are also new technologies involved and implemented in all the sectors likewise the medical representatives have some digital transformation. The study is descriptive in nature and a qualitative approach to data. And this study mainly concentrated on the Digital Transformation with Artificial Intelligence in Medical Representatives in the sales profession. And found that digital transformation and artificial intelligence have created a greater impact on the sales of medical Representatives.

Keywords: Medical representatives, sales profession, Digital Transformation, Artificial Intelligence.

Introduction

The practice of doing business and selling goods and services is known as marketing. Sales are a crucial component of marketing efforts. From the point of production to the point of consumption, it involves many additional intermediaries, including producers, wholesalers, retailers, and final consumers. Its ultimate purpose is to understand and meet the needs and wishes of the customers. Today, drugs are essential to everyone's survival across the age spectrum. In contrast to other manufacturing businesses, there are also medical manufacturing businesses all throughout India that offer higher-quality medications. Doctors serve as Medical Representatives in the medical industry, acting as a mediator between the manufacturing firm and the consumers. They act as a link between medical manufacturing companies and physicians.

Medical Representatives in the Sales Profession

The main line of contact for pharmaceutical, medical, and healthcare providers is via medical representatives. Medical representatives work for pharmaceutical companies and laboratories to promote and distribute medical products. They are

also known as medical sales representatives or pharmacy sales representatives. The purpose of a medical representative is to market and sell their company's goods, whether they are pharmaceuticals or medical equipment. A medical representative advises patients about medical products and sells and promotes medications. Medical Representatives deploy a range of strategies to spread the word about the employer's medical products.

Objective

To Describe the Digital Transformation with Artificial Intelligence on Medical Representatives in the sales profession

Research Methodology

The study is descriptive in nature and a qualitative approach of data collection and analysis appears to be appropriate, with data acquired from authentic and secure sources. The study focuses on Bridging Digital Transformation with Artificial Intelligence in Medical Representatives in the sales profession. Likewise, the essential and applicable secondary data is gathered from a variety of sources similar to research papers articles, and publications.

Digital Transformation among Medical Representatives

Digital transformation has significantly impacted the role of medical representatives (MRs) in India. With the rise of digital technologies, MRs are now using digital tools and platforms to communicate with healthcare professionals (HCPs) and provide them with the information they need.

Digital Communication

MRs are increasingly using digital platforms such as email, social media, and video conferencing to communicate with HCPs. This has made it easier for them to reach a wider audience and provide more personalized solutions to doctors. Digital communication has also made it easier for MRs to track their interactions with HCPs and monitor their performance.

Data Analytics

Digital technologies have enabled MRs to collect and analyze data on HCPs and their prescribing patterns. This data can be used to identify the needs and preferences of individual HCPs and to tailor communication and marketing strategies accordingly.

E-Detailing

E-detailing involves using digital platforms to provide interactive product demonstrations to HCPs. This approach allows MRs to provide more detailed information about their products and engage HCPs more meaningfully.

Virtual Conferences

MRs are increasingly participating in virtual conferences and webinars, which allow them to connect with HCPs from all over the country. Virtual conferences also provide opportunities for MRs to learn about the latest developments in their field and to share knowledge and best practices with their peers.

Artificial Intelligence used for Medical Representatives in Sales Profession

Artificial intelligence in medicine is the use of machine learning models to search medical data and uncover insights to help improve health outcomes and patient experiences. Thanks to recent advances in computer science and informatics, artificial intelligence (AI) is quickly becoming an integral part of modern healthcare. AI algorithms and other applications powered by AI are being used to support medical professionals in clinical settings and in ongoing research.

Remote Detailing

With the COVID-19 pandemic, many MRs have had to shift to remote detailing, where they use digital platforms to communicate with HCPs instead of meeting them in person. Remote detailing has become an important way for MRs to continue to engage with HCPs during the pandemic.

Personalization

AI algorithms can help MRs personalize their interactions with healthcare professionals (HCPs). By analyzing data on HCPs, AI can provide insights into their prescribing habits and preferences, enabling MRs to tailor their communication strategies accordingly.

Predictive Analytics

AI can help MRs predict future trends in the healthcare industry, such as changes in prescribing patterns or shifts in disease prevalence. This information can be used to develop more effective marketing and sales strategies.

Sales Forecasting

AI can help MRs forecast sales more accurately by analysing data on historical sales patterns, market trends, and other factors that influence product demand.

Competitive Intelligence

AI can be used to monitor and analyse competitor activity in the market, providing MRs with valuable insights into how their products compare to those of their competitors.

Chatbots

AI-powered chatbots can be used to provide HCPs with instant access to information about products, disease states, and treatment options. This can save MRs time and improve their overall efficiency.

Virtual Assistants

AI-powered virtual assistants can be used to automate routine tasks such as scheduling appointments, tracking interactions with HCPs, and generating reports. This can free up MRs to focus on more strategic tasks, such as building relationships with key opinion leaders (KOLs).

Suggestions

Awareness about medical representatives in the medical field is much needed as their role and Importance play a very important role the digital transformation and artificial intelligence must be implemented in all sectors and districts.

Conclusion

Overall, digital transformation has enabled MRs to be more efficient and effective in their communication with HCPs. By using digital tools and platforms, MRs can provide more personalized solutions to HCPs, collect and analyse data more effectively, and engage with HCPs more meaningfully. AI has the potential to help MRs perform more effectively by providing them with valuable insights, automating routine tasks, and enabling more personalized interactions with HCPs. As AI continues to evolve, it is likely to become an increasingly important tool for MRs in the healthcare industry.

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WOMEN ENTREPRENEURSHIP

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Abstract

This conceptual paper indicates and emphasizes the women entrepreneurs as the potentially emerging human resource in the 21st century. Nowadays it has been realized that enterprising women have cast entrepreneurial talents which could be harnessed so as to convert them from the position of Jobseekers to Job givers. The government has realized the importance of women entrepreneurship. As a result, it offers a variety of programmes for women entrepreneurs. Even though the government organizes women by various associations, they are not ready to undertake the business. As compared to men, women are less motivated to start business units due to some unwanted fear, lack of motivation and kind of activities. Practical experience and personality development programmes, to improvise their over-all personality standards. Women of 21st century is no more a traditional resource confined to homes only rather an educated, knowledgeable and innovative part of the overall population possessing the capacity to transform economies into thriving enterprises. On the basis of this analysis some recommendations are given to promote spirit of women entrepreneurship and helping the women to become a successful entrepreneur.

Keywords: Women, Entrepreneur, Innovation, Enterprise, Personality development.

Introduction

In today's world, women are growing in entrepreneurial sector at an increasing pace. They have become important part of the global business environment. To begin with let us first define a women entrepreneur. A Women Entrepreneur may be defined as a woman or a group of woman, who initiate, organize and runs a business venture. The Government of India has defined women entrepreneurs as owning and controlling an enterprise with a woman having a minimum financial interest of 51% of the capital and giving at least 51% of the employment generated in the enterprise to women. Since the 21st century, the status of women in India has been changing as a result to growing industrialization and urbanization, mobility and social legislations.

Over the years more and more women are going in for higher education, technical and professional education and their proportion in the workforce has also been increased. With the spread of education and awareness, women have shifted from the kitchen, handicrafts and traditional cottage industries to non traditional

higher levels of activities, small to medium-sized businesses, and small enterprises. Even the government has laid special emphasis on the need for conducting Special entrepreneurial training programs for women to enable them to start their own ventures. Financial institutions and banks have also set up special cells to assist women entrepreneurs on the economic scene in the recent years. The women are the large part of our country about half of the total population. This large part of our population can largely produce significant support to the overall development of the country. But most of the women of our country ultimately combine them into household chores and family rituals. These era-breaking initiatives are producing these women as more confident to the individual economic freedom and on the other side they are indirectly adding contribution to the national economic growth.

Objectives

Objectives of Women Entrepreneurship Development Program are:

- To enable women entrepreneurs to identify and pursue career paths in Business world.
- To create a conducive business environment for women entrepreneurs.
- To promote women led businesses at national as well as international platforms.
- To bridge the social, cultural and economic gap by providing opportunities for professional and personal development.
- To encourage, enable and facilitate women in becoming economically empowered.
- To set role models in Women Entrepreneurship to influence the younger generation.
- To fill the void created by society due to lack of investment in women development programs.

Status of Women Entrepreneurs in India

Entrepreneurship is considered as one of the most important factors contributing to the development of society. India has been ranked among the worst performing countries in the area of women entrepreneurship in gender-focused global entrepreneurship survey, released in July 2013 by PC maker Dell and Washington based consulting firm Global Entrepreneurship and Development Institute (GEDI). Of the 17 countries surveyed India ranks 16th, just above Uganda. Countries like Turkey, Morocco and Egypt have outperformed India. Status of higher education in women in India came out to be lower than most countries in the world. At present, women's entrepreneurial role is limited in the large scale industries and technology based businesses. But even in small scale industries, the women's participation is

very low. As per the third all-India census of Small Scale Industries, only 10.11% of the micro and small enterprises were owned by women, and only 9.46% of them were managed by women. While the number of women operating their own business is increasing globally, women continue to face huge obstacles that stunt the growth of their businesses, such as lack of capital, strict social constraints, and limited time and skill.

Challenges Faced by Women Entrepreneurs

Conflicts between Work and Domestic Commitments

Women's family obligations also bar them from becoming successful entrepreneurs in both developed and developing nations. "Having primary responsibility for children, home and older dependent family members, few women can devote all their time and energies to their business" (Starcher, 1996)

Gender Gaps in Education

While women are making major strides in educational attainment at primary and secondary levels, they often lack the combination of education, vocational and technical skills, and work experience needed to support the development of highly productive businesses.

Lack of Finance

Access to finance is one of the most common challenges that entrepreneurs face and this is especially true for women who are further Women Entrepreneurship in India 1145 impeded by lack of personal identification, lack of property in their own name and the need for their husband's countersignature on many documents.

Legal Constraints in Family Law

The institutional and legal environment is critical to the growth of female-owned enterprises. Laws regulating the private sphere specifically those regarding marriage, inheritance and land can hinder women's access to assets that can be used as collateral when securing a loan.

Heavy household responsibilities leave a demand on women especially those in rural areas who have more children. They are required to perform their traditional role as housewives and therefore, they have fewer hours of free time than men, both during the weekend and on weekdays.. An ILO report on women entrepreneurship identifies the following problems faced by women entrepreneurs.

Lack of Family Support

Sometimes the family may make the women feel guilty of neglecting household duties in her pursuit of business obligations. Cultural traditions may hold back a woman from venturing into her own business.

Lack of Capital

Traditional sources of finance like banks are reluctant to lend to women entrepreneurs especially if they do not have any male or family backing. This is especially true of lower income females. Women do not have adequate finance or legal knowledge to start an enterprise.

Lack of Confidence and Faith

Lack of role models undermines the self confidence of women entrepreneurs. The activity of selling is considered abhorrent to the female gender.

Lack of Right Public/ Private Institutions

Most public and private incentives are misused and do not reach the woman unless she is backed by a man. Also many trade associations like ministries, chambers of commerce do not cater to women expecting women's organizations to do the necessary thing.

Socio Personal Problems

Wrong attitude of the society against women due to lack of proper education and information, economic backwardness and low risk bearing capacity.

Managerial Problems

Which is due to lack of enough knowledge of general management and experience, lack of skilled labour, absenteeism and low labour turnover, lack of clear cut objectives, transportation problem as women.

Production Problem

Such as inadequate availability of land, plots, and premises, irregular supply of enough inputs, inadequate technical support of production identification, and lack of up gradation of technology research and development and quality control, poor inventory management.

Marketing Problem

Difficulty in marketing their products due to lack of enough knowledge of how to market their products and also relaying on local markets; heavy competition from big enterprises, exploitation by middlemen, difficulties in the collection of dues, inadequate sales promotion avenues and lack of export market support.

Problem of Government Assistance

Both central and State governments are implementing various assistance, schemes, for the promotion of women entrepreneurship. But in practice the respondents face many difficulties in obtaining government assistance due to red tapism at various levels, exploitative advisors, problems due to dishonest officials, complicated and time consuming long procedures in getting the assistance etc.

Problem of Labour

In the course of this study, it has been observed that the women entrepreneurs in the selected group face various labour problems in their units.

Less Confidence

Women entrepreneurs are not confident about their strength and competence. Their family members don't stand by their entrepreneurial growth. In recent years, though the situation is changing, yet the women have to face further change for increased entrepreneurial growth.

Mobility Constraint

The Indian society is a conservative society which restricts the mobility of women entrepreneurs. Women are less mobile than men. The confidence to travel day & night and to different regions and States is lacking in women comparing with men.

Recommendations

The elimination of obstacles for women entrepreneurship requires a major change in traditional attitudes and mindsets of people in society rather than being limited to only creation of opportunities for women. Hence, it is imperative to design programmes that will address to attitudinal changes, training, supportive services. The basic requirement in development of women entrepreneurship is to make aware the women regarding her existence, her unique identity and her contribution towards the economic growth and development of country. The basic instinct of entrepreneurship should be tried to be reaped into the minds of the women from their childhood. This could be achieved by carefully designing the curriculum that will impart the basic knowledge along with its practical implication regarding management (financial, legal etc.) of an enterprise. Here are some suggestions to increase the role of women entrepreneurs:- Women Entrepreneurship in India 1147

Infrastructure

Infrastructure set up plays a vital role for any enterprise. Government can set some priorities for women entrepreneurs for allocation of industrial plots, sheds and other amenities. However, precautionary measures should be undertaken to avoid the misuse of such facility by the men in the name of the women.

Personality Development

Attempts should be there to enhance the standards of education of women in general as well making effective provisions for their training, practical experience and personality development programmes, to improve their over-all personality standards.

Self Help Groups of Women Entrepreneurs

Self help groups of women entrepreneurs can mobilize resources and pool capital funds to help the women in the field of industry, trade and commerce.

Business Development Training Programs

It includes basic day-to-day management training like how to keep track of accounts, handle taxes and understand compliance rules and regulations. They can also focus on strategy and the long-range success of a business from writing a business plan to targeting specific markets, along with product innovation within business clusters and incubators.

Access to Finance Programs

Efforts to facilitate access to finance for women entrepreneurs typically encompass initiatives that reform restrictive bank and regulatory policies. Such reforms accept less traditional forms of collateral, look at a lender's willingness to repay and simplify business registry. They also help financial institutions develop innovative loan and savings products for female entrepreneurs. To establish all India forums to discuss the problems, grievances, issues, and filing complaints against constraints or shortcomings towards the economic progress path of women entrepreneurs and giving suitable decisions .

Policy for Development of Women Entrepreneurs

Nagendra Kumar Jha from Patna University stated the following strategy for development of women entrepreneurs in his research article presented in 9th AIMS International Conference on Management held on January 1-4, 2012;

- A) Vocational training to be extended to women community that enables them to understand the production process and production management.

- B) State Finance Corporations and Financing Institutions should permit by statute to extend purely trade related finance to women entrepreneurs.
- C) The financial institutions should provide more working capital assistance both for small scale ventures and large scale ventures.
- D) Making provision of micro credit system and enterprise credit system to the women entrepreneurs at local level.
- E) Industrial estates could also provide marketing outlets for the display and sale of products made by women.
- F) A Women Entrepreneurs" Guidance Cell may be set up to handle the various problems of women entrepreneurs all over the state.
- G) Training in entrepreneurial attitudes should start at the high school through well designed courses, which build confidence through behavioral games.

Successful Leading Business Women in India

The 21st leading business women in India

- Akhila srinivasan, Managing Director , Shriram Investments ltd
- Chanda Kocchar, Executive Director, ICICI Bank.
- Ekta Kapoor, Creative Director, balaji Telefilms Ltd.
- Jyoti Naik, President, Lijjat Papad.
- Kiran Mazumdar Shaw, Chairman & Managing director, Biocon Ltd. Lalita D.Gupte, JMD , ICICI Bank.
- Naina Lal Kidwar, Deputy CEO , HBSE.
- Preetha Reddy , Managing Director, Apollo hospitals.
- Priya Paul, Chairman, Apeejay Park Hotels.
- Rajshree Pathy, Chairman, Rajshree Sugars & Chemicals ltd. Ranjana Kumar, Chairman, NABARD.

Conclusion

Women, being almost 50% population of India, have a pivotal role to play as far as economic development of country is concerned. India is a male dominated society and women are assumed to be economically as well as socially dependent on male members. Women entrepreneurs faced lots of problems like lack of education, social barriers, legal formalities, high cost of production, male dominated society, limited managerial ability, lack of self confidence etc. Various factors like Pull and Push factors influencing women entrepreneurs. Today, women in advanced market economies own more than 25 per cent of all businesses and women-owned businesses in Africa, Asia, Eastern Europe, and Latin America are growing rapidly. In some regions of the world, transformation to market economy, women entrepreneurs is a growing trend². However, in India, the actual participation of

women in income generating activities is quite unsatisfactory, only eight per cent of the small scale- manufacturing units are owned and operated by women. If women entrepreneurs get support and encouragement from family, society, Government and financial institutions, such positive effort can open new avenues for them and increase the marketability and profitability of business owned by them. If the problems of women entrepreneurs are addressed properly, they can emerge as very successful entrepreneurs far better than men entrepreneurs.

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A IMPACT FACED BY WOMEN ENTREPRENEURSHIP IN MODERN ERA

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Abstract

In this generation, women are having trouble becoming entrepreneurs. From this case study, what are the needs of women's entrepreneurship, the challenges faced by women's entrepreneurship, gender equality, and knowledge about the women's entrepreneurship schemes given by the government? It will be helpful for the women to start their businesses, and it gives some acknowledgement of entrepreneurship.

Keywords: *Women Entrepreneurship, Gender Equality, Startup Business, Government Schemes.*

Introduction

The rise of women entrepreneurs in recent years has been a transformative force in the business world, reshaping industries, challenging gender norms, and driving socioeconomic development. This paper aims to shed light on the unique journey of women entrepreneurs, the obstacles they face, and the positive impact they bring to the global economy. By examining the factors that contribute to their success and the initiatives that support their endeavors, this paper seeks to inspire and advocate for the empowerment of women entrepreneurs.

Review of Literature

- Gupta, V. K., Turban, D. B., Wasti, S. A., & Sikdar, A. (2009). The role of gender stereotypes in perceptions of entrepreneurs and intentions to become an entrepreneur. *Entrepreneurship Theory and Practice*, 33(2), 397-417. This study explores the role of gender stereotypes in shaping perceptions of entrepreneurs. It examines how societal beliefs about gender influence individuals' intentions to become entrepreneurs, with a focus on the impact on women entrepreneurs.

- Alsos, G. A., Ljunggren, E., & Hytti, U. (2013). Gender and innovation: State of the art and a research agenda. *International Journal of Gender and Entrepreneurship*, 5(3), 236-256. This article explores the intersection of gender and innovation in entrepreneurship. It reviews the existing literature on the topic and proposes a research agenda to further investigate the role of gender in driving innovation among women entrepreneurs.

The Rise of Women Entrepreneurs

The rise of women entrepreneurs refers to the increasing number of women who are starting and leading their own businesses across various industries. It signifies a significant shift in the entrepreneurial landscape, as more women are breaking traditional gender roles and pursuing entrepreneurship as a viable career path. This trend has gained momentum in recent years and has been fueled by several factors:

1. **Changing societal attitudes:** There has been a gradual shift in societal attitudes towards gender roles and women's capabilities. Women are now more encouraged and supported to pursue their entrepreneurial ambitions, challenging the notion that entrepreneurship is primarily a male domain.
2. **Increased access to education and resources:** Women's access to education and resources has improved significantly. Greater educational opportunities and vocational training have equipped women with the knowledge and skills necessary to start and run successful businesses.
3. **Advancements in technology:** Technological advancements, especially the widespread availability of the internet and digital tools, have leveled the playing field for entrepreneurs. Women can now easily start online businesses, access global markets, and leverage digital platforms for marketing and networking.
4. **Supportive networks and initiatives:** The rise of women-focused entrepreneurship networks, organizations, and initiatives has created a supportive ecosystem for women entrepreneurs. These networks offer mentorship, funding opportunities, and resources tailored to the unique challenges faced by women in entrepreneurship.
5. **Government policies and programs:** Governments around the world have recognized the economic potential of women entrepreneurs and have implemented policies and programs to support their growth. These include funding schemes, business development initiatives, and policies promoting gender equality and women's empowerment.
6. **Inspiration from successful women entrepreneurs:** High-profile women entrepreneurs serve as role models and sources of inspiration for aspiring women entrepreneurs. Their success stories showcase the possibilities and potential rewards of entrepreneurship, motivating more women to take the leap.

Empowering Next Generation by Women Entrepreneurs

Empowering the next generation through women entrepreneurs is a powerful and impactful approach to fostering social and economic growth. When women take on entrepreneurial roles, they not only contribute to economic development but also become role models and advocates for other women and girls aspiring to achieve their dreams. Here are some key ways in which women entrepreneurs can empower the next generation:

- 1. Inspiring role models:** Women entrepreneurs serve as inspiring role models for young girls and women, demonstrating that they can achieve success in any field they choose. Their stories of overcoming challenges and achieving their goals can inspire others to pursue their passions and ambitions.
- 2. Breaking stereotypes:** By venturing into various industries and sectors, women entrepreneurs challenge traditional gender stereotypes and break down barriers. This can encourage the next generation to pursue diverse career paths, irrespective of gender-based expectations.
- 3. Mentorship and guidance:** Women entrepreneurs can actively engage in mentorship programs and initiatives to support and guide young women who are interested in entrepreneurship. Sharing knowledge, experiences, and networks can help aspiring entrepreneurs navigate challenges and foster their personal and professional growth.
- 4. Access to education and resources:** Women entrepreneurs can advocate for and support educational opportunities that focus on entrepreneurship and leadership skills for girls and young women. Additionally, they can help ensure that resources and funding opportunities are accessible to aspiring female entrepreneurs, bridging the gender gap in entrepreneurial activities.
- 5. Empowering through networks:** Women entrepreneurs often create networks and support systems that encourage collaboration, skill-sharing, and collective empowerment. These networks can provide valuable connections and resources to the next generation of aspiring women entrepreneurs.
- 6. Addressing gender bias:** Women entrepreneurs can use their influence and platform to address gender bias and advocate for gender equality in the entrepreneurial ecosystem. By actively promoting diversity and inclusivity, they create a more supportive environment for women to thrive in business.
- 7. Social impact and sustainability:** Women entrepreneurs are often driven by a strong sense of social responsibility. They can create businesses that address critical social and environmental issues, inspiring the next generation to build sustainable and purpose-driven enterprises.

8. **Encouraging risk-taking and resilience:** Through their experiences as entrepreneurs, women can teach the next generation the importance of taking calculated risks, embracing failure as a learning opportunity, and developing resilience in the face of challenges.
9. **Balancing work and family life:** Many women entrepreneurs successfully manage the dual responsibilities of running a business and caring for their families. By showcasing this ability to balance work and personal life, they can challenge societal norms and inspire others to do the same.
10. **Advocating for policy changes:** Women entrepreneurs can use their influence to advocate for policy changes that promote gender equality in the workforce and support women-led businesses. These policy changes can create a more supportive environment for the next generation of women entrepreneurs.

Government Policies for Women Entrepreneur

1. **Anti-Discrimination Laws:** These laws protect women entrepreneurs from gender-based discrimination in various aspects of business, such as hiring, promotions, access to funding, and access to opportunities.
2. **Equal Pay Laws:** Legislation that mandates equal pay for men and women doing the same or similar work helps address gender wage gaps that might impact women entrepreneurs.
3. **Maternity and Parental Leave:** Laws related to maternity and parental leave ensure that women entrepreneurs can balance their work and family responsibilities without facing discrimination or negative consequences.
4. **Access to Capital:** Women entrepreneurs might benefit from laws and policies that promote equal access to financing and funding opportunities.
5. **Business Registration:** The process of registering a business should be gender-neutral, ensuring that women have equal access to start and operate businesses.
6. **Property Rights:** Laws related to property ownership and inheritance should treat men and women equally, ensuring that women entrepreneurs have secure rights to their assets and property.
7. **Legal Protections for Victims of Harassment and Violence:** Laws that protect individuals from harassment and violence are essential to creating a safe and supportive business environment for women entrepreneurs.
8. **Training and Education:** Government initiatives or laws might focus on providing training, education, and capacity-building programs specifically tailored for women entrepreneurs.

Challenges Faced by Women Entrepreneurship

Entrepreneurship includes many challenges, although the challenges faced by women entrepreneurs are critical. Such challenges as lack of financial support, lack of mentorship, gender inequality, Limited mobility, etc. Prone to a variety of emotions Sensitivity plays a major role in women's

1. Gender Bias and Stereotypes

One of the primary challenges faced by women entrepreneurs is gender bias and stereotypes. Deep-rooted societal beliefs often portray women as less capable in business, affecting their access to funding, networks, and support. Overcoming these biases requires promoting inclusivity, challenging stereotypes, and providing equal opportunities for women entrepreneurs to showcase their skills and expertise.

2. Limited Access to Capital

Access to capital remains a significant challenge for women entrepreneurs. Bias in traditional funding channels often results in limited financing options. To address this, initiatives such as gender-lens investing, microloans, and venture capital funds specifically focused on women-led businesses can bridge the gap and provide financial support for growth and expansion.

3. Lack of Mentorship and Role Models

The scarcity of female mentors and role models poses a challenge for women entrepreneurs. Mentorship plays a vital role in providing guidance, sharing experiences, and building networks. Establishing mentorship programs, encouraging successful women entrepreneurs to act as role models, and facilitating networking opportunities can empower aspiring entrepreneurs and enhance their chances of success.

4. Work-Life Balance

Balancing personal and professional responsibilities is a significant challenge for women entrepreneurs, particularly those with caregiving roles. Policies that support flexible work arrangements, affordable childcare options, and promoting a culture of work-life integration can enable women entrepreneurs to manage their businesses effectively while maintaining their personal well-being.

5. Networking and Access to Opportunities

Networking and access to opportunities are crucial for business growth. However, women entrepreneurs may face difficulties in accessing male-dominated networks. Initiatives promoting diverse networking platforms, industry-specific conferences and events, and partnerships with organizations supporting women entrepreneurs can help bridge this gap and provide equal access to opportunities.

6. Lack of Confidence and Self-Promotion

Women entrepreneurs sometimes struggle with self-promotion and asserting confidence in their abilities. Overcoming this challenge requires fostering a supportive environment that encourages women to showcase their achievements,

providing training in self-promotion skills, and celebrating the accomplishments of women entrepreneurs to boost their confidence and build credibility.

7. Stereotypes in Industries

Certain industries remain traditionally male-dominated, creating additional hurdles for women entrepreneurs entering those sectors. Overcoming these stereotypes involves promoting inclusivity and diversity within these industries, encouraging women to pursue non-traditional paths, and showcasing successful women leaders who challenge the norms.

8. Limited Access to Business Education and Resources

Unequal access to entrepreneurship education and resources is a challenge faced by women entrepreneurs. Establishing mentorship programs, offering scholarships for business education, and providing resources tailored to the unique needs of women entrepreneurs can enhance their skills and knowledge, enabling them to navigate the business landscape more effectively.

Conclusion

The rise of women entrepreneurs signifies a significant shift in the business landscape, as they challenge traditional norms, overcome barriers, and contribute to economic growth and social progress. By addressing the unique challenges they face and providing support through initiatives and policies, we can encourage an inclusive entrepreneurial ecosystem that empowers women to thrive. It is crucial to recognize the contributions of women entrepreneurs and continue working towards a more equitable and various business environment for all.

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GOVERNMENT SUPPORT MECHANISMS: FREEBIE SCHEMES, SUBSIDIES ARE AVENUE FOR SOCIO ECONOMIC DEVELOPMENT

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Abstract

Tamil Nadu is still one of the few socialist-democratic states in India, Welfare schemes have long influenced Tamil Nadu politics. In 1967, when hunger was a major issue, Perarignar C.N. Annadurai became Chief Minister riding on his promise of 'One rupee for one padi (litre) rice'. The government soon found out that the promise was even expensive and unsustainable, but the welfarism continued which has, in the post-liberalisation period, managed to significantly increase its per capita income and Gross Domestic State Product (GSDP), while also maintaining a steady trend of interventions into welfare. Not only as 'freebies' – Tamil Nadu has given India a market-friendly Dravidian welfare model. This is the story of Tamil Nadu – the state that has given India a unique template. One, by pursuing targeted welfare schemes, often exonerate as 'freebies', and two, by pursuing economic growth through market forces. The state shows that the twin track is possible. Interestingly, despite spending high on freebies and populist schemes, Tamil Nadu has maintained inclusive growth over the decades.

Keywords: Freebie, Schemes, Socio-economic, Society, Subsidize, Welfare, Development

Introduction

Mainly focused on the freebie schemes initiated by the Government of Tamil Nadu for socio-economic development. In India, Tamilnadu is an Origin and Pioneer of the great welfare scheme & Socio-economic development Model when Dravida Model Government took charge in Government Role by Tamilnadu State Assembly Election at 1967 through their successful social-movements for establishing Social Justice, People Welfare, Equality in Human Rights, Secularism, Federalism, Fundamental and democracy rights oriented initiatives by their uncompromised social movements in their successful track record.

Observations

Different types of socio-economic development schemes of Government of Tamil Nadu provide employment opportunities, reduce unemployment problems,

generate income, eradicate poverty, improve the standard of living of the people across the state, provide proper education, increase women participation in workforce, develop entrepreneurship, empower the people, enormously contributes to industrial production, GDP and market share and there by promotes our country's economy. Besides that the schemes are great opportunities for utilizing the available natural and human resources

- **Employment-** Freebies build a healthier and a stronger workforce, which is a necessary part of any growth strategy.

Working under MGNREGA can guarantee some assured wages and confers right to life with dignity.

- **Poverty reduction-** There have been studies which showed the poverty-reducing effect of the Public distribution System.

The free or subsidised rations under PDS allows foodgrains to be available for cheap for consumers while assuring remunerative prices to farmers.

- **Food security-** Subsidised foodgrains distributed under the PDS contribute to ensuring basic food security.
- **Education-** Mid-day meals and in schools have been proven to contribute to increased enrolment and retention in schools and addresses classroom hunger.

It also resulted in keeping the evil of child labour under control.

'Breakfast Scheme' - "*Muthalamaicharin kalai unavu Thittam*" for schoolchildren is an inspiring model. To begin with, the scheme will benefit 114,000 children in 1,545 government primary schools, and will be expanded in phases. Stalin says breakfast for children is a responsibility and not a freebie. The scheme's goal, according to him, is to prevent hunger and nutritional deficiency, besides easing the burden of working mothers.

- **Women empowerment-** Tamil Nadu government's free bus pass for women has encouraged more women to join the workforce, in turn leading to economically stable families and women's empowerment.

- **Makkalai Thedi Maruthuvam Scheme**

A new scheme has been created by the chief minister of Tamil Nadu to provide doorstep healthcare facilities in the seven districts of the state. With the help of the **Makkalai Thedi Maruthuvam Scheme**, people who are above the age of 45 years will be screened and provided with medical facilities if found to be infected with non-communicable diseases like high blood pressure and diabetes. The main aim of launching the **Tamil Nadu Doorstep Healthcare Scheme** is to eliminate the visit of poor people to various hospitals.

- **Reduction in social evils-** The introduction of free colour television in villages has resulted in decrease in domestic violence and also enabled women's empowerment as women have been able to connect with the outside world through visual media.
- It has ensured self-respect, as women and children are able to watch TV in their houses rather than visit the homes of those who are rich and own TV sets.
- **Increased productivity-** Subsidies such as free laptops has now become necessities for increasing productivity, knowledge and skills.
- The small amounts given to the poor are called 'freebies', while freebies that the rich get through low tax rates and exemptions are referred as 'incentives'.
- **Boost industrial growth-** In Kerala, fiscal incentives are given to encourage corporate/entrepreneurs to boost industrial growth.
- **Sustainability-** It's not about how cheap the freebies are but how expensive they are for the economy, life quality and social cohesion in the long run.

Scheme List for Tamil Nadu

1. Moovalur Ramamirtham Ammaiyar Education Assurance Scheme.
2. Chief Minister Comprehensive Health Insurance Scheme.
3. Tamil Nadu Magalir Urimai Thogai Scheme.
4. Tamil Nadu Zero Ticket Bus Travel Scheme for Women
5. Tamil Nadu Unemployed Youth Employment Generation Programme
6. Tamil Nadu New Entrepreneur cum Enterprise Development Scheme
7. Tamil Nadu Chief Minister Breakfast Scheme

1. Moovalur Ramamirtham Ammaiyar Education Assurance Scheme

- Scheme : Moovalur Ramamirtham Ammaiyar Higher Education Assurance Scheme
- Name Benefits of the Scheme : Financial Assistance to meet the cost of education.Amount of AssistanceRs. 1,000/- per month till the completion of the course.Nodal AgencyDepartment of Social Welfare and Women Empowerment, Tamil Nadu.
- Mode of Apply : SchemeMoovalur Ramamirtham Ammaiyar Higher Education Assurance Scheme application

Features of the Scheme

- Under this scheme, only those girls are eligible who have completed their studies from class 6th to class 12th from a government school.

- The financial assistance amount of the scheme will be given every month in the account of the girl.

2. Chief Minister Comprehensive Health Insurance Scheme:

- Name of the Scheme :Chief Minister Comprehensive Health Insurance Scheme.
- Launched in 23.07.2009. Benefits Insurance cover up to 5 lakh per family member. Beneficiaries People having less than annual income of less than 1,20,000 per annum. Nodal Ministry Government of Tamil Nadu.
- Mode of Apply : Online Application
- Beneficiaries:
 - ❖ Spouse (wife/husband) of eligible person by law.
 - ❖ Children of eligible person (till they get married, employed or attain age of 25)
 - ❖ Dependant parents of eligible person

3. Tamil Nadu Magalir Urimai Thogai Scheme :

- Name of the Scheme :Tamil Nadu Magalir Urimai Thogai Scheme.
- Launched on 15th September 2023. Benefits Financial Assistance of Rs. 1,000/- per Month. Beneficiaries Women of Tamil Nadu. Nodal Department Department of Social Welfare & Women Empowerment, Tamil Nadu Government.
- Mode of Application : Online Application
- Benefits of Scheme :
 - ❖ The following benefits will be provided to eligible women beneficiaries of Tamil Nadu under Magalir Urimai Thogai Scheme :-
 - ❖ Financial Assistance of Rs. 1,000/- per Month to Women Beneficiary.

4. Tamil Nadu Zero Ticket Bus Travel Scheme for Women

- Name of the Scheme: Tamil Nadu Zero Ticket Bus Travel Scheme for Women.
- Launched on 2021 Benefits Free of Cost Bus Travel in Tamil Nadu Government Run Buses.
- Beneficiaries :Women of Tamil Nadu.
- Nodal Department : Department of Social Welfare & Women Empowerment, Tamil Nadu Government.
- Mode of Application: No Need to Apply Anywhere for Zero Ticket Bus Travel Scheme for Women.
- Benefits of Scheme:
 - ❖ Free of Cost Travel in Government of Tamil Nadu Buses.
 - ❖ No Need to Pay any Fare up to 30 Kilometers.

- Eligibility
 - ❖ Women Should be a Permanent Resident of Tamil Nadu.

5. Tamil Nadu Unemployed Youth Employment Generation Programme

- Name of the Scheme :Tamil Nadu Unemployed Youth Employment Generation Programme.
- Benefits Capital Subsidy on Projects of Entrepreneurs.
- Beneficiaries : Entrepreneurs of Tamil Nadu.
- Nodal Department of Micro, Small and Medium Enterprises, Government of Tamil Nadu.
- Mode of Apply : Online application
- Eligibility
 - ❖ Applicant should be a Permanent Resident of Tamil Nadu.
 - ❖ Applicant should have passed minimum Class 8th.
 - ❖ The Annual Family Income of Applicant should be below Rs. 5,00,000/-.
- The Age of Applicant should be :-
 - ❖ Between 18 Years to 35 Years for General Applicant.
 - ❖ Between 18 Year to 45 Years for below mentioned Special Category Applicant :-
 - ❖ Women.
 - ❖ Minorities.
 - ❖ Backward Class.
 - ❖ Most Backward Class.
 - ❖ Schedule Caste.
 - ❖ Schedule Tribe.
 - ❖ Ex-Servicemen.
 - ❖ Transgenders.
 - ❖ Differently Abled.

6. Tamil Nadu New Entrepreneur cum Enterprise Development Scheme

- Name of the Scheme:Tamil Nadu New Entrepreneur cum Enterprise Development Scheme.
- BenefitsCapital Subsidy on Projects of First Generation Entrepreneurs.
- Beneficiaries: First Generation Entrepreneurs of Tamil Nadu.
- Nodal Department: Department of Micro, Small and Medium Enterprises, Government of Tamil Nadu.
- Mode of Apply : online application Eligibility
 - ❖ Applicant should be a Resident of Tamil Nadu for Not Less than 3 Years.
 - ❖ Applicant should possess any of the following Minimum Educational Qualification :-

- ❖ 12th Pass.
- ❖ Diploma Holder.
- ❖ ITI Pass.
- ❖ Vocational Training Passed.
- ❖ The Age of Applicant should be :-
- ❖ Between 21 Years to 35 Years for General Category Entrepreneur.
- ❖ Between 21 Year to 45 Years for below mentioned Special Category Entrepreneur :-
- ❖ Schedule Caste.
- ❖ Schedule Tribe.
- ❖ Minorities.
- ❖ Women.
- ❖ Differently Abled.
- ❖ Backward Class.
- ❖ Transgenders.
- ❖ Ex-Servicemen.
- ❖ Most Backward Class.

7. Tamil Nadu Chief Minister Breakfast Scheme

- Name of the Scheme: Tamil Nadu Chief Minister Breakfast Scheme.
- Launched Date: 15-09-2022. Benefits: Nutritious Breakfast will be Provided to Primary School Students.
- Beneficiaries : Primary School Students of Tamil Nadu.
- Mode of Application : No Need to Apply Anywhere for Chief Minister Breakfast Scheme.
- Benefits of Scheme:
 - ❖ The following benefits will be provided to Students of Primary School under Tamil Nadu Chief Minister Breakfast Scheme :-
 - ❖ Free Breakfast will be Provided to all Primary School Students
 - ❖ Breakfast has 13 Types of Food Items which will be distributed among Students.
 - ❖ Installation of solar PV plants at subsidized cost.
 - ❖ Reduced Power bills.
 - ❖ Free comprehensive maintenance for first five years.
- Beneficiaries : Domestic consumers with a TANGEDCO service connection
Nodal Agency Tamil Nadu Energy Development Agency

Eligibility

- Only Domestic consumers with a TANGEDCO service connection are eligible under this scheme.
- Subsidy will be applicable for 1kWp plants.
- The Scheme only applies to grid-connected rooftop solar PV systems.

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BEYOND CRYPTOCURRENCY, BLOCK CHAIN TECHNOLOGY AND VIRTUAL LEDGER TECHNIQUES

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Abstract

Block Chain (BC), the generation behind the Bitcoin crypto-forex gadget, is taken into consideration to be each eye-catching and crucial for making sure stronger protection and (in some implementations, non-traceable) privacy for diverse applications in lots of other domains - consisting of in the net of things (IoT) eco-machine. Intensive research is presently being conducted in each academia and industry applying the Block chain generation in multifarious programs. Proof-of-work (PoW), a cryptographic puzzle, performs a crucial role in making sure BC protection by means of maintaining a digital ledger of transactions, that's taken into consideration to be incorruptible. Moreover, BC makes use of a changeable Public Key (PK) to report the users' identity, which presents an extra layer of privacy. Now not most effective in cryptocurrency has the successful adoption of BC been applied however additionally in multifaceted non-monetary structures which includes in: dispensed storage systems, evidence-of-proximity, healthcare, decentralized voting and so forth. Recent research articles and tasks/programs have been surveyed to evaluate the implementation of BC for improved security, to discover related demanding situations and to endorse answers for BC enabled superior protection structures

Keywords: *Block chain (BC); Bitcoin; Crypto-currency; IoT; proof of labour (PoW); dispensed virtual Ledger*

Introduction

The aim of this research paper is to summarize the literature on implementation of the Block chain and similar virtual ledger techniques in numerous different domain names past its application to crypto-currency and to attract suitable conclusions. Block chain being particularly a new era, a consultant sample of research is offered, spanning over the last ten years, beginning from the early work on this area. special styles of utilization of Block chain and other virtual ledger strategies, their demanding situations, applications, safety and privacy troubles were investigated. identifying the most propitious course for destiny use of Block chain past crypto-currency is the principle attention of the review look at. Block chain (BC), the generation in the back of Bitcoin crypto-foreign money device, is taken into

consideration to be crucial for forming the backbone for making sure more suitable safety and privacy for numerous programs in lots of different domains inclusive of the internet of things (IoT) eco-system. international studies are presently being performed in both academia and enterprise making use of Block chain in numerous domain names. The evidence-of-work (PoW) mathematical assignment ensures BC safety via keeping a digital ledger of transactions this is taken into consideration to be unalterable. moreover, BC uses a changeable Public Key (PK) to document the customers' identification that gives a further layer of privateness. A hit adoption of BC has been carried out in diverse non-financial systems consisting of in online vote casting, decentralized messaging, distributed cloud storage systems, proof-of-area, healthcare and so forth. latest research articles a tasks/packages were surveyed to envision the implementation of BC for greater protection and to become aware of its associated challenges and thence to recommend solutions for BC enabled stronger security systems. The knowledge domain of the studies is within the realm of the virtual ledger, especially, in Block chain and crypto-foreign money.

Generation fundamentals of Block chain

This section in brief describes the fundamentals of the era behind the Block chain. A Block chain incorporates of two special components, as follows:

- a. *Transaction*: A transaction, in a Block chain, represents the movement brought about via the participant.
- b. *Block*: A block, in a Block chain, is a collection of statistics recording the transaction and different related information consisting of the right sequence, timestamp of advent, and so on. The Block chain can both be public or non-public, relying on the scope of its use. A public Block chain permits all of the customers with read and write permissions which includes in Bitcoin, get admission to it. But, there are some public Block chains that limit the get admission to only either to read or to write. At the opposite, a non-public Block chain limits the access to selected depended on members handiest, with the goal to preserve the customers' details hid. that is mainly pertinent among governmental institutions and allied sister issues or their subsidies thereof. one of the fundamental advantages of the Block chain is that it and its implementation generation is public. every collaborating entities possesses an updated whole report of the transactions and the related blocks. consequently, the data stays unaltered, as any changes may be publicly verifiable.

The statistics inside the blocks are encrypted by using a private key and consequently can't be interpreted through anybody another fundamental gain of the

Block chain technology is that it's miles decentralized. it's miles decentralized within the feel that:

- There may be no single tool that shops the data (transactions and related blocks), alternatively they may be disbursed many of the individuals in the course of the network assisting the Block chain.
- The transactions aren't problem to approval of any single authority or ought to abide with the aid of a set of particular regulations, consequently concerning widespread believe as to attain a consensus.
- the overall safety of a Block chain eco-gadget is another benefit. The machine simplest permits new blocks to be appended. for the reason that preceding blocks are public and allotted, they can't be altered or revised.

For a new transaction to be brought to the existing chain, it has to be confirmed via all the members of the relevant Block chain eco-gadget. For one of these validation and verification system, the contributors must apply a selected set of rules. The relevant Block chain eco-gadget defines what's perceived as "legitimate", which may also range from one eco-gadget to any other. some of transactions, hence permitted by the validation and verification process, are bundled collectively in a block. The newly organized block is then communicated to all other collaborating nodes to be appended to the prevailing chain of blocks. every succeeding block comprises a hash, a unique virtual fingerprint, of the preceding one. Parent 1 demonstrates how Block chain transactions takes place, using a step-by way of-step instance. Bob is going to switch a few cash to Alice. once the monetary transaction is initiated and consequently prompted by using Bob, it's far represented as a "transaction" and broadcast to all the concerned parties in the networks. The transaction now has to get "approval" as being indeed "valid" via the Block chain eco-system. Transaction(s) once authorised as legitimate alongside the hash of the succeeding block are then fed into a new "block" and communicated to all of the participating nodes to be subsequently appended to the present chain of blocks within the Block chain digital ledger.

Triggering Transaction

- Bob goes to transfer a few cash to Alice;
- As soon as the financial transaction is initiated and hence brought on by way of Bob, it's miles represented as a "transaction" and broadcast to all the concerned events in the community

Validation & Verification

- The transaction now has to get “approval” as being indeed “legitimate” by way of the Block chain eco-system.
- For this kind of validation and verification technique, the participants should observe a selected algorithm;
- The relevant Blockchain eco-machine defines what's perceived as “valid”, which may range from one eco-gadget to every other.

Creating a brand new Block

- Transaction(s) once authorized as valid along with the hash of the succeeding block are then fed into a new “block”.

Including Block to the Chain

- The brand new block is then communicated to all of the taking part nodes to be in the end appended to the existing chain of blocks inside the block chain virtual ledger.

Utilization of Block Chain Past Crypto currency

Despite the fact that the internet is a wonderful device to resource each sphere of the cutting-edge digital lifestyles, it is still tremendously flawed in phrases of the lack of security and privateness, particularly in relation to FinTech and E-commerce. Block chain, the era at the back of crypto-currency, delivered forth a brand new revolution with the aid of supplying a mechanism for Peer-to-Peer (P2P) transactions without the want for any middleman frame which include the existing commercial banks.

BC validates all of the transactions and preserves an everlasting document of them while making sure that any identification related records of the customers are kept incognito. as a consequence, all the non-public records of the customers are sequestered even as substantiating all of the transactions. this is finished by way of reconciling mass collaboration by cumulating all of the transactions in a pc code based totally virtual ledger. as a result, by using applying Block chain or similar crypto-currency strategies, the customers neither want to consider every other nor do they need an intermediary; alternatively, the trust is manifested in the decentralized community machine itself. Block chain as a consequence seems to be the suitable “believe device”. In reality, Bitcoin is just an exemplary use of the Block chain.

Block chain is taken into consideration to be a novel revolution in the domain of computing enabling countless packages consisting of storing and verifying legal documents along with deeds and diverse certificate, healthcare statistics, IoT, Cloud and so on. Rightly indicated Block chain to be the “global huge Ledger”, permitting many new applications past verifying transactions including in: clever deeds,

decentralized and/or independent businesses/ government offerings and so on. Within the cloud surroundings, the history of advent of any cloud facts object and its next operations carried out thereupon are recorded with the aid of the records shape mechanism of 'data Provenance', which is a type of cloud metadata. as a consequence, that is very essential to offer the utmost safety to the facts provenance for making sure its information privacy, forensics and duty. Liang et al. Places forward a Block chain based relied on cloud records provenance architecture, 'ProvChain', that is fully decentralized. Such adoption of the Block chain in cloud surroundings can offer robust protection towards statistics being altered for this reason enabling a greater transparency as properly as additional facts responsibility. This also will increase the supply, trustworthiness, privacy and in the long run the price of the provenance facts itself.

In an IoT eco system most of the conversation is in the shape of system-to-device (M2M) interactions. consequently, establishing accept as true with the various participating machines is a massive assignment that IoT era nonetheless has now not been met notably. but, Block chain can also act as a catalyst on this regard by means of allowing enhanced scalability, security, reliability and privateness. This will be performed by means of deploying Block chain technology to music billions of gadgets linked to the IoT eco-systems and used to allow and/or coordinate transaction processing. applying Block chain inside the IoT ecosystem will even growth reliability by means of axing the unmarried factor of Failure (SPF). The cryptographic algorithms used for encryption of the block information in addition to the hashing strategies may additionally provide higher security. but, this shall call for more processing strength which IoT devices currently suffer from. thus further studies is required to conquer this cutting-edge difficulty. Underwood considers the utility of Block chain technology to completely overhaul the virtual economy. ensuring and keeping consider is both the number one and initial situation of the utility of the Block chain. BC also can be used to accumulate chronological and collection facts of transactions, as it could be visible as an enormous networked time-stamping device. for instance, NASDAQ is the use of its 'Linq Block chain' to file its private securities transactions. meanwhile the Depository believe & Clearing organization (DTCC, united states) is working with Axon in imposing financial agreement services together with post-change matters and swaps. Regulators are also interested for BC's capability to provide cosy, private, traceable actual-time tracking of transactions.

Conclusion

The utility of the Blockchain idea and generation has grown past its use for Bitcoin generation and transactions. The residences of its safety, privateness,

traceability, inherent records provenance and time-stamping has visible its adoption beyond its initial application areas. The Blockchain itself and its variants at the moment are used to relaxed any sort of transactions, whether it's human-to-human communications or system-to-device. Its adoption seems to be relaxed particularly with the worldwide emergence of the net-of-matters. Its decentralized software throughout the already established global internet is likewise very appealing in terms of making sure records redundancy and as a result survivability. The Blockchain has been specifically diagnosed to be suitable in growing nations where ensuring accept as true with is of a major challenge. as a consequence, the invention of the Blockchain may be seen to be a critical and lots wanted additional factor of the net that changed into missing in safety and agree with earlier than. BC technology nevertheless has no longer reached its adulthood with a prediction of five years as novel applications stay applied globally.

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WOMEN ENTREPRENEURSHIP: ISSUES AND CHALLENGES IN INDIA

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Abstract

Today's world is changing at a startling pace. Political and economic transformations seem to be occurring everywhere – as countries convert from command to demand economies, dictatorships move toward democracy, and monarchies build new civil institutions. These changes have created economic opportunities for women who want to own and operate businesses. Today, women in advanced market economies own more than 25% of all businesses and women-owned businesses in Africa, Asia, Eastern Europe and Latin America are growing rapidly. This paper focuses on woman entrepreneur. Any understanding of woman in global scene and especially in India, also the paper talks about the status of woman entrepreneurs and the problems faced by them when they set up and managed their own businesses in the competitive world of business environment Today's world is changing at a startling pace. Political and economic transformations seem to be occurring everywhere – as countries convert from command to demand economies, dictatorships move toward democracy, and monarchies build new civil institutions. These changes have created economic opportunities for women who want to own and operate businesses. Today, women in advanced market economies own more than 25% of all businesses and women-owned businesses in Africa, Asia, Eastern Europe and Latin America are growing rapidly. This paper focuses on woman entrepreneur. Any understanding of woman in global scene and especially in India, also the paper talks about the status of woman entrepreneurs and the problems faced by them when they set up and managed their own businesses in the competitive world of business environment Today's world is changing at a startling pace. Political and economic transformations seem to be occurring everywhere – as countries convert from command to demand economies, dictatorships move toward democracy, and monarchies build new civil institutions. These changes have created economic opportunities for women who want to own and operate businesses. Today, women in advanced market economies own more than 25% of all businesses and women-owned businesses in Africa, Asia, Eastern Europe and Latin America are growing rapidly. This paper focuses on woman entrepreneur. Any understanding of woman in global scene and especially in India, also the paper talks about the status of woman entrepreneurs and the problems faced by them when they set up and managed their own businesses in the competitive world of business environment.

Women Entrepreneurship" means an act of business ownership and business creation that empowers women economically in a position in society. Women entrepreneurship has gained significant attention in recent years as women continue to break barriers and establish successful

businesses. However, women entrepreneurs still face a variety of unique issues and challenges that can hinder their progress and limit their potential for success. The first challenge faced by women entrepreneurs is the persistent gender-based biases and stereotypes prevalent in society. These biases can affect women's access to resources, funding, and opportunities, creating barriers to entry and growth. Additionally, societal expectations related to gender roles and family responsibilities often place additional burdens on women entrepreneurs, making it challenging to balance work and personal life. This paper aims to delve deeper into the issues and challenges faced by women entrepreneurs, exploring their implications on economic and social development. By understanding and addressing these barriers, societies can unlock the full potential of women in entrepreneurship, promoting gender equality and fostering vibrant and inclusive entrepreneurial ecosystems.

Introduction

In recent years, the global landscape of entrepreneurship has witnessed a remarkable rise in the participation of women. Women entrepreneurs have emerged as key contributors to economic growth, innovation, and job creation. However, despite their significant strides, women entrepreneurs continue to face a multitude of unique issues and challenges that can hinder their progress and limit their potential for success. The empowerment of women through entrepreneurship is not only a matter of gender equality but also a catalyst for economic development. Studies have shown that increasing women's participation in the entrepreneurial sphere can have substantial positive effects on economies, including enhanced productivity, job creation, and poverty reduction. Moreover, women-led businesses often prioritize social and environmental sustainability, contributing to a more inclusive and equitable society. Nevertheless, numerous obstacles impede the advancement of women entrepreneurs. One of the most prevalent challenges is the persistence of gender-based biases and stereotypes deeply ingrained in society. These biases create barriers to entry, affecting women's access to resources, funding, and opportunities. Society's preconceived notions about gender roles often cast doubts on women's abilities as entrepreneurs and limit their potential for growth. Access to capital remains a critical issue for women entrepreneurs. Research consistently highlights the disparities faced by women in securing funding for their businesses compared to their male counterparts. Venture capital firms, angel investors, and financial institutions often exhibit biases that result in unequal distribution of funding, making it more challenging for women to start or expand their ventures. Networking and mentorship opportunities pose additional challenges for women entrepreneurs. The existing business networks, often male-dominated, can exclude or marginalize women, limiting their access to crucial connections, partnerships, and mentorship. Lack of representation and role models further hampers the growth and development of aspiring women entrepreneurs. Moreover, the absence of tailored support systems and resources designed specifically for

women entrepreneurs is a significant gap. Women may have distinct needs, such as access to affordable childcare facilities, flexible working arrangements, and targeted training programs. Without these resources, women entrepreneurs face additional hurdles in navigating the complex entrepreneurial landscape.

Work-life integration is yet another challenge faced by women entrepreneurs. Juggling the demands of running a business with family responsibilities and personal well-being can create a significant strain. The lack of adequate support systems and mechanisms to balance these competing priorities can lead to burnout and hinder the long-term sustainability of women-led businesses. Addressing these issues and challenges requires concerted efforts from various stakeholders, including governments, policymakers, financial institutions, and business support organizations. Recognizing and dismantling gender biases, implementing gender-responsive policies, and fostering inclusive entrepreneurial ecosystems are crucial steps towards empowering women entrepreneurs.

Definition of Women Entrepreneurship

The **GOI** has defined a women entrepreneurship as “an enterprise owned and controlled by a woman having a minimum financial interest of 51% of the capital and giving at least 51% of the employment generated in the enterprise to women”.

According to Schumpeter, an entrepreneur is an innovating individual who introduces something new into the economy. Any woman (or a group of women), who innovates, initiates or adapts an economic activity may be called a women entrepreneur.

According to Medha Dubhashi Vinze, a woman entrepreneur is a person who is an enterprising individual with an eye for opportunities and an uncanny vision, commercial acumen, with tremendous perseverance and above all a person who is willing to take risk with the unknown, because of the adventurous spirit she possesses.

Kerala Government defined women industrial units as units owned/ organized by women and engages in small scale and cottage industries with not less than 80% of the total workers as women.

With effect from 6th Feb. 1992, the definition of ‘Women Entrepreneurs’ Enterprises is as follows: “A small scale industrial units/industrially related services or business enterprise managed by one or more women entrepreneurs in proprietary concerns in which she/they will individually or jointly have share capital of not less than 51% as partners/shareholders/directors of a private limited company, members of co-operative society”.

Functions of Women Entrepreneurship

- Exploration of the prospects of starting a new business enterprise.
- Undertaking of risks and the handling of economic uncertainties involved in business.
- Introduction of innovation or imitation of innovations.
- Coordination, administration and control.
- Supervision and leadership.

Leadership Qualities of Women Entrepreneurship

Some of the outstanding qualities of women entrepreneurs are as follows:

1. Accept Challenges
2. Adventurous
3. Driver
4. Conscious
5. Hard work
6. Educated
7. Motivations
8. Determination to excel
9. Skill full
10. Experienced
11. Industrious
12. Intelligent
13. Studious
14. Perseverance
15. Patience
16. Unquenchable optimism

Reasons for the Slow Growth of Women Entrepreneurship

In spite of the initiatives taken by the government, the growth of women entrepreneurship is very slow. The reasons are outlined as below:

- Unfavourable family background
- Lack of business education
- Dual role of women
- Lack of aptitudes and training
- Absence of individualistic spirit
- Lack of freedom to choose a job according to ability, influence of sex, custom etc
- Inadequate infrastructure facilities

- Shortage of capital and technical knowhow
- Lack of adequate transport and communication facilities
- Shortage of power
- Lack of security
- Absence of ideal market conditions
- Corruption in administration.

Challenges Faced by Women Entrepreneurs in India

- Family restriction
- Lack of Finance
- Lack of Education
- Role Conflict
- Unfavorable Environment
- Lack of persistent Nature
- Lack of Mental strength
- Lack of Information
- Stiff Competition
- Mobility
- Male-Dominated Society
- Low Risk-Bearing Ability
- Scarcity of Raw Material

Family restriction: Women are expected to spend more time with their family members. They do not encourage women to travel extensively for exploiting business opportunities.

Lack of Finance: Finance is regarded as “life-blood” for any enterprise, be it big or small. However, women entrepreneurs suffer from shortage of finance on two counts. Family members do not encourage women entrepreneurs. They hesitate to invest money in the business venture initiated by women entrepreneurs. Bank and other Financial Institutions do not consider Middle Class Women Entrepreneurs as proper applicants for setting up their projects and they are hesitant to provide financial assistance to unmarried women or girls as they are unsure as to who will repay the loan – Either their parents or in-laws after their marriage. This humiliates unmarried women and they generally leave the idea of setting up their ventures.

For example, Kiran Mazumdar Shaw initially faced many problems regarding funds for her business. Banks were hesitant to give loan to her as biotechnology was a totally new field at that point of time and she was a woman entrepreneur, which was a rare phenomenon.

Lack of Education: In India, around three-fifths (60%) of women are still illiterate. Illiteracy is the root cause of socio-economic problems. Due to the lack of education and that too qualitative education, women are not aware of business, technology and market knowledge. Also, lack of education causes low achievement motivation among women. Thus, lack of education creates one type or other problems for women in the setting up and running of business enterprises. Women are generally denied of higher education, especially in rural areas and under developed countries. Women are not allowed to enrich their knowledge in technical and research areas to introduce new products.

Role Conflict: Marriage and family life are given more importance than career and social life in Indian society.

Unfavorable Environment: The society is dominated by males. Many business men are not interested to have business relationship with women entrepreneurs. Male generally do not encourage women entrepreneurs.

Lack of persistent Nature: Women generally have sympathy for others. They are very emotional. This nature should not allow them to get easily cheated in business.

Lack of Mental strength: Business involves risk. Women entrepreneurs get upset very easily when loss arises in business.

Lack of Information: Women entrepreneurs are not generally aware of the subsidies and incentives available for them. Lack of knowledge may prevent them from availing the special schemes.

Stiff Competition: Women face lot of competition from men. Due to limited mobility they find difficult to compete with men.

Mobility: Moving in and around the market, is again a tough job for Middle Class Women Entrepreneurs in Indian Social system.

Male-Dominated Society: Male chauvinism is still the order of the day in India. The Constitution of India speaks of equality between sexes. But, in practice, women are looked upon as abla, i.e. weak in all respects. Women suffer from male reservations about a women's role, ability and capacity and are treated accordingly. In nutshell, in the male-dominated Indian society, women are not treated equal to men. This, in turn, serves as a barrier to women entry into business.

Low Risk-Bearing Ability: Women in India lead a protected life. They are less educated and economically not self-dependent. All these reduce their ability to bear risk involved in running an enterprise. Risk-bearing is an essential requisite of a successful entrepreneur. In addition to above problems, inadequate infrastructural facilities, shortage of power, high cost of production, social attitude, low need for achievement and socioeconomic constraints also hold the women back from entering into business.

Scarcity of Raw Material: Most of the women enterprises are plagued by the scarcity of raw material and necessary inputs. Added to this are the high prices of raw material, on the one hand, and getting raw material at the minimum of discount, on the other. The failure of many women co-operatives in 1971 engaged in basket-making is an example how the scarcity of raw material sounds the death-knell of enterprises run by women (Gupta and Srinivasan 2009).

Remedies to Solve the Problems of Women Entrepreneurs

The remedial measures that can be undertaken to promote women entrepreneurship in India, are as follows.

- Promotional Help
- Training
- Selection of Machinery and Technology
- Finance
- Marketing Assistance
- Family support

Promotional Help: Government and NGOs must provide assistance to entrepreneurs, both in financial and non-financial areas.

Family support: Family should support women entrepreneurs and encourage them to establish and run business successfully.

Selection of Machinery and Technology: Women require assistance in selection of machinery and technology. Assistance must be provided to them in technical areas so that the business unit become successful.

Finance: Finance is one of the major problems faced by women entrepreneurs. Both family and government organizations should be liberal in providing financial assistance to them.

Marketing Assistance: Due to limited mobility, women are unable to market their goods. Assistance must be provided to help them to market their goods successfully in the economic environment.

Training: Women entrepreneurs must be given training to operate and run a business successfully. Training has to be given to women who are still reluctant to take up the entrepreneurial task.

- In banks and public financial institutions, special cells may be opened for providing easy finance to women entrepreneurs. Finance may be provided at concessional rates of interest.
- Women entrepreneurs' should be encouraged and assisted to set up co-operatives with a view to eliminate middlemen.

- Scarce and imported raw materials may be made available to women entrepreneurs on priority basis.
- Steps may be taken to make family members aware of the potential of girls and their due role in society.
- Honest and sincere attempts should be undertaken by the government and social organizations to increase literacy among females.
- In rural areas self-employment opportunities should be developed for helping women.
- Marketing facilities for the purpose of buying and selling of both raw and finished goods should be provided in easy reach.
- Facilities for training and development must be made available to women entrepreneurs. Family members do not like women to go to a distant place for training.

Therefore mobile training centers should be arranged. Additional facilities like a stipend, good hygienic chreches, transport facilities, etc., should be offered to attract more women to training centres.

Development of Women Entrepreneurship in India

Women empowerment should be one of the primary goals of a society. Women should be given equality, right of decision-making and entitlements in terms of dignity. They should attain economic independence. The most important step to achieve women empowerment is to create awareness among women themselves. Development of women can be achieved through health, education and economic independence. Realizing the importance of women entrepreneurs, Govt. of India has taken a number of measures to assist them. Some of the important measures are outlined as follows:

TRYSEM: Training of Rural Youth for Self-Employment was launched on 15th August 1979 which is still continuing. The objective of TRYSEM is to provide technical skills to rural youth between 18 and 35 years of age from families below the poverty line to enable them to take up self-employment in agriculture and allied activities, industries, services and business activities. This is a sub scheme of IRDP. Training given through ITIs, Polytechnics, Krishi Vigyan Kendra, Nehru YuvaKendras etc has helped many rural women set up their own micro enterprises with IRDP assistance.

Banks: Banks particularly commercial banks have formulated several schemes to benefit women entrepreneurs. These includes Rural Entrepreneurship Development Programmes and other Training programmes, promotion of rural non-farm enterprise, women venture etc.

NABARD: NABARD as an apex institution guides and assists commercial banks in paying special attention to women beneficiaries while financing. It has also been providing refinance to commercial banks so as to help the latter institutions to supplement their resources which could be deployed for the purpose of financing women beneficiaries.

Industrial Policy: The new Industrial policy of Government has specially highlighted the need for conducting special entrepreneurship programme for women.

Institutions and Voluntary Association: Several voluntary agencies like FICCI Ladies Organization (FLO), National Alliance of Young Entrepreneurs (NAYE) and others assist women entrepreneurs. NAYE has been a leading institution engaged in the promotion and development of entrepreneurship among women. It convened a conference of women entrepreneurs in November 1975.

National Policy for the Empowerment of Women, 2001

As to the commitments made by India during the Fourth World Conference on women held in Beijing during September, 1995, the Department of women and children has drafted a national policy for the empowerment of women. This is meant to enhance the status of women in all walks of life at par with men. Assistance to Women Entrepreneurs Entrepreneurship does not differentiate the sex. A number of facilities and assistance are offered to the entrepreneurs. However, certain additional incentives or facilities offered to women entrepreneurs are discussed as follows.

Small Industrial Development Organisation (SIDO): SIDO through a network of SISIs conduct the EDPs exclusively for women entrepreneurs. The aim is to develop entrepreneurial traits and qualities among women and enable them to identify entrepreneurial opportunities etc.

National Small Industries Corporation (NSIC): The H.P. scheme of NSIC provides preferential treatment to women entrepreneurs. It also conducts Entrepreneurs and Enterprise Building programmes for women.

Industrial Development Bank of India (IDBI)

The schemes of IDBI for women entrepreneurs are summarized as follows:
Promoter's Contribution: The IDBI set up the MahilaUdyan Nidhi (MUN) and Mahila Vikas Nidhi (MVN) schemes to help women entrepreneurs. IDBI conduct programmes of training and extension services through designated approved agencies and association with other development agencies like EDII, TCOs, KVIC etc.

Mall Industries Development Bank of India (SIDBI): SIDBI has special schemes for financial assistance to women entrepreneurs. It provides training and extension

services. It gives financial assistance at concessional terms in setting up tiny and small units.

Commercial Banks: The “Sthree Shakthi Package Scheme” of SBI provides a package of assistance to women entrepreneurs. The consultancy wings of SBI give guidance on project identification and project viability. The program of assistance such as repair and servicing, photocopying, dry cleaning, retail trade business enterprises, poultry farming, tailoring, etc. The Bank of India has introduced a scheme known as ‘Priyadarshini Yojana’ to help women entrepreneurs.

Conclusion

Entrepreneurship among women, no doubt improves the nation in general and of the family in particular. Women today are more willing to take up activities that once considered the preserve of men, and have proved that are second to no one with respect to contribution to the growth of the economy. Women entrepreneurship must be moulded properly with entrepreneurial traits and skill to meet the changes in trends, challenges global markets and also be competent enough to sustain and strive for excellence in the entrepreneurial arena.

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DIGITAL INDIA: TRANSFORMING INDIA THROUGH TECHNOLOGY AND CONNECTIVITY

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Abstract

Digital India is an ambitious initiative launched by the Government of India with the aim of transforming the country into a digitally empowered society and knowledge economy. This abstract highlights the key points of the essay on Digital India, emphasizing the transformative power of technology and connectivity in various sectors. The essay explores the impact of Digital India on governance, education, healthcare, and the economy. It highlights the role of technology in promoting transparency, efficiency, and accessibility in public service delivery. The expansion of digital infrastructure and connectivity, including the BharatNet project and Common Service Centres, is discussed as a means to bridge the digital divide between urban and rural areas.

In the education sector, Digital India is enabling e-learning, digital certifications, and skill development through initiatives like NDEAR and SWAYAM. The role of technology in improving healthcare delivery, telemedicine, and creating a digital health ecosystem is also highlighted. Additionally, the essay explores the promotion of digital payments and financial inclusion, transforming the way financial transactions are conducted and providing formal banking services to previously marginalized sections of society. The abstract concludes by emphasizing the potential of Digital India to empower citizens, enhance service delivery, and drive economic growth. It highlights the need to address challenges related to digital literacy, data security, and infrastructure development to ensure the inclusive benefits of digital transformation reach all segments of society. Overall, Digital India is presented as a transformative initiative that leverages technology and connectivity to propel India towards a digitally empowered nation, fostering socio-economic progress and inclusive development.

Keywords: *Digital India, Technology, Connectivity, Transformation, Inclusive development.*

Introduction

Digital India is an ambitious initiative launched by the Government of India with the vision of transforming the country into a digitally empowered society and knowledge economy. The program recognizes the transformative power of technology and connectivity in driving inclusive growth, empowering citizens, and enhancing the delivery of public services. Digital India aims to bridge the digital

divide by ensuring that every individual, regardless of their location or socioeconomic background, has access to digital technologies and the internet. In the governance sector, Digital India has revolutionized the way public services are delivered and accessed. The program promotes e-governance initiatives, such as online portals and mobile applications, which enable citizens to interact with government departments and access services in a seamless and efficient manner. It has streamlined administrative processes, reduced paperwork, and minimized corruption through digital transactions and transparent systems. By embracing digital technologies, the government has been able to improve the efficiency, transparency, and accountability of public service delivery, making governance more accessible and citizen-centric.

Education is another sector that has been greatly impacted by Digital India. The initiative aims to promote digital literacy and technology-enabled learning in schools and colleges across the country. By providing digital infrastructure, e-learning content, and online resources, Digital India is transforming traditional classrooms into vibrant hubs of digital education. Students have access to a wide range of digital resources, interactive learning materials, and virtual classrooms, enabling personalized and immersive learning experiences. This empowers students to acquire 21st-century skills, fosters innovation, and prepares them for a technology-driven future. In the healthcare sector, Digital India has led to significant advancements in telemedicine, electronic health records, and healthcare information systems. The program seeks to leverage technology to improve healthcare accessibility, quality, and affordability. Through initiatives like the National Health Portal and telemedicine services, individuals in remote areas can access quality healthcare services and consult with medical professionals without the need for physical travel. Digital platforms and mobile applications facilitate the management of health records, ensuring seamless coordination between healthcare providers and enhancing patient care.

Digital India has also played a pivotal role in driving economic growth and entrepreneurship. The initiative has fostered the growth of the digital economy, enabling small and medium-sized enterprises (SMEs) to leverage technology for business expansion and market access. Start-ups have thrived under the Digital India ecosystem, with a supportive framework that includes funding opportunities, incubation centers, and simplified regulatory processes. The program has also promoted digital payments and financial inclusion, encouraging the adoption of cashless transactions and bringing financial services to the unbanked and underbanked populations. In conclusion, Digital India is a transformative initiative that harnesses the power of technology and connectivity to create a digitally inclusive

society and knowledge economy. By focusing on sectors such as governance, education, healthcare, and the economy, Digital India is driving positive change and empowering citizens to embrace the digital revolution. Through enhanced connectivity, access to digital services, and the promotion of digital literacy, the program is positioning India as a modern and inclusive nation, ready to take advantage of the opportunities offered by the digital age.

Governance and Public Services

Digital India has ushered in a new era of governance, marked by transparency, efficiency, and accessibility in public service delivery. Through various initiatives and platforms, such as the Digital Locker, e-Sign, and MyGov, the program has revolutionized the way citizens interact with the government and access essential services. The Digital Locker is an innovative platform that enables citizens to securely store their important documents online. This eliminates the need for physical copies and reduces the risk of document loss or damage. With the Digital Locker, citizens can access their documents from anywhere at any time, making it convenient and hassle-free. Additionally, this platform enhances data security by implementing robust encryption and authentication measures. The e-Sign initiative has simplified and digitized the process of signing documents. It allows citizens to digitally sign documents, eliminating the need for physical signatures and paper-based transactions. This not only saves time and resources but also enhances the authenticity and integrity of the documents. The implementation of e-Sign has transformed the way contracts, agreements, and other legal documents are executed, making it more efficient, secure, and environmentally friendly.

The MyGov platform has revolutionized citizen engagement and participation in policy-making discussions. It serves as an interactive platform that connects citizens directly with the government, enabling them to share their ideas, suggestions, and feedback on various initiatives and policies. Through MyGov, citizens have a voice in shaping the governance landscape, fostering a sense of ownership and accountability. The platform has facilitated open dialogue, transparency, and collaboration between the government and its citizens, resulting in more inclusive and citizen-centric policies. Furthermore, the digitization of government processes and services has significantly reduced bureaucratic red tape and minimized corruption. Citizens can now access essential services online, such as applying for government schemes, passports, and income tax filings, without the need for physical visits to government offices. This has streamlined administrative procedures, reducing paperwork and processing times. It has also minimized opportunities for corruption and bribery, as digital transactions leave a clear audit trail and promote accountability. Digital India has made governance more efficient

and citizen-friendly. The initiatives and platforms introduced under the program have leveraged technology to empower citizens, improve service delivery, and enhance transparency. By embracing digital transformation, the government has created a streamlined and accessible ecosystem that caters to the needs and expectations of its citizens. As a result, Digital India has not only simplified government processes but also enhanced the overall experience of interacting with the government, making it more inclusive and responsive to citizen demands.

Digital Infrastructure and Connectivity

Digital India has recognized the significance of digital infrastructure and connectivity in enabling inclusive growth and bridging the digital divide between urban and rural areas. To achieve this, the program has placed a strong emphasis on expanding digital infrastructure across the country. One of the key initiatives under Digital India is the BharatNet project. It aims to connect over 250,000 village panchayats (local administrative bodies) with high-speed broadband connectivity. By providing internet access to previously underserved rural areas, the BharatNet project is instrumental in bringing digital opportunities to remote regions. This increased connectivity has opened up a world of possibilities, enabling rural communities to participate in the digital economy, access e-commerce platforms, and engage in e-governance activities. It has created opportunities for digital entrepreneurship, allowing rural residents to leverage technology for economic growth and development.

In addition to the BharatNet project, Digital India has established Common Service Centres (CSCs) across the country. These CSCs act as access points for digital services and information, particularly in rural areas. They serve as a one-stop destination for citizens to avail themselves of various government and private sector services, such as applying for government schemes, utility bill payments, banking services, and online education. CSCs are equipped with computers, internet connectivity, and trained personnel who assist citizens in accessing digital services and navigating online platforms. These centers play a crucial role in bridging the digital divide by bringing digital services and information closer to the rural population. The expansion of digital infrastructure and connectivity has far-reaching implications for the socio-economic development of rural areas. It empowers rural communities by providing access to information, education, healthcare services, and government schemes. With internet connectivity, farmers can access market information, weather updates, and agricultural best practices, enhancing their productivity and income. Students in remote areas can access online educational resources, participate in digital classrooms, and pursue e-learning courses. Digital connectivity also enables telemedicine services, allowing rural residents to consult

with doctors remotely and access quality healthcare. Moreover, the expansion of digital infrastructure has led to the growth of digital entrepreneurship in rural areas. It has opened up avenues for rural artisans, craftspeople, and small-scale producers to showcase and sell their products through e-commerce platforms. This has enabled them to access a wider market, increase their visibility, and generate sustainable livelihoods. In conclusion, Digital India's emphasis on expanding digital infrastructure and connectivity is instrumental in bridging the digital divide between urban and rural areas. The BharatNet project and Common Service Centres (CSCs) have significantly enhanced internet penetration and digital access in previously underserved regions. The increased connectivity has opened up opportunities for e-commerce, e-governance, and digital entrepreneurship, empowering rural communities and driving socio-economic development. By fostering digital inclusion and equal access to digital resources, Digital India is transforming the rural landscape and paving the way for a digitally empowered and inclusive India.

Education and Skill Development

Digital India is driving a significant transformation in the education sector, leveraging technology to enhance learning outcomes and promote access to quality education for all. The program recognizes the power of digital tools and platforms in making education more inclusive, interactive, and engaging. One of the key initiatives under Digital India is the National Digital Education Architecture (NDEAR). This initiative aims to establish a common digital infrastructure for schools and colleges across the country. By providing a standardized platform for digital education, NDEAR facilitates the delivery of e-learning content, online assessments, and digital certifications. This digital infrastructure enables students and educators to access educational resources anytime, anywhere, breaking the barriers of time and location. It promotes personalized and self-paced learning, allowing students to explore diverse subjects and acquire knowledge beyond traditional textbooks.

The SWAYAM (Study Webs of Active Learning for Young Aspiring Minds) platform is another significant component of Digital India's impact on education. SWAYAM offers free online courses from top Indian educational institutions, covering a wide range of subjects and disciplines. It enables learners to access high-quality educational content and engage in interactive learning experiences. Learners can acquire new skills, enhance their knowledge, and earn certifications, opening up opportunities for personal and professional growth. SWAYAM promotes lifelong learning and skill development, fostering a culture of continuous education and upskilling. Digital India also places a strong emphasis on digital literacy and skill

development through initiatives like the PradhanMantriGramin Digital SakshartaAbhiyan (PMGDISHA). This initiative focuses on equipping citizens, particularly in rural areas, with essential digital skills. PMGDISHA offers training programs and resources to enhance digital literacy, enabling individuals to navigate digital platforms, access information, and effectively utilize digital tools. By fostering digital literacy, PMGDISHA empowers citizens to participate in the digital economy, improve their employability, and access a wide range of online services and opportunities.

Furthermore, the integration of technology in education has the potential to address challenges related to accessibility, equity, and quality. It enables students from remote or disadvantaged areas to access educational resources and connect with expert educators through virtual classrooms and online learning platforms. Technology facilitates collaborative learning, enabling students to engage in group discussions, share ideas, and collaborate on projects irrespective of their geographical locations. Additionally, digital assessments and feedback mechanisms promote timely and constructive evaluation, enabling educators to track student progress and provide personalized guidance. In conclusion, Digital India is transforming the education sector by harnessing the potential of technology to enhance learning outcomes and make education accessible to all. The National Digital Education Architecture (NDEAR), SWAYAM platform, and initiatives like PMGDISHA are instrumental in promoting digital literacy, providing access to high-quality educational resources, and fostering skill development. By embracing technology in education, Digital India is paving the way for a more inclusive, flexible, and learner-centric education system that prepares individuals for the challenges and opportunities of the digital era.

Healthcare and Telemedicine

Digital India is playing a pivotal role in revolutionizing healthcare delivery by harnessing the power of technology and connectivity. The program aims to improve access, quality, and affordability of healthcare services through various initiatives and platforms. The National Digital Health Mission (NDHM) is a flagship initiative under Digital India that seeks to create a comprehensive digital health ecosystem. It aims to provide every citizen with a unique health ID, digital health records, and a platform for tele consultations. The health ID acts as a digital repository of an individual's medical history, allowing for seamless sharing of health information across healthcare providers. This enhances continuity of care, eliminates the need for redundant tests or procedures, and promotes patient safety. The digital health records enable healthcare professionals to access critical patient information, leading to more accurate diagnoses, effective treatment planning, and improved patient

outcomes. Furthermore, the tele consultation platform allows individuals to consult with healthcare professionals remotely, overcoming geographical barriers and bringing healthcare services to the doorsteps of underserved populations in rural and remote areas.

Telemedicine initiatives are a significant component of Digital India's impact on healthcare. Through telemedicine, healthcare professionals can remotely diagnose and treat patients using telecommunications technology. This enables individuals in remote areas to access specialized healthcare services without the need for physical travel. Telemedicine facilitates timely interventions, particularly in emergency cases, and improves healthcare outcomes for underserved communities. It also reduces the burden on healthcare facilities, allowing for better resource allocation and optimized healthcare delivery. The use of technology in healthcare enhances data collection, analysis, and surveillance, leading to evidence-based policymaking and disease management. Digital platforms enable the seamless collection and integration of health data, which can be analyzed to identify disease patterns, monitor population health trends, and respond effectively to public health emergencies. The utilization of big data analytics and artificial intelligence in healthcare enables predictive modeling, early detection of outbreaks, and personalized interventions. This empowers healthcare systems to make informed decisions, allocate resources efficiently, and implement targeted interventions for better population health outcomes.

Additionally, digital technologies facilitate remote patient monitoring and home healthcare. Wearable devices, remote sensors, and mobile applications allow individuals to monitor their health parameters, track medication adherence, and receive personalized health recommendations. This promotes preventive care, early detection of health issues, and self-management of chronic conditions. Digital tools also empower patients by providing access to health information, educational resources, and support networks, fostering a patient-centric approach to healthcare. In conclusion, Digital India is revolutionizing healthcare delivery by leveraging technology and connectivity. The National Digital Health Mission (NDHM), telemedicine initiatives, and the use of technology in data collection and analysis are transforming access, quality, and affordability of healthcare services. By creating a digital health ecosystem, Digital India enables seamless sharing of health information, facilitates remote consultations, and enhances disease management. Through these initiatives, Digital India is making healthcare more patient-centered, efficient, and responsive to the needs of diverse populations, ultimately improving the overall health and well-being of the nation.

Digital Payments and Financial Inclusion

Digital India has played a pivotal role in promoting digital payments and financial inclusion, transforming the way financial transactions are conducted and increasing access to formal financial services for the unbanked and under banked populations. The demonetization drive in 2016 acted as a catalyst for the adoption of digital payment methods. The sudden withdrawal of high-value currency notes encouraged individuals and businesses to embrace digital alternatives. This led to the proliferation of mobile wallets, Unified Payments Interface (UPI), and Aadhaar-enabled payment systems. Mobile wallets provided a convenient and secure way to make digital transactions, while UPI revolutionized peer-to-peer payments, enabling individuals to transfer funds instantly using their smartphones. Aadhaar-enabled payment systems leveraged the unique identification number to facilitate biometric authentication, making transactions more secure and convenient.

The shift towards digital payments has significantly reduced the reliance on cash, resulting in several benefits. It has promoted transparency in financial transactions, as digital payments leave a clear audit trail, reducing the risk of corruption, tax evasion, and illicit activities. Digital payments have also improved convenience and efficiency, eliminating the need for physical currency and enabling quick and seamless transactions. Moreover, the adoption of digital payments has stimulated the growth of the digital economy, promoting entrepreneurship and innovation in the financial technology sector. Digital India has also prioritized financial inclusion by implementing various initiatives and programs. The Jan DhanYojana (PradhanMantri Jan DhanYojana) aimed to provide universal access to banking services by offering no-frills bank accounts to unbanked individuals. This initiative facilitated financial inclusion by enabling previously marginalized sections of society to open bank accounts and access formal financial services. It also encouraged saving habits and provided a platform for government benefit transfers.

The Direct Benefit Transfer (DBT) program further strengthened financial inclusion by digitizing the distribution of social welfare benefits. Through DBT, government subsidies and welfare schemes are directly transferred to the beneficiaries' bank accounts, eliminating intermediaries and ensuring timely and efficient delivery of benefits. This has reduced leakages, improved accountability, and empowered beneficiaries to manage their finances more effectively. The PradhanMantri Mudra Yojana (PMMY) has played a significant role in providing credit facilities to micro, small, and medium-sized enterprises (MSMEs). This initiative offers collateral-free loans to individuals and small businesses, fostering entrepreneurship and economic growth. By providing access to formal credit, PMMY has enabled MSMEs to expand their businesses, invest in technology, and

create employment opportunities. In conclusion, Digital India has been instrumental in promoting digital payments and financial inclusion in India. The demonetization drive accelerated the adoption of digital payment methods, reducing reliance on cash and promoting transparency in financial transactions. Initiatives like Jan DhanYojana, Direct Benefit Transfer, and PradhanMantri Mudra Yojana have strengthened financial inclusion by providing banking services, social welfare benefits, and credit facilities to previously marginalized sections of society. The digitization of financial transactions and the expansion of formal financial services have contributed to economic growth, improved financial literacy, and empowered individuals and businesses across the country.

Conclusion

Digital India is a transformative initiative that aims to leverage technology and connectivity to drive the socio-economic development of India. By harnessing the power of digital technologies, the program has the potential to bridge the digital divide and bring the benefits of the digital revolution to all segments of society. One of the key objectives of Digital India is to empower citizens through digital literacy and skills development. Digital literacy programs aim to equip individuals with the necessary knowledge and skills to navigate the digital landscape effectively. By promoting digital literacy, the program ensures that citizens are able to take full advantage of the opportunities presented by the digital era, such as accessing information, engaging in e-commerce, and participating in online platforms. Addressing the digital literacy gap is crucial to ensure inclusivity and equal access to digital resources and opportunities.

Data security is another important aspect that needs to be addressed to safeguard the interests of individuals and organizations. As digital technologies become more pervasive, ensuring the security and privacy of data becomes paramount. Measures such as robust data protection laws, encryption, and cybersecurity protocols are essential to protect sensitive information and maintain trust in digital transactions. Strengthening data security frameworks will encourage greater adoption of digital technologies and enhance confidence in the digital ecosystem. Infrastructure development is a key enabler for the success of Digital India. It is important to expand and improve the digital infrastructure, including broadband connectivity, to reach all corners of the country. The government has initiated various projects, such as the BharatNet project, to connect rural areas and provide high-speed internet access. Continued investment in infrastructure development will lay the foundation for digital inclusion and ensure that even remote and marginalized communities can benefit from the digital transformation.

Digital India has the potential to revolutionize service delivery in various sectors, such as governance, education, healthcare, and agriculture. Through e-governance initiatives, citizens can access public services more efficiently and transparently. Digital education platforms provide access to quality education resources and opportunities for skill development. Technology-enabled healthcare solutions improve access to healthcare services, especially in remote areas. Digital agriculture initiatives empower farmers with real-time information on weather conditions, market trends, and farming practices. These advancements enhance efficiency, transparency, and accessibility, driving overall socio-economic progress. Furthermore, the digital transformation facilitated by Digital India has the potential to fuel economic growth and spur innovation. The adoption of digital technologies by businesses enables them to improve efficiency, expand market reach, and develop innovative products and services. It opens up new avenues for entrepreneurship, job creation, and economic diversification. Digital payments and e-commerce platforms contribute to the growth of the digital economy, fostering financial inclusion and driving consumer spending. In conclusion, Digital India is transforming India by harnessing the power of technology and connectivity. The program has the potential to bridge the digital divide, empower citizens, improve service delivery, and boost economic growth. However, it is crucial to address challenges related to digital literacy, data security, and infrastructure development to ensure that the benefits of digital transformation reach all segments of society. By embracing digital technologies and leveraging connectivity, India is poised to become a digitally empowered nation, leading to socio-economic progress, innovation, and inclusive development.

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WOMEN ENTREPRENEURSHIP: EMPOWERING WOMEN, DRIVING ECONOMIC GROWTH

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Abstract

Women entrepreneurship is a significant catalyst for empowering women and driving economic growth. This abstract provides a concise overview of the seminar paper that explores the concept of women entrepreneurship, its impact on women's empowerment, and its role in fostering economic growth. The paper examines the challenges faced by women entrepreneurs, the benefits of promoting women entrepreneurship, and the strategies to create an enabling environment for women-owned businesses. Additionally, successful examples and best practices from around the world are highlighted to demonstrate the positive outcomes of supporting women entrepreneurs. Ultimately, the abstract emphasizes the importance of women entrepreneurship in empowering women and contributing to sustainable economic development.

Keywords: *Women entrepreneurship, Empowerment, Economic growth, Gender equality, Business development.*

Introduction

Women entrepreneurship is a dynamic and evolving concept that highlights the active participation of women in the entrepreneurial landscape. It encompasses various forms of business ownership and engagement, reflecting the diverse range of entrepreneurial activities undertaken by women worldwide. At its core, women entrepreneurship involves women identifying and seizing business opportunities, taking on risks, and assuming leadership roles to achieve their entrepreneurial goals. Women entrepreneurs play a vital role in driving innovation, job creation, and economic growth. They contribute to the development of vibrant and inclusive entrepreneurial ecosystems that foster social and economic progress. Women entrepreneurship encompasses a broad spectrum of business activities. It includes self-employment, where women establish and manage their own businesses, often operating as sole proprietors. This can range from freelancing and consultancy services to retail businesses and small-scale enterprises. Women entrepreneurs also establish and lead small and medium-sized enterprises (SMEs), which can be either traditional brick-and-mortar businesses or technology-driven ventures.

Additionally, women play an increasingly prominent role in the startup ecosystem, founding and scaling innovative businesses that leverage technology, digital platforms, and disruptive business models.

Crucially, women entrepreneurship goes beyond the mere ownership of businesses. It encompasses active involvement in all stages of business development, from conceptualization and market research to strategic planning, implementation, and growth. Women entrepreneurs bring their unique perspectives, skills, and experiences to the table, infusing their ventures with creativity, resilience, and a commitment to making a positive impact. Women entrepreneurship is influenced by various factors, including social, cultural, economic, and institutional contexts. It can be shaped by both internal and external drivers, such as personal aspirations, financial independence, passion for a particular industry, and the need to overcome societal barriers and gender inequalities. Moreover, women entrepreneurs often face distinct challenges, including gender biases, limited access to financial resources, cultural expectations, and work-life balance considerations. Overcoming these challenges requires supportive ecosystems, policies, and interventions that promote gender equality, provide access to finance and networks, and foster an inclusive and enabling business environment. Thus, women entrepreneurship represents a multifaceted and dynamic phenomenon. It encompasses the identification, initiation, and management of businesses by women, across various sectors and scales. Women entrepreneurs contribute significantly to economic growth, innovation, and job creation. They play a crucial role in challenging traditional gender roles and breaking barriers, ultimately paving the way for a more equitable and inclusive entrepreneurial landscape. By acknowledging the diverse forms and contributions of women entrepreneurship, societies can create an environment that encourages and supports women in pursuing their entrepreneurial aspirations and realizing their full potential.

Importance and Relevance of Women Entrepreneurship

Women entrepreneurship holds immense importance in multiple dimensions, making it a crucial driver of social and economic progress. The significance of women entrepreneurship can be observed in the following aspects:

1. **Empowerment of Women:** Women entrepreneurship provides a platform for women to exercise their skills, talents, and creativity. By starting and managing their businesses, women gain a sense of economic independence, allowing them to make their own decisions and control their financial futures. This empowerment extends beyond economic aspects, as women entrepreneurs often experience increased self-confidence, leadership development, and personal growth. By challenging traditional gender roles

and stereotypes, women entrepreneurship contributes to breaking down barriers and creating a more inclusive society.

2. **Economic Growth and Job Creation:** Women-owned businesses are a driving force behind economic growth and job creation. By establishing and expanding their enterprises, women entrepreneurs contribute to the overall productivity and competitiveness of the economy. Women-owned businesses create employment opportunities not only for themselves but also for others, addressing unemployment and reducing poverty levels. Moreover, women entrepreneurs often bring fresh perspectives, innovative ideas, and unique solutions to the market, fostering innovation and diversification of industries.
3. **Promotion of Entrepreneurial Ecosystems:** Women entrepreneurship plays a vital role in fostering entrepreneurial ecosystems. By encouraging women to start their businesses, societies promote a culture of entrepreneurship that benefits everyone. Women entrepreneurs serve as role models, inspiring others to pursue their entrepreneurial aspirations and fostering a supportive environment for future generations of women entrepreneurs. The presence of women-owned businesses encourages collaboration, knowledge-sharing, and mentorship, nurturing a vibrant and inclusive entrepreneurial ecosystem.
4. **Enhanced Competitiveness and Productivity:** Women entrepreneurs bring distinctive perspectives, approaches, and innovative solutions to the market. Their unique experiences, skills, and insights contribute to a more diverse and dynamic business landscape. By embracing diversity, businesses become more adaptable, creative, and responsive to changing market demands. This enhanced competitiveness and productivity translate into improved business performance, increased customer satisfaction, and overall economic growth.

Thus, women entrepreneurship holds significant importance in empowering women, driving economic growth, and fostering innovation. It enables women to exercise their skills, challenge societal norms, and gain economic independence. Women-owned businesses contribute to job creation, economic diversification, and enhanced competitiveness. By recognizing and supporting women entrepreneurship, societies can unlock the full potential of women as entrepreneurs, creating a more equitable and prosperous future for all.

Challenges Faced by Women Entrepreneurs

- a. **Gender biases and stereotypes:** Women entrepreneurs often face gender biases and stereotypes that can hinder their progress. Society's preconceived notions about gender roles and expectations may result in discriminatory treatment, limiting women's access to opportunities, resources, and networks.

Overcoming these biases requires addressing cultural attitudes and promoting gender equality in entrepreneurship.

- b. Limited access to financial resources and funding: Women entrepreneurs often encounter challenges in accessing financial resources and funding. Traditional financial institutions may have biases or require collateral that women may not possess. Limited access to capital hampers the growth and scalability of women-owned businesses. Creating gender-responsive financial policies, facilitating access to microfinance, venture capital, and providing tailored financial support can help address this issue.
- c. Balancing work and family responsibilities: Women often face the challenge of balancing their entrepreneurial pursuits with family responsibilities. The expectation of caretaking and societal norms around gender roles can pose additional burdens for women entrepreneurs. Supportive policies, such as flexible working arrangements, affordable childcare options, and social support systems, can help women entrepreneurs manage their dual roles effectively.
- d. Lack of supportive networks and mentorship opportunities: Women entrepreneurs may face a lack of supportive networks and mentorship opportunities, which are crucial for business guidance, knowledge-sharing, and access to resources. The absence of role models and mentors who understand the unique challenges faced by women entrepreneurs can limit their growth and success. Creating networking platforms, mentorship programs, and fostering collaboration among women entrepreneurs can provide the necessary support and guidance.

Addressing these challenges requires a multi-faceted approach involving stakeholders at various levels. Governments can play a vital role by implementing policies that promote gender equality, providing financial incentives, and creating an enabling environment for women entrepreneurs. Businesses and organizations can support women entrepreneurs by establishing mentorship programs, promoting diversity and inclusion, and offering training and capacity-building initiatives. Civil society can advocate for gender equality and raise awareness about the challenges faced by women entrepreneurs, fostering a supportive ecosystem for their success. By addressing gender biases, ensuring access to financial resources, supporting work-life balance, and creating supportive networks, societies can create an environment that empowers women entrepreneurs. Overcoming these challenges will unlock the full potential of women entrepreneurs, driving economic growth, innovation, and creating a more inclusive and equitable entrepreneurial landscape.

Benefits of Promoting Women Entrepreneurship

- a. **Economic growth and job creation:** Women entrepreneurship contributes significantly to economic growth and job creation. Women-owned businesses stimulate economic activity, generate employment opportunities, and contribute to the overall GDP of a nation. By starting and growing businesses, women entrepreneurs create new jobs, boost productivity, and drive innovation, leading to sustainable economic development.
- b. **Innovation and diversity in business:** Women entrepreneurs bring unique perspectives, experiences, and approaches to the business world, fostering innovation and diversity. Their diverse backgrounds and insights lead to creative problem-solving and the development of new products, services, and business models. The inclusion of women entrepreneurs in various industries promotes diversity, which is essential for competitiveness, adaptability, and addressing the needs of diverse customer bases.
- c. **Empowerment and gender equality:** Women entrepreneurship is a catalyst for empowering women and achieving gender equality. By starting and managing their businesses, women gain economic independence, decision-making power, and the ability to challenge traditional gender norms and stereotypes. Entrepreneurship provides a platform for women to exercise their skills, talents, and leadership abilities, ultimately leading to their personal and professional empowerment. Gender equality is promoted as women entrepreneurs break barriers, shatter glass ceilings, and inspire others to pursue their entrepreneurial aspirations.
- d. **Social and community development:** Women entrepreneurship positively impacts social and community development. Women-owned businesses often contribute to their local communities by creating employment opportunities, supporting local suppliers, and fostering economic resilience. Women entrepreneurs are also more likely to prioritize social responsibility and community development initiatives, leveraging their businesses to address social and environmental challenges. By contributing to social and community development, women entrepreneurs play a crucial role in building inclusive and sustainable societies.

The combined effects of economic growth, innovation, empowerment, and social development contribute to the overall advancement of societies. Women entrepreneurship has the potential to transform economies and create positive social change. By recognizing the value of women's contributions and creating an enabling environment, societies can harness the full potential of women entrepreneurs, leading to long-term economic prosperity, gender equality, and sustainable development.

Strategies to Foster an Enabling Environment for Women-Owned Businesses

- a. **Policy reforms and legal frameworks:** Governments can promote women entrepreneurship through policy reforms and the establishment of supportive legal frameworks. These may include measures such as anti-discrimination laws, gender-responsive business regulations, and equal access to business opportunities. Policy reforms can also focus on promoting gender equality in education, labor laws, and access to healthcare, creating an enabling environment for women entrepreneurs to thrive.
- b. **Access to finance and targeted financial support:** Access to finance is crucial for the growth and sustainability of women-owned businesses. Governments and financial institutions can develop initiatives to provide women entrepreneurs with easier access to loans, venture capital, and microfinance. Targeted financial support programs can help address the specific needs and challenges faced by women entrepreneurs, including collateral requirements, financial literacy, and risk management.
- c. **Business development programs and training:** Business development programs and training are essential in equipping women entrepreneurs with the necessary skills, knowledge, and resources to succeed in their ventures. These programs can include entrepreneurship training, leadership development, marketing and sales strategies, financial management, and access to business networks. Providing mentorship opportunities and business incubation programs can further support the growth and sustainability of women-owned businesses.
- d. **Networking and mentorship initiatives:** Networking and mentorship play a crucial role in the success of women entrepreneurs. Establishing networking platforms, industry-specific associations, and mentorship programs allows women entrepreneurs to connect with like-minded individuals, gain insights from experienced professionals, and access business opportunities. Mentorship initiatives can provide guidance, support, and valuable advice on navigating the entrepreneurial journey, overcoming challenges, and achieving business goals.
- e. **Creating supportive communities and platforms:** Creating supportive communities and platforms is essential for fostering an ecosystem where women entrepreneurs can thrive. This involves building collaborative networks, both online and offline, that provide a sense of belonging, shared experiences, and mutual support. Women-focused business associations, online forums, and entrepreneurship communities create spaces for knowledge-sharing, collaboration, and collective advocacy for women entrepreneurs.

By implementing these strategies, governments, organizations, and stakeholders can create a supportive ecosystem that nurtures and empowers women entrepreneurs. The combination of policy reforms, access to finance, business development programs, networking opportunities, and supportive communities can remove barriers, increase opportunities, and enhance the success rate of women-owned businesses. Ultimately, this fosters a more inclusive and equitable entrepreneurial landscape, leading to economic growth, innovation, and social progress.

Successful Examples and Best Practices

- a. Case studies of successful women entrepreneurs: Examining case studies of successful women entrepreneurs provides valuable insights into their journeys, strategies, and achievements. These case studies showcase the diverse range of industries, business models, and innovative approaches pursued by women entrepreneurs. By analyzing their experiences, challenges, and successes, researchers and policymakers can identify key factors that contribute to their success and extract best practices that can be replicated or adapted in different contexts.
- b. Government initiatives and programs supporting women entrepreneurship: Governments around the world have recognized the importance of supporting women entrepreneurship and have implemented various initiatives and programs. These initiatives include financial incentives, business development support, access to markets, and mentorship programs specifically designed for women entrepreneurs. Studying and evaluating the effectiveness of these government programs helps identify successful approaches and areas for improvement. It also provides insights into the role of policymakers in fostering an enabling environment for women entrepreneurs.
- c. Collaboration between public and private sectors: Collaboration between the public and private sectors is crucial for promoting women entrepreneurship. Public-private partnerships can leverage the strengths and resources of both sectors to create comprehensive support systems for women entrepreneurs. Such collaborations can include joint initiatives, mentorship programs, access to funding, market linkages, and capacity-building initiatives. Exploring successful collaborations between the public and private sectors sheds light on effective models of engagement and highlights the benefits of synergistic efforts in supporting women entrepreneurs.
- d. Lessons learned and key takeaways: Reflecting on the experiences and outcomes of women entrepreneurship initiatives allows researchers,

policymakers, and practitioners to distill key lessons and takeaways. These insights help identify common challenges faced by women entrepreneurs, effective strategies for addressing those challenges, and potential areas for further improvement. Lessons learned from previous initiatives can guide future policy decisions, program design, and resource allocation. They also contribute to the ongoing dialogue and knowledge-sharing among stakeholders in the women entrepreneurship ecosystem.

By delving into case studies, examining government initiatives, studying collaborative efforts, and extracting lessons learned, researchers and policymakers can develop a comprehensive understanding of the factors that contribute to the success of women entrepreneurs. These insights inform evidence-based policy recommendations, program enhancements, and the formulation of holistic strategies to further promote and support women entrepreneurship.

Suggestions to Stakeholders for Promoting Women Entrepreneurs

Achieving the full potential of women entrepreneurship requires collective action from stakeholders and policymakers. Stakeholders, including governments, business organizations, educational institutions, civil society, and the private sector, must collaborate to create an enabling environment for women entrepreneurs. This involves:

1. **Implementing gender-responsive policies:** Policymakers should develop and implement policies that promote gender equality, eliminate discriminatory practices, and foster supportive business environments. This includes addressing legal barriers, improving access to finance, providing business development support, and facilitating access to markets and networks.
2. **Enhancing access to finance and resources:** Financial institutions and organizations should ensure equal access to financial resources and funding opportunities for women entrepreneurs. This may involve creating specialized loan programs, venture capital funds, and microfinance schemes tailored to the needs of women-owned businesses. Providing mentorship programs, networking opportunities, and capacity-building initiatives can also empower women entrepreneurs.
3. **Encouraging education and training:** Educational institutions should integrate entrepreneurship education and training programs that specifically cater to the needs of women entrepreneurs. By equipping women with the necessary skills, knowledge, and confidence, educational institutions can play a pivotal role in fostering an entrepreneurial mindset and nurturing future women entrepreneurs.

4. Building supportive networks and mentorship programs: Stakeholders should establish networking platforms, mentorship programs, and peer support networks that provide women entrepreneurs with guidance, role models, and access to resources. Mentors and role models can offer valuable insights, advice, and support, helping women entrepreneurs navigate the challenges and complexities of entrepreneurship.
5. Raising awareness and changing societal attitudes: Collective efforts should be made to challenge gender biases, promote gender equality, and raise awareness about the importance of women entrepreneurship. This involves fostering a cultural shift that recognizes and celebrates the achievements of women entrepreneurs, challenging stereotypes, and promoting diverse representation in business and leadership roles.

By taking concerted action, stakeholders and policymakers can create an ecosystem that empowers and supports women entrepreneurs. This not only benefits women individually but also contributes to economic growth, social progress, and the achievement of sustainable development goals. It is a collective responsibility to create an inclusive and equitable society that values and harnesses the potential of women entrepreneurs.

Conclusion

Continued efforts to support women entrepreneurship are crucial for several reasons. Firstly, promoting women entrepreneurship aligns with the principles of gender equality and empowerment, fostering an inclusive and equitable society. By creating opportunities and addressing barriers, women entrepreneurs can fully participate in the economic and social spheres, contributing to their personal growth and the overall development of communities and nations. Secondly, supporting women entrepreneurship drives economic growth and innovation. Women-owned businesses have the potential to generate substantial economic impact, job creation, and productivity gains. By unlocking the untapped entrepreneurial potential of women, economies can benefit from increased competitiveness, diversification, and market resilience. Moreover, women entrepreneurs often introduce unique perspectives, ideas, and products to the market, leading to innovation and addressing unmet needs. Thirdly, continued efforts to support women entrepreneurship contribute to social progress and community development. Women entrepreneurs tend to reinvest in their communities, creating positive social change and improving the quality of life for themselves and others. They act as role models, inspiring other women and girls to pursue their entrepreneurial aspirations and challenge societal norms. By fostering supportive ecosystems for women

entrepreneurs, societies can advance gender equality, break down barriers, and create more inclusive and sustainable communities.

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ROLE OF TECHNOLOGY IN NEP 2020

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Abstract

After 34 years, the country now has a new education policy, thanks to the Union Cabinet's ratification of National Education Policy 2020. The integration of technology is heavily emphasized in NEP 2020 since technology can serve as a significant role in paving the road for holistic development. NEP 2020 places a strong emphasis on regional languages, with E-courses being established in the same. Furthermore, virtual labs will be created. It is also important to note that a National Educational Technology Forum (NETF) is being formed. NEP-2020 is a game-changing step toward improving the education system. Technology, which has permeated practically every aspect of life, makes things more accessible, and there is a rising need to integrate technology in the education sector as well. Constructive measures are being taken toward implementation, and NEP 2020 has cleared the road for it through various digital platforms being presented. In this paper, we will attempt to explain the policy's various components, with a special emphasis on technology and its implementation.

Keywords: National Education Policy 2020, Technology, Accessibility, ICT.

Introduction

The Union Cabinet of India approved the National Education Policy of India 2020 (NEP 2020) on July 29, 2020, outlining the goal of India's new education system. It is the successor to the previous National Policy on Education from 1986. The policy's objective is to create an education system anchored in Indian ethos that directly contributes to the transformation of India by delivering high-quality education to all, developing India into a global knowledge giant. The new grade system calls into doubt the existing educational infrastructure of various educational institutions in India, calling the 'qualifications' supplied by these institutions into question. The traditional definitions of basic and secondary education will likewise change dramatically as their goals change. The ultimate objective of the New Education Policy 2020 is represented by the 'Atma Nirbhar Bharat program' and 'NIPUN Bharat'. The government's ultimate goal is to reach five crore youngsters from three to eleven years old so that they can actively pursue their life goals. The employment of educational technology and information and communication technologies (ICTs)

in education is urgent. It is capable of reaching every nook and cranny of the country and bridging the digital divide by delivering teaching, learning, evaluation, and continuing professional development solutions at any time and from any location while achieving scale and speed. The goal of technological interventions will be to improve teaching-learning and evaluation processes, support teacher preparation and professional development, improve educational access, and streamline educational planning, management, and administration, including admission, attendance, and assessment processes, among others. During the epidemic, virtual learning enabled teaching and learning. The educational system was forced to change. New paths were opened with the implementation of the new National Education Policy. Efforts have been made to make India "self-sufficient," and it is not incorrect to say that technology will play a significant role in this endeavor. The goal is to inspire learners to be creative by giving them the ability to imagine and create. This is easily accomplished with the incorporation of technology in the classroom. The policy intends to improve learning outcomes. It provides a variety of takeaways that will enable stakeholders to contribute to society creatively in the future. To achieve this positive transformation, the policy proposes curriculum changes, improvements to digital infrastructure, the development of strong and relevant core skills, and a shift in the traditional assessment system. The policy also covers vocational education at both the school and postsecondary levels.

National Education Policy (NEP 2020) for School Education

1. Focus on Early Childhood Care and Education (ECCE) & Foundational Literacy and Numeracy (FLN)
2. Curtailing dropouts and ensuring universal access at all levels of school education
3. Learning Should be Holistic, Integrated, Enjoyable, and Engaging
4. Teacher Empowerment
5. Equitable and Inclusive Education: Learning for All
6. Standard-setting and Accreditation for School Education
7. Adoption of pedagogically sound teaching & learning practices
8. Adoption of technology in teaching, learning and assessments

Transforming Exams

Exams will also be made 'easier' according to the National Education Policy 2020. They will largely assess core competencies in order to eradicate the "Coaching Culture." To eliminate the high stakes of board exams, students will be allowed to take them twice in any given year. Board exams in specific disciplines may be

modified in conformity with the New Education Policy 2020. There will be two kinds of board test questions:

- Objective type with multiple-choice questions
- Descriptive type

The National Testing Agency (NTA) will offer a high-quality common aptitude test, as well as specialized common subject exams in various subjects, at least a twice every year as prep for entrance examinations.

Five Pillars of NEP 2020

NEP 2020 is built around five pillars: affordability, accessibility, quality, equity, and accountability. NEP 2020 supports not only continuous learning but also the entire development of students. Students will be able to explore their areas of interest thanks to choice-based education. Another excellent innovation that would expedite the flow of funds between organizations is the establishment of a bank of credit. It will aid pupils in retaining their academic credits. Aside from that, focus is placed on infrastructural support and innovative education centers. NEP 2020 also allows for multiple learning pathways. Creating an ICT-literate community and offering free access to ICT tools are urgently needed. There is also a significant need to motivate a larger portion of the population.

National Digital Education Architecture

The acronym NDEAR stands for National Digital Education Architecture, with the goal of developing a "unified national digital infrastructure to energize and catalyze the education ecosystem." Essentially, this is a technology framework that tries to enable existing systems to be upgraded and made interoperable while also making common building blocks and services available for the development of new tools and solutions. NDEAR intends to stimulate and catalyze the digital education ecosystem through these common buildings and services. It is defined as a "distributed, adaptive, and open socio-technical system with self-organization, scalability, and sustainability properties."

Higher Education

NEP-2020 has brought about significant improvements in Higher Education by emphasizing multidisciplinary courses. In this digital age, NEP-2020 focuses on preparing youngsters to tackle the challenges of a globalised world by ensuring continuous learning. There is a demand for fresh and multi-skilled workers, and multi-disciplinary institutions will help to meet that demand.

Another objective of NEP 2020 is increasing the Gross Enrollment Ratio (GER). The goal in higher education is to increase it from 26 percent to 50 percent by 2030.

By increasing the use of technology in the educational area, the chances of greater accessibility to all are increased. The HECI, which would serve as a single regulator, will comprise accreditation, funding, and academic norm setting by independent verticals. Other regulatory bodies, such as the University Grants Commission (UGC) and the All India Council for Technical Education (AICTE), will eventually be replaced by these.

The establishment of the National Research Foundation (NRF) signifies that a special location has been designated for research-related activities in order to meet world quality standards. A variety of topics will be prioritized, including Indian languages, yoga, arts, music, history, culture, social sciences, and many others. Higher education institutes have been encouraged to establish technological development centers. This will allow the kids to contribute effectively, resulting in the development of a tech-savvy and knowledgeable workforce.

Another notable change is the establishment of the Higher Education Commission of India (HECI) to oversee all higher education in India. The Higher Education Council of India (HECI) would develop a number of verticals to fulfill the NEP's proposal.

Digital India

The new education policy has prioritized the development of infrastructure, online teaching platforms, and technological instruments. There is also a tremendous need for technology-savvy teachers, and special focus has been placed on educator training. It will not be possible to generate online curriculum or online evaluations unless educators are technologically savvy.

There is a critical need to educate teachers about the changes and revolutions that this new policy will bring. Methods that lead to effective student engagement are urgently needed. Teachers must be adequately trained in order to be completely informed of the future changes in order for NEP 2020 to be implemented successfully. New teaching approaches have been given favor, and innovative ideas have been accepted. The main emphasis will be on competency-based examinations, with regular evaluations to help pupils realize when things will go wrong. The pupils will be given feedback in order to assist them identify their own unique potential and capabilities.

There is an urgent need to educate instructors on the changes and transformations that this new policy will bring. Methods that lead to effective student engagement are critical. Teachers must be well trained to be completely informed of the future changes in order for NEP 2020 to be implemented successfully.

It promotes egalitarian use of technology by investing in the development of open public digital infrastructure. The use of developing technologies such as 3D, simulation, robots, and artificial intelligence (AI) has been prioritized. It also enables integrated learning with online and experimental learning. It also proposes expanding the existing digital learning platforms.

Advantages

- **Focus on Critical Thinking:** The board exam system, which primarily measured students' memorizing and rote learning abilities, will be changed with the goal of developing students' critical thinking, logic, and creativity through practical application of their information.
- **Changes in the School Structure:** The current framework of 10+2 school education will be replaced with the 5+3+3+4 pattern to alleviate the burden of board exams on students. There will also be a focus on vocational learning from class 6 to 8, so that kids can acquire practical skills such as gardening, carpentry, plumbing, artists, potters, and so on, to introspect and comprehend their passions while building a deeper knowledge and appreciation for these talents.
- **Regulating the Fees:** The introduction of the NEP will place a cap on the amount of fees that can be charged, preventing private institutions from charging exorbitant fees for higher education. This measure will make education more accessible and inexpensive to all kids, including those from low-income families.
- **More Scope for Global Education:** The new NEP would welcome global educational institutions and foreign universities to establish campuses in India. Indians will have better access to quality education in their country, making the dream more affordable to more kids and possibly even reducing brain drain.
- **Improvement in Teaching Quality:** By 2030, B.Ed. will be made a mandatory four-year course in order to improve the quality of education for teachers, and steps will be taken to prepare them to deal with various issues in the education system, such as providing support and mentorship to students and being trained to teach students with disabilities.

Disadvantages

- **Focus on Digital Learning:** Though it appears to be feasible and necessary, the NEP 2020's emphasis on digitization of education and promotion of e-learning appears to neglect the fact that only approximately 30% of Indians can afford cellphones and even fewer have access to computers. Then,

because government-run schools lack a robust IT infrastructure, pupils from rural areas or from low-income families will be unable to adapt to IT-based learning until such a facility is made available as soon as possible.

- **The Updated Terms of Undergraduate Program:** Because a student can abandon a graduate program and still receive a certification or diploma under the new regulation, students may quit without completing their study, resulting in their lack of seriousness and a high drop-out rate.
- **Enforcement of Languages:** The NEP emphasizes the introduction of mother tongue in elementary classes, which will be utilized to teach the main topics, whereas English will be taught considerably later. Unlike other countries with a single mother tongue, such as Germany, Russia, Japan, China, and France, India is a varied nation with 22 major languages and countless of dialects. Converting the core subjects to these many regional languages (and mother tongues) will be a huge endeavor that will necessitate a significant amount of time, effort, and qualified individuals. Another issue that has prompted some individuals to speak out against the NEP is that the enforcement of mother tongue and regional languages is perceived as the federal government's attempt to impose Hindi.

Challenges

Undoubtedly, the policy has remarkably integrated technology into teaching but there are certain concerns towards which the attention must be drawn. The implementation of the policy is no less than an uphill task. There was a survey conducted (July 2017-June 2018) on 'Household Social Consumption: Education'. In the survey, it was found that the literacy rate among persons of age 7 and above was about 77.7%. In rural areas, it was 73.5% while in urban it was 87.7%. There was also a difference in the literacy rate of males and females, 84.7% and 70.3% respectively.

Challenge comes in the form of accepting the transformation from the traditional rote learning system to the technology driven critical thinking and experimental learning system. This will require a change in the attitude of the stakeholders and continuous efforts are needed to be made to understand and implement this new vision. To fulfil the upcoming requirements, there is a strong need of digitally competent teachers. Moreover, there is an unavailability of digital resources infrastructure and there are a number of subjects which face a limitation as far as teaching through digital space is concerned. For the successful implementation of the policy, centre and states need to work together as the implementation of the policy and the integration of technology come with challenges.

Conclusion

India is moving positively in becoming digitally enriched. A massive progress can be seen in this direction. However, every big reform need time and one has to be patient and wait for the result. The complete integration of technology in education will require a bit of time as making it accessible in remote areas will be a little time-consuming task. But slowly and gradually it will be attained.

It will be critical to identify the essential technologies that will meet the needs of both students and teachers in order to provide a better teaching learning experience. According to analysts, this will be a critical aspect in the successful implementation of the NEP. The NEP aspires for a learner-centered approach. The government has successfully piqued the interest of stakeholders in the National Education Policy 2020. Constructive steps have been taken to inform stakeholders about the new policy's vision and objective.

A digital repository of content will also be created, which will involve the construction of course work, simulations, and learning games for fun-based learning. The information will be created in many languages and will include clear directions. Students will be given a backup mechanism for distributing e-content. The benefits of digital education can only be fully realized if the digital divide is bridged. The digital programs are offered to meet the needs of the stakeholders. The digital India initiative is working in this direction, with promising results.

Without a doubt, NEP 2020 has generated innovative ideas. It has recognized the role of technology in moving education forward, since it plays a significant role in enabling teaching and learning. Some states have introduced and implemented the new policy, and many more are in the process, but there is still a long way to go. If the center and the states work together, the New Education Policy will pave the path for students to be future-ready by emphasizing skill and technology learning.

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AGRICULTURAL REFORMS: NEED AND SCOPE

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Abstract

Agricultural reforms play a vital role in addressing the challenges faced by the agricultural sector and promoting its sustainable development. This abstract provides an overview of the need for agricultural reforms and the scope of these reforms. The essay explores the reasons why agricultural reforms are necessary, including enhancing productivity, ensuring food security, improving farmer livelihoods, and promoting sustainable resource management. Additionally, the abstract discusses the scope of agricultural reforms, including policy reforms, access to finance and technology, capacity building, and infrastructure development. By understanding the need and scope of agricultural reforms, policymakers and stakeholders can work towards creating a more resilient and efficient agricultural sector that contributes to economic growth and sustainable development.

Introduction

Agriculture serves as the backbone of many economies, particularly in developing countries, by providing employment opportunities, ensuring food security, and contributing significantly to the Gross Domestic Product (GDP). However, the agricultural sector often faces various challenges that impede its growth and sustainability. These challenges include low productivity, inadequate infrastructure, limited access to modern technology, market inefficiencies, and the adverse impact of climate change. To overcome these obstacles and unleash the full potential of the agricultural sector, agricultural reforms are crucial. The need for agricultural reforms arises from several factors. First and foremost is the imperative of ensuring food security. As the global population continues to grow, agricultural production must increase to meet the rising demand for food. By implementing reforms, governments can enhance agricultural productivity, promote sustainable farming practices, and improve the efficiency of the food supply chain, thus ensuring an adequate and stable food supply for their populations.

In addition to food security, agricultural reforms are necessary to address poverty and rural development. Many developing countries heavily rely on agriculture as a source of income and livelihood for rural populations. However, small-scale farmers often face numerous challenges, including limited access to

credit, lack of market information, and inadequate infrastructure. Agricultural reforms can address these issues by providing financial support, facilitating access to credit and insurance, and promoting market integration, thereby improving the socio-economic conditions of rural communities. Moreover, agricultural reforms are essential for sustainable and responsible resource management. The sector's heavy reliance on natural resources, such as land, water, and forests, makes it susceptible to environmental degradation and climate change impacts. By implementing reforms that promote sustainable agricultural practices, resource conservation, and climate resilience, governments can mitigate environmental risks and ensure the long-term viability of the agricultural sector.

The scope of agricultural reforms is broad and encompasses various dimensions of the agricultural value chain. It involves policy interventions to create an enabling environment for agricultural development, such as land reforms, trade liberalization, and the establishment of supportive regulatory frameworks. Reforms may also focus on strengthening agricultural extension services, improving access to markets and credit, enhancing infrastructure, and promoting research and development in agricultural technologies. Furthermore, fostering public-private partnerships, supporting agricultural entrepreneurship, and encouraging farmer cooperatives can be part of the reform agenda. By implementing comprehensive agricultural reforms, governments can drive positive change in the sector and unlock its full potential. These reforms require a multi-stakeholder approach involving collaboration between governments, farmers, private sector actors, civil society organizations, and international institutions. Additionally, investments in capacity building, knowledge transfer, and technology adoption are critical to ensuring the successful implementation of agricultural reforms. Thus, agricultural reforms are indispensable for overcoming the challenges faced by the agricultural sector and realizing its full potential for economic development, food security, poverty alleviation, and environmental sustainability. The scope of agricultural reforms encompasses policy interventions, resource management, market integration, infrastructure development, and institutional reforms. By prioritizing and implementing agricultural reforms, governments can drive positive change, strengthen the agricultural sector, and contribute to overall economic growth and sustainable development.

Need for Agricultural Reforms

1. **Enhancing Productivity:** Agricultural reforms aim to address the low productivity levels in the sector. By promoting the adoption of advanced technologies, such as precision agriculture, farmers can optimize their use of inputs, minimize wastage, and achieve higher yields. Additionally, reforms

can facilitate improved irrigation systems and water management practices, enhancing water-use efficiency and reducing crop losses. Modern farming techniques, such as integrated pest management and crop rotation, can also be encouraged through agricultural reforms, leading to increased productivity and sustainable farming practices.

2. **Ensuring Food Security:** Agricultural reforms play a crucial role in ensuring a stable and sufficient food supply. Reforms can focus on improving food production and distribution systems to reduce post-harvest losses and food waste. By providing better access to markets, storage facilities, and transportation infrastructure, agricultural reforms can help farmers effectively bring their produce to consumers. Furthermore, reforms can promote the cultivation of diverse and nutritious crops, addressing nutritional deficiencies and promoting healthier diets for populations.
3. **Promoting Farmer Livelihoods:** Agricultural reforms should prioritize improving the socio-economic conditions of farmers. This can be achieved by enhancing market access through the establishment of efficient value chains, connecting farmers with buyers, and promoting fair pricing mechanisms. Reforms can also support farmers in accessing financial services, such as affordable credit and insurance, to mitigate risks and invest in their agricultural activities. Additionally, capacity-building programs and training initiatives can equip farmers with the necessary skills and knowledge to enhance their productivity and business management capabilities.
4. **Sustainable Resource Management:** Agricultural reforms are crucial for promoting sustainable resource management practices. By encouraging precision agriculture techniques, farmers can optimize the use of inputs such as fertilizers, pesticides, and water, reducing their environmental impact. Reforms can also promote organic farming practices, minimizing the use of synthetic chemicals and promoting soil health. Agroforestry, another sustainable practice, combines agriculture with tree planting to improve soil fertility, provide shade, and contribute to carbon sequestration. Through these reforms, the agricultural sector can contribute to environmental conservation, preserve biodiversity, and mitigate climate change effects.

Thus, agricultural reforms encompass a wide range of measures aimed at enhancing productivity, ensuring food security, promoting farmer livelihoods, and fostering sustainable resource management. By implementing these reforms, governments can address the challenges faced by the agricultural sector and pave the way for a more productive, resilient, and sustainable agricultural system. The success of these reforms relies on strong policy frameworks, effective

implementation strategies, and the active participation and collaboration of farmers, private sector actors, and other stakeholders in the agricultural value chain.

Scope of Agricultural Reforms

1. **Policy Reforms:** Agricultural reforms necessitate policy changes and regulatory frameworks that support sustainable agriculture and equitable practices. Governments can implement land tenure reforms to ensure secure land rights for farmers, promote efficient water management strategies, provide agricultural subsidies that target small-scale farmers, and develop trade policies that enhance market access for agricultural products. Additionally, food safety regulations can be strengthened to ensure the production and distribution of safe and high-quality food.
2. **Access to Finance and Technology:** Agricultural reforms should prioritize improving farmers' access to financial resources and modern technologies. This includes establishing agricultural financing programs that provide affordable credit and insurance schemes tailored to the specific needs of farmers. Governments can also incentivize financial institutions to offer loan products and investment opportunities for agricultural activities. Furthermore, reforms should focus on facilitating the adoption of modern farming technologies, such as precision agriculture tools, remote sensing, and data analytics, to enhance productivity, reduce costs, and optimize resource use.
3. **Capacity Building and Knowledge Transfer:** Agricultural reforms should emphasize capacity building programs and knowledge transfer initiatives to empower farmers with the necessary skills and knowledge. This can be achieved through agricultural extension services that provide training on sustainable farming practices, farm management techniques, and value chain development. Farmers can also benefit from training programs on marketing strategies, financial management, and entrepreneurship. The provision of relevant and up-to-date information through digital platforms, mobile applications, and community networks can enhance knowledge sharing and decision-making among farmers.
4. **Infrastructure Development:** Agricultural reforms should address the inadequate infrastructure in rural areas that hinders agricultural development. Governments can invest in improving rural road networks to facilitate the transportation of agricultural inputs and products. Enhancing irrigation systems, both large-scale and small-scale, can ensure efficient water distribution for agricultural activities. Additionally, reforms should prioritize the development of storage facilities, including cold storage and warehouses,

to minimize post-harvest losses and maintain the quality of agricultural produce. Improving market infrastructure, such as wholesale markets and market information systems, can enable farmers to access broader markets, obtain better prices, and reduce transaction costs.

By implementing comprehensive agricultural reforms in these areas, governments can create an enabling environment for agricultural development, foster sustainable practices, enhance farmers' resilience, and promote inclusive and equitable growth in the agricultural sector. The success of these reforms relies on effective collaboration between policymakers, farmers' organizations, private sector entities, research institutions, and civil society, ensuring that the needs and aspirations of farmers are considered and addressed.

Conclusion

Agricultural reforms are of utmost importance in addressing the challenges and unlocking the potential of the agricultural sector. The need for these reforms arises from several critical factors that affect the sector's performance and its contribution to sustainable development. Firstly, enhancing productivity is a key objective of agricultural reforms. Low productivity levels often hinder the sector's growth and efficiency. Reforms can focus on introducing modern technologies, such as advanced farming equipment, precision agriculture techniques, and digital tools for data management and analysis. Additionally, promoting sustainable agricultural practices, improving access to quality seeds, fertilizers, and crop protection measures, and implementing efficient irrigation systems can contribute to increased productivity.

Ensuring food security is another pressing concern that agricultural reforms can address. With a growing global population, it is crucial to produce enough food to meet the rising demand. Reforms should prioritize strategies to increase agricultural production and improve the efficiency of food distribution systems. This includes supporting small-scale farmers through access to resources, training, and market opportunities. Furthermore, promoting sustainable farming practices that conserve natural resources and reduce food waste can contribute to long-term food security. Improving farmer livelihoods is a critical objective of agricultural reforms. Many farmers face challenges related to low incomes, limited access to markets, and inadequate support systems. Reforms can focus on creating fair pricing mechanisms, strengthening farmers' bargaining power, and improving market access. Access to finance, credit, and insurance schemes can also empower farmers and enable them to invest in their agricultural activities, improve their income, and enhance their livelihoods.

Sustainable resource management is another crucial aspect of agricultural reforms. The agricultural sector heavily relies on natural resources such as land, water, and biodiversity. Reforms should aim to promote sustainable farming practices that minimize environmental impact and protect ecosystems. This includes measures to reduce soil erosion, conserve water resources, and promote biodiversity conservation. By adopting sustainable resource management practices, agricultural reforms contribute to climate change mitigation, environmental conservation, and the long-term viability of the sector. The scope of agricultural reforms is broad and multifaceted. It encompasses policy reforms, including changes in regulations, trade policies, and subsidy schemes that create an enabling environment for agricultural development. Reforms should also focus on improving access to finance and technology, as this can facilitate innovation and modernization in the sector. Capacity building programs and knowledge transfer initiatives are crucial to equip farmers with the skills and knowledge needed to adapt to changing market dynamics and adopt sustainable practices. Furthermore, infrastructure development, including rural roads, irrigation systems, storage facilities, and market infrastructure, is essential to improve connectivity, reduce post-harvest losses, and enhance market access for farmers. By implementing comprehensive agricultural reforms, nations can unlock the full potential of the agricultural sector and drive economic growth. These reforms contribute to global food security, poverty alleviation, and sustainable development. It is imperative for policymakers, stakeholders, and international organizations to work together to design and implement effective agricultural reforms that address the specific needs and challenges of each country. By prioritizing agricultural reforms, nations can achieve a more resilient, productive, and sustainable agricultural sector that contributes to the well-being of communities, the economy, and the environment.

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GLOBAL LEADERSHIP EFFECTIVENESS IN GLOBAL TEAMS

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Abstract

Globalization has revolutionized the business landscape, necessitating the formation of diverse and geographically dispersed teams known as "global teams." These teams consist of individuals from different cultural backgrounds, time zones, and languages, collaborating virtually to achieve common objectives. As organizations increasingly rely on global teams to drive innovation and competitiveness, understanding the dynamics of effective leadership within these teams becomes crucial.

This research paper explores the concept of global leadership effectiveness in global teams. It delves into the competencies, skills, and challenges faced by global leaders and the impact of their leadership on team performance. The paper conducts an extensive literature review on global teams, global leadership, and relevant theories, models, and empirical findings.

The study identifies key competencies for global leaders, including cross-cultural communication, adaptability, trust-building, decision-making, conflict resolution, and negotiation. It investigates the role of these competencies in fostering effective leadership in the context of diverse team environments.

Moreover, the paper analyzes various factors that influence global leadership effectiveness, such as cultural differences, language barriers, virtual team dynamics, geographical dispersion, and organizational support. It explores how these factors impact leadership practices and team outcomes in a global setting.

To gather insights, the research employs a mixed-methods approach, utilizing both qualitative and quantitative methods. Data is collected through surveys, interviews, and observations from diverse global teams and their leaders.

The findings of this research contribute to a deeper understanding of the importance of effective global leadership in driving team success in a globalized world. The paper concludes by discussing the implications of these findings for organizations seeking to enhance their global leadership practices and optimize the performance of their global teams. By addressing the challenges and fostering the competencies essential for global leadership, organizations can navigate the complexities of cross-cultural collaboration and achieve sustained competitive advantage in the global marketplace.

Keywords : Globalization, Global teams, globalized World, etc

Introduction

Globalization has transformed the way organizations conduct business, leading to the emergence of diverse and geographically dispersed teams commonly referred to as "global teams." These global teams consist of individuals from different cultural backgrounds, time zones, and languages, collaborating virtually to achieve common goals. Effectively managing and leading such global teams is essential for

organizational success and competitiveness in the global marketplace. Therefore, the concept of global leadership effectiveness has become a critical area of study.

This research paper aims to explore and analyze the factors that contribute to effective leadership in global teams. By understanding the competencies and challenges faced by global leaders, organizations can develop strategies to enhance their leadership practices and optimize team performance in the global context.

Literature Review

Definition of Global Teams: Provide an overview of the characteristics and composition of global teams, highlighting their unique challenges and advantages.

Importance of Global Leadership: Discuss the significance of effective leadership in global teams, exploring the impact of leadership on team dynamics, motivation, and performance.

Global Leadership Competencies: Review existing models and frameworks that define the essential competencies and skills required for successful global leaders.

Cross-Cultural Communication: Examine the role of effective communication in cross-cultural settings and its influence on leadership effectiveness.

Adaptability and Cultural Intelligence: Discuss the importance of adaptability and cultural intelligence in navigating diverse cultural contexts and fostering collaboration.

Building Trust Across Cultures: Explore the significance of trust-building in global teams and its connection to leadership effectiveness.

Decision-Making and Problem-Solving: Analyze how global leaders approach decision-making and problem-solving in complex and diverse team environments.

Conflict Resolution and Negotiation: Investigate the strategies global leaders employ to manage conflicts and negotiations within multicultural teams.

Methodology

Research Design: Outline the chosen research design, which may involve a combination of qualitative and quantitative approaches, case studies, and interviews with global leaders and team members.

Data Collection: Describe the methods for collecting data, such as surveys, interviews, or observation of global team interactions.

Sample Selection: Explain the criteria for selecting participants, ensuring representation from different industries and regions.

Data Analysis: Clarify the analytical techniques used to analyze the collected data and draw meaningful insights.

Factors Affecting Global Leadership Effectiveness:

Cultural Differences: Explore the impact of cultural variations on leadership styles, communication, and decision-making in global teams.

Language Barriers: Examine the challenges posed by language differences and strategies to overcome communication barriers.

Virtual Team Dynamics: Investigate the unique challenges and opportunities associated with leading virtual global teams.

Time Zone and Geographical Dispersion: Analyze the implications of time zone differences and geographical dispersion on team coordination and communication.

Organizational Support and Resources: Evaluate the role of organizational support, resources, and policies in facilitating effective global leadership.

Conclusion

This research paper highlights the critical role of effective leadership in global teams and its impact on team performance and success. By understanding the competencies required for global leaders and the challenges they face, organizations can develop targeted training programs and support systems to enhance global leadership effectiveness. As companies continue to embrace globalization, investing in the development of global leaders becomes imperative for achieving sustainable growth and competitive advantage in the global marketplace. Further research in this area will undoubtedly provide valuable insights into fostering effective global leadership practices and optimizing the performance of global teams.

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SUCCESS FACTORS FOR RURAL WOMEN EMPOWERMENT

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Abstract:

Women's empowerment may be defined in several ways, including accepting women's viewpoints, trying to seek them and raising the status of women through education, awareness, literacy, and training. Education is a milestone of women empowerment because it enables them to respond to the challenges, to confront their traditional role and change their life. It assists in bringing equality and works as a means to improve their status within family, society and politico-economic system.

Keywords: *Women empowerment, Success Factors, Rural*

Introduction:

Women's empowerment may be defined in several ways, including accepting women's viewpoints, trying to seek them and raising the status of women through education, awareness, literacy, and training. The success of empowering women in rural areas cannot be seen only partially but must consider various aspects or factors comprehensively. Women empowerment refers to making women socially and financially independent. Women empowerment is a process in which women make their own independent decisions. When women are entitled to decide, it gives them a sense of empowerment and more worth. Empowerment means people having power and control over their own lives. People get the support they need that is right for them. Empowerment means that people are equal citizens. They are respected and confident in their communities.

Factors Responsible for Women Empowerment

1. Education:

Education enables us to learn about the world outside our own environment. It makes us spiritually, socially, and intellectually strong by improving our level of knowledge, technical skills, and position in the profession. The knowledge acquired in education gives each individual self-confidence for his or her life. Girls who

receive an education are less likely to marry young and more likely to lead healthy, productive lives. They earn higher incomes, participate in the decisions that most affect them, and build better futures for themselves and their families. Girls' education strengthens economies and reduces inequality. Educated girls are more likely to have better paying jobs and contribute to the economy. This in turn can lead to reduced poverty and increased economic growth. Education can help to reduce the risk of gender-based violence and promote gender equality in other areas of life. Education is a Tool for Empowerment. Education can be an effective tool for women's empowerment, the parameters of which are: Enhancing self-esteem and self-confidence of women. Developing ability to think critically. Fostering decision-making and action through collective processes. The right to education is a human right, and eliminating illiteracy, ensuring equal access to education and closing the gender gap at all levels of education empowers women and girls and thereby contributes to the elimination of all forms of discrimination and violence against women and girls.

Equal access to education for women and girls will be ensured. Special measures will be taken to eliminate discrimination, universalize education, eradicate illiteracy, create a gender-sensitive educational system, increase enrolment and retention rates of girls and improve the quality of education to facilitate life-long learning as well as development of occupation/vocation/technical skills by women. Reducing the gender gap in secondary and higher education would be a focus area. Sectoral time targets in existing policies will be achieved, with a special focus on girls and women, particularly those belonging to weaker sections including the Scheduled Castes/Scheduled Tribes/Other Backward Classes/Minorities. Gender sensitive curricula would be developed at all levels of educational system in order to address sex stereotyping as one of the causes of gender discrimination.

2. Elimination of Gender Discrimination:

Women's empowerment is a critical aspect of achieving gender equality. It includes increasing a woman's sense of self-worth, her decision-making power, her access to opportunities and resources, her power and control over her own life inside and outside the home, and her ability to effect change. Women suffer from lack of access to decent work and face occupational segregation and gender wage gaps. In many situations, they are denied access to basic education and health care and are victims of violence and discrimination. Active participation of government by framing policies and laws for preventing such acts. Increasing consciousness in society by making them aware about the evils of discrimination. Adopting policies

like positive discrimination and making them socially politically and economically equal.

3. Steps for implementation of Women Development Programme and various Acts:

The government has also taken several steps towards making laws for example - Medical Termination of Pregnancy Act 1971. Implementing political rights - for examples - The Government of India Act, 1935 granted female enfranchised persons the basis of educational qualifications. The Government of India has taken various steps to ensure empowerment of women through their social, educational, economic and political uplifting through various schematic interventions. While the schemes implemented by the Government like Pradhan Mantri Awas Yojana (Urban & Rural), the National Social Assistance Programme (NSAP), the initiatives like Samagra Shiksha, Scheme of National Overseas Scholarship, Babu Jagjivan Ram Chhatrawas Yojna, Swachh Vidyalaya Mission, etc. ensure that schools are girl-friendly especially for vulnerable sections of society and have adequate facilities in place to fulfil their special requirements. Further, in order to encourage employment of women, a number of enabling provisions have been incorporated in the recently enacted Labour Codes viz. the Code on Wages, 2019, the Industrial Relations Code, 2020, the Occupational Safety, Health and Working Conditions Code, 2020 and the Code on Social Security, 2020 for creating congenial work environment for women workers. The Mahatma Gandhi National Rural Employment Guarantee Act, 2005 (MGNREGA) mandates that at least one third of the jobs generated under the scheme (MGNREGS) should be given to women. Government has also made enabling provisions for allowing women's participation in non-conventional sectors such as fighter pilots in Indian Air Force, Commandos, Central Police Forces, admissions in Sainik Schools, etc. The data in respect of these schemes are maintained by the respective Ministries/ Departments.

a. Health

A holistic approach to women's health which includes both nutrition and health services will be adopted and special attention will be given to the needs of women and the girl at all stages of the life cycle. The reduction of infant mortality and maternal mortality, which are sensitive indicators of human development, is a priority concern. This policy reiterates the national demographic goals for Infant Mortality Rate (IMR), Maternal Mortality Rate (MMR) set out in the National Population Policy 2000. Women should have access to comprehensive, affordable and quality health care. Measures will be adopted that consider the reproductive rights of women to enable them to exercise informed choices, their vulnerability to sexual and health problems together with endemic, infectious and communicable diseases such as malaria, TB, and water borne diseases as well as hypertension and cardio-pulmonary diseases. The social, developmental and health consequences of

HIV/AIDS and other sexually transmitted diseases will be tackled from a gender perspective.

To effectively meet problems of infant and maternal mortality, and early marriage the availability of good and accurate data at micro level on deaths, birth and marriages is required. Strict implementation of registration of births and deaths would be ensured and registration of marriages would be made compulsory.

In accordance with the commitment of the National Population Policy (2000) to population stabilization, this Policy recognizes the critical need of men and women to have access to safe, effective and affordable methods of family planning of their choice and the need to suitably address the issues of early marriages and spacing of children. Interventions such as spread of education, compulsory registration of marriage and special programmes like BSY should impact on delaying the age of marriage so that by 2010 child marriages are eliminated.

Women's traditional knowledge about health care and nutrition will be recognized through proper documentation and its use will be encouraged. The use of Indian and alternative systems of medicine will be enhanced within the framework of overall health infrastructure available for women.

b. Violence against women

All forms of violence against women, physical and mental, whether at domestic or societal levels, including those arising from customs, traditions or accepted practices shall be dealt with effectively with a view to eliminate its incidence. Institutions and mechanisms/schemes for assistance will be created and strengthened for prevention of such violence, including sexual harassment at work place and customs like dowry; for the rehabilitation of the victims of violence and for taking effective action against the perpetrators of such violence. A special emphasis will also be laid on programmes and measures to deal with trafficking in women and girls.

c. Rights of the Girl Child

All forms of discrimination against the girl child and violation of her rights shall be eliminated by undertaking strong measures both preventive and punitive within and outside the family. These would relate specifically to strict enforcement of laws against prenatal sex selection and the practices of female foeticide, female infanticide, child marriage, child abuse and child prostitution etc. Removal of discrimination in the treatment of the girl child within the family and outside and projection of a positive image of the girl child will be actively fostered. There will be special emphasis on the needs of the girl child and earmarking of substantial

investments in the areas relating to food and nutrition, health and education, and in vocational education. In implementing programmes for eliminating child labour, there will be a special focus on girl children.

d. Mass Media

Media will be used to portray images consistent with human dignity of girls and women. The Policy will specifically strive to remove demeaning, degrading and negative conventional stereotypical images of women and violence against women. Private sector partners and media networks will be involved at all levels to ensure equal access for women particularly in the area of information and communication technologies. The media would be encouraged to develop codes of conduct, professional guidelines and other self-regulatory mechanisms to remove gender stereotypes and promote balanced portrayals of women and men.

Conclusion

Empowering women is essential to the health and social development of families, communities and countries. When women are living safe, fulfilled and productive lives, they can reach their full potential, contributing their skills to the workforce and can raise happier and healthier children. Women empowerment adds to confidence of women in their ability to lead meaningful and purposeful lives. It removes their dependence on others and makes them individuals in their own right.

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PREFACE

In an era where the global landscape is undergoing rapid and profound changes, the aspiration for global leadership demands a visionary and concerted effort. The seminar proceedings titled “Vision for Vishwa Guru India Initiatives for Global Leadership by 2047” stand as a testament to India's unwavering commitment to shaping a future that is not only transformative for its own citizens but also resonates across the international community.

As we approach the momentous milestone of 2047, which marks the centenary of India's independence, we find ourselves at a crossroads of possibilities and challenges. The concept of ‘Vishwa Guru’ encapsulates India's age-old tradition of disseminating knowledge, fostering dialogue, and illuminating the path for others. This compilation of seminar proceedings is a reflection of this tradition, a dialogue that transcends boundaries and invites scholars, students, and visionaries to collectively envision the path ahead. These proceedings offer a panoramic view of the discussions and insights shared by luminaries in various fields, touching upon a myriad of sub-themes. From discussions on the Role of Technology in NEP 2020 to explorations of Ease of Doing Business, the proceedings delve into crucial facets that shape India's global role.

We extend our heartfelt gratitude to the Indian Council of Social Science Research (ICSSR) for its invaluable support in bringing together these seminal discussions. Their unwavering commitment to advancing knowledge aligns seamlessly with the spirit of the Vishwa Guru India Initiatives. As we navigate the complexities of a rapidly evolving world, we hope that these initiatives serve as a source of inspiration, a catalyst for meaningful dialogues, and a blueprint for action.

We are indebted to the authors who have contributed their scholarly insights to this compilation. Their diverse perspectives and rigorous research have enriched the discourse on global leadership and India's role in shaping the global narrative. Each paper presented here is a testament to their dedication to knowledge dissemination and their belief in the power of ideas to drive positive change.

Together, let us embrace the spirit of ‘Vishwa Guru’ and pave the way for a brighter, more harmonious, and prosperous India.

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EXPERIENTIAL LEARNING AND SKILL DEVELOPMENT IN NATIONAL EDUCATIONAL POLICY 2020

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Abstract

Education is the key factor to increase the financial status of the persons. Not only it gives financial status then also it gives holistic knowledge to the persons. Education gives economic background, and knowledge-based attitude or behaviour. Then what society expect from the educated persons. Today students are leaders of the country in future. So, Education gives leadership qualities, Responsibilities to the society. This National Educational Policy 2020 helps to improve the students learning process or method to vary. Experiential Learning and skill development is one of the main objectives of NEP 2020. This article tries to show, NEP 2020 what wants to change the learning and technical knowledge of the students.

Keywords: Soft skill learning, Hard skill learning, Practical learning or Experiential learning.

Introduction

The National Education Policy (NEP) 2020 is a complete and transformative framework introduced in India with the aim of reforming the country's education system. Intended as a student-centric, holistic approach, the policy seeks to adoptive creativity, critical thinking, and problem-solving skills among students. NEP 2020 promotes for a elastic and multidisciplinary curriculum, mixing vocational education and experiential learning, while promoting technology-enabled education. It encourages early childhood education, underlines the training and professional development of teachers, and strives to bridge the gap between academic and vocational streams. The policy recognizes the importance of protective cultural and original knowledge while preparing students for the challenges of the 21st century, making education more inclusive, reasonable, and adaptive to the changing needs of learners and society.

Experiential Learning

Experiential learning, in the context of NEP 2020, is a student-centered method that boosts students to learn by doing, appealing in hands-on activities, and go through real-world situations. It is planned to move away from habit memorization and theoretical knowledge, and instead, focus on real-world applications and perilous thinking.

Following key features are includes in NEP 2020 for experiential learning to the students:

Skill-based Learning: Experiential learning aims to develop anextensive range of skills in students, including problem-solving, decision-making, communication, collaboration, and inventiveness, among others. This focus on subject expertise intended to make students better equipped for real-life challenges and employment opportunities.

Vocational Education: The NEP 2020 emphasizes the amalgamation of professional education into the mainstream curriculum. This enables students to advance practical skills and appropriate knowledge to various trades and industries, preparing them for the workforce.

Internships and Hands-on Training: The policy encourages schools and higher education institutions to provide prospects for students to engage in internships, apprenticeships, and other forms of hands-on training. This allows students to apply academic knowledge to real-world sceneries and improve valuable work experience to the students.

Project-Based Learning: Observed learning promotes project-based learning, where students work on real-life projects and solve reliable problems. This approach adopts perilous thinking, coordination, and practical application of knowledge.

Field Trips and Community Engagement: The NEP 2020 encourages schools to organize field trips and involve with the local community. These experiences enable students to understand the real-world situation of their studies and shape a deeper connection between the classroom and the world outside.

Integration of Co-curricular Activities: Experiential learning involves participating co-curricular activities such as sports, arts, and cultural programs into the education system. This encourages a well-versed growth of students and improves their learning experience.

It's worth noting that the implementation of NEP 2020 and its initiatives, including observed learning, may differ across different states and educational institutions in India. For the most current and detailed information on the status of experiential learning in NEP 2020, I recommend referring to official government sources or educational institutions' updates.

Skill Development

The term "skill" refers to the ability or proficiency acquired through practice, training, or experience to perform a specific task or activity effectively. Skills can be both physical and intangible, encompassing a extensive range of capabilities across various areas, including physical, reasoning, technical, social, and emotional areas.

Following some key points about skills in NEP 2020:

Learned Abilities: Skills are not innate; they are learned and developed over time. They result from a grouping of knowledge, practice, and experience.

Performance-Oriented: Skills are task-oriented and involve the capacity to carry out specific actions or achieve particular objectives.

Context-Dependent: Skills may be context-specific, meaning they can be more appropriate in certain situations or fields than others.

Transferable: Some skills are handy across different areas, allowing individuals to apply them in various contexts.

Improvable: With practice and continuous learning, individuals can advance their skills and increase their ability.

Skills can be broadly categorized into two types:

Hard Skills: These are specific, technical abilities that are easily measurable and often require formal education or training. Examples of hard skills include programming, accounting, graphic design, data analysis, and external verbal proficiency.

Soft Skills: Also known as "people skills" or "interpersonal skills," these are more subjective and are related to how individuals interact with others and handle various situations. Examples of soft skills contain communication, leadership, teamwork, problem-solving, adaptability, and emotional intelligence.

Both hard and soft skills are essential for personal and professional development, and a well-rounded individual typically holds a amalgamation of these skills. In the workplace, employers often seek candidates with a balanced mix of technical expertise (hard skills) and the ability to work well with others and adapt to new challenges (soft skills).

The National Education Policy (NEP) 2020 in India the significance of skill development as a crucial aspect of the education system. The NEP 2020 aims to equip students with a broad range of skills that are essential for personal growth, employability, and contributing to the nation's development. It emphasizes the integration of skill development across all levels of education, from school to higher education.

Following important points are include in NEP 2020:

Early Childhood Education: The policy highlights skill development from an early age. It aims to encourage foundational skills such as critical thinking, problem-solving, creativity, and communication in children through play-based and activity-based learning in early childhood education.

Vocational Education: NEP 2020 advocates for the combination of vocational education into the mainstream curriculum. This tactic aims to provide students with practical skills and knowledge applicable to various trades and industries. It seeks to remove the traditional hierarchy between academic and vocational streams and encourages students to discover various career options.

Internships and Experiential Learning: This policy helps practical learning through internships, apprenticeships, and hands-on training opportunities to the students. This allows students to increase practical knowledge and progress employable skills while following their studies.

Flexible Curriculum: NEP 2020 inspires a elastic curriculum that permits students to choose from a wide range of subjects and skill-based courses. This flexibility allows students to discover their interests and strengths, fostering a holistic development method.

Teacher Training and Professional Development: The policy highlights the training and professional development of teachers to train them with the skills and knowledge needed to efficiently impart skill-based education to students.

Technology Integration: NEP 2020 identifies the importance of technology in skill development. It highlights the use of technology to improve teaching and learning experiences and to convey digital skills to students.

Entrepreneurship Education: The policy encourages entrepreneurship education to encourage invention and self-employment. It seeks to foster an entrepreneurial mindset among students and provide them with the necessary skills to start their schemes.

Recognition of Prior Learning: NEP 2020 acknowledges the value of skills acquired external formal education systems. It aims to provide mechanisms for recognizing and accrediting prior learning, allowing individuals to gain theoretical credit for their existing skills and knowledge.

It's significant to note that the application of skill development creativities under NEP 2020 may differ across different states and educational institutions in India. Since policies are subject to nonstop updates and changes, I recommend referring to official government sources or educational institutions for the most current and detailed info on skill development in NEP 2020.

Conclusion

Indians understand the value of education in their daily lives. Not only in terms of money, but also in terms of respect in society, education is given a special place. Assets may go tomorrow but arrive today. Education, however, is not stolen or burned in the same way. If someone imparts information to others, the recipient will become more knowledgeable. According to a statistical study, in India, parents spend 60% of their income on their children's tuition. The NEP 2020 must be implemented by teachers. Because the government is dealing with more issues and holding more meetings with educators, opposition party suggestions, parents' opinions, and public input. The government then implemented the policy. Teachers work in the field, thus. Every strategy has flaws, and success depends on Every strategy has flaws; the execution of the plan determines whether it succeeds. How to carry out the strategy on the ground. As a result, more educationalists offer advice to the government for NEP 2020. The government includes the educationalists' recommendations to the NEP 2020's developed next level.

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MAKE IN INDIA: PROMOTING MANUFACTURING AND GROWTH

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Abstract

Manufacturing is believed to be the key to the development of a nation. However in case of India it is the services which has spurred the development. Realizing the imperativeness of manufacturing sector 'Make in India' initiative was launched on 25th September 2014 by our Prime Minister, Mr. Narendra Modi. The new policy is launched with the objective of making India the manufacturing hub of the world. The initiative is a sales pitch; focusing the key 25 industries; to attract foreign investors. However to make it successful the areas of regulations, power, infrastructure etc. needs fixing up.

This research paper is written with the intention to expound the concept of 'Make in India' campaign, objectives, its purpose and its merits.

Keywords: Make, India, Manufacturing.

Introduction

The Government of India began the "Make in India" project in 2014 with the goal of supporting domestic manufacturing and accelerating economic growth. The initiative's main goal is to entice both domestic and international businesses to participate in Indian manufacturing.

By fostering an advantageous business environment, streamlining laws, and promoting ease of doing business, the "Make in India" initiative seeks to turn India into a major global manufacturing base. It aims to entice investment in a variety of industries, including renewable energy, textiles, electronics, autos, and medicines.

Objective of the Study

- To list out the objective of make in India scheme
- To list out the merits of make in India scheme
- To list the methods and forms of FDI

Objectives of Make in India

1. Promoting investment: By providing incentives, tax advantages, and streamlined regulatory processes, the campaign hopes to draw both domestic and foreign direct investments (FDI). It strives to foster a climate that is business-friendly.
2. Improvement of infrastructure, such as transportation systems, logistics systems, and industrial corridors, is a key goal of the plan. This is crucial for the efficient transport of commodities and raw resources, which lowers prices.
3. The "Make in India" initiative acknowledges the value of skilled workers for the manufacturing sector. It attempts to improve workforce skill sets through a variety of activities, including partnerships with industry leaders and programs for vocational training.
4. Protection of intellectual property rights (IPR): To safeguard innovations and promote research and development, the government is aiming to improve India's IPR system. This is essential for encouraging innovation and luring investments in technology-driven production.
5. Sector-specific policies: To address the special difficulties and opportunities in many industries, the initiative has created sector-specific policies. With the help of these policies, focused growth and competitiveness can be encouraged in a variety of industries.

The "Make in India" project seeks to increase employment possibilities, foster economic growth, and establish India as a hub for global manufacturing by boosting local production and luring investments. To promote sustainable economic development, it aims to take use of India's sizable consumer market, talented labour, and favourable demographics.

Merits of Make in India

The Make in India initiative offers several merits and advantages for India. Some of the key merits of the Make in India scheme are:

1. Economic growth: The initiative aims to boost economic growth by promoting domestic manufacturing and attracting foreign direct investment (FDI). Increased manufacturing activities contribute to GDP growth, job creation, and overall economic development.
2. Job creation: The Make in India scheme focuses on creating employment opportunities across various sectors, including manufacturing, infrastructure development, and services that support the manufacturing ecosystem. This helps to reduce unemployment rates and improve the standard of living for the population.

3. **Skill development:** The initiative emphasizes skill development programs and vocational training, aiming to enhance the capabilities of the workforce. This helps bridge the skill gap and ensures a skilled labor force that can meet the demands of the manufacturing industry. It also promotes entrepreneurship and innovation, creating a culture of self-employment and job creation.
4. **Foreign direct investment (FDI):** The Make in India scheme aims to attract foreign companies to invest in India's manufacturing sector. By simplifying regulations, providing incentives, and improving ease of doing business, it creates a favorable environment for foreign investors. Increased FDI inflows bring in advanced technology, capital, and expertise, leading to the growth and development of the manufacturing sector.
5. **Technological advancements:** The Make in India initiative encourages the adoption and development of advanced technologies in the manufacturing sector. This helps upgrade the industrial infrastructure, improve productivity, and enhance the competitiveness of Indian manufacturing companies in the global market.
6. **Export promotion:** By promoting domestic manufacturing, the Make in India scheme aims to increase exports. It focuses on developing export-oriented industries and facilitating trade, leading to a favorable balance of trade and foreign exchange earnings for the country.

Foreign Direct Investment

A **foreign direct investment (FDI)** refers to purchase of an asset in another country, such that it gives direct control to the purchaser over the asset (e.g. purchase of land and building). In other words, it is an investment in the form of a controlling ownership in a business, in real estate or in productive assets such as factories in one country by an entity based in another country.^[1] It is thus distinguished from a foreign portfolio investment or foreign indirect investment by a notion of direct control.

The origin of the investment does not impact the definition, as an FDI: the investment may be made either "inorganically" by buying a company in the target country or "organically" by expanding the operations of an existing business in that country.

Methods

The foreign direct investor may acquire voting power of an enterprise in an economy through any of the following methods:

- by incorporating a wholly owned subsidiary or company anywhere
- by acquiring shares in an associated enterprise

- through a merger or an acquisition of an unrelated enterprise
- participating in an equity joint venture with another investor or enterprise

Forms of FDI incentives

Foreign direct investment incentives may take the following forms:

- low corporate tax and individual income tax rates
- tax holidays
- other types of tax concessions
- preferential tariffs
- special economic zones
- EPZ – export processing zones
- bonded warehouses
- maquiladoras
- investment financial subsidies
- free land or land subsidies
- relocation & expatriation
- infrastructure subsidies
- R&D support
- energy
- derogation from regulations

Conclusion

To make India free of unemployment by bringing development and growth this policy is the urgent need. We can downsize poverty in India to a great level by solving the unemployment issue for youths. Thus the country economy will achieve a new height after the success of this campaign. This, in turn, may solve various social issues in the country.

This program is an absolute necessity if we are to eradicate unemployment in India while also fostering economic growth. We can significantly reduce poverty by addressing the issue of youth unemployment. A strong economy is inevitable following the success of the “Make in India” initiative. By doing so, various socio-economic problems in the country may be addressed.

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TRANSFORMATIVE ROLE OF TECHNOLOGY IN THE NATIONAL EDUCATION POLICY (NEP) 2020

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Abstract

The National Education Policy (NEP) 2020 outlines a transformative vision for the Indian education system, and technology plays a central role in its realization. This abstract explores the transformative role of technology in the NEP 2020, highlighting its impact on access to education, personalized learning, teacher empowerment, assessment and evaluation, and data-driven decision making. By leveraging technology, the NEP 2020 aims to create an inclusive, equitable, and high-quality education system that prepares students for the challenges of the future. The successful implementation of the NEP's vision relies heavily on embracing technology as a powerful tool for educational transformation.

Keywords: National Education Policy, NEP 2020, Education System, Personalized Learning, Teacher Empowerment, Assessment and Evaluation, Data-driven Decision Making.

Introduction

The National Education Policy (NEP) 2020 represents a groundbreaking policy initiative aimed at transforming the Indian education system. At the heart of this transformation lies technology, which plays a pivotal role in reshaping the educational landscape by providing innovative tools and platforms for teaching, learning, and assessment. This essay delves into the profound impact of technology in the NEP 2020, highlighting how it facilitates equitable, inclusive, and high-quality education for all learners. Technology serves as a catalyst for educational revolution by offering new possibilities and avenues for teaching and learning. In the NEP 2020, technology plays a significant role in achieving the policy's vision of a learner-centric and holistic education system. It empowers both educators and students, bridging gaps and promoting educational opportunities that transcend traditional boundaries.

One of the primary goals of the NEP 2020 is to ensure universal access to education, irrespective of geographical location or socio-economic background. Technology serves as a powerful enabler in achieving this objective. Through digital infrastructure and connectivity, students can access educational resources, virtual classrooms, and expert teachers from anywhere, breaking down the barriers of distance and limited resources. This accessibility expands educational opportunities for marginalized communities, including those in rural and remote areas. The NEP

2020 advocates for personalized and adaptive learning, recognizing that each student has unique strengths, weaknesses, and learning styles. Technology provides a wide array of digital tools and resources that cater to individual needs, allowing learners to progress at their own pace. Adaptive learning platforms, equipped with intelligent algorithms, identify knowledge gaps and offer customized learning paths, ensuring that students receive targeted support and achieve optimal learning outcomes.

Technology empowers educators with innovative tools and resources that enhance their teaching practices. In the NEP 2020, teachers are encouraged to develop digital pedagogical skills to create engaging and interactive learning experiences. Through technology, teachers can incorporate multimedia content, simulations, and educational apps into their lessons, making them more dynamic and impactful. Moreover, technology fosters collaboration among educators, enabling them to share best practices, access professional development opportunities, and collectively improve the quality of instruction. Assessment and evaluation are critical components of the NEP 2020, emphasizing a shift from rote memorization to a competency-based approach. Technology revolutionizes these processes, offering diverse and innovative assessment methods. Online assessments, such as quizzes and assignments, provide immediate feedback, enabling students to monitor their progress and make necessary improvements. Additionally, technology facilitates adaptive testing, where the difficulty level adjusts based on students' responses, ensuring a comprehensive evaluation of their knowledge and skills.

Data-driven decision making lies at the core of the NEP 2020, aiming to inform policies and interventions that improve educational outcomes. Technology enables the collection, analysis, and interpretation of vast amounts of educational data. This data, encompassing student performance, learning patterns, and teaching effectiveness, provides valuable insights for policymakers and educational institutions. Through technology-enabled data analysis, policymakers can make informed decisions, identify areas for improvement, and allocate resources effectively, fostering continuous enhancement in the education system. Technology emerges as a transformative force in the NEP 2020, revolutionizing the Indian education system. It propels the realization of the policy's vision by ensuring equitable access to education, facilitating personalized learning experiences, empowering teachers, transforming assessment practices, and enabling data-driven decision making. While challenges such as infrastructure limitations, digital divide, and privacy concerns exist, addressing them through collaboration and investment is crucial. By harnessing the power of technology, India can create an inclusive and future-ready education ecosystem that prepares learners to thrive in an ever-

evolving world. The NEP 2020, with technology at its core, paves the way for a truly holistic, inclusive, and high-quality education system in India.

Digital Infrastructure and Connectivity

The National Education Policy (NEP) 2020 recognizes the critical role of digital infrastructure and connectivity in providing equitable access to education. It places significant emphasis on bolstering digital infrastructure in schools and higher education institutions across the country. By embracing technology, the NEP 2020 aims to eliminate geographical barriers and ensure that all students can avail themselves of high-quality educational resources, online libraries, and virtual classrooms. In the modern digital era, technology has become an essential tool for learning and knowledge acquisition. However, without adequate digital infrastructure and connectivity, many students, especially those in remote and rural areas, face limited access to educational opportunities. The NEP 2020 addresses this disparity by recognizing the need to bridge the digital divide and promote inclusivity in education.

Strengthening digital infrastructure in schools and higher education institutions is crucial to create an environment conducive to effective teaching and learning. This involves equipping educational institutions with necessary hardware, such as computers, tablets, and smart boards, as well as establishing a robust network infrastructure to support seamless connectivity. By investing in digital infrastructure, the NEP 2020 ensures that students from all regions, including those in remote and underserved areas, have access to the same educational resources as their urban counterparts. In addition to enhancing infrastructure within schools, the NEP 2020 also prioritizes internet connectivity in rural and remote areas. The availability of high-speed internet connections in these regions is essential for enabling digital learning experiences. With reliable internet access, students can tap into a wealth of online educational resources, participate in virtual classrooms, engage in collaborative projects, and communicate with teachers and peers from around the world. Internet connectivity serves as a gateway to global knowledge, opening up vast opportunities for students to broaden their horizons and stay abreast of the latest advancements in their fields of interest. By focusing on digital infrastructure and connectivity, the NEP 2020 not only ensures equal access to educational resources but also addresses the digital divide prevalent in the country. The digital divide refers to the gap between those who have access to digital technologies and those who do not. This divide can create disparities in educational outcomes, with students lacking access to technology being at a disadvantage. The NEP 2020 aims to bridge this divide by promoting internet connectivity in rural and

remote areas, leveling the playing field for students across the country. It envisions a future where every student, regardless of their geographical location, can benefit from the transformative power of technology in education.

In conclusion, the NEP 2020 acknowledges the vital role of digital infrastructure and connectivity in ensuring widespread access to education. By strengthening digital infrastructure in schools and higher education institutions and promoting internet connectivity in rural and remote areas, the NEP 2020 takes significant strides toward inclusivity and bridging the digital divide. Through the integration of technology, students across the country can access quality educational resources, online libraries, and virtual classrooms, empowering them to thrive in the digital age. The NEP 2020 sets the foundation for an education system that embraces technology as a catalyst for equitable and holistic learning experiences.

Blended Learning and Personalized Education

The National Education Policy (NEP) 2020 advocates for a transformative shift towards blended learning, which integrates the traditional face-to-face classroom experience with online learning components. Technology plays a vital role as a catalyst in this process, providing a diverse range of digital learning resources that enrich students' educational experiences. By leveraging technology, the NEP 2020 fosters enhanced student engagement, self-directed learning, and personalized education. Blended learning combines the strengths of both traditional and online learning approaches, offering a comprehensive and flexible educational framework. In the NEP 2020, technology plays a pivotal role by providing various digital tools and resources that augment classroom instruction. Educational apps, multimedia content, and interactive simulations are among the array of digital learning resources available to students. These resources offer dynamic and interactive learning experiences, capturing students' attention and facilitating deeper understanding of concepts.

The integration of technology in blended learning environments cultivates student engagement by presenting educational content in innovative and captivating formats. Interactive multimedia elements, such as videos, animations, and virtual reality experiences, stimulate students' curiosity and make learning more enjoyable. Moreover, technology enables collaborative learning experiences, allowing students to interact with their peers and engage in group projects through online platforms. These collaborative opportunities promote active participation and the exchange of diverse perspectives, enriching the overall learning experience. One of the key advantages of technology in blended learning is its capacity to foster self-directed learning. Online platforms provide students with access to a vast array of

educational resources, empowering them to take ownership of their learning journeys. Students can explore topics of interest, conduct independent research, and access supplementary materials at their own pace and convenience. This self-directed learning approach nurtures critical thinking skills, encourages curiosity, and promotes lifelong learning habits.

Adaptive learning platforms are another notable aspect of technology-enabled blended learning. These platforms employ algorithms to analyze students' performance and identify their strengths and weaknesses in specific subjects or skills. Based on this analysis, adaptive learning platforms tailor instruction to meet individual student needs. Students receive personalized learning pathways and targeted interventions, allowing them to focus on areas that require improvement and advance at a pace that suits their learning abilities. This personalized approach enhances learning outcomes and ensures that students receive tailored support, thus maximizing their potential for academic success. The NEP 2020 recognizes the transformative potential of technology in blended learning and encourages its integration into the educational system. By embracing technology, educational institutions can provide students with a blended learning experience that combines the best of traditional and online approaches. The diverse array of digital learning resources, interactive elements, and adaptive platforms foster engagement, autonomy, and personalized learning. Blended learning, supported by technology, empowers students to become active participants in their education, prepares them for the digital age, and equips them with the skills necessary for success in the 21st century.

Teacher Empowerment and Professional Development

The role of technology in empowering teachers and enhancing their professional development is of utmost importance in the National Education Policy (NEP) 2020. The NEP 2020 acknowledges the necessity for teachers to develop digital pedagogical skills to effectively integrate technology into their teaching practices. It recognizes that technology can serve as a catalyst for professional growth and provides numerous avenues for teachers to enhance their skills and stay abreast of the latest educational practices. Online training programs and webinars play a crucial role in equipping teachers with the necessary knowledge and skills to leverage technology in their classrooms. These programs offer flexible and accessible learning opportunities, enabling teachers to enhance their teaching methodologies, explore new digital tools, and understand how to integrate them effectively into their lessons. By participating in online training programs and webinars, teachers can acquire the pedagogical strategies and technical expertise needed to create engaging and impactful learning experiences for their students.

Additionally, technology facilitates collaboration among teachers, fostering a community of practice where they can exchange resources, share best practices, and learn from each other's experiences. Online platforms and social networking tools enable teachers to connect and collaborate with educators from different locations, both nationally and globally. Through these collaborative networks, teachers can engage in discussions, share innovative teaching ideas, and gain valuable insights into effective instructional strategies. The exchange of knowledge and experiences among teachers leads to the collective improvement of teaching practices, ultimately raising the overall quality of education. Furthermore, technology provides teachers with access to a wealth of educational resources, ranging from digital textbooks and interactive multimedia content to online learning platforms and educational apps. These resources offer diverse teaching materials and instructional aids that can be integrated seamlessly into lesson plans. By leveraging technology, teachers can create engaging and interactive learning experiences that cater to diverse learning styles, promote active participation, and facilitate student-centered approaches.

Moreover, technology enables teachers to stay updated with the latest educational practices and research. Online platforms, educational websites, and professional learning communities provide a vast repository of educational articles, research papers, and teaching resources. By leveraging technology, teachers can explore emerging trends, evidence-based practices, and innovative teaching methodologies. This continuous professional development equips teachers with the knowledge and tools necessary to adapt to evolving educational landscapes and cater to the changing needs of their students. In conclusion, technology plays a pivotal role in empowering teachers and enhancing their professional development in the NEP 2020. Through online training programs, webinars, collaboration platforms, and access to educational resources, technology equips teachers with the digital pedagogical skills, knowledge, and resources necessary to create impactful and engaging learning experiences. By embracing technology, teachers can continuously improve their instructional practices, stay updated with the latest educational trends, and ultimately provide students with a high-quality education that prepares them for the challenges of the future.

Assessment and Evaluation

Technology plays a transformative role in assessment and evaluation, aligning with the National Education Policy's (NEP) focus on holistic and competency-based education. The NEP 2020 recognizes the need to redefine assessment practices to move beyond rote memorization and promote a comprehensive understanding of students' knowledge and skills. Technology offers innovative approaches to

assessment, enabling timely feedback, identifying areas for improvement, and facilitating adaptive testing. Online assessments have become increasingly prevalent in educational settings, offering a wide range of tools and formats such as quizzes, tests, and assignments. These digital assessments provide numerous benefits compared to traditional paper-based exams. First and foremost, online assessments allow for immediate feedback, enabling students to gauge their performance and identify areas that require further attention. Through timely feedback, students can address their weaknesses and make necessary improvements, fostering a continuous learning process.

Moreover, technology-enabled assessments offer greater flexibility and efficiency in administration and grading. Online assessments can be administered remotely, eliminating logistical constraints and allowing students to complete assessments from any location. This flexibility is particularly beneficial for students who may have limited access to physical testing centers. Additionally, automated grading systems streamline the grading process, saving teachers valuable time and ensuring consistency in the evaluation of student responses. Adaptive testing is another significant advancement facilitated by technology in the realm of assessment. Adaptive testing refers to assessments where the difficulty level adjusts dynamically based on students' responses. Adaptive testing platforms utilize sophisticated algorithms that adapt the test's content and questions to match the individual's demonstrated knowledge and skills. This approach ensures a more accurate and comprehensive evaluation of students' capabilities. By tailoring the assessment to the specific needs and abilities of each student, adaptive testing provides a personalized and equitable evaluation experience, catering to the diverse learning profiles and levels of students.

Technology also offers opportunities for multidimensional assessment, beyond traditional forms of testing. With digital tools and platforms, students can demonstrate their understanding and skills through multimedia presentations, portfolios, and project-based assessments. These alternative assessment methods allow students to showcase their creativity, critical thinking, problem-solving, and collaboration skills, providing a more comprehensive view of their abilities. Additionally, technology facilitates the collection and analysis of assessment data on a large scale. With digital assessment platforms, educational institutions can gather extensive data on student performance, progress, and learning patterns. This data-driven approach enables educators and policymakers to gain insights into student strengths, weaknesses, and overall performance. By leveraging this data, informed decisions can be made to improve teaching practices, curriculum design, and educational policies, leading to continuous improvement in the education system.

In conclusion, technology revolutionizes assessment and evaluation practices in alignment with the NEP's focus on holistic and competency-based education. Online assessments provide timely feedback and flexibility, while adaptive testing ensures a personalized and comprehensive evaluation of students' knowledge and skills. The integration of technology also opens doors to alternative assessment methods, allowing students to showcase a broader range of competencies. Furthermore, technology facilitates data-driven decision-making by collecting and analyzing assessment data on a large scale. By embracing technology in assessment practices, the NEP 2020 promotes a more accurate, meaningful, and student-centered approach to evaluation, ultimately fostering holistic development and enhancing the quality of education.

Data-driven Decision Making

Data-driven decision making takes center stage in the National Education Policy (NEP) 2020, reflecting the recognition of the importance of utilizing educational data for informed policy and planning. Technology plays a pivotal role in enabling the collection, analysis, and interpretation of vast amounts of educational data, empowering policymakers to make evidence-based decisions that enhance the quality and relevance of education. The NEP 2020 emphasizes the value of educational data in understanding student performance and learning outcomes. Through technology-enabled systems, educational institutions can efficiently gather data on various aspects of students' academic journey, including assessments, attendance, and engagement. This comprehensive data provides valuable insights into individual student progress, patterns, and strengths, enabling educators to tailor their instruction and interventions to address specific needs.

Furthermore, the analysis of educational data allows for the identification of learning gaps and areas of improvement. By examining patterns and trends within the data, policymakers can pinpoint subjects, topics, or skills where students may be struggling or underperforming. This knowledge guides the development of targeted interventions, curriculum enhancements, and instructional strategies to address these gaps effectively. Data-driven insights enable educators to personalize learning experiences and provide tailored support, ensuring that every student has the opportunity to succeed. Technology also facilitates the evaluation of the effectiveness of educational initiatives and policies. By analyzing educational data, policymakers can assess the impact of various programs, interventions, and teaching methodologies on student outcomes. This evaluation helps policymakers identify successful practices and replicate them on a larger scale, while also identifying areas where improvements may be necessary. By using data to measure the effectiveness

of educational initiatives, resources can be allocated strategically, optimizing the outcomes for students and maximizing the return on investment.

Moreover, technology-driven data analysis enables policymakers to track and monitor educational progress on a broader scale. By aggregating and examining data across multiple schools, districts, or regions, policymakers can identify trends, patterns, and disparities in educational outcomes. This information informs the development of targeted policies and interventions to address inequalities, promote equitable access to quality education, and close achievement gaps. The NEP 2020 recognizes that leveraging technology for data analysis is critical for informed decision making in education. However, it is essential to ensure the ethical collection, storage, and use of educational data, respecting student privacy and data security. Striking a balance between utilizing data to inform decision making while safeguarding individuals' rights is of utmost importance in the implementation of data-driven policies. In conclusion, the NEP 2020 places a strong emphasis on data-driven decision making in education policy and planning. Technology facilitates the collection, analysis, and interpretation of educational data, providing valuable insights into student performance, learning gaps, and the effectiveness of educational initiatives. By leveraging technology for data analysis, policymakers can make informed decisions that enhance the quality and relevance of education. Data-driven insights ensure targeted interventions, personalized learning experiences, and equitable access to education, ultimately fostering improved educational outcomes for all learners.

Challenges and the Way Forward

Despite its immense opportunities, the integration of technology in education also presents several challenges that must be addressed for the successful implementation of the National Education Policy (NEP) 2020. Key challenges include infrastructure limitations, the digital divide, privacy concerns, and the need for digital literacy among teachers and students. However, through collaboration between stakeholders, including the government, educational institutions, and technology providers, and strategic investments in infrastructure, teacher training, and technology-based educational solutions, these challenges can be overcome to realize the vision of the NEP 2020. Infrastructure limitations pose a significant challenge to the effective integration of technology in education. Many schools and educational institutions, particularly in rural and remote areas, lack the necessary infrastructure to support digital learning. Insufficient access to reliable electricity, internet connectivity, and hardware devices hinders the seamless adoption of technology. Addressing infrastructure limitations requires concerted efforts from the

government and other stakeholders to invest in the development of robust digital infrastructure, ensuring that all educational institutions have the necessary resources to leverage technology for effective teaching and learning.

The digital divide exacerbates inequities in access to technology and internet connectivity. Students from marginalized communities, including those in remote areas and low-income households, face barriers in accessing digital resources and participating fully in digital learning experiences. Bridging the digital divide requires comprehensive strategies that focus on improving internet connectivity in underserved areas, providing affordable devices to students, and promoting digital inclusion initiatives that empower all learners to access and utilize technology effectively. Privacy concerns are another critical challenge associated with the integration of technology in education. Educational institutions must prioritize data privacy and security to protect sensitive student information from unauthorized access or misuse. Strict policies and protocols should be established to ensure compliance with data protection regulations and to safeguard the privacy of students and teachers. Collaboration between educational institutions, policymakers, and technology providers is essential to develop robust privacy frameworks and implement appropriate safeguards.

Digital literacy among teachers and students is crucial for effective technology integration. Teachers need support and training to develop digital pedagogical skills and utilize technology tools optimally. Likewise, students must be equipped with digital literacy skills to navigate online resources responsibly, critically evaluate information, and leverage technology for learning. Continuous professional development programs and teacher training initiatives, supported by collaboration between educational institutions and technology providers, can enhance digital literacy skills among teachers. Similarly, comprehensive digital literacy programs for students should be implemented to ensure they can utilize technology safely and effectively. To overcome these challenges, collaboration between various stakeholders is paramount. The government, educational institutions, technology providers, and other relevant parties should work together to develop strategies and allocate resources effectively. Collaboration can involve public-private partnerships to drive infrastructure development, joint initiatives for teacher training and professional development, and collaborations to create research and development centers that focus on technology-based educational solutions aligned with the objectives of the NEP 2020.

Investment in infrastructure is essential to create a robust digital ecosystem that supports technology integration in education. Adequate funding should be allocated to develop reliable internet connectivity, provide devices to students, and upgrade

digital infrastructure in educational institutions. Additionally, investments in research and development of technology-based educational solutions can drive innovation, supporting the NEP's objectives and ensuring the availability of effective and contextually relevant educational technologies. In conclusion, while the integration of technology in education presents challenges, strategic collaborations and investments can help overcome them. Addressing infrastructure limitations, bridging the digital divide, ensuring data privacy, and promoting digital literacy are crucial for the successful implementation of the NEP 2020. Through collaborative efforts between the government, educational institutions, and technology providers, a supportive ecosystem can be created, facilitating the effective integration of technology in education and enabling the realization of the NEP's vision for equitable, inclusive, and high-quality education.

Conclusion

The National Education Policy (NEP) 2020 paints a visionary picture of an education system that harnesses the potential of technology to promote inclusivity, equity, and quality. Technology serves as a transformative force, revolutionizing the way education is accessed, delivered, and evaluated. By providing widespread access to educational resources, enabling personalized learning experiences, empowering teachers, facilitating assessment and evaluation, and supporting data-driven decision making, technology becomes the catalyst for educational transformation envisioned by the NEP 2020. Embracing technology as a powerful tool is essential for the successful implementation of the NEP's vision. First and foremost, technology provides students with unprecedented access to a vast array of educational resources. Online platforms, digital libraries, and repositories of educational materials ensure that students, regardless of their geographical location, can tap into a wealth of knowledge and information. This broadens their horizons and enhances their learning experiences by exposing them to diverse perspectives, up-to-date content, and interactive learning resources.

Moreover, technology enables personalized learning experiences tailored to individual student needs. Adaptive learning platforms, powered by intelligent algorithms, analyze student performance, identify strengths and weaknesses, and adapt instructional content accordingly. This personalized approach ensures that students receive targeted support, progress at their own pace, and maximize their learning potential. By catering to individual learning styles, interests, and abilities, technology promotes inclusive education that respects and nurtures the unique qualities of every student. Teachers play a central role in the NEP 2020, and technology empowers them to become more effective and innovative educators.

Through technology-enabled platforms, teachers gain access to a wide range of teaching tools, resources, and professional development opportunities. Online training programs, webinars, and virtual collaboration platforms enable teachers to enhance their pedagogical skills, explore new instructional strategies, and share best practices. Technology supports teacher empowerment by fostering a collaborative community of educators, facilitating knowledge exchange, and promoting continuous professional growth.

Assessment and evaluation are essential components of the NEP 2020, and technology revolutionizes these processes. Online assessments provide immediate feedback to students, enabling them to gauge their understanding, track their progress, and identify areas for improvement. Additionally, technology facilitates adaptive testing, where assessments dynamically adjust the difficulty level based on individual performance. This ensures a comprehensive evaluation of students' knowledge and skills, going beyond mere memorization and promoting a deeper understanding of concepts. Data-driven decision making is at the core of the NEP 2020, and technology serves as a powerful tool in this regard. Through technology-enabled data collection, analysis, and interpretation, policymakers gain insights into student performance, learning outcomes, and educational trends. This data informs evidence-based decision making, allowing policymakers to identify areas for improvement, allocate resources effectively, and design targeted interventions. By leveraging technology for data-driven decision making, the NEP 2020 aims to enhance the overall quality and relevance of education.

In conclusion, the NEP 2020's vision for an inclusive, equitable, and high-quality education system can be realized through the transformative power of technology. By providing access to educational resources, enabling personalized learning experiences, empowering teachers, facilitating assessment and evaluation, and supporting data-driven decision making, technology becomes the driving force behind educational transformation. Embracing technology as a powerful tool is paramount for India to redefine education and create a dynamic learning ecosystem that equips students with the knowledge, skills, and competencies needed to navigate the challenges of the future. The successful implementation of the NEP 2020's vision hinges on harnessing the potential of technology and leveraging it as an enabler for educational excellence.

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CYBER SECURITY IN THE INDIAN CONTEXT: EXPLORING DATA BREACH VULNERABILITIES AND PROTECTIVE MEASURES

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Abstract

India has made remarkable strides in the field of information technology, positioning itself as a global hub for innovation and technological advancement. Over the past decade, the country has emerged as a global hub for IT services, software development, and technology innovation. India continues to play a pivotal role in shaping the future of the information technology industry. But it has also presented challenges, including an increased risk of data breaches. Data breaches have become a global concern in the digital age, and India is no exception. With the rapid growth of the information technology sector and the increasing reliance on digital systems, India has witnessed a rise in data breaches over the years. This paper discusses about the multifaceted landscape of data breach vulnerabilities in India, examining the intricate interplay of technological, human, and regulatory factors that contribute to this pervasive challenge.

Keywords: Cyber security, Data breach, Threats.

Introduction

A data breach is a security incident in which unauthorized parties gain access to sensitive, protected or confidential data. This could include personal information like names, addresses, social security numbers, credit card details, and more. Data breaches can occur due to various reasons, including cyberattacks, hacking, phishing, accidental exposure, or insider threats. Some potential impacts of a data breach include identity theft, financial losses, reputational damage, legal and regulatory penalties, and loss of customer trust.

The risk of data breaches in India, as in any country, depends on various factors including the Cyber security measures in place, the technological landscape, the prevalence of cyber threats, and the level of awareness among individuals and organizations.

Factors influence the data breaches in India:

- **Weak or stolen passwords:** This is one of the most common causes of data breach. Stolen/compromised credentials: This is when hackers obtain or guess the usernames and passwords of users or employees, and use them to access sensitive data or systems. This is the most expensive cause of data breach in India, costing Rs 21.6 crore on average.

- **Phishing:** This is when hackers send fraudulent emails or messages that trick users or employees into clicking on malicious links or attachments, or revealing their personal or financial information. This is the second most expensive cause of data breach in India, costing Rs 20.6 crore on average.
- **Malware:** Malware is a type of software that can be used to steal data, damage systems, or disrupt operations. It can be spread through email attachments, malicious websites, and other means.
- **Social engineering:** Social engineering is a technique used by attackers to trick people into giving up their personal information or clicking on malicious links. It is a very effective way to gain access to data.
- **Insider threats:** Insider threats can occur when employees or contractors misuse their access privileges to steal data or disrupt operations. Insider threats can be difficult to detect and prevent.
- **Lack of awareness:** Many people are not aware of the risks of data breaches or how to protect themselves. This lack of awareness can make them more vulnerable to attack.
- **Digital transformation:** This is when organizations adopt new technologies and processes to improve their efficiency and competitiveness, such as cloud computing, artificial intelligence, and internet of things. This also increases the amount and complexity of data that needs to be protected, as well as the potential attack surface for hackers.
- **Remote work:** This is when employees work from home or other locations outside the office, due to the Covid-19 pandemic or other reasons. This also poses challenges for data security, as employees may use unsecured networks or devices, or share confidential information through unencrypted channels.
- **Third Party Influences:** Many data breaches occur through third-party vendors and supply chain partners. The security practices of these partners can indirectly affect the risk of breaches for Indian organizations.

These factors underscore the importance of addressing both technical and human aspects of Cyber security to safeguard sensitive data and minimize the risk of data breaches in the Indian context.

Literature Review

Data breaches are a serious and growing threat to the security and privacy of individuals and organizations in India. Several studies have examined the costs and causes of data breaches in India, as well as the legal and regulatory framework for data protection and privacy. The major data breaches in India include the BigBasket data breach in 2020, in which the personal data of over 1.8 crore customers was leaked, and the Unacademy data breach in 2020, in which the personal data of over 2 crore users was compromised [3][4].

The increasing number of data breaches in India is a serious concern, as it can have a significant impact on individuals and businesses. The stolen data can be used

for identity theft, fraud, and other crimes. To protect themselves from data breaches, individuals and businesses should take steps to improve their Cyber security practices. This includes using strong passwords, enabling two-factor authentication, and keeping their software up to date [5].

A study by Jain et al. reviewed the existing literature and open data sources related to Cyber security and cyber risk, focusing on the datasets used to improve academic research and policy making. The study identified various types and sources of data on Cyber security incidents, such as breach reports, vulnerability disclosures, threat intelligence feeds, cyber insurance claims, etc. The study also evaluated the quality and limitations of these data sources, such as coverage, reliability, accessibility, etc. The study also provided suggestions for enhancing data availability and usability for Cyber security research [6]. These studies show that data breaches are a complex and multifaceted phenomenon that require a holistic and multidisciplinary approach to understand and address them. They also show that there is a need for more effective policies and practices to prevent and mitigate them.

Data Breach Vulnerabilities

In India, the vulnerability to such breaches is influenced by a complex interplay of technological, social, and regulatory factors. This vulnerability not only jeopardizes the privacy and security of individuals but also poses significant risks to businesses, the government, and national security.

Table 1: Top 5 countries reported data breaches

Country	No. of data breaches
United States	1,862
Russia	751
China	627
India	400
United Kingdom	271

The data is from the Privacy Rights Clearinghouse [1], a non-profit organization that tracks data breaches. The table 1 shows the top 5 countries with the most reported data breaches in 2022. The table only includes data breaches that affected more than 1,000 people. The United States had the most data breaches reported in 2022, followed by Russia, China, India, and the United Kingdom. But, the data from Surfshark[2] did not include India in the top 5 countries for data breaches in Q3 2022.

Protective Measures

The increasing number of data breaches in India is a serious concern. It is important for individuals and businesses to take steps to protect themselves from data breaches. Here are several protective measures that individuals, organizations, and the government can employ to mitigate the risk of data breaches:

Digital Personal Data Protection Bill, 2022

The Digital Personal Data Protection Bill 2022, drafted by the Ministry of Electronics and Information Technology, is designed to establish a comprehensive framework for the protection of personal data in India. It outlines the rights and responsibilities of individuals (referred to as Digital Nagrik) regarding their personal data and sets obligations for organizations to lawfully handle this data. A significant feature is the creation of a Data Protection Board of India, which would be responsible for ensuring compliance with the bill's provisions, imposing penalties for violations, and performing other functions delegated by the Central Government. Currently, the Information Technology (Reasonable Security Practices and Procedures and Sensitive Personal Data or Information) Rules, 2011, govern data protection practices, mandating security measures and privacy policies for organizations handling personal data. The new bill represents a significant step forward in India's data protection landscape, addressing emerging challenges in the digital era and enhancing data security and privacy for citizens [7].

The other major protective measures to tackle the data breach are:

Encryption: Utilize robust encryption protocols to secure data both in transit and at rest. Encryption ensures that even if data is intercepted or stolen, it remains unintelligible to unauthorized parties.

Data Backups: Implement a robust data backup and recovery strategy to ensure data availability even in the event of a breach or ransomware attack.

Firewalls Systems: Employ state-of-the-art firewalls and intrusion detection systems to monitor network traffic for suspicious activity and block potential threats.

Cyber security Awareness: The level of Cyber security awareness, practices, and investments among Indian businesses and individuals can impact the likelihood of data breaches. Organizations that prioritize Cyber security are generally better equipped to prevent and respond to breaches.

Digital Literacy: The level of digital literacy among the population can influence the likelihood of falling victim to cyberattacks such as phishing, which is often used to initiate data breaches.

Conclusion

Data breaches are a serious and growing threat to the security and privacy of individuals and organizations. The increasing number of data breaches is a serious concern, as it can have a significant impact on individuals and businesses. To protect from data breaches, individuals and businesses should take steps to improve their Cyber security practices. The Digital Personal Data Protection Bill 2022 is a significant step forward in India's data protection landscape. The bill addresses emerging challenges in the digital era and enhances data security and privacy for citizens. By adopting the protective measures and maintaining a proactive stance on Cyber security, India can work toward fortifying its defences against data breaches and ensuring the security and privacy of its digital assets.

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A STUDY ON PROBLEMS, PROSPECTS AND DEVELOPMENT OF WOMEN ENTREPRENEURSHIP IN INDIA

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Abstract

Development has economic, social and political dimensions and is incomplete without the development of women who constitute about 50 per cent of total population. So, contribution of women is essential in economic activities for healthy nation building. When we speak about the term "Women Entrepreneurship" Women are one of the most relevant untapped resources if you talk about entrepreneurship. Female entrepreneurship is gaining attention and importance in light of the evidence of the importance of new business creation for economic growth and development. Entrepreneurship refers to the act of setting up a new business so as to take advantages from new opportunities. Entrepreneurs are responsible for shaping the economy and they help in creation of new wealth and new jobs by inventing new products, process and services. We all understand that economic development of the today's woman is crucial for economic development of any country specially a country like India

Women's entrepreneurship has been recognized during the last decade as a new jobs and success for themselves and others also. By providing this, they are giving different ideas, jobs and solutions to management, organization and business problems as well as women exploitation. Although the number of women entrepreneurs are very less but they are doing their best. Because of the male dominated society, women entrepreneurs are largely neglected in normal life of society and basically a woman and her family members have a concept for job to her as a teacher, tutor or government officer/worker. They are unable to accept them as R&D in charge, IAS/PCS/CID, business lady, factory maker, engineer, etc. But today if we see the backside of mirror, then we will find successful women entrepreneurs. We can collect the full profile of women entrepreneurs, their demographic information barriers to start-up, growth and problems to perform their duties in family as well as in society.

Keywords: *Women Entrepreneurship, women exploitation, economic development, dominated society*

Introduction

Entrepreneurship is necessary to initiate the process of economic development of both developed and developing countries as it is the back bone of economy of any country. Entrepreneurship refers to combining the available resources of production in such a new way that it produces the goods and services more satisfactory to the customers.

Entrepreneur is a catalytic agent of change. It is also instrumental in sustaining the process of economic development. Every country tries to achieve economic development for prosperity and better life standard of its people. Development has economic, social and political dimensions and is incomplete without the development of women who constitute about 50 per cent of total population. So, contribution of women is essential in economic activities or healthy nation building. A person who assumes and bears all types of risks involved in an enterprise, who organizes the various inputs or factors of production and who innovates new ideas, concepts, strategies and methodology in business from time to time is known as Entrepreneur.

Women Entrepreneurship

When we speak about the term “Women Entrepreneurship” we mean, an act of business ownership and business creation that empowers women economically, increases their economic strength as well as position in society. Hence women-entrepreneurs have been making a considerable impact in all most all the segments of the economy which is more than 25% of all kinds of business. In India “Entrepreneurship” is very limited amongst women especially in the formal sector, which is less than 5% of all the business. Women are one particularly understudied group of entrepreneurs. We know very little about female entrepreneurs, and our ignorance of this important demographic is a serious blind spot in any effort to increase the total number of entrepreneurs participating in our economy.

Today, more and more women are undertaking various economic activities. Female entrepreneurs are active at all levels domestically, regionally and globally. Women entrepreneurs encounters only one third of all entrepreneurs. In the era of globalization, the challenges are far greater for women entrepreneurs. They are playing very important role in socio-economic development of all countries. Because of their participation, global economy is being changed at present. All over the world, it is estimated that approximately one third of the business organizations are owned by women. In India, the position is near about the same. The precious contribution of women in the area of entrepreneurship can be summarized as:

1. Promotion of capital formation by mobilizing the idle saving of the public
2. Creation of immediate employment so it helps to reduce unemployment problem
3. Promotion of balanced regional development
4. Encourage effective mobilization of capital and skill, which might remain unutilized
5. Promotion of India's export trade.

Characteristics of Woman Entrepreneur in India

A woman or a group of women manages the whole business of enterprise. She prepares various plans and executes the maunder her own supervision and control. A woman entrepreneur takes calculated risk. She faces uncertainty confidently and assumes risk. She has to tie up capital and wait for good returns. The most critical skill required for industrial development is the ability of building a sound organization. A woman entrepreneur assembles, co-ordinates, organizes and manages the other factors namely land, labour and capital. It is essential to be a self confident for a woman entrepreneur. She should have faith in herself and in her abilities. The main function of a woman entrepreneur is to make decision. She takes various decisions regarding the activities of her enterprise. She decides about the type of business to be done and the way of doing it. A woman entrepreneur must be clear and creative in decision making process.

A distinguishing feature of a woman entrepreneur is the willingness to work hard. She has to follow the principle, "Hard-work is the key to success". A woman entrepreneur must be optimistic. She should approach her venture with a hope of success and attitude for success rather than with a fear of failure.

Women entrepreneurs face the adversities boldly and bravery. She has faith in herself and attempts to solve the problems even under great pressure. A woman entrepreneur is energetic, single-minded, having a mission and a clear vision. She should be a lady of creative thinking and analytical thinking. She must be intelligent, adaptable and problem solver. Leadership quality is one of the most important characteristic of a woman entrepreneur. It is the process of influencing and supporting others to work enthusiastically towards achieving objectives.

Problems of Women Entrepreneurship in India

Problem of Finance

Finance is regarded as "life blood" for any enterprise, be it big or small. However, women entrepreneurs suffer from shortage of finance on two counts. Firstly, women do not generally have property on their names to use them as collateral for obtaining funds from external sources. Thus, their access to the external sources of funds is limited. Secondly, the banks also consider women less credit- worthy and discourage women borrowers on the belief that they can at any time leave their business. Given such situation, women entrepreneurs are bound to rely on their own savings, if any and loans from friends and relatives who are expectedly merger and negligible. Thus, women enterprises fail due to the shortage of finance.

Scarcity of Raw Material

Most of the women enterprises are plagued by the scarcity of raw material and necessary inputs. It is added to this are the high prices of raw material, on the other.

Stiff Competition

Women entrepreneurs do not have organization set-up to pump in a lot of money for canvassing and advertisement. Thus, they have to face a stiff competition for marketing their products with both organized sector and their male counterparts. Such a competition ultimately results in the liquidation of women enterprises.

Family Ties

In India, it is mainly a woman's duty to look after the children and other members of the family. Man plays a secondary role only. In case of married woman, she has to strike a fine balance between her business and family. Her total involvement in family leaves little or no energy and time to devote for business. Support and approval of husbands seem necessary condition for women's entry into business. Accordingly, the educational level and family background of husbands positively influence women's entry into business activities.

Lack of Education

In India, majority of women are still illiterate. Illiteracy is the root cause of socio-economic problems. Due to the lack of education, women are not aware of business, technology and market knowledge. Also, lack of education causes low achievement motivation among women. Thus, lack of education creates problems for women in the setting up and running of business enterprises.

Male Dominated Society

Male chauvinism is still the order of the day in India. The constitution of India speaks of equality between genders. But, in practice women are looked upon as able i.e. weak in all respects. Women suffer from male reservations about a woman's role, ability and capacity and are treated accordingly. In nutshell, in the male dominated Indian society, women are not treated equal to men. This in turn, serves as a barrier to women entry into business.

Low risk- Bearing Ability

Women in India lead a protected life. They are less educated and economically not self-dependent. All these reduce their ability to bear risk involved in running an enterprise. Risk bearing is a nessesential requisite of a successful entrepreneur. In addition to above problems, inadequate infrastructural facilities, shortage of power, high cost of production, social attitude, low need for achievement and socio-economic constraints also hold the women back from entering into business.

Marketing Problems

During the process of marketing of products women entrepreneurs faced certain problems viz. poor location of shop, lack of transport facility and tough competition from larger and established units.

Production Problems

Production problems faced by maximum women are non-availability of raw material. Non-availability of raw material is one of the reasons to the slow growth of women entrepreneurs. Other production problems are non-availability of machine or equipment, lack of training facility and non availability of labour, high cost of required machine or equipment.

Health Problems

Major health problems faced by women entrepreneurs were tension, backache, eyestrain fatigue and headache. It is found that women feeling the problem of feeling fatigued after returning home, lack of rest and sleep and heavy schedule. Enterprise. Risk bearing is an essential requisite of a successful entrepreneur. In addition to above problems, inadequate infra structural facilities, shortage of power, high cost of production, social attitude, low need for achievement and socio-economic constraints also hold the women back from entering into business.

Financial Problems

Finance is a most important aspect of any business. Non availability of long-term finance, regular and frequent need of working capital and long procedure to avail financial help is found to be the financial problems faced by women

Suggestions for the Development of Women Entrepreneurship in India

Right efforts from all areas are required in the development of women entrepreneurs and their greater participation in the entrepreneurial activities. Entrepreneurship basically implies being in control of one's life and activities and women entrepreneurs need to be given confidence, independence, and mobility to come out of their paradoxes.

The following measures are suggested to empower the women to seize various opportunities and face challenges in business.

Finance Cells

A large number of various finance cells may be open to provide easy finance to women entrepreneurs. These special cells should provide finance to women entrepreneurs at low and concessional rates of interest and on easy repayment

facilities. Even these finance cells should be manned by women officers and clerks. Efforts should be made to provide finance at the local level.

Marketing Co-operatives

Marketing co-operatives should be established to encourage and assist women entrepreneurs. Government should give preference to women entrepreneurs while purchasing their requirements. These marketing co-operatives will help the women entrepreneurs to sell their products on remunerative prices. This will help in eliminating the middlemen. Supply of raw-materials: The required, scarce and imported raw-materials should be made available to women entrepreneurs at priority basis at concessional rate.

Educational and Awareness

The educational and awareness programmes should be arranged to change the negative social attitudes towards women. The attitude of elders needs to be changed about the potential of girls and their due role in society.

Training Facilities

Training and development programmes play a very essential role for the development of entrepreneurship. Special training schemes should be so designed that women can get full advantages. Mobile training centres, part time training facilities etc. should be offered to attract more and more women to the training centres.

Develop a Blue Print

Wesman said one of the top issues she experiences with women entrepreneurs is that they lack having a set plan in place because so many women fall into their business accidentally. "They seem to fall into the business because it's something they like doing, so they don't create a specific plan or strategy," she said. Wesman advised all women entrepreneurs to write up a business blue print when starting out that includes a clear description of the product or service, their target audience and how the business will be run on a daily basis. This blueprint should also touch on the specific responsibilities of the business owner and employees, as well as an estimate of what it will cost to run the business in the first year.

Team Building

Many female entrepreneurs try to handle every aspect of the business alone, according to Wesman, and that's a recipe for failure. It's important that female entrepreneurs surround themselves with team members that have different

strengths and expertise that can help run a successful business. Women think they can do it all themselves, and aren't thinking about teambuilding and tapping resources the way that men. Men in the business world tend to realize that, whereas women are used to multitasking.

Build Relationships

Women often try to build relationships with prospective clients or customers, which can set themselves up for disappointment, Wes man said. "When they can't make the sale they take it too personally because it was a relationship they tried to build," she said. "Instead of stepping back and thinking, 'what did I learn from that sales experience?' or 'how can I use this to improve my next sales experience?'" Wes man blames this on how women have been conditioned in society, and being uncomfortable with competition and wanting to be liked. "Then you take it really personally, because you are trying to sell based on people liking you," Wes man said. She said women need to build relationships, but shouldn't be scared to be competitive when pitching sales. Under-pricing services: Money can be a touchy subject for many women, Wes man said, and many have trouble discussing pricing terms. This uneasiness often leads female business owners to under value their products or services. "It does not understand what it actually costs you to produce a product, or what it costs you to deliver a service," Wes man said. "Women also under price themselves in the workplace, and the same thing happens when you are an entrepreneur."

Hiding from Cash flow Issues

Managing cash flow and following up on owed money and payments is critical to every successful business, but women tend to be less assertive when it comes to collecting money, according to Wes man. "This goes along with the issue of it being unladylike, or not feminine to discuss money, or think about money, or to collect it," she said. Owners need to face those debtors head on, and get what they are due.

Getting too Close with Employees

While many small businesses adopt that "family" mentality, female entrepreneurs are often very guilty of getting too close with their workers, Wes man said. They treat employees like family and friends," she said. "It's about having a good business relationship, but not getting involved in too personal relationship." When a relationship reaches that point, it becomes harder to make decisions in the best interest of the business, she said.

Solution for the Better Conditions of Women Entrepreneurs

A specific solution for solving women's difficulties for obtaining financing has been micro-financing. Microfinance is financial institution that has become extremely popular especially in developing economies even if there are such programmes in the European Union and the United States. This example of well known programmes is the pioneering gram men bank in Bangladesh. The Bancosolodario (Bancosol) in Bolivia and the Bank Rakyat in Indonesia. If women can be more successful than men in service sector then they can be in business sector also. They have to be bold, confident and capable of doing every type of work and also have patient when others are passing comments about different financial institutions such as banks, mutual funds investment are providing funds to finance them in the business.

Conclusion

It is observable that women entrepreneurs have proved to be a strong driving force in today's corporate world. They are competent to balance their duties of both motherhood and entrepreneurship but they comprise of almost half of all businesses owned today. Indian women and laws guaranteed equal rights of participation in political process and equal opportunities and rights in education and employment were enacted. But unfortunately, the government sponsored development activities have benefited only a small section of women i.e. the urban middle class women. Women sector occupies nearly 45% of the Indian population. At this juncture, effective steps are needed to provide entrepreneurial awareness, orientation and skill development programs to women. Woman can pick up a job any day, but if she becomes an entrepreneur she can provide a livelihood to 10 more women at least...!! Highly educated, technically sound and professionally qualified women must be encouraged for managing their own business, rather than being employed in any outlets. The uncultivated talents of young women can be identified, trained and exploited for various types of industries to increase the productivity in the industrial sector as well as the nation. Now a days even after facing so many obstacles The Indian women is now becoming educated and economically independent. Women entrepreneurs face so many problems from financial, marketing, health, family, and other problems point of view. The governments and financial institutions must enforce some measurable guidelines for women entrepreneurs from time to time. Women entrepreneurship must be moulded properly with entrepreneurial traits and skills to meet the changes in trends, challenges of the global markets and also be competent enough to sustain and strive for excellence in the entrepreneurial arena.

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DIGITAL PAYMENTS AND FINANCIAL INCLUSION: EMPOWERING INDIVIDUALS AND DRIVING ECONOMIC GROWTH

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Abstract

Digital payments have revolutionized the financial landscape, offering fast, convenient, and secure transactions. Beyond their convenience, digital payments have played a vital role in promoting financial inclusion by providing access to formal financial services for the unbanked and underbanked populations. This essay explores the impact of digital payments on financial inclusion, highlighting the benefits, challenges, and strategies for achieving inclusive and sustainable economic growth. Digital payments empower individuals by bridging the gap between traditional banking services and underserved populations, allowing them to participate in the formal economy, access credit facilities, and manage their finances effectively. Financial inclusion, facilitated by digital payments, promotes socio-economic development, as it enables individuals and businesses to access financial services, save, invest, and manage risks. The benefits of digital payments include increased access to financial services, improved transparency and accountability, and enhanced financial management. However, challenges such as digital literacy, the digital divide, and data security must be addressed to ensure widespread financial inclusion. Collaborative efforts among governments, financial institutions, and technology providers are crucial to create an enabling regulatory environment, develop user-friendly digital payment solutions, and invest in digital infrastructure. By harnessing the power of digital payments and promoting financial inclusion, societies can empower individuals, drive economic growth, and build a more inclusive and sustainable future.

Keywords: Digital payments, Financial inclusion, Empowering individuals, Economic growth, Digital transformation

Introduction

In recent years, the rise of digital payment systems has brought about a significant transformation in the way financial transactions are conducted worldwide. This shift has revolutionized the financial landscape by introducing faster, more convenient, and secure modes of conducting transactions. Digital payments have emerged as a game-changer, offering individuals and businesses a wide array of electronic payment options, such as mobile wallets, online banking,

and digital payment apps. One of the most profound impacts of digital payments is their role in driving financial inclusion. Financial inclusion refers to the accessibility and availability of financial services to all segments of society, particularly the unbanked and under banked populations. Traditional banking services have often been inaccessible to these individuals due to various barriers, such as lack of proximity to bank branches, high costs, and documentation requirements. However, the emergence of digital payment systems has helped bridge this gap and provided opportunities for financial inclusion.

Digital payments have empowered individuals by offering them access to formal financial services that were previously out of reach. Mobile wallets, for example, allow individuals to store and transfer funds electronically using just their smartphones. This reduces their dependence on physical cash and provides a secure means of conducting transactions. Moreover, digital payment platforms offer convenient ways to make payments for goods and services, both online and offline, without the need for physical currency. Financial inclusion, facilitated by digital payments, plays a crucial role in driving economic growth. When individuals and businesses have access to formal financial services, they can participate more actively in the economy. Digital payments enable businesses to accept electronic payments, opening up opportunities for e-commerce and expanding customer bases. This, in turn, leads to increased economic activity, job creation, and improved living standards. Digital payments also bring about efficiency gains in the financial system. By reducing the reliance on cash, digital payments contribute to a more transparent and accountable financial ecosystem. Digital transactions leave a digital trail, making it easier to track and monitor financial activities. This helps in combating illicit financial activities, reducing corruption, and improving overall financial integrity.

However, along with the benefits, digital payments also present certain challenges that need to be addressed to ensure inclusive and sustainable economic growth. One of the primary challenges is the digital divide, which refers to the gap in access to digital infrastructure and connectivity. To achieve widespread financial inclusion, efforts must be made to expand digital infrastructure, particularly in underserved areas, and improve internet connectivity to ensure equal access to digital payment systems. Another challenge is the need for digital literacy and awareness. Many individuals, especially in developing countries, may lack the necessary knowledge and skills to adopt and use digital payment platforms effectively. Educational programs and initiatives should be implemented to enhance digital literacy and educate individuals on the benefits and safe usage of digital payment systems. Furthermore, ensuring the security and privacy of digital transactions is crucial. The protection of personal and financial information is of

utmost importance to build trust in digital payment systems. Implementing robust cyber security measures, data encryption techniques, and regulatory frameworks is essential to address concerns related to data security and privacy. In conclusion, the advent of digital payment systems has transformed the financial landscape, offering faster, more convenient, and secure modes of conducting transactions. Digital payments play a vital role in driving financial inclusion by providing access to formal financial services for the unbanked and under banked populations. Financial inclusion, in turn, fuels economic growth by enabling individuals and businesses to actively participate in the economy. However, challenges such as the digital divide, digital literacy, and data security must be addressed to ensure inclusive and sustainable economic growth. By embracing digital payments and implementing strategies to overcome these challenges, societies can empower individuals, drive economic growth, and build a more inclusive and prosperous future.

Digital payments have emerged as a modern and convenient alternative to traditional cash transactions. With the advent of technology and the widespread adoption of smartphones, improved internet connectivity, and the availability of affordable digital payment infrastructure, conducting financial transactions electronically has become increasingly accessible and popular. Digital payments encompass a range of electronic transaction methods that eliminate the need for physical cash. Mobile wallets, for example, allow users to store their payment information securely on their smartphones and make purchases by simply tapping or scanning their devices at payment terminals. Internet banking enables individuals to conduct financial transactions through online platforms provided by their banks, allowing them to transfer funds, pay bills, and manage their accounts conveniently from their computers or mobile devices. Mobile banking applications extend these capabilities to smartphones, providing users with a seamless and on-the-go banking experience. Additionally, digital payment apps provide platforms for peer-to-peer transfers, online shopping, and seamless integration with various merchants and service providers.

The widespread adoption of smartphones has been a significant driver of digital payments. With smartphones becoming more affordable and accessible, a larger portion of the population has gained access to digital payment capabilities. The increasing penetration of internet connectivity, both through mobile networks and Wi-Fi, has further enabled individuals to perform financial transactions on the go. As a result, digital payments have gained popularity as a quick, convenient, and secure alternative to cash transactions. Moreover, the availability of affordable digital payment infrastructure has facilitated the growth of digital payments. Payment service providers, financial institutions, and technology companies have

invested in developing robust payment ecosystems, creating user-friendly interfaces, and ensuring the security of transactions. They have collaborated with merchants and service providers to enable digital payment acceptance, both online and offline, making it easier for individuals to use digital payment methods in their day-to-day transactions. The growth of digital payments has also been accelerated by the benefits they offer to both consumers and businesses. Digital payments provide convenience, as individuals can make payments anytime and anywhere using their mobile devices or computers. They eliminate the need to carry physical cash, reducing the risk of loss or theft. Additionally, digital payments offer security features such as encryption and two-factor authentication, ensuring that transactions are protected from unauthorized access. Furthermore, digital payments enable individuals to track and manage their expenses more efficiently, as transaction records are typically stored electronically and can be easily accessed and analyzed. In conclusion, digital payments have gained prominence as a convenient and secure method of conducting financial transactions. The widespread adoption of smartphones, improved internet connectivity, and the availability of affordable digital payment infrastructure have been instrumental in their growth. Digital payment methods such as mobile wallets, internet banking, mobile banking, and digital payment apps have transformed the way individuals and businesses transact. With their convenience, security, and accessibility, digital payments are likely to continue expanding and shaping the future of financial transactions.

One of the most significant advantages of digital payments is their potential to bridge the gap between individuals who have limited access to formal financial institutions and the benefits of traditional banking services. For many people around the world, particularly in developing countries and underserved areas, accessing traditional banking services can be challenging due to factors such as geographical constraints, lack of infrastructure, and high costs associated with maintaining a bank account. Digital payment systems have emerged as a powerful tool to address these challenges and promote financial inclusion. They enable individuals to store, send, and receive money electronically, providing a means for financial transactions without the need for a traditional bank account. Mobile wallets, for example, allow users to store funds digitally and conduct transactions through their mobile devices. These wallets can be accessed and managed by individuals who may not have access to physical banking infrastructure or formal banking services.

By empowering unbanked and under banked populations, digital payment systems facilitate their participation in the formal economy. Individuals who previously relied on cash-based transactions now have the means to engage in digital commerce, make online purchases, and engage in e-commerce activities. This

inclusion in the formal economy opens up a world of opportunities, as it allows individuals to access financial services, build a financial history, and establish creditworthiness. Furthermore, digital payments enable individuals to access credit facilities and manage their finances more effectively. By using digital payment systems, individuals can demonstrate their financial behaviors and build a transaction history. This information can be utilized by financial institutions and lenders to assess creditworthiness and offer access to credit, even to those without traditional collateral or credit history. Digital payments also provide individuals with tools for managing their finances, such as budgeting and expense tracking apps, which promote financial literacy and responsible financial management.

Digital payments have a transformative impact on the lives of individuals and communities by reducing the reliance on cash and providing opportunities for financial inclusion. By expanding access to financial services, digital payments empower individuals to save, invest, and manage their finances more effectively. This, in turn, contributes to economic growth, as increased financial inclusion leads to higher productivity, increased entrepreneurial activities, and greater financial stability within communities. However, it is important to address challenges such as digital literacy, awareness, and infrastructure development to ensure that the benefits of digital payments reach all segments of society. Efforts should be made to provide education and training on digital payment systems and their benefits. Governments, financial institutions, and technology providers need to work collaboratively to improve internet connectivity, enhance digital infrastructure, and develop user-friendly and secure digital payment solutions that cater to the specific needs of unbanked and underbanked populations. In conclusion, digital payment systems have the potential to bridge the gap between individuals who have limited access to formal financial institutions and the benefits of traditional banking services. By enabling electronic storage, transfer, and receipt of funds, digital payments empower unbanked and underbanked populations to participate in the formal economy, access credit facilities, and manage their finances more effectively. Financial inclusion, facilitated by digital payments, promotes economic growth, fosters entrepreneurship, and enhances the overall well-being of individuals and communities. Efforts to address challenges and promote digital literacy, awareness, and infrastructure development are crucial to ensuring that the transformative power of digital payments reaches all individuals, regardless of their access to traditional banking services.

Financial inclusion is a vital component of socio-economic development, as it provides individuals and businesses with access to essential financial services, enabling them to save, invest, manage risks, and participate fully in the economy.

However, many individuals, particularly those in underserved areas and marginalized communities, have historically been excluded from formal financial systems. Digital payments have emerged as a powerful tool in promoting financial inclusion by providing individuals with a secure and convenient means of transacting, saving, and accessing financial services. Mobile wallets, for instance, have revolutionized the way individuals manage their finances. With a mobile wallet app installed on their smartphones, users can store money digitally, make payments for goods and services, and transfer funds to other individuals or businesses. This eliminates the need for physical cash transactions, which can be risky and costly to handle, especially in areas with high crime rates or limited access to banking infrastructure. Mobile wallets offer a secure alternative, reducing the risks associated with carrying cash and providing individuals with greater peace of mind.

Moreover, digital payment platforms facilitate the integration of previously excluded individuals into the formal banking system. By using digital payment systems, individuals can establish a digital transaction history, which can be leveraged by financial institutions to assess creditworthiness and offer access to credit facilities. This is particularly significant for individuals who may not have traditional collateral or credit history, as it opens up opportunities for them to access credit and engage in entrepreneurial activities. By building a financial history through digital payments, individuals can establish their financial credibility and gain access to financial services that were previously out of reach. Digital payments also enhance financial inclusion by offering greater convenience and accessibility. Traditional banking services often require individuals to visit physical branches during limited operating hours, which can be challenging for those who live in remote areas or work irregular hours. Digital payment systems, on the other hand, are available 24/7 and can be accessed from anywhere with an internet connection. This empowers individuals to manage their finances conveniently and efficiently, irrespective of their geographical location.

Furthermore, digital payments enable individuals to access a wide range of financial services beyond basic transactions. They can easily save money electronically, set up automated recurring payments, and track their expenses through digital tools and apps. This promotes financial literacy and responsible financial management, empowering individuals to make informed decisions and improve their financial well-being. In conclusion, digital payments play a significant role in promoting financial inclusion by providing individuals with a secure and convenient means of transacting, saving, and accessing financial services. Mobile wallets and digital payment platforms facilitate the integration of previously excluded individuals into

the formal banking system, allowing them to establish a digital transaction history and gain access to credit facilities. The convenience, accessibility, and additional financial services offered by digital payments empower individuals to manage their finances effectively, save for the future, and participate fully in the economy. By promoting financial inclusion through digital payments, societies can foster economic growth, reduce poverty, and enhance the overall well-being of individuals and communities.

Benefits of Digital Payments

Digital payments have emerged as a powerful tool in promoting financial inclusion by offering individuals numerous benefits that overcome geographical barriers and improve access to financial services. One of the key advantages of digital payments is their ability to transcend physical boundaries, enabling individuals to access financial services regardless of their location. In countries with large rural populations, access to formal banking services can be challenging due to limited physical infrastructure and the distance individuals have to travel to reach banking branches. Digital payment systems have revolutionized financial access by providing a convenient and efficient way for individuals in remote areas to receive and make payments. Mobile banking applications and digital payment platforms can be accessed through smartphones, enabling individuals to conduct transactions from the comfort of their homes or local areas. This eliminates the need for time-consuming and costly travel to physical banking branches, especially for those residing in remote regions.

Moreover, digital payments offer individuals the ability to conduct financial transactions at any time and from anywhere with an internet connection. This flexibility empowers individuals who may be constrained by work schedules, lack of transportation, or other obligations to still engage in financial activities. Whether it's paying bills, transferring funds, or making purchases, digital payment systems provide the convenience of accessing financial services on-demand, 24/7, without the limitations of physical banking infrastructure. Digital payments also promote financial inclusion by offering individuals increased control over their finances. With digital payment platforms, individuals can easily monitor their transactions, track expenses, and access their account information in real-time. This level of transparency and control enhances financial literacy and empowers individuals to make informed decisions about their money management. Additionally, digital payment systems often offer features such as budgeting tools, spending analysis, and automated payment reminders, further supporting individuals in developing responsible financial habits.

Furthermore, digital payments foster financial inclusion by enabling individuals to build a digital transaction history. This history can be leveraged by financial institutions to assess creditworthiness and provide access to financial services, such as loans, insurance, or investment products. Digital transaction records serve as evidence of an individual's financial behavior, mitigating the need for traditional collateral or credit history. This opens doors to financial opportunities for individuals who may have been previously excluded from the formal banking system, empowering them to participate in economic activities and achieve financial stability. In conclusion, digital payments offer several benefits that enhance financial inclusion by overcoming geographical barriers and improving access to financial services. They provide a convenient and efficient way for individuals, particularly those in remote areas, to access and engage in financial transactions without the need for physical travel to banking branches. The flexibility and convenience of digital payments allow individuals to conduct transactions at any time and from anywhere, providing financial access and control to those with limited resources or mobility. Additionally, digital payment systems enable individuals to build a digital transaction history, facilitating access to financial services and promoting economic empowerment. By leveraging the advantages of digital payments, societies can enhance financial inclusion, foster economic growth, and empower individuals to achieve greater financial well-being.

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Challenges of Digital Payments

However, the adoption of digital payments and achieving widespread financial inclusion also comes with its fair share of challenges. One of the primary obstacles to overcome is the issue of digital literacy. In many developing countries and underserved communities, individuals may lack the necessary digital skills and knowledge to effectively adopt and use digital payment platforms. Digital literacy

encompasses the ability to access, understand, and utilize digital technologies, including digital payment systems. It involves not only technical skills but also the knowledge and awareness of how digital payment platforms work, the benefits they offer, and the potential risks involved. Without adequate digital literacy, individuals may be hesitant or unable to embrace digital payment methods, hindering their participation in the formal financial ecosystem.

To address this challenge, it is crucial to implement comprehensive digital literacy programs that focus on educating individuals on the fundamentals of digital payments. These programs should include training on how to use digital payment platforms, navigate mobile applications, ensure data security and privacy, and understand the benefits and risks associated with digital transactions. These efforts can be carried out through various channels, including community centers, schools, financial institutions, and government initiatives. Moreover, raising awareness about the advantages of digital payments and providing guidance on their usage can play a vital role in promoting digital literacy. By conducting targeted campaigns, workshops, and outreach programs, individuals can be informed about the benefits of digital payments, such as convenience, security, and access to financial services. Additionally, showcasing success stories and real-world examples of how digital payments have positively impacted individuals and communities can help build trust and confidence in the use of these platforms.

Collaboration between governments, financial institutions, and technology companies is essential in addressing the digital literacy challenge. By working together, these stakeholders can develop educational resources, design user-friendly digital payment interfaces, and provide ongoing support to individuals as they navigate the digital payment landscape. Governments can also play a role in incentivizing digital literacy by offering subsidies or benefits to individuals who actively engage in digital payment adoption and education programs. Furthermore, efforts to improve digital infrastructure and connectivity are crucial for promoting digital literacy and ensuring the availability and accessibility of digital payment platforms. Access to reliable internet services and affordable smartphones or other digital devices are prerequisites for individuals to participate in digital payment ecosystems. Governments and private sector entities need to invest in expanding digital infrastructure and reducing connectivity gaps, particularly in remote and underserved areas. In conclusion, addressing the challenge of digital literacy is crucial for achieving widespread financial inclusion through the adoption of digital payments. Education and awareness programs, along with efforts to improve digital infrastructure and connectivity, are essential components in promoting digital literacy and empowering individuals to embrace digital payment platforms. By

equipping individuals with the necessary digital skills and knowledge, societies can ensure that the benefits of digital payments are accessible to all, fostering inclusive economic growth and empowering individuals to participate fully in the digital financial ecosystem.

Another significant challenge in achieving widespread financial inclusion through digital payments is the digital divide, which refers to the gap in access to digital infrastructure and connectivity. To ensure that digital payments and financial inclusion reach all segments of society, governments and financial institutions must prioritize efforts to expand and improve digital infrastructure, particularly in underserved areas. Access to reliable internet connectivity and digital infrastructure is essential for individuals to participate in digital payment systems. However, in many regions, particularly in rural and remote areas, there is limited or no access to broadband internet or mobile networks. This lack of connectivity hinders individuals' ability to access and use digital payment platforms, thereby exacerbating financial exclusion.

To address the digital divide, governments and financial institutions must make concerted efforts to invest in expanding and improving digital infrastructure. This includes initiatives to extend broadband connectivity to underserved areas, upgrade mobile networks, and enhance internet accessibility. Infrastructure development projects should prioritize areas with limited connectivity to ensure that individuals in remote and marginalized communities have equal access to digital payment systems. Additionally, promoting affordable access to digital devices such as smartphones and tablets is crucial. Many individuals in underserved areas may not have access to the necessary digital devices to engage in digital payments. Governments and financial institutions can play a role in making digital devices more affordable and accessible through subsidies, incentives, or partnerships with technology manufacturers.

Furthermore, it is essential to address other barriers that contribute to the digital divide, such as language barriers and technological literacy. Efforts should be made to provide localized digital payment solutions, user interfaces, and educational materials in local languages. Digital literacy programs should also be implemented to ensure that individuals have the necessary skills and knowledge to effectively use digital payment platforms. Collaboration between government, private sector entities, and community organizations is crucial in bridging the digital divide. Public-private partnerships can facilitate infrastructure development and expand digital connectivity. Community engagement initiatives, such as digital awareness campaigns and training programs, can empower individuals with the skills and knowledge to leverage digital payment systems for their financial well-being. In

conclusion, addressing the digital divide is vital to ensure that digital payments and financial inclusion reach all segments of society. Governments and financial institutions must prioritize investments in expanding and improving digital infrastructure, extending broadband connectivity, and promoting affordable access to digital devices. By bridging the digital divide, societies can create an inclusive environment where individuals from all backgrounds can access and benefit from digital payment systems, thereby fostering financial inclusion and driving economic growth.

Moreover, ensuring data security and privacy is of paramount importance in digital payment systems. The protection of sensitive financial information and the prevention of fraud are crucial to building trust and confidence in digital payment platforms. Implementing robust Cyber security measures, encryption techniques, and regulatory frameworks are essential to address these concerns and safeguard the interests of users. Digital payment systems involve the transmission and storage of sensitive financial data, such as account numbers, personal identification information, and transaction details. It is imperative to protect this information from unauthorized access, hacking attempts, and data breaches. Implementing strong authentication protocols, such as two-factor authentication or biometric verification, adds an extra layer of security to ensure that only authorized individuals can access and use digital payment platforms.

Encryption plays a critical role in securing data during transmission and storage. Utilizing encryption algorithms ensures that financial information is encoded and can only be accessed by authorized parties with the corresponding decryption keys. Encryption safeguards against data interception and tampering, providing a secure environment for digital transactions. In addition to technical security measures, regulatory frameworks are essential to protect user data and ensure compliance with privacy regulations. Governments and regulatory bodies play a crucial role in establishing and enforcing data protection laws and standards. These regulations may include requirements for data encryption, data breach notifications, and the secure handling of financial information. Compliance with these regulations not only protects user privacy but also enhances the overall security and trustworthiness of digital payment systems.

Continuous monitoring and proactive threat detection are vital components of a robust Cyber security strategy. Financial institutions and payment service providers must invest in advanced security systems and regularly update their security protocols to stay ahead of evolving cyber threats. This includes conducting regular vulnerability assessments, penetration testing, and implementing real-time monitoring to detect and mitigate potential security breaches promptly. Public

awareness and education on Cyber security best practices are also essential. Users should be educated about the risks associated with digital payments, such as phishing attacks, malware, and social engineering, and be provided with guidance on how to protect their personal and financial information. This can be achieved through public awareness campaigns, educational programs, and user-friendly resources that promote safe digital payment practices. In conclusion, ensuring data security and privacy is a crucial consideration in digital payment systems. Implementing robust Cyber security measures, encryption techniques, and regulatory frameworks are essential to protect sensitive financial information, prevent fraud, and build trust in digital payment platforms. By establishing a secure and privacy-conscious environment, users can confidently embrace digital payments, leading to increased financial inclusion and driving economic growth.

Financial Inclusion through Digital Payment

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Conclusion

To achieve widespread financial inclusion through digital payments, collaboration between governments, financial institutions, and technology providers is crucial. Each stakeholder plays a unique role in ensuring the success and effectiveness of digital payment systems. Governments have a significant role in creating an enabling regulatory environment that promotes innovation, protects consumer rights, and fosters competition in the digital payment sector. By developing and enforcing regulations that balance consumer protection with technological advancements, governments can instill confidence in digital payment platforms and encourage their adoption. They can also invest in digital infrastructure, such as broadband connectivity and mobile networks, particularly in underserved areas, to ensure equal access to digital payment services.

Financial institutions, including banks, payment processors, and mobile money operators, are vital players in driving financial inclusion through digital payments. They need to develop user-friendly and inclusive digital payment solutions that cater to the needs of diverse populations. This includes designing intuitive interfaces, simplifying registration and authentication processes, and providing localized language support. Financial institutions must also focus on promoting financial literacy and awareness to educate individuals on the benefits and safe

usage of digital payment systems. By collaborating with other stakeholders, such as government agencies and technology providers, financial institutions can leverage their expertise and resources to develop innovative solutions that meet the specific needs of different user segments. Technology providers, including software developers, payment platform providers, and device manufacturers, play a critical role in creating secure, accessible, and interoperable digital payment platforms. They need to develop robust and scalable systems that prioritize data security, privacy, and user experience. This includes implementing advanced encryption technologies, adopting industry standards, and ensuring compatibility with a wide range of devices and operating systems. Moreover, technology providers should focus on addressing barriers to entry, such as affordability and digital literacy, by designing user-friendly interfaces, providing user support, and enabling seamless integration with existing financial systems.

Collaboration between these stakeholders is essential to drive the adoption and success of digital payment systems. Governments can work closely with financial institutions and technology providers to establish interoperability standards, promote open APIs (Application Programming Interfaces), and facilitate information sharing to create a seamless and interconnected digital payment ecosystem. By sharing knowledge, resources, and best practices, stakeholders can collectively address the challenges of financial inclusion and drive the adoption of digital payments. In conclusion, achieving widespread financial inclusion through digital payments requires collaboration between governments, financial institutions, and technology providers. Governments must create an enabling regulatory environment and invest in digital infrastructure. Financial institutions need to develop inclusive solutions and promote financial literacy. Technology providers should focus on developing secure and accessible platforms. By working together, these stakeholders can harness the power of digital payments to drive financial inclusion, empower individuals, and foster economic growth.

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GENDER EQUALITY AND WOMEN'S EMPOWERMENT

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Abstract

This journal aims to explore the critical concepts of gender equality and women's empowerment and their transformative potential in achieving a just and inclusive society. By delving into various aspects of gender disparities, discriminatory practices, and the significance of empowering women, this journal seeks to inspire change and foster a world where all individuals can thrive irrespective of their gender.

Keywords: Gender equality, Womens empowerment, Gender disparities

Introduction

Gender equality and women's empowerment are vital components of sustainable development, social justice, and human rights. Historically, women have faced numerous obstacles and systemic barriers, impeding their progress and limiting their full participation in various spheres of life. However, in recent times, there has been a global awakening to the urgent need for equality, leading to an increased focus on women's empowerment. This journal explores the multifaceted dimensions of gender equality and women's empowerment, shedding light on their immense potential to reshape societies and foster a more equitable world.

Understanding Gender Equality

This section provides an in-depth analysis of the concept of gender equality, its historical context, and the persisting challenges. It explores the social construction of gender roles, stereotypes, and the impact of patriarchal norms on women's lives. Furthermore, it examines the importance of dismantling gender biases and promoting equal opportunities for all genders.

Breaking Barriers: Women's Empowerment

This section highlights the transformative power of women's empowerment in achieving gender equality. It explores the significance of education, economic independence, and political representation as key pillars for empowering women. It

also showcases successful initiatives and case studies that have enabled women to overcome barriers, unleash their potential, and become catalysts for change in their communities.

Challenging Gender Norms: Creating an Inclusive Society

This section delves into the social and cultural norms that perpetuate gender inequality. It explores the impact of harmful practices such as gender-based violence, child marriage, and unequal access to healthcare. It also discusses the importance of promoting gender-sensitive policies, challenging societal norms, and fostering inclusive environments that allow individuals to express their authentic selves.

Engaging Men as Allies

Gender equality cannot be achieved without the active involvement of men. This section highlights the significance of engaging men as allies in the pursuit of gender equality. It explores the role of men in challenging harmful masculine norms, promoting healthy relationships, and supporting women's empowerment initiatives. It also presents examples of male champions who have taken a stand for gender equality and transformed their communities.

The Role of Education

Education plays a pivotal role in empowering women and breaking the cycle of inequality. This section explores the importance of access to quality education for girls and women, as well as the need to challenge stereotypes and biases within educational systems. It also highlights the transformative impact of education in enhancing women's decision-making abilities, improving health outcomes, and fostering economic empowerment.

Intersectionality: Recognizing Multiple Identities

This section explores the concept of intersectionality, recognizing that gender inequality intersects with other forms of discrimination, such as race, ethnicity, class, and sexuality. It examines how women from marginalized communities face compounded disadvantages and the importance of adopting an intersectional approach in addressing gender inequality. It highlights the voices and experiences of women from diverse backgrounds, ensuring an inclusive and holistic approach to women's empowerment.

Education and Awareness: Fostering a Culture of Equality

Creating a culture of equality requires education and awareness at all levels. This section explores the importance of gender-responsive education, awareness

campaigns, and community engagement in challenging harmful gender norms. It discusses the role of media, arts, and cultural platforms in promoting positive narratives and breaking stereotypes. It also emphasizes the need for comprehensive sexuality education to empower individuals with knowledge, agency, and consent.

Addressing Violence Against women

Violence against women remains a pervasive human rights violation worldwide. This section delves into the different forms of violence, including domestic violence, sexual assault, and human trafficking. It highlights the importance of comprehensive strategies, including legal reforms, support services, and awareness campaigns, to prevent and address violence against women. It also emphasizes the role of bystander intervention and community mobilization in creating safe environments for women.

Gender Equality in Leadership and Decision-Making

This section examines the underrepresentation of women in leadership positions and decision-making processes across various sectors. It explores the barriers women face in accessing leadership roles, such as stereotypes, biases, and limited opportunities. It underscores the importance of promoting gender balance in leadership and empowering women to participate in decision-making at all levels, including politics, business, and civil society.

Conclusion

In conclusion, this comprehensive journal reinforces the significance of gender equality and women's empowerment as essential components of a just and inclusive society. By exploring various dimensions, including youth engagement, addressing violence against women, promoting gender equality in leadership, fostering international cooperation, measuring progress, and celebrating success stories, we highlight the complex nature of this journey. It is through continuous commitment, collaboration, and a comprehensive approach that we can pave the way for a future where gender equality and women's empowerment are not aspirations but lived realities for all.

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EASE OF DOING BUSINESS

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Abstract

The Ease of Doing Business (EoDB) index is a ranking system established by the World Bank Group. In the EODB index, 'higher rankings' that is a lower numerical value indicate better, usually simpler, regulations for businesses and stronger protections of property rights.

Easy of Doing Business (EODB) has come to be recognized as a cross-border barometer for doing business. In several ways, because of its relative simplicity and easy-to-measure criteria, it has also become an actionable report, as evident from India's new approach of working towards improving its relative position rather than continuing to question the exercise.

Keywords: *The Ease of Doing Business, Ranking, Value.*

Ease of Doing Business

Ease of Doing Business is computed by aggregating the distance to frontier scores of different economies. The distance to frontier score uses the 'regulatory best practices' for doing business as the parameter and benchmark economies according to that parameter. For each of the indicators that form a part of the statistic 'Ease of doing business,' a distance to frontier score is computed and all the scores are aggregated. The aggregated score becomes the Ease of doing business index. Indicators for which distance to frontier is computed include construction permits, registration, getting credit, tax payment mechanism etc. Countries are ranked as per the index.

Among the chosen 190 countries, India ranked 63rd in Doing Business 2020. World Bank Report. In 2014, the Government of India launched an ambitious program of regulatory reforms aimed at making it easier to do business in India. The program represents a great deal of effort to create a more business-friendly environment.

India has emerged as one of the most attractive destinations not only for investments but also for doing business. India jumps 79 positions from 142nd in the

year 2014 to 63rd in the year 2019 in 'World Bank's Ease of Doing Business Ranking 2020'. Positive changes have led to this impressive improvement in India's ranking in the EoDB index.

India's Major Achievements are **Construction Permits** and . India's ranking on this parameter has improved from 184 in 2014 to 27 in 2019. This improvement has been mainly on the account of a decrease in the number of procedures and time taken for obtaining construction permits in India. India's ranking on this parameter has improved from 137 in 2014 to 22 in 2019. It takes just 53 days for a business to get an electricity connection in India. Apart from these significant improvements, among the 190 economies, India ranks 13th in Protecting Minority Investors and 25th in Getting Credit.

The report was a benchmark study of regulation. The survey consisted of a questionnaire designed by the Doing Business team with the assistance of academic advisers. The questionnaire centered on a simple business case that ensures comparability across economies and over time. The survey also based assumptions on the legal form of the business, size, location, and nature of its operations. The ease of doing business index was meant to measure regulations directly affecting businesses and did not directly measure more general conditions such as a nation's proximity to large markets, quality of infrastructure, inflation, or crime.

The next step was gathering data surveys of over 12,500 expert contributors that are lawyers, accountants, etc in 190 countries who deal with business regulations in their day-to-day work. These individuals interacted with the Doing Business team in conference calls, written correspondence, and visits by the global team. For the 2017 report, team members visited 34 economies to verify data and to recruit respondents. Data from the survey was subjected to several rounds of verification. The surveys were not a statistical sample, and the results were interpreted and cross-checked for consistency before being included in the report. Results were also validated with the relevant government before publication.

A Nation's ranking on the index was based on an average of the following factors

Starting a business

Starting a business Includes Procedures involved, time, cost, and minimum capital required to open a new business

Construction Permits

Construction permits Consists the Procedures, time, and cost involved to build a warehouse

Getting Electricity

It includes the procedures, time, and cost required for a business to obtain a permanent electricity connection for a newly constructed warehouse.

Registering Property

It deals with the Procedures involved, time, and cost needed to register commercial real estate

Getting Credit

It Analyse the Strength of legal rights index, depth of credit information index

Protecting Investors

It takes in to account the Indices on the extent of disclosure, the extent of director liability, and ease of shareholder suits

Paying Taxes

It Considers Number of taxes paid, hours per year spent preparing tax returns, and total tax payable as a share of gross profit

Trading Across Borders

It consider the Number of documents, cost, and time necessary to export and import.

Enforcing Contracts

Procedures involved, time, and cost required to enforce a debt contract is considered.

Resolving Insolvency

The time, cost, and recovery rate under a bankruptcy proceeding are considered.

Conclusion

For attracting new investment, both foreign and domestic, several macroeconomic issues have to be addressed. These include economic stability and quality physical infrastructure. India may have the advantage of a large domestic market, and our efforts to improve our ease of doing business rankings finally yielding best results.

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DETECTION OF BLACK SIGATOKA DISEASE IN THE BANANA LEAF USING CNN

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Abstract

Banana civilization is one of the main agrarian elements but it's affected due to sigatoka complaint, so we present a methodology for the automatic recognition of black sigatoka in marketable banana crops. This system uses a LeNet convolutional neural network to descry the progress of infection by the complaint in different regions of a splint image; using this information, we trained a decision tree in order to classify the position of infection inflexibility. The methodology was validated with an annotated database, which was ected in the process of this work and which can be compared with other state- of- the- art uthers. This shows the system is robust against atypical values.

Keywords: Black Sigatoka, convolutional neural network, decision tree, factory complaint discovery.

Introduction

Banana civilization is one of the main agrarian rudiments in India, while the common problem of civilization is that the crop has been told by several conditions, while pest suggestions have been demanded for discovering the infections originally for avoiding fiscal loss to the growers(6). This problem will affect the entire banana productivity and directly affects the frugality of the country(7). A mongrel complication neural network(CNN) enabled banana complaint discovery, and the bracket is proposed to overcome these issues and guide the growers through enabling diseases that have to be employed for avoiding the complaint in the original stages, and the proposed fashion shows 99 of delicacy that's compared with the affiliated deep literacy ways(4). husbandry is one of the most important conditioning around the world and is the profitable foundation of numerous developing countries. In Colombia, 26 of the entire banana crop is produced by small growers(7). presently, agrarian directors have adequately accepted the addition of technological bias similar as smartphones or tablets; still, it isn't common for these to be used in agronomic conditioning, and their use is limited to social networks or rest conditioning Despite this acceptance of the technology, growers ca n't fluently acquire tools for vital processes milar as plaint discovery, because they're precious to

buy, and their conservation or streamlining still take a lot of plutocrat(1). In addition, it's needed to train people to use these tools, which is necessary to spend further plutocrat. Another factor to be stressed is the lack of specialized backing service content in Colombia, which makes it nearly insolvable to break the country's agrarian requirements (7). For this reason, the measures taken in conditioning similar as pest control are made from private criteria, which depends on the experience of the agriculturist, thus, leading to large dimension crimes. Poor operation of conditions similar as black splint Sigatoka, reduces the quality of the product, and there's the probability of losing 100 of product when control conduct are deficient (3). Black sigatoka destroys splint towel, converting visual patterns (6), which can be classified using computer vision w s that represent new styles of complaint discovery. Visual representation systems silar as HSV, TSL, LAB, and YCbCr generally use Gaussian pollutants that soften images; also styles including histogram analysis and OTSU, among others, can be used to threshold images (11). still, these developments are validated by laboratory testing, under controlled conditions, ignoring lighting conditions growing crops where these algorithms can not perform d y. Convolutional neural networks(CNNs) are important tools that enable perfection h bandry o rations similar as splint and stem counts, splint size measures, root localization, and factory recognition. Due to the significance of the husbandry process, the most constantly used operation is complaint discovery. One study trained an commencement- v3 network to classify infections in yucca shops, which fulfilled 93 of effectiveness(10). The authors of used a public sphere dataset to train the AlexNet and GoogleNet armature to identify 26 conditions that impact 14 types of fraternity, directly relating c plaint in99.35 of cases(11). Indeed though the reported delicacy rates for these studies are high, the tests were made under laboratory conditions where there were no disturbances caused by image noise. These bracket models must satisfy all the disturbances which would induce sturdy systems with high perpetration possibilities in lands.



Methodology

Dataset collection: Gather a dataset of labeled images of banana leaves, including both healthy leaves and leaves affected by black sigatoka complaint. insure the dataset is different and representative of different stages and rigidity of the complaint.

Data pre-processing: Pre-process the images to insure they're in a suitable format for training the CNN. This may involve resizing the images to a harmonious resolution, converting them to a standard color space(similar as RGB), and homogenizing pixel values(6). also, it's essential to consider data addition ways like gyration, flipping, zooming, or adding noise to increase the dataset's size and ameliorate the model's robustness.

Dataset splitting: Divide the dataset into training, confirmation, and testing sets. A common split is 70 for training, 15 for confirmation, and 15 for testing. insure that the distribution of healthy and diseased samples is representative in each split to maintain balanced training.

Model architecture selection: Choose an applicable CNN armature for the black sigatoka discovery task. Depending on the available coffers and complexity of the problem, you can elect a pre-existing armature like VGG, ResNet, Inception, or DenseNet (2). Alternately, you can design a custom armature specific to your dataset and conditions.

Model training: Train the named CNN armature on the training set. Initialize the model with arbitrary weights and optimize it using a suitable loss function(e.g.,double-cross-entropy) and an optimizer(e.g., Adam). During training, reiterate over the training samples, forward propagate them through the network, calculate the loss, and modernize the model's weights through backpropagation (3). Cover the confirmation loss and delicacy to insure the model isn't overfitting.

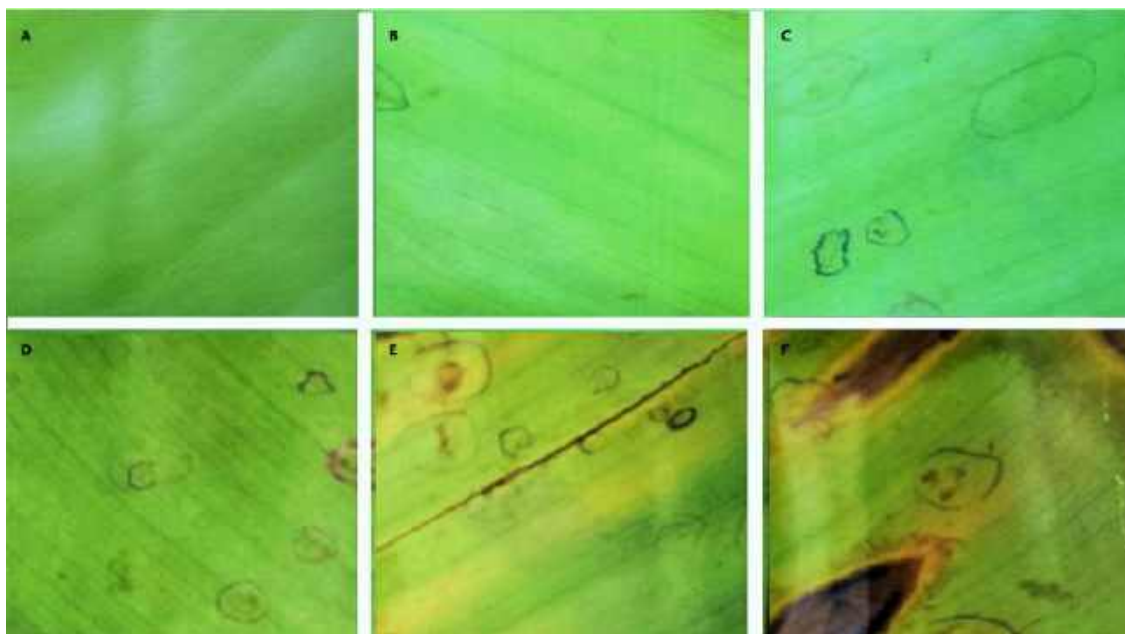
Hyper parameter tuning: Acclimate the hyperparameters of the CNN and training process to ameliorate the model's performance. This includes parameters like learning rate, batch size, number of ages, and regularization ways(e.g., powerhouse or L2 regularization). use the confirmation set to estimate different configurations and choose the best- performing one.

Model evaluation: evaluation estimate the trained model on the testing set to assess its performance. Calculate criteria similar as delicacy, perfection, recall, F1 score, and confusion matrix to understand the model's capability to descry black sigatoka complaint directly(10). Consider fresh evaluation ways like cross-validation for a more robust assessment..

Deployment and conclusion: Once satisfied with the model's performance, emplace it for real- world operation. give unseen images of banana leaves to the

model, and it'll prognosticate whether each splint is healthy or affected by black sigatoka complaint.

Image Acquisition

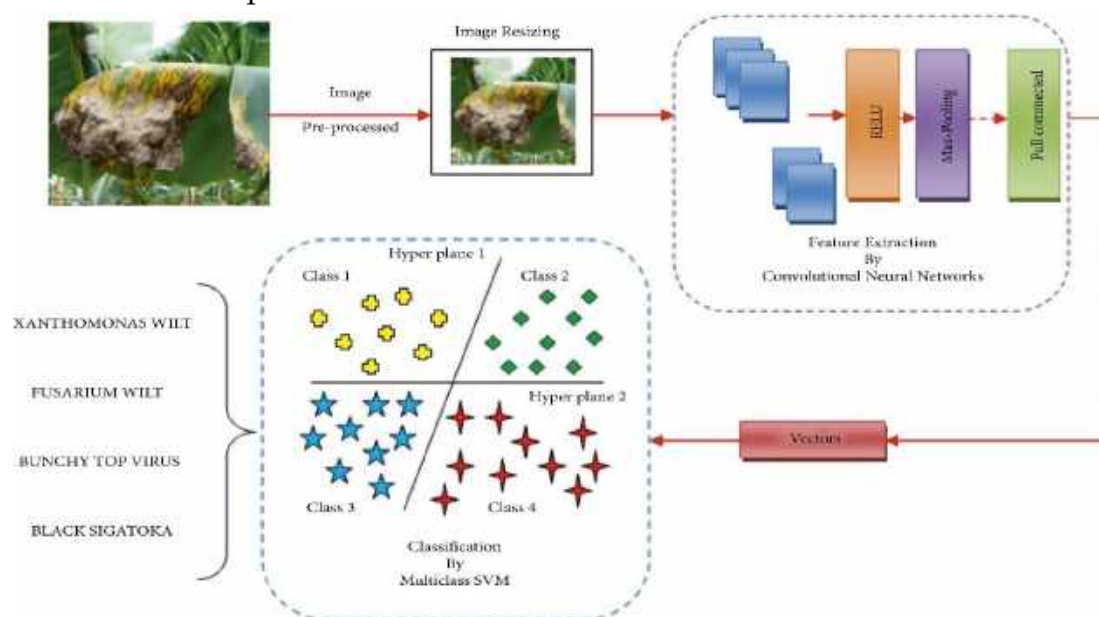


(A) non- infected, (B) stage 1, (C) stage 2, (D) stage 3, (E) stage 4, and (F) stage

Image Pre-processing

Image pre-processing on the collected image is performed to enhance the image quality for performing farther way. This process doesn't change the dereliction information in the image; it performs image resizing and performs some useful filtering processes to descry the complaint information in the banana splint(11). The image captured and stored as a data set is of different judgments so it must be converted into a standard fixed resolution size using image resizing(12). also by using image filtering ways similar as median sludge other noises present in the images are removed. Focus issues and other unwanted portions in the image while capturing are restored in this process(8). Another filtering process similar as low pass filtering helps in reducing the breadth of high- frequency factors in the image and keeps the low- frequency information as it is. The high- pass sludge does vice versa and the proposed armature ideal of CNN The main ideal of the CNN is to recover the high- position features of the banana splint infections in the image. To perform this, CNN armature was erected with multiple overlying convolutional layers. typically, a convolutional sub caste will contain complication and activation functions that are non-linear in our case, and the application of ReLU and the pooling process have been enabled. The input for the CNN will be training and

testing images of confines of 80×120 in height and range Conclusion The discovery of black sigatoka complaint in banana leaves using a Convolutional Neural Network(CNN) is a promising approach for automated complaint identification. By following the outlined methodology, which involves dataset collection, data pre-processing, model training, hyper parameter tuning, and model evaluation, we can make a CNN model that directly classifies banana leaves as healthy or affected by black sigatoka complaint. This methodology emphasizes the significance of collecting a different and well- balanced dataset that represents different stages and rigidness of the complaint.



Objective of CNN

To detect black Sigatoka disease at an early stage or even before visible symptoms are apparent to the human eye. Early detection can help prevent the spread of the disease to other plants and allow farmers to take appropriate action to mitigate its impact. CNNs are well-suited for image-based tasks, making them powerful tools for achieving exceptional accuracy in image classification tasks. CNN architecture was built with multiple overlying convolutional layers to perform this. It minimizes yield loss and supports food security efforts in regions that heavily rely on banana crops as a staple food source.

Conclusion

The detection of black sigatoka disease in banana leaves using a Convolutional Neural Network (CNN) is a promising approach for automated disease identification. By following the outlined methodology, which involves dataset collection, data pre-processing, model training, hyper parameter tuning, and model evaluation, we can build a CNN model that accurately classifies banana leaves as

healthy or affected by black sigatoka disease. This methodology emphasizes the importance of collecting a diverse and well-balanced dataset that represents different stages and severities of the disease.

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GENDER EQUALITY AND WOMEN'S EMPOWERMENT

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Abstract

Development of single woman leads to major growth of the society. To empower women, gender equality plays very crucial role. The word Gender equality is considered as having the equal rights and freedom for both genders so that our environment becomes safe and healthier. Unequal society brings violence and increases the rate of anti-social activities. Countries with equal gender rights are more connected and those countries are well developed among all other nations. Gender equality is not only for men and women citizens of the society it is also for transgender. To stop violence against women and girls gender equality is important. So the Indian government introduced women empowerment scheme on 22nd January 2015. Women empowerment is essential for socio, political and economic development of the country. It may be achieved in different ways such as health empowerment, educational empowerment, social empowerment, political empowerment and economic empowerment. When these types of empowerment are connected together it leads to positive result. India has ranked 127th among 146 countries in global gender index in 2023. Where as Nordic countries such as Iceland, Finland, Norway and Sweden are listed as top countries in gender equality.

Keywords: Gender equality, Women empowerment, Economic development.

Introduction to Gender Equality and Women Empowerment

Gender equality means that men and women have equal rights, both have the same levels of opportunities. It is one of the common problems in our modern society. If we take the record of today's world, till many of the places women are not given equal rights as given to men. Girl child do not get proper education such a way women are discriminated against employment. They are also victim of the domestic violence. Women are always considered as the weaker than men in the society.

In spite of biological difference, women should be granted equality in developing their own future, equality in economic participation, equality in lifestyle, equality to make decision freely, equality in almost every aspect of women's life.

Women Empowerment

“Empowering women is the key to building a future we want”- AMARTYASEN
“Empowerment of women leads to development of a good family, good society and ultimately a good nation” – Dr. APJ.ABDULKALAM

Women Empowerment stands for giving authority and power to the women. It mainly focuses on practices of making women independent so that they can make their own decision as well as they can handle their life without any restrictions. The empowerment of women can be learned as the ability to become a source of the self-independence. Women are empowered when they are able to access an opportunity in each and every field. Education is the right way to ensure women empowerment.

Need for Women Empowerment

Gender Equality:

In order to attain gender equality, women must be empowered. Gender inequality is mostly caused by social norms, cultural practices, and discriminatory attitudes that limit women's opportunities and undermine their rights. By empowering women, we challenge these norms and aim to establish a society in which men and women are given the same freedoms, opportunities, and responsibilities.

Economic Development

Economic development and women's empowerment are intimately connected. Women constitute half of the world's population and economic sustainability is dependent on their active participation. When women have equal access to education, employment, and entrepreneurship, they contribute significantly to economic performance, poverty eradication, and overall development.

Education and Knowledge

Educating and empowering women is a powerful technique for transforming civilizations. Women who have acquired an education are more updated, competent, and self-assured, allowing them to question biases based on gender and actively participate in social, economic, and political arenas. Education promotes a woman's tendency to invest in her family's welfare, particularly in her children's health and education, which benefits future generations.

Health and Well Being

Women's well-being and physical health are closely related to women's empowerment. Women's empowerment needs access to quality healthcare, the right

to an abortion, and independence over their own bodies. Women who feel empowered are more capable to take care of their health, seek medical assistance when necessary, and make decisions that benefit their overall well-being.

Violence and Discrimination

Women must be empowered in order to overcome violence and discrimination towards women. Domestic violence, sexual harassment, and human trafficking are just a few of the violent crimes against women that they are still facing. The empowerment of women makes it feasible to challenge these harmful practices, create safer environments, and build a culture of equality and respect.

Leadership and Decision Making

Women's opinions and ideas are critical in developing effective policies, strategies, and decision-making processes. Gender parity in leadership roles must be achieved in both the commercial and public sectors in order to promote inclusive governance and meet society's numerous demands and ambitions. The empowerment of women guarantees that they have an equal role in decisions that affect their communities and way of life.

Socio and Cultural Change

Women's empowerment is critical for challenging societal and cultural traditions that sustain gender imbalance. By empowering women, we eliminate prejudice, remove barriers, and advance a society that recognizes and respects women's contributions outside of traditional gender norms. As a result, cultural change occurs.

Women Empowerment Schemes in India

To uplift the life of every Indian woman, the government of India has introduced numerous schemes to ensure more and more opportunities in education, work, and some other aspects.

1. Beti Bachao Beti Padhao Scheme

The Prime Minister of India inaugurated this project in Haryana on January 22, 2015, to ensure the survival, protection, and education of girls. In recent years, the project is trying to address the issue of unequal sex ratios, raise the social awareness, and improve the effectiveness of welfare benefits for girls. The Beti Bachao Beti Padhao Scheme aims to prevent female infanticide and other forms of sex-selective elimination. Ensure the girl child's survival and safety. To promote education and active participation of girls in the social activities.

2. Working Women's Hostel Scheme

This scheme's goals are encourage safe and easily located childcare facilities for working women. Construction and expansion of new and existing hostel buildings are encouraged. Allow working women of all backgrounds to be accommodated without discrimination. Allow trainees to remain in hostels if space is available, with working women given priority children of working women can also be accommodated in this scheme.

3. One-Stop Centre Scheme

This scheme's goals are in both private and public settings, support women who are victims of violence. Provide a variety of services under one roof, such as medical, legal, psychiatric, and counseling assistance. Provide both immediate and long-term assistance and support. Aim to stop all types of violence against women.

4. Women's Helpline Program

The Women Helpline scheme, which was launched in April 2015, designed to give 24*7 emergency supports to women who have experienced abuse in either public or private settings. The government established a toll-free helpline (181) to provide immediate and emergency assistance. This helpline number is available to women in every state and union territory in the United States. This campaign so promotes women's empowerment and safety. By giving missedcalls to the toll free number 181 every women can sort out their problems anytime.

5. Mahila Police Volunteer Program

The Mahila Police Volunteers scheme was launched in all states and UTs in 2016 by the Ministries of Women and Child Development and Home Affairs. This central government-sponsored program aims to develop a link between police authorities and local communities' in order to ensure police out reach on criminal cases. An MPV (Mahila Police Volunteers Scheme) will serve as a public-police link to address crimes against women such as dowry harassment, underage marriage, domestic abuse, and domestic violence as part of this plan. This concept also encourages women to join the police force by creating a safe environment.

6. Swadhar Green

It is one of the programmes for women's empowerment announced by the Indian government in 2018. The fundamental goals of this project are to provide social, economic, and health security, as well as housing, food, and clothing. This program provides legal assistance to women and empowers them to take the initiative to reintegrate into society.

7. STEP (Women's Support to Training and Employment Program)

The STEP scheme was run as a "Central Sector Scheme" by the Ministry of Women and Child Development from 1986 to 1987. It was revised in December of 2014. It was created to provide women with job security and skill development training. This government – sponsored initiative funds institutions and organizations that provide women's training programs.

8. MSKs (Mahila Shakti Kendras)

One of the well-known programmes for women is Mahila Shakti Kendra, an initiative for women's empowerment that began in India in 2017. It plans to provide women with convergent support services in one location so that they may develop their skills, find work, and increase their digital literacy. This initiative operates on several levels, including the federal, state, and local. The government intends to reach the 115 poorest districts by creating 920 Mahila Shakti Kendras. This program looks to provide women with resources such as quality healthcare, education, employment opportunities, and provides counselling.

9. Rajiv Gandhi National Creche Scheme

The Indian government launched the National Creche Scheme to give various amenities to children of working moms. It was first presented in 2006. It is implemented by the ministry of women and child development. By this scheme, working mothers enjoy day care facilities to their children from age group of 6 months to 6 years.

This initiative provides childcare services to working women and promises to improve their health and nutrition status. Furthermore, this women empowerment yojana promotes children's physical, social, and holistic development while also raising awareness about children's health by training parents on how to enhance child care procedures or practices.

10. Ujjwala Scheme

This initiative was launched in December 2007. It is a comprehensive plan designed by the Indian government to combat trafficking and to recover, cure, and reintegrate sexually exploited survivors of human trafficking. The initiative is being executed mostly through non-governmental organizations (NGOs) in order to provide direct relief and benefit to victims of human trafficking.

Conclusion

The Indian government has implemented a number of programs aimed at empowering women and providing them with possibilities for progress and safety. Gender inequality, violence against women, and access to education and health care are among the challenges addressed by these projects. The government is actively working to create a more inclusive and secure environment for women in India through programs such as Beti Bachao Beti Padhao, Working Women Hostel, One-Stop Centre, Women Helpline, Mahila Police Volunteers, and many others. These programs not only offer assistance and resources, but they also raise awareness and encourage women's active engagement in society.

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DIGITAL PAYMENTS IN INDIA

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Abstract

A digital payment, sometimes called an electronic payment, is the transfer of value from one payment account to another using a digital device or channel. Digital payment is referred to as those payments that take place using the various types of electronic medium. These methods do not require payment to be made in the form of cash or providing cheque. One of the major objectives of Digital India is to achieve “Faceless, Paperless, Cashless” status. The promotion of digital payments has been accorded the highest priority by the Government of India to bring each and every segment of our country under the formal fold of digital payment services. Various digital payments make the customer ease of payments. Banking cards are the most widely used digital payment system in India. It offers a great set of features that provides convenience as well as security to the users. Unstructured Supplementary Service Data can be used for carrying out cashless transactions using mobile, without the need of installing any banking app. AEPS can be used for all the following banking transactions such as balance enquiries, cash withdrawal, cash deposit, aadhaar to aadhaar fund transfers. UPI is the latest digital payment standard where the user having a bank account can transfer money to any other bank account using UPI based app. and the methods are Mobile Wallets, Point of Sale Terminals, Mobile Banking and Internet Banking.

Keywords: Digital Payment, Government of India, Banking Cards.

Introduction

A digital payment, sometimes called an electronic payment, is the transfer of value from one payment account to another using a digital device or channel. This definition may include payments made with bank transfers, mobile money, QR codes, and payment instruments such as credit, debit, and prepaid cards. Digital payments can be partially digital, primarily digital, or fully digital.

Digital payment is referred to as those payments that take place using the various types of electronic medium. These methods do not require payment to be made in the form of cash or providing cheque.

A partially digital payment might be one in which both payer and payee use cash via third-party agents, with payment providers transferring the payment digital

between the agents. A primary digital payment might be one in which the payer initiates the payment digital to an agent who receives it digitally, but the payee receives the payment in cash from that agent.

A fully digital payment is one in which the payer initiates the payment digitally to a payee who receives it digitally, and it is then kept and spent digitally. Recent years have seen a technological revolution in governance in India. Government services have been slowly and steadily brought on board and today, last-mile delivery happens with the click of a mouse in seconds. Digital Payments transactions have been consistently increasing over the last few years, as a part of the Government of India's strategy to digitise the financial sector and economy. Further, concerted efforts have been made to promote financial inclusion as one of the important national objectives of the country.

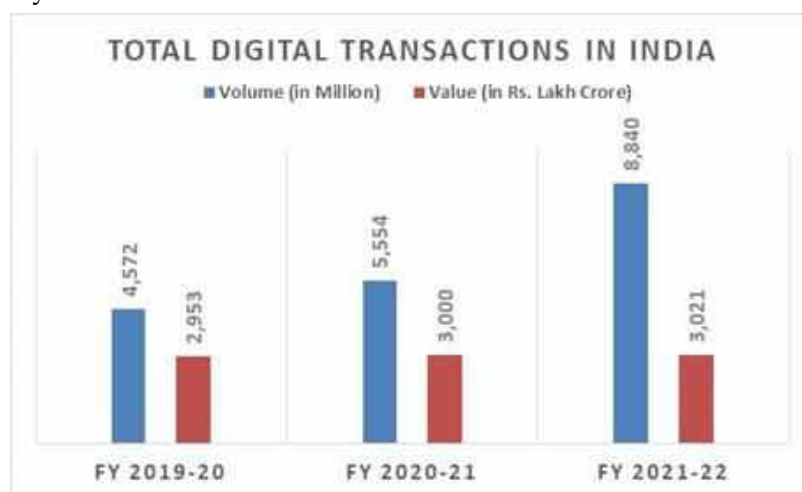
The key enabler at the centre of India's transformed digital payment landscape is the JAM Trinity - Jan Dhan, Aadhaar and Mobile. PradhanMantri Jan-DhanYojana (PMJDY) is one of the biggest financial inclusion initiatives in the world, launched in August 2014, to provide universal banking services for every unbanked household. Aadhaar, the Unique Identification Authority of India's flagship product, is a simple but effective method to verify individuals and beneficiaries based on their biometric information. Jan Dhan accounts, Aadhaar and Mobile connections, taken together, have helped lay the foundations of a Digital India where a vast array of Government services are made available directly to the citizen with enhanced ease of access without the presence of any intermediary (middle-men).

Digital Payment Ecosystem in India

One of the major objectives of Digital India is to achieve "Faceless, Paperless, Cashless" status. The promotion of digital payments has been accorded the highest priority by the Government of India to bring each and every segment of our country under the formal fold of digital payment services. The vision is to provide the facility of seamless digital payment to all citizens of India in a convenient, easy, affordable, quick and secured manner.

During the last three years, digital payment transactions have registered unprecedented growth in India. Easy and convenient modes of digital payment, such as Bharat Interface for Money-Unified Payments Interface (BHIM-UPI); Immediate Payment Service (IMPS); pre-paid payment instruments (PPIs) and National Electronic Toll Collection (NETC) system have registered substantial growth and have transformed digital payment ecosystem by increasing Person-to-Person (P2P) as well as Person-to-Merchant (P2M) payments. At the same time, pre-existing payment modes such as debit cards, credit cards, National Electronic Funds

Transfer (NEFT) and Real-Time Gross Settlement (RTGS) have also grown at a fast pace. BHIM-UPI has emerged as the preferred payment mode of users. The Government of India also launched the digital payment solution e-RUPI, a cashless and contactless instrument for digital payment which is expected to play a huge role in making Direct Benefit Transfer (DBT) more effective in digital transactions in the country. All these facilities together have created a robust ecosystem for a digital finance economy.



There are different modes and types of digital payments that are prevalent in India, which are discussed in detail in the following lines.

1. Banking Cards
2. USSD (Unstructured Supplementary Service Data)
3. UPI (United Payment Interface)
4. AEPS (Aadhaar enabled Payment System)
5. Mobile wallets
6. Point of Sale Machines (PoS)
7. Mobile Banking
8. Internet Banking

1. Banking Cards

Banking cards are the most widely used digital payment system in India. It offers a great set of features that provides convenience as well as security to the users. Cards offer the flexibility of making other types of digital payments. Customers can store card information in the mobile application and pay for the services using the stored card information. Banking cards (debit and credit cards) can be used for a variety of digital transactions like PoS terminals, online transactions, as a payment medium in mobile apps, which provide any kind of service like grocery, healthcare, rental cab booking, flight tickets, etc.

The most popular cards are issued by service providers like VISA, MASTERCARD, RuPay, AMEX etc.

2. USSD (Unstructured Supplementary Service Data)

USSD is another popular digital payment method. It can be used for carrying out cashless transactions using mobile, without the need of installing any banking app.

The good thing about USSD is that it works without the requirement of mobile data. The main aim of this digital payment service is to include those sections of people of the society who are not included in the mainstream.

The striking feature of the USSD is that it can be availed in Hindi. The USSD can be used for the following types of activities:

- a. Initiating fund transfers
- b. Making balance enquiries
- c. Getting the bank statements

3. AEPS (AadhaarEnabled Payment System)

AEPS can be used for all the following banking transactions such as balance enquiries, cash withdrawal, cash deposit, aadhaar to aadhaar fund transfers. All such transactions are carried out through a banking correspondent which is based on Aadhaar verification.

This service can be availed if the aadhaar is registered with the bank where an individual has a bank account.

4. UPI (Unified Payment Interface)

UPI is the latest digital payment standard where the user having a bank account can transfer money to any other bank account using UPI based app. UPI enabled payments occur throughout the day and all 365 days in a year.

Payment can be done using a Virtual Payment Address (VPA). To use UPI services one must have a bank account and a mobile number registered with that bank account.

5. Mobile Wallets

Mobile wallets are another popular payment option. Here the users can add money to their virtual wallet using debit or credit cards and use the money added in the wallet to perform digital transactions.

Some of the most popular mobile wallets are PayTM, Mobikwik, PhonePe, etc.

6. Point of Sale Terminals

PoS terminals are installed in shops or stores where payments for purchases can be done through debit and credit cards. There are variations of PoS, one which can be Physical PoS and the other one is mobile PoS. The mobile PoS does away with the need of maintaining a physical device.

7. Mobile Banking

Mobile banking is a service provided by the banks through their mobile apps in a smartphone for performing transactions digitally. The scope of mobile banking has expanded extensively after the introduction of UPI and mobile wallets.

Mobile banking is a term used to describe a variety of services that are availed using mobile/smartphones.

8. Internet Banking

Internet banking is the process of performing banking transactions from the comfort of your home using a mobile phone/laptop/ desktop and an active internet connection. The major type of transactions can all be done using internet banking.

Internet banking services can be availed round the clock and all 365 days in a year, which makes it a popular choice for performing digital transactions.

Benefits of Digital Payment

There are several ways digital payments can help improve your bottom line and make for a better customer experience.

- Digital payments can help reduce fraud. Digital payments leverage several technologies to secure and encrypt transaction data and multi-factor authentication, making it more difficult for bad actors to initiate fraudulent transactions. Plus, with digital payment types like virtual credit cards, you have a one-off payment dedicated to only one vendor for only one amount, thereby helping to protect your actual credit card from being hacked.
- Digital payments can help reduce costs and waste. The Association for Financial Professionals reports that 92% of companies accept paper checks as incoming payments, and 86% accept them as outgoing payments. Sending and receiving checks can incur hefty processing costs like bank fees, printing, postage and secure disposal. AFP found that digital payment fees are much lower—they can be less than \$0.50 per transaction—and are a greener solution. Some digital payments have no associated costs, meaning no additional fees, which could earn you cash back.
- Digital payments can increase transaction speeds. While traditional payment methods like paper checks can take days or weeks to process and complete,

digital payments can be almost instantaneous. By digitizing payments, companies can be better about paying invoices on time, every time.

- Digital payments give you real-time cash flow visibility. When a payment occurs, the account balance reflects the change immediately and all currency conversions happen right at the moment of the transaction. Thus, executives can track expenses and income in real time and make quicker business decisions in key areas such as spending, investing and hiring.
- Digital payments can increase scalability and accuracy. Companies can spend six to ten hours a week processing and reconciling payments. Not only is this cost-prohibitive at scale, but it also leads to high exception rates that require more time and money to correct.
- Digital payments can turn a cost center into a value driver. Consumers often consider cashback offers when deciding which credit cards to use. Businesses can get the same perks with VCCs as with physical credit cards. Plus, VCC numbers can be used only once, and companies determine how much money to fund in the credit card. Cashback offers could mean reoccurring revenue for your organization on every invoice you already need to pay.

Usage of Digital Payments Country Wise

Top 10 countries Ranked by Real-Time Payments Transactions 2021

Countries	Transaction Value in Billions
India	46.8 Billion
China	18.5 Billion
Thailand	9.7 Billion
South Korea	7.4 Billion
Nigeria	3.7 Billion
UK	3.4 Billion
US	1.8 Billion
Japan	1.7 Billion
Turkey	1.4 Billion

India has topped the list for digital payments and recorded 89.5 million transactions in 2022, according to a report. Interestingly, India's payments are more than the digital payments made in the next four leading countries combined.

According to the data provided by MyGovIndia, the citizen engagement platform of Government of India, 46% of all real-time payments made worldwide in 2022 were made in India. India has topped the list for digital payments and recorded 89.5 million transactions in 2022, according to a report. Interestingly, India's payments are more than the digital payments made in the next four leading countries combined.

According to the data provided by MyGovIndia, the citizen engagement platform of Government of India, 46% of all real-time payments made worldwide in 2022 were made in India. Brazil is second on the list accounting for 29.2 million transactions, followed by China with 17.6 million transactions. The top list is completed by Thailand, ranked at number 4, with 16.5 million digital transactions and South Korea with 8 million of transactions in 2022.

'India Number 1 in Digital Payments'

Earlier this year, Prime Minister Narendra Modi said that India is number one in digital payments.

"India is number one in digital payments. India is one of the countries where mobile data is the cheapest. Today, the country's rural economy is transforming," he noted.

The Ministry of Electronics and Information Technology (MeitY) said it will offer the Incentive Scheme for the Promotion of RuPay Debit Cards and Low-Value BHIM-UPI Transactions for the current fiscal year. This is done in order to promote digital payments in the country.

India is the world leader in digital payments, according to Prime Minister Narendra Modi, who also claimed that the rural economy of the nation is changing. "India is number one in digital payments. India is one of the countries where mobile data is the cheapest. Today, the country's rural economy is transforming," the PM said.

Expansion of Digital Payments

Apart from promoting UPI in India, the government is also pushing to make cross-border payments easy. Earlier this year, India and Singapore linked their respective digital payments systems, UPI and PayNow. This will allow users to quickly make low-cost fund transfers between the two nations.

Conclusion

The digital payments ecosystem in India has grown significantly in recent years, driven by government initiatives, an increase in internet and smartphone penetration, and the rise of e-commerce. The digital payment ecosystem is supported by private players who offer a range of digital payment services. The future of digital payments in India looks bright with the expected growth in the number of internet users and e-commerce market size.

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EASE OF DOING BUSINESS

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Abstract

The ease of doing business is a broad notion that incorporates a variety of elements impacting a country's business environment. It refers to the ease, efficiency, and transparency with which a business can be created, run, and grown. The regulatory framework, administrative procedures, legal safeguards, access to finance, tax systems, trade policies, and infrastructure are all factors to examine when assessing the ease of doing business. International institutions, such as the World Bank, have created rankings and metrics to assess and evaluate the ease of doing business in different nations. These rankings offer a comparative assessment of the business climate, allowing policymakers to identify areas for improvement and execute reforms to attract investments and boost economic growth.

The ease of doing business is an abstract concept that necessitates a thorough grasp of the numerous aspects influencing corporate operations. While rankings are a good place to start when examining the business environment, they should be supplemented with further research and local knowledge to provide a more accurate and comprehensive picture. These rankings can help policymakers and enterprises make educated decisions and create improvements in the business climate by incorporating them into a larger analysis.

Keywords: Ease of doing business, Policymakers, World bank.

Introduction

A favourable business climate is required for a country's economic progress. A country like India, which is one of the world's fastest developing, has the potential to outperform the world's leading economies in terms of business. The government's Make in India project, started in 2014 with the goal of transforming India into a manufacturing center, has made attempts to improve the Ease of Doing Business (EODB) in India by inviting more domestic and foreign enterprises to invest and do business in India. India's climb to 63rd place out of 190 countries is the consequence of the government's sustained efforts over the last few years and its attempts to boost its economy.

At international level, the World Bank every year assesses the policies to ease the regulatory burden undertaken by countries across the world through its Ease of Doing Business Index (EDBI). The index uses 10 different indicators that measure

various aspects of business regulations which are important to domestic firms and for national competitiveness. Doing Business also measures features of labour market regulations which are reported as a separate section and not included in the ranking. EDBI is considered as a reliable source of information on the business environment of an economy. EDBI rankings aim to compare the business environment of different countries. Ease of doing business rankings impact the reputation of the countries and hence influence them to initiate important policy reforms to improve the regulatory environment in their economy.

Reforms Implemented During 2018-19

India is striving to attain a ranking among top 50 in Ease of Doing Business rankings across the world. The country has been undertaking major reforms, which have successfully cut cost, time, documentation and procedures for the conduct of business in the country. The reforms include an easy procedure for filing Goods and Service Tax returns, the elimination of incorporation fees for small businesses, increase in the recovery rate under the Insolvency and Bankruptcy Code 2016, among others. These reforms have brought a significant amount of efficiency and transparency in doing business in the country. Several reforms have been implemented to improve the trade experience of companies. These reforms include introduction of a single window for all import and export transactions, integration of all stakeholders such as port and terminal operators at a common platform and fast tracking clearances of consignments at ports. The government has launched „PCS1x“, an upgraded version of the ecommerce portal for Port Community System (PCS), which intends to integrate 27 maritime stakeholders at a common platform. In the trading Across Borders, the Government has reduced the time and cost of exports and imports through various initiatives, including the implementation of electronic sealing of containers, upgrading of port infrastructure and allowing electronic submission of supporting documents with digital signatures.

Ease of Doing Business at State Level

Business Reforms Action Plan (BRAP)

Keeping in mind the vision of making India an easy place to do business, the Department for Promotion of Industry and Internal Trade (DPIIT) of the Ministry of Commerce and Industry of the Government of India, in collaboration with the World Bank, launched a dynamic national level exercise in 2014 to rank all Indian States and Union Territories based on the reforms implemented on selected parameters. In December 2014, the 6 representatives of the State Government identified and shared a 98-Point Business Reform Action Plan (BRAP) to be implemented by them for improving the regulatory framework for business as part of easing the country's

doing business. The BRAP 2020 report groups Indian states into four categories based on their implementation of ease of doing business reforms.

1. Top Achievers category: Andhra Pradesh, Gujarat, Haryana, Karnataka, Punjab, Tamil Nadu, and Telangana
2. Achievers Category: Himachal Pradesh, Madhya Pradesh, Maharashtra, Odisha, Uttarakhand, and Uttar Pradesh
3. Aspirers category: Assam, Chhattisgarh, Goa, Jharkhand, Kerala, Rajasthan, and West Bengal
4. Emerging Business Ecosystems category: Andaman & Nicobar, Bihar, Chandigarh, Daman & Diu, Dadra & Nagar Haveli, Delhi, Jammu & Kashmir, Manipur, Meghalaya, Nagaland, Puducherry, and Tripura.

World Bank's doing Business Report

Soon after Prime Minister Shri Narendra Modi, as part of the "Make in India" campaign, made a special mention of the need to enhance India's ranking in the World Bank's Doing Business Report, there was a paradigm shift in India's approach and strategy. Along with other programs, EODB gained front stage as one of the most critical foundations in promoting India as a desired investment destination.

To improve the ease of doing business in the country, systematic and focused efforts are being made to minimize the number of processes, reduce average time taken, rationalize costs, and make doing business in India easier. Intense collaboration with the World Bank to better grasp the methodology and analyse global best practices aided India in developing its strategy for strengthening the business climate. In cooperation with Nodal Ministries and States, a precise roadmap for reform implementation was prepared. As a result, India's ranking rose to 63 in the Doing Business Report 2020 (October 2019) from 142 in the Doing Business Report 2015 (October 2014). India has risen 79 places as a consequence of the government's ongoing efforts.

The World Bank's Ease of Doing Business Project is a driving force behind regulatory improvements. It rates 190 economies based on ten factors that range from the cradle to the grave of a business cycle and determine how easy it is to do business in the country. Starting a Business, Registering Property, Dealing with Construction Permits, Obtaining Electricity, Obtaining Credit, Paying Taxes, Trading Across Borders, Protecting Minority Investors, Enforcing Contracts, and Resolving Insolvency are the parameters.

The Doing Business Report (DB) was an annual publication created by a team led by Djankov in 2003. It was released annually by the World Bank Group from 2003 to 2019 and intended to quantify the costs of business regulations in 190 countries. The

research was one of the World Bank Group's hallmark knowledge products in the subject of private sector development, and it is said to have inspired the design of various regulatory reforms in developing countries. Every year, the study presents a complete examination of the expenses, requirements, and procedures to which a given type of private enterprise is subject in all nations, and then develops rankings for each country. The study is also supported by extensive communication.

Benefits of Ease of Doing Business

- **Attracting investment:** Countries with an easy-to-do-business climate are more likely to attract both local and foreign investment. When regulatory processes are streamlined, investors have higher confidence in the business environment's stability and predictability. Increased capital inflows, job creation, and economic expansion can all result from this.
- **Entrepreneurship promotion:** Simplified procedures and decreased regulatory barriers make it easier for entrepreneurs to start and run enterprises. This promotes the establishment of new businesses, which in turn promotes innovation, competition, and economic dynamism. A thriving entrepreneurial ecosystem can help to create jobs, reduce poverty, and boost productivity.
- **Encourages business expansion:** An easy-to-do-business environment allows existing enterprises to expand more effectively. When laws and administrative constraints are reduced, businesses may focus on expanding their operations, entering new markets, and investing in R&D. This promotes corporate growth, increases competitiveness, and aids economic development.
- **Increasing competitiveness:** Countries that prioritize ease of doing business have more competitive and efficient markets. A business-friendly climate is supported by simplified regulations, enhanced infrastructure, and functional institutions. This promotes healthy competition, stimulates innovation, and increases productivity, ultimately boosting economic competitiveness on both the national and international levels.

Ease of Doing Business Index

The ease of doing business index was an index created jointly by Simeon Djankov, Michael Klein, and Caralee McLiesh, three renowned economists of the World Bank Group, devised the ease of doing business index. The report's academic research was conducted in collaboration with professors Edward Glaeser, Oliver Hart, and Andrei Shleifer. Though the initial report was written by Djankov, Klein, and McLiesh, and they are still credited as "founders" of the report, some sources

credit Djankov and Gerhard Pohl with the idea. Higher rankings (a lower numerical value) indicated better, usually simpler, business policies and greater property rights safeguards. According to empirical research supported by the World Bank to explain their work, the economic growth effect of improving these regulator is strong.

The study underpinning Doing Business is based on the "World Development Report 2002," which examines how to construct effective institutions.[8] The research underlines the importance of history in understanding what drives institutional development, emphasizing the necessity to ensure functional institutions through a design that matches existing institutions, human skills, and accessible technologies. The research was led by Joseph Stiglitz and Roumeen Islam, with main contributors Simeon Dyankov and Aart Kraay. Several background studies were published in academic journals or books, including those by Nobel laureates Robert Shiller, Amartya Sen, and Gabriel Garcia Marquez.

India - Ease of Doing Business Ranking

The Ease of Doing Business (EODB) index is a ranking system established by the World Bank Group. In the EODB index, 'higher rankings' (a lower numerical value) indicate better, usually simpler, regulations for businesses and stronger protections of property rights. The research¹ presents data for 190 economies and aggregates information from 10 areas of business regulation:

1. Starting a Business of all
2. Dealing with Construction Permits
3. Getting Electricity
4. Registering Property
5. Getting Credit
6. Protecting Minority Investors
7. Paying Taxes
8. Trading across Borders
9. Enforcing Contracts
10. Resolving Insolvency

Doing Business 2020: World Bank Report ranks India 63rd out of 190 countries². In 2014, the Indian government initiated an ambitious regulatory reform program aimed at making it easier to do business in India. The program reflects a significant attempt to make the environment more business-friendly.

India has emerged as one of the most appealing countries for both investment and business. In the 'World Bank's Ease of Doing Business Ranking 2020,' India advances 79 places from 142nd to 63rd (2019). Positive reforms have resulted in India's outstanding improvement in the EODB index ranking.

India's major achievement is summarised here:

Construction Permits: India's ranking on this parameter has improved from 184 in 2014 to 27 in 2019.⁴ This improvement has been mainly on the account of a decrease in the number of procedures and time taken for obtaining construction permits in India.

Getting Electricity: India's ranking on this parameter has improved from 137 in 2014 to 22 in 2019. It takes just 53 days and 4 procedures for a business to get an electricity connection in India. Apart from these significant improvements, among the 190 economies, India ranks 13th in Protecting Minority Investors and 25th in Getting Credit.

Conclusion

The ease of doing business is a complex and multifaceted concept that assesses various factors related to the regulatory environment, business processes, and government policies affecting businesses. While it is challenging to draw a definitive conclusion on the ease of doing business worldwide, there have been efforts by international organizations such as the World Bank to provide rankings and indicators to measure and compare the business environments of different countries.

It's important to note that the ease of doing business rankings should be taken with some caution. They provide a simplified snapshot of the business environment and may not capture the full complexity and nuances of conducting business in a specific country. Moreover, the rankings can be influenced by various subjective factors and may not always reflect the ground realities faced by businesses on the ground.

That said, the ease of doing business rankings can still offer valuable insights and serve as a starting point for policymakers to identify areas for improvement and implement reforms that foster a more business-friendly environment. Governments around the world have been striving to enhance their ease of doing business rankings to attract investments, promote entrepreneurship, and stimulate economic growth.

In conclusion, while the ease of doing business rankings provide some useful information, it is essential to consider them as one among several indicators when assessing the overall business environment of a country. It's also crucial to complement these rankings with additional research and local knowledge to gain a comprehensive understanding of the opportunities and challenges that businesses may face in different regions.

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AGRICULTURAL REFORMS: NEED AND SCOPE

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Abstract

Agricultural systems worldwide are under pressure due to various challenges, including unsustainable practices, income disparities, inadequate technology adoption, and vulnerability to climate change. This article examines the pressing need for comprehensive agricultural reforms and explores the potential scope of these reforms. The need for sustainable development, equitable income distribution, technology adoption, improved market access, and climate resilience are highlighted as driving factors. The scope of reforms encompasses land distribution, financial support, extension services, market enhancements, research and innovation, policy adjustments, and education. By addressing these areas, countries can harness the full potential of agriculture, ensuring food security, livelihood improvement, and environmental sustainability. Successful implementation of agricultural reforms necessitates collaborative efforts among stakeholders, fostering a balanced and thriving agricultural sector.

Keywords: *Agricultural Reforms, Sustainable Development, Environmental Sustainability.*

Introduction

Agriculture plays a pivotal role in the economies of many countries, serving as a primary source of food, livelihood, and economic growth. However, the sector often faces numerous challenges that can hinder its potential contribution to sustainable development. Agricultural reforms are essential to address these challenges and unlock the sector's potential for the benefit of both rural communities and the broader economy. This article discusses the need for agricultural reforms and explores the scope of potential changes.

Need for Agricultural Reforms

Sustainable Development

The current agricultural practices in many regions are often unsustainable, leading to soil degradation, water depletion, and biodiversity loss. Reforms are needed to promote sustainable agricultural practices that ensure long-term food security and environmental health.

Income Disparities

Agriculture employs a significant portion of the population, especially in developing countries. However, income disparities between small-scale farmers and large agribusinesses are common. Reforms can help ensure fair income distribution and improve the livelihoods of small farmers.

Technology Adoption

Agricultural technology has evolved significantly, offering solutions to increase productivity, reduce post-harvest losses, and enhance resource efficiency. Reforms can facilitate the adoption of these technologies by providing access to improved seeds, machinery, and knowledge.

Market Access

Many small farmers face challenges in accessing markets due to inadequate infrastructure, limited transportation, and lack of information. Reforms can improve market access by investing in rural infrastructure, establishing market linkages, and enhancing value chains.

Climate Change Resilience

Agriculture is highly vulnerable to climate change impacts, such as erratic weather patterns and extreme events. Reforms should focus on building climate-resilient farming practices and promoting crop diversification.

Scope of Agricultural Reforms

Land Reforms

Addressing issues related to land ownership, tenancy, and land use is crucial. Land reforms can help redistribute land more equitably among small farmers, encourage efficient land use, and reduce disputes.

Financial Support

Providing access to credit and insurance services can help farmers manage risks and invest in modern agricultural practices. Government subsidies and support programs can also be reformed to target those who need them most effectively.

Extension Services

Strengthening agricultural extension services can facilitate the transfer of knowledge and best practices to farmers. Reforms can include training programs, workshops, and the use of digital tools for disseminating information.

Market Reforms

Developing efficient marketing systems, establishing farmer-producer organizations, and creating agri-business networks can help farmers fetch better prices for their produce and reduce post-harvest losses.

Research and Innovation

Investing in agricultural research and innovation is crucial for developing new technologies and practices that address emerging challenges. Reforms can ensure that research efforts align with practical needs on the ground.

Policy Framework

Reforms should also target policy frameworks that support sustainable agriculture. This involves removing barriers, reducing bureaucracy, and promoting policies that incentivize environmentally friendly and socially equitable practices.

Education and Training

Reforms in education and vocational training can equip the younger generation with the necessary skills and knowledge to engage in modern and sustainable agricultural practices.

Conclusion

Agricultural reforms are imperative to ensure the sector's sustainable growth, enhance food security, and uplift the livelihoods of rural communities. These reforms encompass a wide range of areas, from land management to market access, and require collaborative efforts from governments, international organizations, farmers, and other stakeholders. By addressing the pressing issues faced by agriculture and embracing innovative solutions, countries can unlock the true potential of their agricultural sector while promoting economic prosperity and environmental well-being.

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DIGITAL TRANSFORMATION OF FINANCIAL INCLUSION IN INDIA: EXAMINING THE ROLE OF DIGITAL INDIA INITIATIVE

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Abstract

The Digital India initiative has been a major transformative force in India, aiming to harness the power of technology to create a digitally empowered society and bridge the digital divide. This paper explores the various aspects of Digital India and its impact on different sectors of the economy, governance, and the lives of citizens. The study is descriptive in nature and a qualitative approach of data. The study focuses on the role of digital India initiative in digital transformation of financial inclusion. And found that the initiatives have brought millions of previously unbanked individuals into the formal financial system, fostering economic empowerment and driving inclusive growth.

Keywords: Digital India, Financial Inclusion, Transformation.

Introduction

The Digital Revolution in India refers to the rapid advancement and adoption of digital technologies across various sectors of the economy and society. It encompasses the widespread use of the internet, mobile devices, digital services, and digital platforms. The digital revolution has brought about significant changes in the way people communicate, access information, conduct business, and interact with government services. The Vision of Digital India is to transform India into a digitally empowered society and knowledge economy. It focuses on three key areas: digital infrastructure, digital services, and digital empowerment of citizens. The vision aims to provide universal access to digital services, bridge the digital divide, and leverage technology for inclusive growth and development. In today's digital age, technology has become a catalyst for economic, social, and political transformation. India, with its vast population and diverse socio-economic landscape, recognized the immense potential of digital technologies in driving development and addressing the challenges faced by its citizens. Digital India envisions a future where every individual, irrespective of their background or location, can leverage the power of technology to access information, services, and opportunities.

Digital infrastructure refers to the underlying technological and physical components that enable the functioning of digital services and connectivity. It includes initiatives like BharatNet, National Optical Fiber Network, and Digital Village Program, which aim to provide broadband connectivity to rural and remote areas. The development of robust digital infrastructure is crucial for the successful implementation of Digital India.

Several success stories have emerged from the implementation of Digital India. These include initiatives like Aadhaar, which provides a unique identification number to Indian residents, enabling streamlined service delivery and reducing identity fraud. The Digital Payments ecosystem, led by platforms like Unified Payments Interface (UPI) and BHIM, has witnessed significant growth, promoting a cashless economy. E-governance initiatives like the e-Governance Portal and Digital Locker System have enhanced transparency and efficiency in government services. Digital India has played a crucial role in fostering innovation and entrepreneurship in India. Initiatives like Startup India, Digital India Startup Fund, and Atal Innovation Mission have provided support and incentives to startups. The digital ecosystem has enabled the growth of sectors like e-commerce, fintech, and edtech, leading to the emergence of successful Indian startups and promoting economic growth. This study explores Digital India and Financial Inclusion. Digital India has played a crucial role in promoting financial inclusion. Initiatives like Pradhan Mantri Jan DhanYojana (PMJDY) have facilitated the opening of bank accounts for the unbanked population. The Aadhaar-enabled payment system, mobile banking, and digital payment platforms have made financial transactions more accessible, convenient, and secure, empowering individuals and businesses.

Objectives

- To Examine the role of digital India initiative in digital transformation of financial inclusion

Research Methodology

The study is descriptive in nature and a qualitative approach of data collection and analysis appears to be appropriate, with data acquired from authentic and secure sources. The study focuses on the role of digital India initiative in digital transformation of financial inclusion. Likewise, the essential and applicable secondary data is gathered from a variety of sources similar as research papers articles publications.

How digital India promotes financial inclusion?

Digital India is a transformative initiative launched by the Government of India with the vision to harness the power of technology for the comprehensive development of the country. It seeks to create a digitally empowered society and a knowledge-based economy by leveraging digital technologies to connect citizens, streamline governance, and promote inclusive growth. The Digital India initiative aims to bridge the digital divide, improve access to digital infrastructure and services, and empower citizens with digital literacy and skills.

Digital India has played a significant role in promoting financial inclusion in India. Financial inclusion refers to providing access to affordable financial services, such as banking, credit, insurance, and payments, to underserved and unbanked populations. The following are some key points about the impact of Digital India on financial inclusion:

Pradhan Mantri Jan DhanYojana (PMJDY): The PMJDY is a flagship scheme launched as part of Digital India to provide universal access to banking services. It aimed to ensure that every household in India has access to a bank account. Under this scheme, millions of bank accounts were opened, especially for people from economically weaker sections, enabling them to avail banking services, government subsidies, and direct benefit transfers.

Aadhaar-enabled Payment System (AePS): Aadhaar, the unique identification number issued to Indian residents, has been instrumental in promoting financial inclusion. The AePS allows individuals to access their bank accounts, make payments, and withdraw cash using their Aadhaar number and biometric authentication. This has facilitated financial transactions for individuals who may not have traditional identification documents.

Mobile Banking and Digital Payment Platforms: The proliferation of mobile phones and the growth of digital payment platforms have played a crucial role in financial inclusion. Platforms such as Unified Payments Interface (UPI), BHIM (Bharat Interface for Money), and mobile wallets have made it easier for individuals to make digital transactions, send and receive money, and access financial services using their smartphones.

Microfinance and Digital Lending: Digital India has facilitated the growth of microfinance institutions and digital lending platforms, providing access to credit for underserved populations, especially in rural areas. Digital lending platforms leverage technology to streamline loan disbursement and enable easier access to credit for individuals and small businesses, fostering entrepreneurship and economic empowerment. Digital technology has transformed credit assessment and lending processes, particularly for individuals with limited credit history. Alternative credit

scoring models leverage digital data such as mobile phone usage, transaction history, and social media behavior to assess creditworthiness. This enables lenders to extend digital loans to previously underserved populations, fostering financial inclusion and supporting entrepreneurship.

Government Schemes and Subsidies: Digital India has improved the efficiency of government schemes and subsidies by leveraging digital platforms. Direct Benefit Transfers (DBT) ensure that subsidies and welfare benefits are directly credited to the bank accounts of beneficiaries, reducing leakages and improving financial inclusion. Digital platforms have made it easier for individuals to apply for government schemes and receive financial assistance.

Financial Education and Awareness: Digital India has also emphasized financial education and awareness to promote financial inclusion. Digital literacy programs, workshops, and campaigns have been conducted to educate individuals about digital financial services, safe online transactions, and the benefits of formal banking. These efforts aim to empower individuals with the necessary knowledge to make informed financial decisions.

Rural Banking and Last-mile Connectivity: Digital India has focused on improving banking services in rural areas and ensuring last-mile connectivity. Through the establishment of banking correspondent agents, the provision of banking services has been extended to remote locations where physical bank branches are not accessible. This has brought financial services closer to rural communities, promoting financial inclusion.

Digital Identification and Know Your Customer (KYC): Digital identification systems, such as biometric authentication and electronic know your customer (e-KYC) processes, have been instrumental in promoting financial inclusion. Digital IDs, often linked to government-issued identification documents, enable individuals to establish their identity digitally, facilitating faster and more accessible onboarding processes for financial services. This helps overcome barriers related to documentation and identity verification for the unbanked.

Agent Banking and Branchless Banking: Digital technology has enabled the growth of agent banking and branchless banking models. These models leverage local retail agents equipped with digital devices to provide banking services in underserved areas. Through these agents, individuals can deposit and withdraw cash, open accounts, and access basic banking services in their communities, bypassing the need for physical bank branches.

Overall, Digital India has played a crucial role in promoting financial inclusion by leveraging technology to enhance access, affordability, and convenience of financial services. The initiatives have brought millions of previously unbanked

individuals into the formal financial system, fostering economic empowerment and driving inclusive growth. Regulatory frameworks play a vital role in ensuring the safety and inclusivity of digital financial services. Governments and regulatory bodies have developed frameworks to protect consumers, establish standards for digital financial service providers, and mitigate risks such as fraud, data breaches, and unfair practices. These frameworks foster trust and confidence in digital financial services, encouraging wider adoption and usage.

Suggestions

- Challenges such as infrastructure gaps, digital literacy, and Cyber security need to be addressed to ensure that the benefits of financial inclusion reach all segments of society.
- Investigate the role of digital financial services providers, including fintech companies, in expanding financial inclusion in India.

Conclusion

The future of Digital India holds great promise. The continued development of digital infrastructure, increased digital literacy, and the growth of digital services are expected to drive further transformation across sectors. Embracing emerging technologies like artificial intelligence, block chain, and the Internet of Things (IoT) will open new opportunities and challenges. The success of Digital India lies in addressing the remaining challenges, ensuring inclusivity, and creating an enabling environment for innovation and growth. Digital India is a visionary initiative that seeks to transform India into a digitally empowered society and knowledge-based economy. It aims to bridge the digital divide, empower citizens with digital skills, and leverage technology to enhance governance, access to services, and economic opportunities. By embracing digital technologies, India is poised to unlock its full potential and shape a future where every citizen can participate in and benefit from the digital revolution. Digital technology has emerged as a key driver of financial inclusion, providing access to formal financial services, promoting financial literacy, and empowering the unbanked and underserved populations. By leveraging digital platforms, mobile devices, and innovative solutions, digital financial inclusion has the potential to bridge the financial divide and foster economic empowerment for individuals and communities worldwide.

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INSTITUTIONAL REFORM AND TECHNOLOGICAL ADVANCEMENTS IN INDIAN AGRICULTURE DEVELOPMENT

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Abstract

India's agricultural sector plays a crucial role in sustaining its vast population and supporting its economy. However, the sector faces numerous challenges such as low productivity, inadequate infrastructure, and fragmented landholdings. To address these issues and enhance agricultural development, institutional reform and technological advancements have emerged as critical pathways. This paper examines the significance of institutional reform and technological advancements in transforming Indian agriculture. Moreover, the paper explores the role of technology in modernizing Indian agriculture. Furthermore, the paper analyzes the challenges and opportunities associated with integrating institutional reforms and technological advancements. It highlights the importance of providing training and support to farmers for the successful adoption of new technologies. Additionally, the study discusses how public-private partnerships can facilitate the dissemination of knowledge and resources to the farming community.

Keywords: Institutional Reform, Technological Advancements, Indian Agriculture, Agriculture Development, Farmers, Agricultural Policies.

Introduction

Indian agriculture has been the backbone of the country's economy for centuries, providing livelihoods to a significant portion of its population and contributing substantially to its Gross Domestic Product (GDP). However, the sector has faced numerous challenges over the years, including outdated farming practices, low productivity, inadequate infrastructure, and volatile market conditions. In recent times, a combination of institutional reforms and technological advancements has emerged as a promising strategy to revitalize and modernize Indian agriculture, paving the way for sustainable growth and improved farmer welfare. Historically, Indian agriculture has been characterized by small landholdings, dependency on monsoon rains, and a traditional approach to farming. The lack of access to modern tools, credit facilities, and knowledge has hindered productivity and trapped

farmers in a cycle of poverty. Recognizing the urgency of addressing these issues, the government, policymakers, and agricultural experts have been increasingly focused on implementing institutional reforms that aim to empower farmers, increase their income, and foster overall rural development. Simultaneously, technological advancements have revolutionized various sectors worldwide, and agriculture is no exception. From precision farming techniques to the use of drones and artificial intelligence, technology offers immense potential to optimize agricultural practices, increase efficiency, and mitigate environmental impact. Integrating these technological innovations into Indian agriculture has become essential to overcome challenges and meet the growing demands of a burgeoning population. This paper delves into the key aspects of institutional reform and technological advancements in Indian agriculture development. It explores the recent policy measures and initiatives taken by the government to empower farmers and create an enabling environment for agricultural growth. Additionally, it examines the role of technology in transforming traditional farming methods, enhancing productivity, and promoting sustainable practices.

Institutional Reforms in Agricultural Development

Indian agriculture has played a pivotal role in the country's socio-economic fabric for centuries, providing livelihoods to a significant portion of the population and contributing substantially to the national GDP. However, over the years, the agricultural sector has faced numerous challenges, ranging from fragmented landholdings and outdated farming practices to inadequate infrastructure and market inefficiencies. These challenges have hindered the sector's growth and impeded the well-being of millions of farmers and rural communities.

Recognizing the urgent need for transformative change, institutional reforms in Indian agriculture have emerged as a critical aspect of sustainable development and rural prosperity. These reforms seek to restructure and modernize the agricultural framework, address systemic issues, and empower farmers with better access to resources, technology, and markets. Historically, the Green Revolution in the 1960s and 1970s significantly boosted agricultural production, bringing India closer to self-sufficiency in food grains. However, over time, the limitations of this model became apparent, leading to issues such as over-reliance on chemical inputs, water depletion, environmental degradation, and income disparities among farmers.

In recent years, the Government of India, along with various state governments, has been actively involved in designing and implementing agricultural reforms to bring about a more sustainable, inclusive, and prosperous agricultural sector. These reforms focus on diversifying agricultural practices, ensuring better price realization

for farmers, promoting value addition, enhancing rural infrastructure, and strengthening farmer-centric institutions.

One of the landmark initiatives in this direction was the passage of the Agriculture Reform Bills in 2020, aimed at creating a more liberalized agricultural ecosystem. The legislation sought to provide farmers with the freedom to sell their produce outside traditional agricultural produce market committees (APMCs) and explore options beyond the Minimum Support Price (MSP) system. While the reforms were met with mixed reactions, they brought the issue of institutional reform to the forefront of the national discourse. In addition to policy-level changes, various non-governmental organizations, research institutions, and private enterprises have been actively involved in driving agricultural innovation and empowering farmers through capacity-building programs, technology adoption, and market linkages.

Technology Development in Indian Agricultural Development

Agriculture has been the backbone of India's economy for centuries, providing livelihoods to millions of people and contributing significantly to the country's GDP. However, over the years, the sector has faced various challenges such as population growth, diminishing natural resources, climate change, and fluctuating market demands. In response to these challenges, the Indian agricultural sector has undergone significant technological advancements and innovations. The application of modern technology in agriculture, often referred to as "agricultural technology" or "agritech," has revolutionized the way farming is practiced in India. These technological developments aim to enhance agricultural a wide range of innovations, including the adoption of genetically modified crops, precision agriculture techniques, farm mechanization, use of drones and satellite imagery, climate-resilient practices, and improved irrigation systems, among others.

The integration of technology in agriculture has not only increased productivity but also empowered farmers by providing them with access to valuable information and resources. Additionally, technology has enabled better market linkages, reduced post-harvest losses, and facilitated the adoption of sustainable practices. It is important to note that while technological advancements offer promising opportunities, they also come with challenges and concerns. Issues related to the digital divide, accessibility, and the impacts on traditional agricultural practices need to be carefully addressed.

Challenges and Opportunities Associated with Integrating Institutional Reforms and Technological Advancements

Integrating institutional reforms and technological advancements in Indian agriculture presents both challenges and opportunities. India's agricultural sector is vital to its economy, as it employs a significant portion of the population and contributes substantially to the country's GDP. By combining reforms and technology, the agriculture sector can become more efficient, sustainable, and resilient. However, there are several hurdles that need to be addressed to fully realize the potential benefits. Let's explore the challenges and opportunities in more detail:

Challenges

1. **Limited infrastructure:** The lack of proper infrastructure, such as irrigation facilities, storage facilities, and transportation networks, poses a significant challenge to implementing and adopting advanced agricultural technologies effectively.
2. **Access to technology:** Ensuring that small and marginal farmers, who make up a substantial portion of the agricultural community in India, have access to modern agricultural technologies can be challenging due to factors like affordability and awareness.
3. **Fragmented land holdings:** The pattern of fragmented land holdings makes it difficult to implement large-scale modern farming techniques. Integrating technology in such a scenario requires coordination and collaboration among farmers.
4. **Resistance to change:** Traditional agricultural practices are deeply ingrained in the Indian farming community. Convincing farmers to adopt new technologies may be met with resistance, especially if they perceive risks associated with new methods.
5. **Financial constraints:** Many farmers face financial limitations, hindering their ability to invest in advanced technologies and machinery. Access to affordable credit and financial assistance is crucial to promoting technological integration.

Opportunities

1. **Increased productivity:** By incorporating modern technologies like precision agriculture, smart irrigation systems, and advanced machinery, Indian agriculture can witness a significant boost in productivity, leading to increased yields and income.

2. Sustainable practices: Technological advancements can enable the adoption of sustainable farming practices, reducing the environmental impact and promoting conservation of resources like water and soil.
3. Market linkages: Technology can help improve market linkages for farmers, allowing them to connect directly with buyers, negotiate better prices, and access a wider customer base.
4. Data-driven decision making: The integration of technology provides access to real-time data and information, enabling farmers to make informed decisions about crop planning, pest management, and resource allocation.
5. Empowerment of farmers: Technology and institutional reforms can empower farmers by providing them with knowledge, skills, and tools to manage their farms more efficiently and profitably.
6. Research and development: Integrating technology may foster collaboration between agricultural research institutions and private sector companies, leading to more innovations and customized solutions for Indian farming needs.
7. Job creation: The adoption of new technologies may lead to the emergence of new job opportunities in the agricultural technology sector, fostering rural economic development.
8. To leverage these opportunities and overcome the challenges, a comprehensive approach is needed. This should involve creating supportive policies, investing in rural infrastructure, providing training and education to farmers, promoting public-private partnerships, and ensuring equitable access to resources and technology. Government initiatives, NGOs, private companies, and research institutions can play a crucial role in driving this transformation towards a more technologically advanced and sustainable Indian agriculture sector.

Conclusion

Institutional reform and technological advancements play crucial roles in the development of Indian agriculture. Over the years, India has faced numerous challenges in its agricultural sector, including outdated practices, low productivity, fragmented land holdings, and insufficient access to resources and markets. However, through strategic reforms and innovative technological interventions, the country has made significant progress in transforming its agricultural landscape.

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TECHNOLOGY START-UPS: INNOVATION AND GROWTH

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Abstract

Technology start-ups have become significant contributors to economic development by driving innovation and creating new market opportunities. This abstract highlights the key characteristics of successful technology start-ups, including their entrepreneurial mindset, adaptability, disruptive nature, and strong leadership. It emphasizes the importance of innovation in the start-up ecosystem, where emerging technologies and interdisciplinary collaborations play a crucial role. However, start-ups also face challenges such as securing funding, navigating regulatory landscapes, and managing growth. Various strategies, including partnerships, incubators, accelerators, and supportive government policies, are discussed as means to overcome these challenges. By understanding and supporting technology start-ups, we can foster an environment that encourages innovation and sustains growth, ultimately benefiting economies and societies at large.

Keywords: Technology start-ups, Innovation, Growth, Entrepreneurship, Disruption.

Introduction

In today's rapidly evolving and technology-driven world, technology start-ups have emerged as key drivers of innovation and catalysts for economic growth. These entrepreneurial ventures, led by visionary individuals, possess the power to revolutionize industries, establish novel markets, and fundamentally reshape the way we live and work. This essay delves into the intricate relationship between technology start-ups, innovation, and growth, shedding light on the essential elements that underpin their success while acknowledging the obstacles they encounter on their journey. Technology start-ups serve as fertile grounds for innovation, providing a platform for inventive ideas to flourish. They thrive on a culture of creativity and forward-thinking, constantly pushing the boundaries of what is possible. By challenging traditional norms and embracing disruptive technologies and concepts, these start-ups have the ability to introduce transformative products, services, and business models. Their innovative pursuits not only satisfy unmet market needs but also generate value and propel entire industries forward.

The success of technology start-ups can be attributed to a combination of factors. Firstly, visionary entrepreneurs play a pivotal role in driving the growth and innovation of these enterprises. These individuals possess a unique ability to identify market gaps and envision groundbreaking solutions. Their passion, drive, and risk-taking mindset allow them to navigate uncharted territories and pursue unconventional approaches. Moreover, technology start-ups thrive in an environment of adaptability and agility. Unlike established organizations burdened by bureaucratic structures, start-ups are nimble and can swiftly respond to market dynamics and changing customer preferences. This inherent flexibility enables them to pivot their strategies, optimize their offerings, and capitalize on emerging opportunities, thereby fueling their growth trajectory.

Furthermore, technology start-ups are at the forefront of leveraging emerging technologies. They are quick to adopt and harness cutting-edge advancements such as artificial intelligence, blockchain, and the Internet of Things. By leveraging these tools, start-ups can develop innovative solutions that address complex challenges, enhance efficiency, and unlock new possibilities. The strategic integration of these technologies gives start-ups a competitive edge, enabling them to differentiate themselves and capture market share. However, the path to success for technology start-ups is not without obstacles. They face numerous challenges, including securing funding, navigating regulatory frameworks, and scaling their operations effectively. Acquiring adequate financial resources is often a daunting task, as start-ups must convince investors of their value proposition and potential for growth. Additionally, the regulatory landscape can present hurdles, as policies may not always align with the rapidly evolving nature of technology start-ups. Navigating these frameworks requires resilience, adaptability, and effective advocacy.

Scaling operations while maintaining the core values and culture of a start-up is another significant challenge. Rapid growth necessitates strategic resource allocation, attracting and retaining top talent, and establishing scalable processes. Balancing growth with preserving the innovative spirit and entrepreneurial mindset that fueled the start-up's initial success is a delicate balancing act. To overcome these challenges and foster sustainable growth, technology start-ups adopt various strategies. Collaboration with established industry players and forging strategic partnerships can provide access to expertise, resources, and market reach. Start-up incubators and accelerators offer invaluable support in the form of mentorship, access to networks, and funding opportunities. Additionally, governments play a vital role in creating an enabling environment for start-ups by implementing policies that encourage entrepreneurship, streamline regulations, and provide financial incentives. In conclusion, technology start-ups are at the forefront of driving

innovation and economic growth. Their dynamic nature, driven by visionary entrepreneurs, allows them to disrupt industries and reshape markets. By embracing innovation, leveraging emerging technologies, and embodying an agile mindset, these start-ups have the potential to revolutionize the way we live and work. However, they face challenges that require strategic approaches and supportive ecosystems. By understanding the intricacies of technology start-ups and providing the necessary resources and support, we can cultivate an environment where innovation thrives, ultimately leading to sustainable growth and societal advancement.

Characteristics of Successful Technology Start-ups

Successful technology start-ups stand out from traditional businesses due to several key characteristics that define their approach. At the core of their mindset is an entrepreneurial spirit and a willingness to take risks. The founders of these start-ups are driven by a deep-seated passion for solving problems and creating innovative solutions. They are motivated by the opportunity to make a significant impact and drive positive change in the world. Embracing uncertainty is a fundamental aspect of the entrepreneurial mindset. Technology start-up founders understand that the path to success is often filled with unknowns and unpredictable challenges. Instead of shying away from these uncertainties, they embrace them as opportunities for growth and learning. They see uncertainty as a chance to experiment, iterate, and refine their ideas and strategies. Technology start-ups are unafraid to challenge the status quo. They recognize that true innovation requires breaking away from conventional thinking and questioning established norms. By challenging existing practices and norms, start-ups can identify new approaches, untapped markets, and disruptive ideas. This mindset allows them to differentiate themselves from traditional businesses that may be more risk-averse and tied to established processes.

The founders of successful technology start-ups possess a strong belief in their vision and an unwavering determination to bring their ideas to fruition. They are driven by their passion, which fuels their persistence and resilience in the face of setbacks and obstacles. This passion serves as a driving force that motivates the entire team and attracts like-minded individuals who share the same dedication and commitment to the start-up's mission. In addition to an entrepreneurial mindset, successful technology start-ups also prioritize innovation. They continuously seek out new and creative solutions to address existing problems or meet unmet needs. Innovation is embedded in their DNA, and they actively foster a culture of creativity, curiosity, and openness to new ideas. This culture allows them to generate

novel concepts, develop cutting-edge technologies, and disrupt established industries. By combining an entrepreneurial mindset with a willingness to take risks, an embrace of uncertainty, and a drive to challenge the status quo, technology start-ups create an environment that fosters innovation and propels them towards success. These characteristics enable them to create groundbreaking products or services, identify new markets, and create a lasting impact on industries and society as a whole.

In addition to an entrepreneurial mindset and a willingness to take risks, successful technology start-ups thrive on an agile and adaptable organizational structure. They understand the importance of being able to swiftly pivot and adjust their strategies in response to market feedback and changing circumstances. Technology start-ups operate in dynamic and fast-paced environments where new technologies, market trends, and customer preferences can shift rapidly. To stay competitive and capitalize on emerging opportunities, these start-ups prioritize agility and adaptability. They recognize that being able to respond quickly to market feedback and adjust their direction is essential for their survival and growth. Agility in the organizational structure of technology start-ups allows them to make strategic decisions and implement changes rapidly. They have streamlined decision-making processes that empower their teams to take quick action and iterate on their ideas. They value experimentation and encourage a fail-fast mentality, recognizing that rapid learning from failures is a key component of achieving success.

Start-ups actively seek feedback from customers, users, and stakeholders, and they leverage this feedback to inform their decision-making. By remaining closely connected to their target market, they gain insights into evolving customer needs, pain points, and emerging trends. This customer-centric approach enables them to make informed adjustments to their products, services, and business models, ensuring that they stay aligned with market demands. Moreover, technology start-ups embrace an iterative approach to product development and innovation. They understand that the first version of a product or service may not be perfect, but it serves as a starting point for gathering feedback and making continuous improvements. They leverage agile development methodologies, such as Scrum or Kanban, which facilitate incremental and iterative development cycles. The adaptable nature of technology start-ups extends beyond product development. They are open to reevaluating their strategies, business models, and market positioning based on new information and market dynamics. They are not tied to rigid plans but are willing to pivot and explore alternative directions if it aligns better with the market or customer needs. This flexibility allows them to seize emerging opportunities, pivot their offerings, or even enter new markets.

Furthermore, technology start-ups often embrace a flat organizational structure that encourages collaboration, creativity, and rapid decision-making. This structure facilitates communication and information flow across the organization, enabling teams to respond quickly to changes and make informed decisions at every level. Thus, the success of technology start-ups is closely tied to their ability to maintain an agile and adaptable organizational structure. By being responsive to market feedback, embracing continuous learning and iteration, and remaining open to change, these start-ups can seize emerging opportunities, navigate the dynamic technology landscape, and stay ahead of the competition. The agility and adaptability of technology start-ups enable them to capitalize on market trends, deliver innovative solutions, and drive sustained growth in an ever-changing business environment.

Furthermore, successful technology start-ups possess a remarkable capacity to embrace disruptive technologies and ideas. They possess a keen eye for identifying gaps in the market and capitalize on emerging trends, enabling them to stay ahead of the curve and create a significant impact. By pushing the boundaries of innovation, they introduce groundbreaking products, services, or business models that have the potential to transform entire industries and generate substantial value. Technology start-ups actively seek out opportunities to disrupt existing markets by challenging traditional approaches and introducing innovative solutions. They possess a deep understanding of emerging technologies and trends, allowing them to identify areas where existing solutions fall short or where untapped potential exists. By recognizing these gaps, start-ups can leverage their expertise to develop cutting-edge products or services that address unmet needs or provide superior alternatives. Moreover, technology start-ups are not constrained by the limitations of established players in the market. They have the agility and flexibility to navigate uncharted territories, unencumbered by legacy systems or outdated processes. This freedom enables them to take risks and explore unconventional ideas that can lead to revolutionary breakthroughs.

These start-ups are at the forefront of driving innovation and leveraging disruptive technologies. They embrace emerging technologies such as artificial intelligence, blockchain, virtual reality, or the Internet of Things, among others. By leveraging these technologies creatively, start-ups can unlock new possibilities and develop solutions that were previously unimaginable. By introducing groundbreaking products, services, or business models, technology start-ups challenge the status quo and reshape industries. They disrupt established markets by offering unique value propositions, delivering enhanced user experiences, and providing more efficient or cost-effective solutions. In doing so, they create

significant value for customers, stakeholders, and society at large. Successful technology start-ups not only introduce innovative products or services but also redefine business models. They understand the importance of business model innovation in capturing new market opportunities and creating sustainable competitive advantages. By reimagining how value is created, delivered, and monetized, these start-ups can establish new industry standards and transform traditional business practices.

Furthermore, technology start-ups foster a culture of continuous innovation and exploration. They encourage their teams to think creatively, experiment with new ideas, and challenge conventional thinking. This culture of innovation is nurtured through a supportive and collaborative work environment that encourages risk-taking, learning from failures, and embracing a growth mindset. Successful technology start-ups possess a unique ability to embrace disruptive technologies and ideas. They identify gaps in the market, leverage emerging trends, and push the boundaries of innovation. By introducing groundbreaking products, services, or business models, they transform industries and create significant value. Through their entrepreneurial spirit, forward-thinking mindset, and willingness to challenge the status quo, these start-ups drive innovation, shape the future, and leave a lasting impact on the business landscape.

Finally, strong leadership and vision play a pivotal role in the growth and success of technology start-ups. Founders of these ventures must possess the ability to inspire and motivate their teams, creating a culture of innovation, collaboration, and excellence. Effective leaders within technology start-ups understand the importance of creating a shared vision that aligns with the aspirations of the team members. They articulate a compelling narrative that communicates the start-up's purpose, goals, and values, igniting a sense of passion and commitment among their employees. By fostering a shared vision, leaders inspire their teams to work towards a common goal and invest their best efforts into the success of the start-up. In addition to establishing a vision, strong leaders set ambitious goals that push the boundaries of what is deemed achievable. They have a clear understanding of the market landscape, the potential of their technology, and the opportunities that lie ahead. By setting stretch goals, leaders challenge their teams to think creatively, take calculated risks, and strive for excellence in their work.

Crucially, leaders within technology start-ups chart a clear path towards achieving their vision and goals. They develop a strategic roadmap that outlines the necessary steps, milestones, and actions required to reach their desired outcomes. This roadmap serves as a guidepost for the start-up's activities, ensuring that all efforts are aligned and focused on advancing the vision. Strong leaders also attract

investors and talent who share their vision and passion for the start-up's mission. Investors are more inclined to support start-ups led by leaders who possess a compelling vision, a deep understanding of the market, and a proven track record of execution. Similarly, talented individuals are drawn to start-ups with visionary leaders who can inspire and provide a clear direction for their professional growth. Moreover, leaders within technology start-ups foster a culture of innovation and continuous improvement. They encourage their teams to think creatively, challenge assumptions, and explore new ideas. This culture allows for the free flow of information, collaboration, and experimentation, creating an environment where innovation thrives.

Leaders also recognize the importance of cultivating a diverse and inclusive workforce. They understand that diverse perspectives and experiences lead to richer problem-solving and better decision-making. By fostering an inclusive environment, leaders within technology start-ups can tap into the full potential of their teams and leverage a range of perspectives to drive innovation and growth. Thus, strong leadership and vision are fundamental to the growth and success of technology start-ups. Leaders inspire and motivate their teams, fostering a culture of innovation, collaboration, and excellence. By setting ambitious goals, charting a clear path, and attracting investors and talent who share their vision, leaders create a strong foundation for the start-up's success. Their ability to inspire, guide, and empower their teams ensures that the start-up remains focused, adaptable, and well-positioned to achieve its vision and drive sustainable growth.

Innovation in Technology Start-Ups

Innovation is the lifeblood of technology start-ups, driving their ability to create value, disrupt industries, and drive sustainable growth. These dynamic enterprises are at the forefront of pushing the boundaries of what is possible, constantly seeking out new ideas, technologies, and approaches to problem-solving. One of the primary sources of innovation within technology start-ups is their ability to harness emerging technologies. Start-ups leverage advancements in fields such as artificial intelligence (AI), blockchain, the Internet of Things (IoT), and other cutting-edge domains to develop groundbreaking products and services. By embracing these technologies, start-ups can unlock new possibilities and create unique solutions that address previously unmet needs. Artificial intelligence, for example, has revolutionized the way start-ups approach various industries. From utilizing machine learning algorithms for data analysis and pattern recognition to developing intelligent virtual assistants or chatbots, AI enables start-ups to automate processes, enhance decision-making, and deliver personalized experiences to customers. By leveraging AI

creatively, start-ups can optimize operations, improve efficiency, and drive innovation across diverse sectors.

Blockchain technology has also emerged as a significant driver of innovation within technology start-ups. Its decentralized and secure nature enables start-ups to explore new business models, streamline processes, and establish trust in various industries. Start-ups in finance, supply chain, healthcare, and other sectors are leveraging blockchain to create transparent, tamper-proof systems that enhance security, traceability, and efficiency. By applying blockchain creatively, start-ups are disrupting traditional intermediaries and establishing new paradigms for trust and value exchange. The Internet of Things (IoT) is another area where start-ups are fostering innovation. By connecting physical devices and enabling them to communicate and share data, start-ups can unlock new possibilities in areas such as smart homes, wearables, industrial automation, and smart cities. IoT-driven start-ups are developing solutions that optimize energy usage, enhance safety, and improve operational efficiency. By harnessing the power of IoT, start-ups are transforming industries and creating more connected and intelligent ecosystems.

Furthermore, technology start-ups foster a culture of creativity and out-of-the-box thinking. They encourage their teams to explore unconventional ideas, challenge existing norms, and question the status quo. This culture of innovation empowers individuals to experiment, take calculated risks, and learn from failures. It is within this environment that start-ups can ideate, prototype, and iterate on novel solutions that have the potential to disrupt industries. Moreover, technology start-ups often have a customer-centric approach to innovation. They prioritize understanding the needs, pain points, and aspirations of their target audience. By engaging closely with customers, conducting user research, and gathering feedback, start-ups gain insights that fuel the innovation process. This customer-focused approach enables them to develop products and services that truly resonate with users, providing enhanced experiences and creating value in the market. Thus, innovation is the beating heart of technology start-ups. These dynamic enterprises embrace disruptive ideas, new technologies, and novel approaches to problem-solving. By harnessing emerging technologies such as AI, blockchain, IoT, and others, start-ups can deliver groundbreaking solutions that address unmet needs and revolutionize industries. Their culture of creativity, customer-centricity, and willingness to explore unconventional ideas enable them to remain at the forefront of innovation, driving economic growth and shaping the future.

Start-ups foster innovation not only through their embrace of emerging technologies but also through their collaborative and interdisciplinary nature. They recognize the value of diverse teams composed of individuals with different skill

sets, backgrounds, and perspectives. By bringing together people with varied expertise, start-ups create an environment that sparks creativity and encourages the cross-pollination of ideas. The diversity within start-up teams can lead to fresh insights and breakthrough innovations. When individuals with different perspectives and knowledge come together, they challenge each other's assumptions and encourage innovative thinking. The exchange of ideas and the ability to draw upon a range of experiences allows for unique problem-solving approaches and the generation of novel solutions. Moreover, the collaborative nature of start-ups fosters a culture of teamwork and shared learning. The emphasis on open communication and collaboration encourages individuals to share their ideas, provide feedback, and build upon each other's contributions. This collaborative environment promotes the free flow of information, leading to a more holistic understanding of challenges and potential solutions.

In addition to their collaborative nature, successful technology start-ups are known for their customer-centric approach to innovation. They place a strong emphasis on understanding customer pain points, gathering feedback, and iterating rapidly to meet evolving needs. Start-ups actively engage with their target market to gain insights into user preferences, behaviors, and expectations. By closely involving customers in the innovation process, start-ups can create products and services that truly resonate with their intended audience. They gather feedback through various channels such as surveys, user testing, and direct communication. This iterative approach allows start-ups to refine their offerings based on real-world usage and feedback, resulting in products that deliver superior user experiences and address specific pain points. Furthermore, the customer-centric approach enables start-ups to stay agile and responsive to changing market demands. By continually gathering feedback and staying attuned to customer needs, they can adapt their strategies and offerings to evolving trends and preferences. This iterative process of incorporating customer feedback allows start-ups to stay ahead of the competition and maintain a competitive edge in the market. By embracing collaboration, diversity, and a customer-centric approach, technology start-ups foster an environment conducive to innovation. The synergy created by diverse teams and the close engagement with customers allows start-ups to develop unique solutions, refine their offerings, and continuously deliver value to their target market. This emphasis on collaboration and customer-centricity drives the success of start-ups and positions them as agents of innovation and growth in the technology landscape.

Challenges and Growth Strategies

While technology start-ups are known for their potential, they encounter significant challenges on their path to growth and success. Securing adequate funding is often a primary hurdle. Start-ups heavily rely on external investment to fuel their growth, develop their products or services, and scale their operations. However, attracting investors can be a complex and competitive process. Start-ups must craft compelling business plans, demonstrating their market potential, outlining their competitive advantage, and showcasing their ability to generate returns on investment. Effectively communicating their vision, growth strategy, and revenue model is crucial in building investor confidence. In addition to funding challenges, navigating the regulatory landscape can pose a significant obstacle for technology start-ups. The regulatory environment in many industries may not always keep pace with the rapid advancements in technology. Start-ups must ensure that they stay informed about applicable laws and regulations that impact their operations, such as data privacy, intellectual property, consumer protection, and Cyber security. Compliance with these regulations is essential to maintain trust and legitimacy in the market.

Furthermore, technology start-ups often face the task of advocating for policies that foster innovation and entrepreneurship. They need to actively engage with policymakers, industry associations, and regulatory bodies to ensure that regulations are conducive to their growth and innovation. By participating in public consultations, contributing to policy discussions, and sharing their experiences, start-ups can influence the development of regulations that support their operations while protecting public interests. Moreover, start-ups must proactively stay informed about changes in regulations and adapt their practices accordingly. This involves monitoring legal developments, engaging legal counsel when necessary, and implementing robust compliance measures to mitigate legal and regulatory risks. By taking a proactive approach, start-ups can ensure they remain compliant while also advocating for policies that foster an environment conducive to innovation and entrepreneurship.

Addressing funding challenges and navigating the regulatory landscape requires a multi-faceted approach. Start-ups can seek alternative funding sources, such as angel investors, venture capital firms, crowdfunding platforms, or government grants and programs. They can also leverage incubators, accelerators, and networking events to connect with potential investors and mentors who can provide guidance and support. Building a strong network of industry professionals, advisors, and legal experts can also help start-ups navigate the regulatory landscape effectively. Thus, technology start-ups face significant challenges in securing funding

and navigating the regulatory landscape. Overcoming these challenges requires a combination of strategic planning, effective communication, proactive compliance measures, and engagement with policymakers and investors. By addressing these hurdles, start-ups can position themselves for growth, innovation, and long-term success. Additionally, collaboration among start-ups, industry stakeholders, and policymakers is essential to create an ecosystem that supports innovation, fosters entrepreneurship, and enables technology start-ups to thrive.

Additionally, scaling a technology start-up presents unique challenges that require careful management and strategic decision-making. Rapid growth brings the need to effectively allocate resources, attract and retain top talent, and establish scalable processes and infrastructure. Balancing the demands of growth with maintaining the start-up's core values and culture can be a delicate endeavor. Resource management is crucial during the scaling phase. Start-ups need to allocate their financial, human, and technological resources efficiently to support expansion. This includes securing additional funding, optimizing cash flow, and strategically investing in areas that drive growth. Managing resources effectively ensures that the start-up can sustain its operations, scale its product or service offerings, and seize market opportunities. Attracting and retaining top talent is another critical challenge. As start-ups grow, they need to expand their team with skilled individuals who can contribute to the company's success. Recruiting and retaining top talent can be competitive, as start-ups often compete with larger, more established organizations. Start-ups need to offer competitive compensation packages, a stimulating work environment, and opportunities for professional growth and development to attract and retain the best talent.

Establishing scalable processes and infrastructure is essential to support growth without sacrificing efficiency or quality. Start-ups must streamline their operations, optimize workflows, and implement scalable technologies and systems. This includes adopting agile project management methodologies, leveraging automation and digital tools, and continuously optimizing processes to increase efficiency and productivity. Maintaining the start-up's core values and culture throughout the scaling process is critical. As the team expands and the organization grows, founders must ensure that the values and vision that drove the start-up's early success remain intact. This may involve effective communication, fostering a collaborative and inclusive work environment, and implementing practices that preserve the start-up's culture as it evolves. To overcome the challenges of scaling, technology start-ups employ various strategies. Collaboration with established industry players and strategic partnerships can provide valuable expertise, networks, and resources. Partnering with larger companies can enable start-ups to access new markets,

distribution channels, and resources that may otherwise be challenging to achieve independently.

Start-up incubators and accelerators offer support and resources to help start-ups navigate the scaling process. These programs provide mentorship, networking opportunities, and access to funding and resources, accelerating the growth trajectory of the start-up. Incubators and accelerators also offer a supportive community of like-minded entrepreneurs, fostering collaboration and knowledge sharing. Government initiatives that promote entrepreneurship and provide favorable regulatory environments play a vital role in fostering the growth of technology start-ups. Supportive policies, tax incentives, and funding programs can create an enabling environment for start-ups to thrive. Governments can also invest in infrastructure, research and development, and education to cultivate a skilled workforce and promote innovation. Thus, scaling a technology start-up presents unique challenges that require strategic planning and execution. Managing resources effectively, attracting and retaining top talent, establishing scalable processes, and preserving the start-up's core values and culture are essential for sustainable growth. Collaborating with established industry players, engaging in strategic partnerships, leveraging start-up incubators and accelerators, and benefiting from supportive government initiatives are strategies that can help start-ups overcome these challenges and navigate the scaling journey successfully.

Conclusion

Technology start-ups play a transformative role in today's economy, acting as powerful catalysts for innovation and drivers of economic growth. These dynamic enterprises embody an entrepreneurial spirit, embracing risk-taking and pushing the boundaries of what is possible. By fostering a culture of innovation, start-ups disrupt established industries, create new markets, and generate economic value. However, technology start-ups also encounter significant challenges that can hinder their progress. One of the primary challenges is securing funding. Start-ups often require external capital to fuel their growth, develop their products or services, and expand their operations. However, attracting investors can be a formidable task. Start-ups must develop a compelling business case, articulate their value proposition, and demonstrate market potential to attract investment. By addressing funding challenges, start-ups can access the resources needed to realize their vision and drive innovation. Regulatory barriers also pose hurdles for technology start-ups. The regulatory landscape may lag behind the rapid pace of technological advancements, making it challenging for start-ups to navigate. Start-ups must stay informed about relevant laws and regulations, ensuring compliance while advocating for policies

that foster innovation. Collaborative efforts between start-ups, policymakers, and industry stakeholders can lead to the development of a regulatory framework that supports technological innovation, entrepreneurship, and consumer protection.

Scaling is another critical challenge for technology start-ups. Rapid growth requires effective resource management, attracting and retaining top talent, and establishing scalable processes and infrastructure. Balancing growth with preserving the start-up's core values and culture can be a delicate endeavor. Start-ups must strategically allocate resources, offer competitive compensation and opportunities for professional growth, and establish streamlined operations to support expansion. By addressing scaling challenges, start-ups can achieve sustainable growth while maintaining their innovative edge. To overcome these challenges and nurture the start-up ecosystem, collaboration is essential. Collaboration among start-ups, industry stakeholders, investors, and government entities creates a supportive and vibrant environment. Start-up incubators and accelerators provide guidance, mentorship, and access to networks and resources. By leveraging these programs, start-ups can gain valuable insights, refine their strategies, and accelerate their growth trajectory. Mentorship plays a vital role in the success of technology start-ups. Experienced entrepreneurs and industry experts can provide guidance, share knowledge, and offer valuable advice to help start-ups navigate challenges and make informed decisions. Mentorship programs foster a culture of learning, accelerate skill development, and provide valuable connections within the start-up ecosystem.

Moreover, supportive policies and initiatives from governments are instrumental in cultivating a thriving start-up ecosystem. By implementing policies that incentivize entrepreneurship, reduce regulatory barriers, and provide access to funding and resources, governments can create an enabling environment for technology start-ups to flourish. Strategic investments in infrastructure, education, and research and development further support start-up growth and foster a culture of innovation. In conclusion, technology start-ups are powerful engines of innovation and economic growth. By addressing challenges in funding, regulation, and scaling, we can unlock their full potential and harness the benefits they bring. Collaboration, mentorship, and supportive policies are crucial in nurturing the start-up ecosystem, enabling start-ups to thrive, create jobs, and drive technological advancement. By fostering an environment that nurtures innovation and supports the growth of technology start-ups, we can cultivate a prosperous future driven by transformative ideas and economic prosperity.

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CLOUD COMPUTING: BENEFITS, RISKS AND ADOPTION STRATEGIES

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Abstract

Cloud computing has played a major role in solving the inefficiencies problem in organizations and increase the growth of business thus help the organizations to stay competitive. It is required to improve and automate the traditional ways of doing business. Cloud computing has been considered as an innovative way to improve business. Overall, cloud computing enables the organizations to manage their business efficiently. Unnecessary procedural, administrative, hardware and software costs in organizations expenses are avoided using cloud computing. Standards, policies and controls are therefore of the essence to assist management in protecting and safeguarding systems and data.

Keywords: Cloud computing, Business, organizations, Management

Introduction

Cloud Computing is quickly becoming one of the most popular and promising technologies. It offers variety of opportunities that help the organizations to improve their business and use technology more efficiently. Many organizations have started adopting cloud computing in their business. It is difficult for the organizations to survive in the traditional ways and they are unable to compete with their competitors. It acts as an excellent technological tool that helps the organizations to stay competitive as it can be considered as an innovative way to increase business value. Cloud Service Providers like Google, Microsoft, Amazon are vendors that provide their customers with cloud computing resources and services that are used dynamically based on customer demand in accordance with a particular business model.

Objectives of the Study

- To analyze the benefits of cloud computing
- To examine the risks involved in cloud computing
- To identify the Adoption Strategy in Cloud computing

Benefits of Cloud Computing

- Cost Saving and Reduced Investment
- Increase in Scalability
- High Availability and Reliability
- Efficient Collaboration
- Automatic Updates

Cost Saving and Reduced Investment

Cloud Computing has significant hands-on reducing the costs proportionally to the usage of the services and reducing the initial investment for the computing resources. The automated cloud capacity is extremely elastic in terms of wisely allocating resources as per the growth or decrease in the customer demand without ever wasting the capacity not ever having a crisis of insufficient resources. Moreover, the automated cloud capacity will always meet the demand of the customers without wasting the capacity thus providing cost savings. This cost reduction regarded as one of the primary benefits of cloud computing has driven business prospects for this technology adopted by uncountable business enterprises and personal userbases parallelly

Increase in Scalability

The increase in scalability is one of the important benefits of cloud computing. This can be easily illustrated with the ever-changing as elastic customer demand being met by cloud computing technology.

High Availability and Reliability

The increase in availability and reliability offered by cloud computing has driven its adoption by organizations. Moreover, cloud providers guarantee the associated availability and reliability of the services in the service level agreement (SLA). Companies can adapt and evolve to better respond to the changes of the customer demand as well as mitigate risk for precarious situations that may arise in the future through the availability and reliability provided by cloud computing.

Efficient Collaboration

Beyond the approach of traditional methods, with cloud computing and cloud environment businesses will have the ability to collaborate, communicate and share more easily. With the world becoming a global village with every passing year, the office has become an ideology. With numerous employees working from across the borders, when projects are being worked on employees, contractors and third parties will have the capability to share and access the files required through cloud computing.

Automatic Updates

The systems working on traditional infrastructures, companies were responsible to take care of the hardware as well as software.. While installing an operating system, one only has to choose the image of the latest software and the system will do it all by itself. The tedious tasks of updating each and every new update have become history. This is one amazing advantage that cloud computing provides.

Risks of Cloud Computing

- Security Vulnerabilities
- Minimized Governance Control
- Portability in between cloud providers
- Compliance and Legal Issues

Security Vulnerabilities

Security vulnerabilities with cloud computing if measures are not taken. In comparison to the traditional infrastructure which would have a direct connection to the on-premise infrastructure with the isolated resources, it is not the same with various functionalities of cloud computing. Thus, however, Cloud Computing can be adjusted to mitigate such risks with careless administration of resource allocation and usage; it can also become equally vulnerable. Thus, skilled manpower is of extreme importance while handling critical data and resources in cloud computing.

Minimized Governance Control

Cloud Computing comes with the risk of minimized operational control of governance. Since the cloud providers operate the infrastructures and external connections are essential for the communication between the customers and the provider, there is a lack of control.

Portability in between Cloud Providers

Each of the cloud providers is discrete and can be observed to be shielded from each other. This increases the chances of limited portability between the cloud providers. Though not impossible to move between these cloud providers, it becomes extremely difficult to switch in between then down the path. Some features might be provided by one provider and the other doesn't and vice versa.

Adopting strategies in cloud computing

Cloud adoption strategies take into account specific business goals, best practices, and cloud standards for current and future use by a company. The adoption strategies in business are:

- *Private*
- *Public*
- *Hybrid*

Private

- Applications are developed only for internal use
- Application usage patterns are predictable and require low storage
- Private clouds can be configured to support any application
- Certain features in legacy applications can be protected. These applications may not work well in public clouds.
- On-premise infrastructure with virtualization layer in the data center or a dedicated infrastructure

Public

- Offers a cloud infrastructure (IaaS) for companies looking to reduce hardware costs
- Cost-effective solutions for long term storage
- Enterprises looking for a managed services provider can consider public clouds
- Data centers maintain all managed services (web servers, application servers, load balancing and other infrastructure).
- Offers good load testing environment for developers

Hybrid

- Used in scenarios where applications are supported well in both private and public clouds
- Best suited for customer service interactions

- Hybrid clouds are attractive for organizations looking for flexibility and scalability
- Legacy applications and data can be stored in private clouds, whereas networks can be used on a public cloud.
- Security is an issue. Companies must have adequate security planning to protect internal data.

Conclusion

Cloud computing has become one of the transformational technologies that is tremendously important to improve ways of doing business. It has been proved to be a valuable asset for organizations to stay competitive. Cloud service providers should provide regulatory compliances that the users may concern about. Through the compliances, it helps the users to be certified securely. Besides, security, policies should be provided with details regarding access control, risk management, system backup and recovery.

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DEEP LEARNING FRAMEWORK FOR CLASSIFICATION OF HEALTHCARE DATA

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Abstract

Deep learning is a machine learning technique for medical diagnosis that can directly find useful data from high-dimensional sensory inputs without manual interaction. Meanwhile in order to perform, effective human body analysis an enhanced machine learning methodology is needed. Full connected frameworks that mimic the healthcare delivery process have been proposed to address this challenge. These frameworks have two main modules: a depth-sensing module that diagnoses health conditions using deep neural networks (DNNs) and an action evaluation module based on Bayesian Inference Graphs. To evaluate these frameworks, a simulation environment has been designed that includes a body simulator for creating body instances that can be treated and where various interventions modify the potential health states of simulated patients. The framework also includes a depth-sensing module and an action evaluation module to take care of the body. Experiments show that healthcare processes under this framework can become increasingly efficient over time with increasing statistical data.

Keywords: Deep Learning, Frame work, DNN, CNN, DLA

Introduction

Recently, there has been a rapid progression in the automation of acquiring and analysing human-specific health data. Various tools have been implemented for collecting health-related data and observing the data types involved in human health [1]. However, capturing reliable high-dimensional complex health data and evaluating insights or hidden properties within that data remains a significant challenge for biomedical data analysts.

Latest advances in biomedical research identify many new health-related inputs which are in multiple datatypes. These inputs are becoming complex on every day basis with traditional data mining and statistical analysis approaches. Two steps

must be taken to obtain a highly effective and robust capability of recorded data and to build a prediction model. Depending on the complexity of the data, many challenges must be addressed, and sufficient domain knowledge is required. Nowadays, deep learning approaches are very active in providing solutions to handle multi-dimensional datatypes which are with high complexity using many effective learning models for such problems. An electrocardiograph (ECG) is an instrument that records heart activity, measured using electrodes placed at specific points on the chest. Arrhythmias are abnormal heart rhythms that, when severe, are classified as harmful or life-threatening [2,3]. Many algorithms have been presented and implemented in the literature for recognising and classifying ECG heartbeat patterns. Automated classification can greatly interest patient monitoring, even if a cardiologist must make the ECG classification judgment.

Modern biomedical research has identified many new health-related data types, including structured, unstructured and semi structured data types. In recent days the data growth and data complexity are becoming increasingly complex, and traditional data mining and statistical analysis approaches are proving inadequate. Two steps must be taken for a robust capability for recorded data and to construct predictive models: addressing the challenges presented by the complexity of the data and acquiring sufficient domain knowledge.

An example is the electrocardiograph (ECG), an instrument that records heart activity through electrodes placed at specific points in the chest. Arrhythmias are heart rhythms which are classified as harmful or life-threatening when severe [4]. Automated classification can be highly beneficial for patient monitoring, although a cardiologist must make the final judgement on ECG classification. Numerous algorithms have been proposed and implemented in the literature for recognising and classifying ECG heartbeat patterns. As the machine learning algorithms are not much promising in processing and extracting the required information from the data the current trend researchers should provide solution to the problem by expanding the features of the techniques. However, with the advent of big data, and many more data processing methodologies deep learning has emerged as a new machine learning algorithm capable of handling such complex data.

The number of advanced deep learning algorithms includes the features to bypass the earlier problems and made significant advancements in different fields. Several algorithms have been proposed accurate detection of heart diseases using electrocardiograms. However, these systems rely on time-domain properties that are susceptible to slight variations in amplitude

System Architecture

A multi-layer or deep convolution neural network (d-CNN) can be properly utilized for multiple feature extraction and classification of raw ECG data into numerous categories. Simplified overview of a convolutional neural network is presented. The quality of the classifier depends on implementing the filter bank, and the filtering operation determines the main speed bottleneck in the processing chain. As such, designing filter banks for signal classification based on an architecture capable of performing sequential linear filtering operations is an intriguing approach [5]. However, if classification is based on segmentation of temporal ECG patterns, this approach must take into account computation time and power consumption as well as heart rate variability.

The waveform of an ECG signal is inherently complex and varies between individuals and situations. Different heart diseases and abnormalities present distinct waveform patterns, representing snapshots of different time series of heartbeats for various anomalies in the human body. The primary objective is to extract features by transforming the temporal signal of the electrocardiogram into a spatial signal, which is then filtered with a bank of 1D spatial filter.

CNNs are set as the primary technique due to their minimum requirement for data pre-processing and their exceptional signal detection capabilities, often comparable to or surpassing human performance. Another reason for the application of CNNs is the nature itself. Since most life threatening diseases are diagnosed by physicians who visually inspect electrocardiograms for anomalies, the aim is to detect irregularities in the input data. Thirdly, symbolic processing, which underlies classical machine learning paradigms, is suboptimal for ECG recognition tasks due to its difficulty in encoding shape differences and sensitivity to noise. A network with excessively large, fully connected layers may not be trainable. CNNs, trained using the BPN algorithm, are commonly used in image processing tasks where the connections between neurons in a hidden layer is determined by a fraction of input neurons. A hidden layer consists of several groups of neurons with shared weights within each group. Each group typically contains enough neurons to cover the entire image. When each group of neurons in a hidden layer computes a convolution of the image using its weights, resulting in a processed version, this convolution is referred to as feature extraction. Pooling is usually used to subsequent retrieved data.

Simulation Setup

Two prominent numerical platforms are available in Python with many useful special functions: Theano and Tensor Flow. These libraries are very effective in nature but application of these libraries becomes a task in developing deep learning

models. In addition to these two numerical platforms, the Keras Python library provides a simplified and convenient way to construct deep learning models using either Theano or TensorFlow. The Python programming platform was selected with the Keras library using the TensorFlow backend to leverage recent developments fully. Keras is the advanced and influential ease to use pre built package for building and testing deep learning models [6]. It includes Theano, a powerful and significant numerical library. The basic merit of using this approach is it allows for an easy and enjoyable exploration of neural networks. The PC configuration used is a for installation of this packages is very common with primary definitions.

Early Detection

Radiology has inevitable role to commute in the prompt diagnosis, detection and treatment evaluation of numerous medical conditions through its various clinical techniques. Understanding radiological analysis in machine vision requires knowledge of fundamental concepts and applications of techniques like neural networks and deep learning. Implementation of deep learning approaches (DLA) for clinical image analysis is rapidly expanding as an area of research [7,8]. Deep learning approaches have been frequently employed in medical sector to analyse the images to find the abnormalities present in the image. Medical images are analysed using the advanced techniques like artificial neural networks, which is a precise examination of deep learning approaches, and some potentially practical medical imaging applications.

Maximum Deep Learning Algorithm applications focus digital images from histology, computer tomography, mammography and X-rays. It provides an in-depth analysis of the articles. Various Medical imaging services have experienced a surge in demand within the healthcare system. Additionally, due to a shortage of Radiologists, examining clinical images can be challenging and time-consuming. These issues can be addressed by AI. Machine learning being a part of AI that can operate without explicit programming and has capabilities to learn from raw data to identify the results or to make decisions based on multiple preliminary data sources [9]. Machine Learning employs three distinct learning strategies: semi-supervised, unsupervised, and supervised.

Different types of Deep Learning Algorithms (DLA) have been utilised for specific medical image analysis, drawing inspiration from computer vision. Supervised DL techniques include most advanced methodologies which are employed in disease detection. DLA is typically used to identify anomalies and classify certain types of health abnormalities [10]. Convolution Neural Networks (CNNs) is most effective and most suited technique for medical image analysis. A

convolution - based neural network architecture for clinical image pattern recognition is a Convolutional Neural Network.

Conclusion

Application of ML methodologies and their enhanced algorithms to analyse medical pictures is one of the factors contributing to this development. When a neural network is capable of autonomously learning features, deep learning was successfully employed as a technique for machine learning. In difference, such procedures employ characteristics which are usually hand-crafted. It might be challenging to choose and calculate these qualities.

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A STUDY ON THE PROGRESS OF PRADHAN MANTRI JEEVAN JYOTI BIMA YOJANA (PMJJBY) FROM 2015 TO 2022

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Introduction

The Government initiated the National Mission for Financial Inclusion (NFI), namely, Pradhan Mantri Jan Dhan Yojana (PMJDY) in August, 2014 to provide universal banking services for every unbanked household, based on the guiding principles of banking the unbanked, securing the unsecured, funding the unfunded and serving unserved and underserved areas. A digital pipeline has been laid for the implementation of PMJDY through linking of Jan-Dhan account with mobile and Aadhaar [Jan Dhan-Aadhaar-Mobile (JAM)].

In order to move towards creating a universal social security system for all Indians, especially the poor and the under-privileged, three ambitious Jan Suraksha Schemes or Social Security Schemes pertaining to Insurance and Pension Sector were announced by the Government in the Budget for 2015-16. The schemes were launched on 9th May, 2015, for providing life & accident risk insurance and social security at a very affordable cost namely (a) Pradhan Mantri Suraksha Bima Yojana and (b) Pradhan Mantri Jeevan Jyoti Bima Yojana and (c) Atal Pension Yojana. Pradhan Mantri Vaya Vandana Yojana to protect elderly aged 60 years and above was initially opened for subscription for a period of one year i.e. from 4th May 2017 to 3rd May 2018.

Objective of the Study

Among the three social security schemes Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) is chosen for the study. The objectives of the study are

1. To comprehend about PMJJBY.
2. To know the salient features of PMJJBY.
3. To assess the progress of PMJJBY over the years.

Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)

With the aim of insuring the uninsured a universal social security system for all Indians, especially the poor and the under-privileged, the PMJJBY was launched by the Hon'ble Prime Minister for providing cover for death due to any reason. To achieve saturation under this scheme as announced by Hon'ble PM on 15.08.21, digital and periodic physical camps/drives were taken up. Further PMJDY account holders holding quarterly average balance of Rs. 1000 or more and standard PMMY account holders were also targeted. To increase voluntarily enrollment under the scheme enhanced intermediary commission of Rs.30 payable to BCs is being passed to the subscriber by reduction of amount of Insurance premium payable amount.

The PMJJBY is available to people in the age group of 18 to 50 years having a bank account who give their consent to join / enable auto-debit. Aadhar would be the primary KYC for the bank account. The life cover of Rs. 2 lakhs shall be for the one year period stretching from 1st June to 31st May and will be renewable. Risk coverage under this scheme is for Rs. 2 Lakh in case of death of the insured, due to any reason.

The premium is Rs. 436 per annum which is to be auto-debited in one installment from the subscriber's bank account as per the option given by him on or before 31st May of each annual coverage period under the scheme. The scheme is being offered by Life Insurance Corporation and all other life insurers who are willing to offer the product on similar terms with necessary approvals and tie up with banks for this purpose.

Salient Features

- Launched on 9th May, 2015
- Offers a renewable one-year term life cover of Rupees Two Lakh to all subscribing bank account holders in the age group of 18 to 50 years, covering death due to any reason
- Annual premium of Rs.436/- per annum per subscriber.
- The scheme is offered/administered through LIC and other Life Insurance companies willing to offer the product on similar terms.

Progress of Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)

The scheme was launched on 9th may, 2015 and still in operation. It has been eight years since its launch the following charts show the progress made during this period.

Cumulative Enrolments in PMJJBY from 2016 TO 2022

Source : Banks including convergence schemes

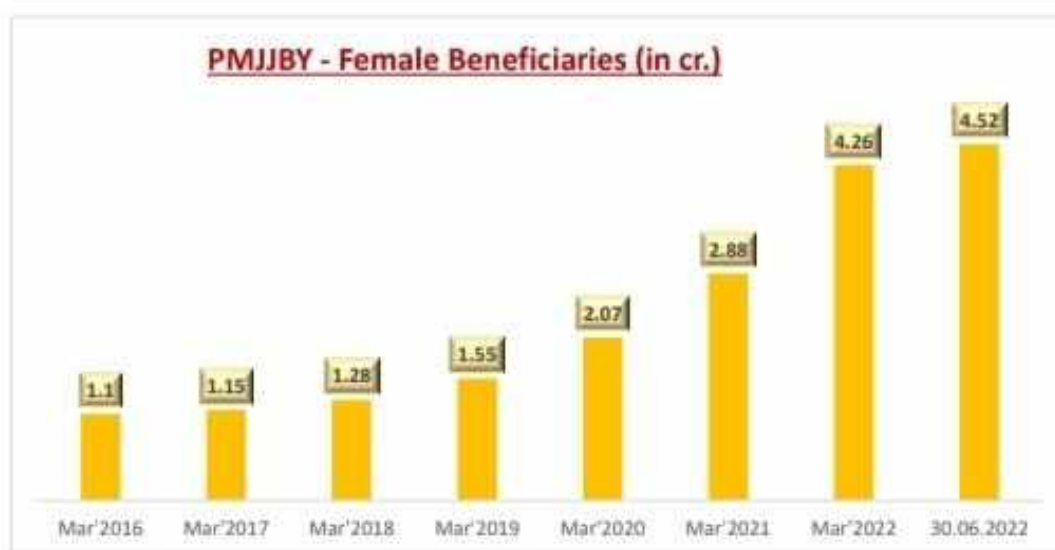
The total enrollments in the scheme at the end of March 2016 was 2.96 Crores and now it has reached a peak of 13.11 Crores by June 2022.

Cumulative Number of Claims Disbursed Under PMJJBY

Source : Insurance companies including convergence schemes

The total number of claims disbursed under the scheme is depicted in the chart above. At the end of March 2016 41,437 claims were disbursed and by end of June 2022 it is 6, 21,372. More than 6 Lakhs people have claimed the benefit.

Female Beneficiaries under PMJJBY



Source :Banks

The chart shows the female beneficiaries under PMJJBY scheme, at the launch it was 1.1 Crores out of 2.96 Crore of total enrollment. At the end of June 2022 the female beneficiaries accounted for around 4.52 Crores which is 49% of the total enrollments.

Conclusion

Insurance is a strong weapon against loss due to risk of death and other uncertainties. By making insurance available to all at a minimum cost the government has ensured security and social welfare among the masses. PMJDY accelerated the progress of PMJJBY through providing a support vehicle. More such social security schemes will ensure a safe and risk free life for the underprivileged. The aim of insuring the uninsured through a universal social security system for all Indians, especially the poor and the under-privileged, through PMJJBY has proven to be efficient and successful through the enormous progress made by the scheme.

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INNOVATION AND GROWTH OF TECHNOLOGY STARTUPS IN INDIA

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Abstract

The Indian startup ecosystem has expanded quite rapidly mainly through private investments including seed, angel, venture capital, and private equity funds, with technical support from incubators, accelerators, and the government⁷. Technology based entrepreneurs are stated as technopreneurs, they are the new trend setting entrepreneurs, they discover and create innovative product and services to the society with the effective usage of science and technology³. India has nearly 27,000 active tech startups now³. The main aim of this paper is to identify the various types of start-ups and growth of unicorn startups in India. Besides this it analysis the issues, challenges faced by the startup companies and emerging trends in the current economic climate.

Keywords: Digital Startups, Technopreneur, Start-up, Entrepreneur, Technology, Invention, Technopreneurship

Introduction

Indian technology companies are at the center of innovation, revolutionizing the Indian economy and opening up new prospects for entrepreneurs. As India's startup environment matures, expect to witness even more revolutionary enterprises emerge¹. To provide funds and facilitates to startups, Indian government initiated "Startup India Scheme" and its primary objective is to promote startup, generate employment and create wealth⁷.

India has the third largest startup ecosystem in the world, just behind China and the US¹⁰. The Indian tech startup environment is rapidly expanding and diversifying, with creative startups forming in various industries. Indian startups are altering the country's economy and offering new possibilities for entrepreneurs, from fintech to e-commerce to health tech¹.

Start-ups created more new jobs; Indian government is setting a right pathway for the young entrepreneurs by providing online portals and mobile applications that brings sharing of information to the business society that leads to healthy growth in business entities³.

Statement of the Problem

The Startup ecosystem of the country is challenging many traditional systems with new-age technologies and removing many pain points¹⁰. Indian businesses are

having a big influence on the everyday lives of the masses by delivering answers to the country's particular difficulties, and the road ahead looks promising for the Indian tech startup industry¹. Despite the progress made so far, Indian businesses face huge challenges, such as the unorganized and fragmented nature of the market in most sectors, a lack of clear and transparent policy initiatives that startups can tap into quickly, as well as a lack of infrastructure, a lack of knowledge and exposure, and complications in doing business⁷.

1. To know the present scenario of tech startups in India, the following questions were raised?
2. What are the various types of start-ups functioning in India? How the growth of startups is identified?
3. Which are the top 10 unicorn startups in India 2023?
4. What are the existing schemes in India for the promotion of start-ups?
5. What are all the issues, challenges faced by the startup companies and emerging trends in the current economic climate?

Objectives of the Study

1. To identify various types of start-ups and their growth in India.
2. To understand the concept and status of unicorn startups in India.
3. To know the existing schemes in India for the promotion of start-ups.
4. To analysis the issues, challenges faced by the startup companies and emerging trends in the current economic climate.

Research Methodology

As the research paper is of conceptual and review nature, the researcher has applied exploratory research design by using varied secondary data availed from the secondary data sources. Based on the secondary data and review, the researcher has reported on important role of innovation and growth of technology startups in India.

Review of Literature

Ankita Panda posted an article entitled "Top 10 Tech Startups in India - An Informative List" on May 23, 2023. In this post, the author indicates at the top ten tech startups in India, building a name for themselves in the tech domain.

Sumit Mishra (2017) entitled a study on "Start-Up In India: Opportunities and Challenges". This research paper revolves around the concept of Start-up India Campaign which was started on 15th august, 2015. The basic purpose of this article is to put some light on the challenges to be countered and opportunities to be capitalised upon by the start-ups entrepreneurs and the initiative taken by the Indian govt.

Unicorn Startups

Unicorn the term was coined by Aileen Lee, a venture capitalist, choosing the mythical animal to represent the statistical rarity of such successful ventures. In the business and financial worlds, a unicorn startup refers to a startup company with a value of over \$1 billion⁹.

Unicorn startups are often innovative and disruptive companies that operate in various sectors, such as technology, e-commerce, finance, healthcare, and more⁹. Unicorns in India are seen as game-changers in their respective industries and have the potential to reshape markets or create new ones. Examples of well-known unicorn startups include BYJU's, Swiggy, OYO Rooms, Dream11, Razorpay, and Ola Cabs⁹.

As per the latest reports, China is 1st position with 206 Chinese firms out of 494 ultra-valuable startups worldwide known as Unicorns. This makes China with the largest number of unicorns in the world. China is also the home of world's 3rd most valuable startup unicorns i.e. Alibaba, ByteDance and ride hailing giant DidiChuxing. All of these 3 unicorns combined value is \$280 billion. US stand at 2nd position with 203 unicorn companies. India is nowhere near China or US, in spite China being our neighboring country, India have 10 times less unicorn startups.

List of the Top 10 Profitable Unicorn Startups in India in 2023

The term 'unicorn' has come a long way from a mythical creature to a regular feature in business and finance discussions. Today unicorn companies have gained recognition and carved a niche for themselves in the market. Not every unicorn needs to prove to be a successful startup. The point is that no startup should stop hustling after achieving a milestone¹⁰.

- **BillDesk**

BillDesk is an Indian online payment gateway company based in Mumbai. The company provides its customers with an online payment platform that enables banking and merchant website transactions. It is an independent payment processing company, regulated under the Payment and Settlement Systems Act, 2007, and supervised by the Reserve Bank of India (RBI)¹⁰.

BillDesk was founded by Indian entrepreneurs M.N. Srinivasu, Ajay Kaushal, and Karthik Ganapathy in 2000. Its headquarter is located in Mumbai. Billdesk is one of the few profitable Fintech companies in India¹⁰.

- **Dream11**

Dream11 is an Indian fantasy sports platform. Dream11 allows users to play fantasy cricket, hockey, football, kabaddi, handball, basketball, volleyball, rugby,

futsal, American football, and baseball¹⁰. It was founded in 2008 by Harsh Jain and BhavitSheth. Dream11 becomes the first Indian fantasy sports company to become a unicorn in 2019. In 2021, Dream Sports, the parent company of Dream 11, raised \$840 million in a funding round led by Tiger Global, D1 Capital, Falcon Edge, DST Global, and Redbird Capital¹⁰.

- **Zerodha**

Zerodha is an Indian financial services company (Member of NSE, BSE, MCX) that provides brokerage-free equity investments, retail, institutional broking, currencies, and commodity trading¹⁰. It was founded in 2010 by Nitin Kamath, the company is headquartered in Bangalore and has a presence in nine Indian cities. It is also an official member of NSE's Advisory Committee for Advanced Trading¹⁰.

- **Zoho**

Zoho Corporation is an Indian technology company that manufactures computer software and web-based business tools. It is known for the online office suite that it provides Zoho Office Suite. The company was founded in 1996 by Sridhar Vembu and Tony Thomas and is headquartered in Chennai, India¹⁰.

- **EaseMyTrip**

EaseMyTrip is an Indian online travel company. It was founded in 2008 by NishantPitti, RikantPitti, and PrashantPitti. Its headquarter is located in New Delhi. The company offers hotel bookings, air tickets, holiday packages, bus bookings, and white-label services. It has overseas offices in Singapore, UAE, Maldives, and Thailand¹⁰.

- **Gupshup**

Gupshup is a leading conversational messaging platform, Powering over 6 billion messages per month according to the company. Thousands of large and small businesses in emerging markets use Gupshup to build conversational experiences across marketing, and sales¹⁰. It is owned and operated by Webru Inc. with its primary operations in India, the United States, Europe, Latin America, Africa, the Middle East, and Southeast Asia. The company was founded by Birud Seth in 2014¹⁰.

- **Infra.Market**

Infra.Market is a construction solutions company, it is India's largest multi-product building material brand. It aims to transform the ecosystem by leveraging technology and driving innovation. Their product portfolio includes a wide range of building materials as well as lifestyle products that enhance interior spaces. The company was launched in 2016 by AdityaSharda and Souvik Sengupta¹⁰.

- **Shiprocket**

Shiprocket is India's largest tech-enabled logistics and fulfillment platform, which aims to democratize the eCommerce landscape of the country. Shiprocket tie-up with multiple courier companies, and e-tailers so that they can easily manage their orders and day-to-day operations from a single platform, customize shipping, tracking, and much more. It was founded in 2012 by Sahil Goyal¹⁰.

- **Mamaearth**

Mamaearth is a skincare products company, They sell their product through an e-commerce platform. They sell a variety of health and wellness products including baby, beauty, hair, and body products. The company is headquartered in Gurgaon, Haryana. It was founded by Varun and Ghazal Alagh in 2016¹⁰.

- **Nykaa**

Nykaa is an Indian e-commerce company that sells beauty, wellness, and fashion products across websites, mobile apps, and 100+ offline stores. Nykaa sells beauty products that are manufactured in India as well as internationally¹⁰. The company was founded in 2012 by Falguni Nair and is headquartered in Mumbai. In 2020, it became the first Indian unicorn startup to be led by a woman¹⁰.

List of Startup Schemes by the Indian Government

India has 335+ active accelerators and incubators with capacity to support 5000+ start-ups annually. Numbers are set to expand to 450+ by 2025 with policy support from Central and State Government agencies.

Under Ministry of Electronics and Information Technology (MeitY)

1. Support for International Patent Protection in Electronics & Information Technology (SIP-EIT)
2. Multiplier Grants Scheme (MGS)
3. Software Technology Park (STP) Scheme
4. Electronic Development Fund (EDF) Policy
5. Modified Special Incentive Package Scheme (M-SIPS)
6. Scheme to Support IPR Awareness Seminars/Workshops in E&IT Sector

Under Ministry of Agriculture and Farmers Welfare

7. NewGen Innovation and Entrepreneurship Development Centre (NewGen IEDC)
8. The Venture Capital Assistance Scheme

Under Ministry Of Micro, Small and Medium Enterprises (MSME)

9. Credit Guarantee
10. Performance & Credit Rating Scheme
11. Raw Material Assistance
12. Revamped Scheme of Fund for Regeneration of Traditional
13. Single Point Registration Scheme (SPRS)
14. Aspire – Scheme for promotion of innovation, entrepreneurship, and agro-industry
15. Infrastructure Development Scheme
16. MSME Market Development Assistance
17. National Awards (Individual MSEs)
18. Coir Udyami Yojana
19. International Cooperation (IC) Scheme
20. Credit Linked Capital Subsidy for Technology Upgradation
21. Bank Credit Facilitation Scheme

Under NITI Aayog

22. Atal Incubation Centres (AIC)
23. Atal Tinkering Laboratories (ATL)
24. Scale-up Support to Establishing Incubation Centres

Under Ministry of Skill Development and Entrepreneurship

25. Udaan Training Programme for Unemployed Youth of J&K

Under Ministry of Heavy Industries & Public Enterprises

26. Enhancement of Competitiveness in the Indian Capital Goods Sector

Under Ministry of New and Renewable Energy (MNRE)

27. National Clean Energy Fund (NCEF) Refinance
28. IREDA Scheme for Discounting Energy Bills
29. Bridge Loan against MNRE Capital Subsidy
30. Bridge Loan against Generation-Based Incentive (GBI) Claims
31. Loan for Rooftop Solar PV Power Projects
32. Credit Enhancement Guarantee Scheme

Under Schemes by Public Sector Enterprises

33. Dairy Entrepreneurship Development Scheme
34. 4E (End to End Energy Efficiency)
35. Pradhan Mantri Mudra Yojana (PMMY)

36. Stand Up India
37. Sustainable Finance Scheme
38. SIDBI Make in India Soft Loan Fund for Micro Small and Medium Enterprises (SMILE)
39. Startup Assistance Scheme
40. Growth Capital and Equity Assistance

Under Ministry of Science & Technology

41. Assistance to Professional Bodies & Seminars/Symposia
42. Ayurvedic Biology Program
43. Industry Relevant R&D
44. High Risk-High Reward Research
45. Technology Development Programme (TDP)
46. National Science & Technology Management Information System (NSTMIS)
47. Biotechnology Industry Partnership Programme (BIPP)
48. Industry Innovation Programme on Medical Electronics (IIPME)
49. Extra Mural Research Funding
50. SPARSH (Social Innovation programme for Products: Affordable & Relevant to Societal Health)
51. Promoting Innovations in Individuals, Startups and MSMEs (PRISM)
52. Science and Technology of Yoga and Meditation (SATYAM)
53. Rapid Grant for Young Investigator (RGYI)
54. Biotechnology Ignition Grant (BIG)

Emerging Trends in Technology Startups

Indian technological startups are transforming the Indian economy in a variety of ways. They drive innovation in finance and online shopping, create new employment, and contribute to the nation's GDP. Furthermore, Indian entrepreneurs are rapidly meeting the demands of the country's large population, from providing inexpensive healthcare to enhancing financial inclusion¹.

Flipkart, Paytm, Ola, Byju, and Zomato are some of India's most successful software firms. Indian technology firms are producing new employment, spurring innovation, and increasing the country's GDP. Both domestic and international investors are investing money in Indian IT businesses. Fintech, e-commerce, health tech, ed-tech, and agri-tech are among the industries in which Indian tech firms are focused¹.

Recommendations

Solving problems and innovation in a country of 1.3 billion requires a lot of money¹⁰. If the government succeeds in establishing a pro-active start-up environment as intended, then there is lot of scope for new job creation. The following recommendations are suggested for betterment of the nation.

For Revenue Generation

- Provide structures institution support for early stage start-ups to tap into global markets
- Easy procurement norms of Public Procurement for Start-ups along with spend targets

To increase seed stage investments:

- Create seed stage co-investment fund for angel groups
- Bring focus on capability over capacity in accelerators and incubators

To increase corporate participation

- Expand CSR guidelines to increase capital availability and pace of deployment
- Encourage set-up of corporate innovation labs.

To strengthen support ecosystem

- Build industry-specific world-class innovation clusters
- Build industry-specific physical and digital sandboxes

Conclusion

Nowadays India focuses on competing and grabbing the top place in global market and for this the government taking necessary steps for creating awareness among the youths in India for meeting up with the global competitions by providing necessary training through training centers, educational institutions and other avenues. vision over the start-up of the nation entirely turn in the present era³.

Creating more awareness of government initiatives and incentives, credit disbursement to priority sectors, promoting outreach and network benefits to Tier 2 and Tier 3 cities, as well as easing financing and tax breaks for foreign and domestic investors could improve opportunities for startups in India⁷.

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A REVIEW ON ANALYZING THE IMPACTS OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING IN HIGHER EDUCATION

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Abstract

Artificial Intelligence (AI), Machine learning (ML) and Deep Learning (DL) technologies are growing immensely in recent years. This tremendous growth is because of the fact that each and every day huge volume of data is generated, and so application of these technologies has become more significant, durable and valuable in today's world. Many artificial applications like Virtual assistants, chatboxes, driverless vehicles, translators, speech recognizers and many more are the best output models of these advanced technologies. In this paper a comparison of these technologies, its types, applications, tools used for evaluation, current research areas and future research area where these techniques can be applied has been clearly reviewed which can help to explore more deep research works from these fields.

Key words: Artificial Intelligence (AI), Machine learning (ML), Deep Learning (DL), Education.

Introduction

Artificial intelligence is a widespread division becoming very popular computer science which deals with building smart machines which are capable of doing tasks that characteristically need human intelligence power. Machine Learning is a subset of artificial intelligence which helps us to construct AI-driven applications. Machine learning is a technique adopted in computers which enables machines to think and act with less human intervention; Deep Learning is a subset of machine learning which makes use of huge volumes of data and complex algorithms to train a model. Deep learning deals with the concept of making computers learn to think by make use of structures which is modeled based on human brain. Machine learning techniques require less computing power and deep learning technique needs less human intervention.

Importance of AI—AI gives technological systems the ability to observe their surroundings, respond to what they see, work through issues, and take appropriate action to complete a task. The computer gathers data through sensors like CCTV camera and then processes it and delivers the results as the user required format. Artificial intelligence techniques are capable of duplicating the human mind and it is used in expert systems to do a particular task. Examples of these include self-driving cars which uses smart assistants like Siri and Alexa. Many companies make use of

these techniques to provide intelligent behavior to their products which can help the users in completing their activities easily and rapidly.

Advantages and disadvantages of AI

Advantages	Disadvantages
1. Processes detail-oriented tasks very efficiently 2. Outputs obtained are more accurate and reliable 3. AI powered virtual agents are becoming more popular nowadays. 4. Time taken for executing huge data jobs is very much reduced	1. It is Costlier to implement 2. Technically skilled professionals are required to train the application 3. Workers who are qualified to build AI based tools are limited in number. 4. AI can work on only programmed task. 5. It does not have the capability to generate the results from another jobs or tasks

Types of AI and ML

Based on the application of AI techniques it can be categorized into four types as follows:

- **Type 1: Reactive machines.** These AI systems are task-specific and lack memory. Deep Blue is a prime example. Deep Blue can recognize the pieces on the chessboard and make predictions, but because it lacks memory, it is unable to draw on its past learning to make predictions about the future.
- **Type 2: Limited memory.** These AI systems contain memories, allowing them to draw on the past to guide present actions. This is how some of the decision-making processes of self-driving automobiles are constructed.
- **Type 3: Theory of mind.** Theory of mind is a term used in psychology. When used to AI, it implies that the technology would be socially intelligent enough to recognize emotions. This kind of AI will be able to forecast behavior and deduce human intentions, which is a capability required for AI systems to become essential members of human teams.
- **Type 4: Self-awareness.** In this category, AI programs are conscious because they have a sense of who they are. Self-aware machines are aware of their own conditions. There is currently no such AI.

A lot of data is provided to the computer so it may learn, forecast the future, look for trends, and categorize data. The findings are trained and predicted using these machine learning algorithms. The kind of data being trained determines the machine learning method that is employed.

There are three machine learning types: supervised, unsupervised, and reinforcement learning.

- **Supervised learning**-In this type of machine learning historical input and output data are used in training the machine learning algorithms, here the machine learn and outputs are clearly given and obtained as needed.
- **Unsupervised learning** -When you need to find patterns and use data to make judgments, this type of machine learning is particularly useful. The same labeled training sets and data are not used in unsupervised learning, but the computer still searches for any similar patterns in the data.
- **Reinforcement learning** -Reinforcement learning is the contiguous machine learning type that learns by interacting with its environment and gets a positive or negative reward.

AI Technology in Real World

AI technologies are incorporated in to different kinds of machines to make the task get completed easier and quicker. Some of the examples of this incorporation include:

- **Automation:** Automation tools are used in places where the tasks have to be done automatically for processing huge volume of different kinds of tasks. Example: Robotic process automation (RPA), this type of software is used to perform automatic repetitive tasks, rule-based data processing tasks that was being done by humans traditionally.
- **Machine vision:** This technology enables the machine to see. Using a camera, analog-to-digital conversion, and digital signal processing, it records and examines visual data..Some of the examples include spying an aero plane to take photographs which helps to figure out spatial information or map of the areas. Clinical expert system is used by doctors to diagnose the patient. The face of the criminal can be detected with the stored portrait made by forensic artist in criminal investigation.
- **Natural language processing (NLP):** This is the process of converting human language using a computer program. The best-known example of NLP is spam detection, which looks at the subject line and text of an email and decides if it's junk. Current NLP applications include text translation,

sentiment analysis and speech recognition. Machines can interact with humans and can understand the language spoken by them.

- **Robotics:** Robots are commonly used to perform tasks that are very tough for humans to perform or perform reliably. Example of this includes robots used in assembly lines for car manufacturing or by NASA to move large objects in space.
- **Self-driving cars:** Autonomous vehicles use an integration of different technologies like computer vision, image recognition and deep learning to construct an automated piloting vehicle which can identify the obstacles and pedestrians on the lane.
- **Gaming** – AI can be used to play strategic games like chess, poker, tic-tac-toe, etc., where machines are made to think like humans using heuristic knowledge.
- **Expert Systems** – These applications are built by integrating machine, software, and special information by imparting reasoning and advising capability to the user's need.
- **Speech Recognition** – These intelligent systems have the capacity to hear and comprehend the language spoken and convert it into meaningful sentences and words.
- **Handwriting Recognition** – This software can read the text written on paper using a pen or on screen by a stylus. It can also identify various shapes of the letters and convert it into editable text.

Machine Learning Technology in Real World Applications

Supervised learning technique is used in different business operations like sales forecasting, inventory optimization, fraud detection, fraudulent transaction made in bank, to predict the disease, prediction of low risk and high risk loan applicant, predicting failure in industrial equipment's etc.

Unsupervised learning techniques can be applied to create predictive models. Some of the commonly used applications include clustering and association, like grouping the customer based on their purchase behavior, grouping inventory based on manufacturing metrics, pinpointing associations in customer data etc.

Reinforcement learning technique This approach of reinforcement learning can be used in fully simulated settings that are immobile or have a lot of useful data. Because this type of machine learning needs less management than supervised learning, practical applications for this type of learning include self-driving a car and teaching it to park them, controlling traffic lights dynamically to reduce traffic jams and advanced robotics techniques which can automatically read video images and do the actions they saw on the video image.

Some of the Most Commonly used Machine Learning Applications includes:

- **Google-** Google Assistant and Google Camera, Gmail and Google Photos. Gmail has now got smart reply feature will suggest small brief responses to the email we have received based on the content that is present available in the email. The smart compose option will give us suggestions like greetings, closings, or some whole sentences in between while we are busy typing the email.
- **Netflix-**ML has been used to improvise the recommendations and personalization problems. ML techniques are also used in other streams like content promotions, price modeling, content delivery and marketing.
- **Uber-**ML is for estimating the time to determining how far your cab is from your given location. It uses algorithms to predict all these efficiently Uber EATS, also performs same by taking into account various factors like food preparation time and estimated delivery time.
- **Siri & Cortana-**These voice recognition systems are based on Deep neural networks algorithms which are being trained in a such a way that they can imitate human interactions. While proceeding with this interaction, these apps will learn to understand the skeleton and grammar of the language being spoken.
- **Spotify-** This is similar to Netflix which makes use of ML to generate weekly releases list of around 30 songs, which we can listen to. A new play list which fulfills their dreams is send to that user.
- **Voice recognition systems-**Deep neural networks is used in voice recognition systems to train the voice which can imitate human interactions in exactly the same manner.
- **Personalized Online Shopping-**ML-powered algorithms are used to curate the list of buying recommendations and filtrations for the users. Using this personalization, users can order products that they actually might be interested to choose from.
- **Enhanced Images-** ML can help to detect the objects in the images and make several enhancement like lighting and creating more effects to the images. Nowadays this features are made available in smart phone cameras also.
- **Social Media-** Social media is area which has established itself as an essential element for the current generation. AI and ML in social media can be associated with big data and machine learning where deep learning is used to extract every minute detail from an image by using a bunch of deep neural networks.

- **Surveillance**-CCTV security camera monitoring images can be used can be trained using supervised exercises, developing security algorithms, identification protocols, and much more.
- **Agriculture**- With the increased demand for food, organizations are using automation and robotics technology with AI embedded in it to help farmers to find more efficient ways to protect their crops from various conditions like weather, weeds, market consumption rates, and much more. The latest help to detect crop diseases and soil nutrition content using the sensor images obtained from the field.
- **Customer Service**-Many websites are now offering customersupport with chatting ability. It's one of artificial intelligence's most widely used applications. These chatbots are essentially just automatic replies. These chat support bots are little more than automated responders.
- **Healthcare**- it is used in helping people with looking after patients. In some cases it provides operating assistance to the doctors.
- **Banks-AI and MLbased** software is used to provide customer support and detect anomalies and credit card fraud, tracing card usage and endpoint access, security specialists are more effectively preventing fraud.
- **Smart Homes**-Various devices like smart locks, smart switches, etc., are increasingly becoming compatible with various devices, and the application of smart homes is becoming more accessible to the general population every day.
- **Travel-Applications** for artificial intelligence (AI) and machine learning in travel assist travel companies in determining lucrative yet accessible fares based on a variety of parameters to draw in a large number of clients..
- **Space Exploration**-Artificial intelligence and machine learning is used to sift through years of data obtained by the Kepler telescope in order to identify a distant eight-planet solar system.
- **ChatBots**-Virtual assistants are used to control various home appliances like siri, cortana and Alexa. Amazon's Echo is used to translate human language into desirable actions by making use of speech recognition and NLP .

The Impact of AI and ML on Human Society

Negative Impact

1. The use of AI and ML creates a huge social change in the way of living by the humans.
2. Unemployment is created as all the tasks will be replaced by machinery.

3. Wealth inequality can be realized between the investors of AI and non-investors of AI.
4. AI has the capacity to work by itself after being loaded with sufficient algorithms and it will ignore the commands given by the human controller.
5. AI which is created by human on racial bias or egocentrically oriented environment may harm certain people or things.

Positive Impact

AI makes the computers to learn, reason, and apply the logic being loaded. Scientists, medical researchers, clinicians, mathematicians, and engineers can make use of this AI technology to produce reliable and safe output or process.

1. **Fast and accurate diagnostics** can be obtained using this techniques example IBM's Watson computer
2. **Socially therapeutic robots**-senior citizens make use of robots as their pets to overcome their tension and reduce blood pressure, anxiety, loneliness, and increase social interaction.
3. **Reduce errors related to human fatigue**-greater levels of human fatigue creates more errors which can be eliminated by using automated machines to perform tasks accurately
4. **AI in surgical contribution**- AI-based surgical procedures is being used to complete the surgeries with less damage to the body.
5. **Improved radiology**- The use of cardiac MRI, body MRI and fetal imaging helps to predict the diseases through the scan results.
6. **Virtual presence**- this technology enables a distant diagnosis of patient who is unable to travel or bed ridden.

Challenges faced in implementing Artificial Intelligent and Machine learning Technology

Data Scarcity - AI system works by making use of trained data. The quality dataset required to train a dataset is limited in number. If the size of the trained dataset is large then more accurate the results will be. Therefore the ability to obtain these quality data is essential for being AI to be graded "good" or "bad".

Limited Implementation - Building up an AI with same human intelligence is a tedious task or a big challenge which many researchers and practitioners are facing today.

Data Privacy and Security -The huge volume of data must be trained so there is no possibility of storing a sensitive data.

Transparency of Algorithm—the AI and ML algorithms are more and more difficult to be understood by the human and so transparency of these algorithms are making it a black box effect.

Bias—Implementation of AI techniques may be good or bad depending on the environment it being used. So it can be judged to be defined as bad or good. It has both merits and demerits and it depends on the type of environment it is being applied.

Current and Future Research Trends in AI, ML and Deep Learning

Text Mining and Text Classification, Machine Vision, Clustering, Optimization, Voice Classification, Sentiment Analysis are some of the hot research areas in which machine learning can be applied. Deep learning research can focus on object detection, information retrieval, fusion and summarization, retrieval of video key frames and summarization, data fusion using deep learning in information retrieval.

Breakthrough in Science: In future AI technologies can be able to create science as evidenced by the Robot Scientist, Eve. AI for drug discovery can be made automated as machines work faster than humans. AI can be used in synthetic biology for manufacturing and rapid design of microorganisms for industrial purpose.

Cyber Security: The future application of AI in cyber security will prevent many curbing hackers. Credit card fraudery is one of the most important research focus where many novel AI techniques like Recurrent Neural Networks can detect fraudery in initial stages itself and can also scan thousands of transactions instantly and predict or classify them into buckets

Face Recognition: Authenticating personal content uses facial recognition technique. Many Governments and security forces make use of this technique to find out the criminals and identify citizens. Future face recognition technology will be able to analyze emotions such as tension and anger in addition to facial structure..

Data Analysis: AI will benefit business through Data Analysis which is able to perceive patterns in data that humans cannot. This makes it possible for businesses to target the ideal clients for their goods. As an illustration, Fluid, a digital retailer, makes intelligent product recommendations to its consumers using Watson, an AI developed by IBM.

Transport: AI-guided transport will help to automate vehicle and operate it smoothly and efficiently. Self-driving car manufacturers, Google, Uber and General Motors are trying to establish to promote driverless vehicles to become a reality.

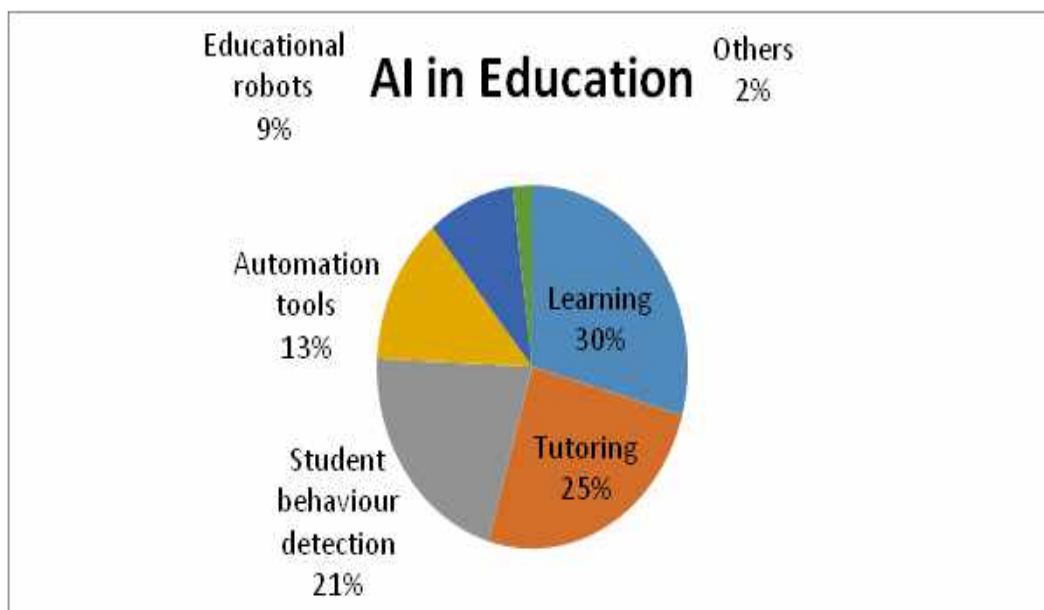
Various Jobs : Robotic Process Automation in factories and industries to carry out their routine operation . It is also possible that AI may take over dangerous and unhealthy vocations like welding and bomb disposal.

Marketing &Advertising: This area focuses the business organizations to increase the efficiency of sales and marketing. More money may be made through targeted advertising, understanding consumer behavior, and facial recognition.

Discussion

Traditional teaching methods are being disrupted by AI-driven education, which is also influencing the direction of technology in the sector. AI tools for education use powerful algorithms to evaluate vast amounts of data to deliver individualized and flexible learning experiences. In the classroom, students have access to immersive technology like augmented and virtual reality as well as individualized learning and rapid feedback.

Chatbots and virtual tutors are examples of conversational AI in education that provide quick support and encourage individual learning. The way that students study is being revolutionized by AI chatbots in education. These chatbots offer students immediate, individualized support by responding to their inquiries and directing them through the learning process using machine learning and natural language processing. Students can better understand topics and remember knowledge when learning is dynamic and interesting. According to the recent survey conducted by AI STEM the following results have been reported by analyzing various feature associated to higher education. The predictions were based on learning, tutoring, analyzing the students behavior, the role of automation , the use of educational robots for tutoring and other features. The report clearly states that 28% of students can understand the concepts clearly and 16% of tutoring is done correctly , students behavior detection is performed 21% and 13% of automation benefits the students community and the use of educational robots for tutoring is only 9% and other benefits with AI is 2%. This survey report clearly states that using AI technologies in higher education and other fields will provide feasible growth in understanding ability and self learning capability of the students.



Conclusion

This article mainly focuses on what is AI, ML, and deep learning, its application in various fields, its impact on human society, its merits and demerits. A detailed study on artificial intelligence, machine learning has been made to do further research in this area. A comparison has also been made with respect to their application in the field of higher education. The emerging development of AI and ML in all applications has uplifted the society. Hence this article will support all the researchers to know the future research areas which can be focused to proceed with their work.

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CYBER SECURITY AND DATA PRIVACY IN THE DIGITAL ERA: CHALLENGES AND STRATEGIES

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Abstract

In the digital era, Cyber security and data privacy have become increasingly important as individuals, organizations, and governments face growing cyber threats and concerns about the protection of sensitive information. This conference paper explores the challenges and strategies related to Cyber security and data privacy in the digital era. It discusses the evolving cyber threat landscape, the impact of technological advancements on data privacy, and the strategies needed to address these challenges. The paper also examines the role of regulations, technological solutions, and collaborative efforts in ensuring effective Cyber security and data privacy practices.

Keywords: Cyber security, Data Privacy, Digital Era, Cyber Threats, Technological Advancements, Regulations, Technological Solutions, Collaboration.

Introduction

The digital era, characterized by the rapid advancements in technology and the widespread use of the internet, has revolutionized the way we live, work, and communicate. This digital transformation has brought numerous benefits and opportunities, but it has also introduced new challenges and risks, particularly in the realms of Cyber security and data privacy. In this digital era, Cyber security has become a critical concern for individuals, businesses, and governments alike. The increasing reliance on digital systems and networks has created a vast surface area for cyber threats to exploit. Cybercriminals are constantly evolving their tactics and techniques to exploit vulnerabilities in computer systems and networks, aiming to gain unauthorized access, steal sensitive information, disrupt operations, or engage in malicious activities. The consequences of successful cyber attacks can be severe, ranging from financial losses and reputational damage to the compromise of personal privacy and national security.

Similarly, data privacy has emerged as a significant concern in the digital age. The proliferation of digital platforms, online services, and data collection practices has led to the creation of vast amounts of personal data. Individuals are increasingly

concerned about how their personal information is collected, stored, used, and shared by organizations. Data breaches and unauthorized access to personal data can result in identity theft, financial fraud, and the violation of privacy rights. Ensuring data privacy is crucial for maintaining individuals' trust in digital systems and protecting their fundamental rights. The importance of Cyber security and data privacy in the digital age cannot be overstated. Cyber security measures are necessary to protect critical infrastructure, secure sensitive data, and safeguard the integrity of digital systems. Effective Cyber security practices not only help prevent cyber attacks but also enable timely detection, response, and recovery in case of security incidents. On the other hand, data privacy is essential for preserving individuals' autonomy, control, and dignity over their personal information. Respecting privacy rights and implementing data protection measures are crucial for maintaining trust between individuals and organizations.

Moreover, Cyber security and data privacy are not only individual concerns but also have significant implications at the societal and economic levels. A secure and trusted digital environment is essential for fostering innovation, promoting e-commerce, enabling digital transformation, and driving economic growth. Organizations that prioritize Cyber security and demonstrate a commitment to protecting data privacy are more likely to attract and retain customers, build brand reputation, and comply with legal and regulatory requirements. Thus, the digital era has brought immense opportunities and advancements, but it has also introduced new risks and challenges related to Cyber security and data privacy. The importance of robust Cyber security measures and effective data privacy practices cannot be ignored. Safeguarding digital systems, protecting sensitive information, and respecting individuals' privacy rights are not only ethical imperatives but also fundamental for maintaining trust, enabling innovation, and ensuring the long-term sustainability of the digital ecosystem.

Cyber Threat Landscape

The digital era, characterized by the rapid advancements in technology and the widespread use of the internet, has revolutionized the way we live, work, and communicate. This digital transformation has brought numerous benefits and opportunities, but it has also introduced new challenges and risks, particularly in the realms of Cyber security and data privacy. In this digital era, Cyber security has become a critical concern for individuals, businesses, and governments alike. The increasing reliance on digital systems and networks has created a vast surface area for cyber threats to exploit. Cybercriminals are constantly evolving their tactics and techniques to exploit vulnerabilities in computer systems and networks, aiming to

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Technological Advancements and Data Privacy

Technological advancements have had a profound influence on data privacy in the digital era. The emergence of new technologies such as the Internet of Things

(IoT), big data analytics, and cloud computing has revolutionized the way data is collected, stored, and shared. While these advancements offer numerous benefits and opportunities, they also present challenges and privacy concerns that must be addressed. The Internet of Things (IoT) refers to the network of interconnected devices embedded with sensors, software, and connectivity, enabling them to collect and exchange data. IoT devices, such as smart home devices, wearables, and industrial sensors, generate vast amounts of data. The challenge lies in ensuring that the data collected by IoT devices is handled securely and that individuals' privacy is protected. Privacy concerns include unauthorized access to personal information, tracking of individuals' behavior, and potential security vulnerabilities in IoT devices.

Big data analytics involves the processing and analysis of large volumes of data to derive insights and make informed decisions. While big data analytics offers significant benefits in various domains, such as healthcare, finance, and marketing, it also raises privacy concerns. Analyzing large datasets may uncover sensitive information and create risks of reidentification. Balancing the need for data analysis with individuals' privacy rights is a challenge that requires careful data governance and anonymization techniques. Cloud computing allows organizations to store and process data remotely on servers accessed via the internet. Cloud services offer scalability, cost-efficiency, and accessibility. However, entrusting data to third-party cloud providers raises concerns about data security and privacy. Organizations must ensure that adequate safeguards are in place to protect data stored in the cloud, including robust encryption, authentication mechanisms, and adherence to privacy regulations.

Data collection, storage, and sharing practices present significant privacy challenges. With the increasing digitization of personal information, individuals may have limited control over how their data is collected, used, and shared. Organizations must be transparent in their data collection practices, provide individuals with informed consent, and implement secure storage and data protection measures. Data sharing among organizations also raises privacy concerns, as data may be shared without individuals' knowledge or used for purposes beyond their original intent. Furthermore, cross-border data transfers pose challenges to data privacy. In a globalized world, data flows across national borders, and differing data protection laws and practices can result in inconsistencies in privacy protection. Harmonizing data protection laws and establishing international agreements on privacy standards are important steps in addressing these challenges. To address the influence of technological advancements on data privacy and overcome associated challenges, several measures can be taken. Implementing privacy-by-design

principles, which embed privacy considerations into the design and development of technologies and systems, can help ensure privacy protection from the outset. Adopting strong encryption and data anonymization techniques can safeguard sensitive information while still enabling data analysis. Enhancing individuals' control over their personal data through mechanisms such as data portability and data access rights empowers individuals to manage their privacy. Strengthening data protection regulations and promoting privacy awareness and education among individuals, organizations, and policymakers are also vital in safeguarding data privacy in the digital era. Thus, technological advancements have had a profound influence on data privacy. Challenges arise from the Internet of Things, big data analytics, cloud computing, and data collection, storage, and sharing practices. Addressing these challenges requires a comprehensive approach that balances technological innovation with privacy protection. By implementing privacy-enhancing measures, adopting robust data protection practices, and promoting privacy awareness, we can navigate the complex landscape of data privacy in the digital era and ensure individuals' privacy rights are respected.

Regulatory Frameworks

Data privacy regulations, such as the General Data Protection Regulation (GDPR), have played a significant role in addressing privacy concerns in the digital era. The GDPR, implemented by the European Union, is one of the most comprehensive and far-reaching data protection regulations globally. It establishes a framework for the collection, processing, and storage of personal data, ensuring individuals have control over their data and imposing obligations on organizations to protect that data. The GDPR introduces several key principles, including the requirement for organizations to obtain informed consent for data processing, the right to access and rectify personal data, the right to erasure (also known as the right to be forgotten), and the obligation to implement appropriate security measures to protect personal data. It also imposes strict penalties for non-compliance, including significant fines.

Apart from data privacy regulations, Cyber security regulations and standards play a crucial role in safeguarding data privacy. These regulations and standards outline best practices and requirements for organizations to secure their systems, networks, and data from cyber threats. Examples include the Payment Card Industry Data Security Standard (PCI DSS) for securing payment card data and the ISO/IEC 27001 standard for information security management. Regulatory compliance is of utmost importance in protecting data privacy. Compliance with data privacy regulations ensures that organizations handle personal data

responsibly, respect individuals' privacy rights, and implement necessary safeguards to protect data from unauthorized access, disclosure, or misuse. Compliance also enhances transparency and accountability, as organizations are required to document their data processing activities, conduct privacy impact assessments, and maintain records of data breaches.

Moreover, regulatory compliance fosters trust between individuals and organizations. When individuals know that their data is being handled in accordance with privacy regulations, they are more likely to feel confident in sharing their personal information. Compliance also helps organizations build a reputation for privacy and data protection, which can be a competitive advantage and lead to increased customer loyalty. The role of regulatory compliance extends beyond individual organizations. It contributes to the overall security posture of industries and sectors by establishing a baseline of security requirements and best practices. Compliance with Cyber security regulations and standards strengthens the resilience of systems and networks, reducing the risk of data breaches and cyber attacks. To ensure effective regulatory compliance and protect data privacy, organizations should invest in robust data protection measures, such as encryption, access controls, and regular security assessments. They should also establish privacy policies and procedures, provide privacy training to employees, and implement incident response plans to address any breaches or incidents promptly. Thus, data privacy regulations and Cyber security standards play a crucial role in protecting data privacy in the digital era. Compliance with these regulations is vital for organizations to uphold privacy rights, maintain trust with individuals, and protect against data breaches and cyber threats. By prioritizing regulatory compliance, organizations can demonstrate their commitment to data privacy and contribute to a safer and more secure digital environment.

Strategies for Cyber security and Data Privacy

a. Technical Measures:

- Implementation of robust Cyber security measures, such as encryption, firewalls, and intrusion detection systems, is essential to protect data privacy. Encryption ensures that sensitive data is stored and transmitted securely, making it unreadable to unauthorized individuals. Firewalls and intrusion detection systems act as barriers against unauthorized access and detect and respond to potential cyber threats.
- Secure software development practices, including conducting thorough code reviews, performing regular security assessments, and patching known vulnerabilities, help mitigate the risk of cyber attacks. By implementing

secure coding practices and regularly updating software, organizations can reduce the likelihood of exploitation by cybercriminals.

b. Employee Training and Awareness:

- Cyber security awareness training is crucial to educate employees about potential risks and best practices for data privacy. Training programs should cover topics such as identifying phishing attempts, creating strong passwords, and recognizing social engineering tactics. By promoting a culture of Cyber security awareness, organizations empower employees to make informed decisions and actively contribute to data privacy protection.
- Encouraging responsible use of technology and adherence to security policies is equally important. Employees should be educated on the importance of following security protocols, such as using secure networks, regularly updating software, and reporting any suspicious activities. By fostering a sense of responsibility and accountability, organizations can mitigate the risk of internal vulnerabilities and enhance overall data privacy.

c. Collaboration and Information Sharing:

- Public-private partnerships play a vital role in addressing Cyber security challenges. Collaboration between government agencies, industry sectors, and academia enables the sharing of threat intelligence, best practices, and research. By working together, stakeholders can collectively identify emerging cyber threats, develop effective countermeasures, and enhance the overall Cyber security posture.
- Information sharing platforms and initiatives facilitate the exchange of Cyber security-related information among organizations. These platforms enable the dissemination of timely threat intelligence, including indicators of compromise and mitigation strategies. By actively participating in information sharing initiatives, organizations can stay ahead of evolving cyber threats and proactively protect their data.

d. Incident Response and Recovery:

- Developing robust incident response plans is crucial for effective Cyber security management. Incident response plans outline the steps to be taken in the event of a cyber incident, including incident reporting, containment, investigation, and recovery. By having a well-defined plan in place, organizations can minimize the impact of cyber incidents, mitigate further damage, and restore normal operations efficiently.

- Effective recovery strategies involve restoring systems from secure backups, patching vulnerabilities, and implementing additional security measures to prevent future incidents. Regular testing and updating of incident response and recovery plans are essential to ensure their effectiveness and relevance in addressing new and emerging cyber threats.

Thus, implementing technical measures, providing employee training and awareness, fostering collaboration and information sharing, and developing robust incident response and recovery strategies are critical for ensuring Cyber security and protecting data privacy in the digital era. By adopting a multi-faceted approach, organizations can strengthen their defenses, mitigate cyber threats, and safeguard sensitive data, ultimately contributing to a secure and trusted digital environment.

Technological Solutions

Emerging technologies are playing a significant role in advancing Cyber security and data privacy measures in the digital era. These technologies offer innovative solutions to address evolving cyber threats and enhance the overall security posture of organizations. Some notable technologies include artificial intelligence (AI), machine learning (ML), and blockchain.

AI and ML have revolutionized Cyber security by enabling automated threat detection, anomaly detection, and behavioral analysis. These technologies can analyze vast amounts of data and identify patterns that may indicate cyber threats. They can also enhance the accuracy of threat detection and enable real-time responses to potential attacks. AI and ML algorithms continuously learn from new data, allowing them to adapt to evolving cyber threats and improve their effectiveness over time.

Blockchain, originally developed for secure transactions in cryptocurrencies like Bitcoin, offers potential applications in data privacy and Cyber security. Blockchain is a decentralized and immutable ledger that ensures the integrity and traceability of data. Its distributed nature makes it difficult for hackers to tamper with or manipulate data stored on the blockchain. Blockchain can enhance data privacy by providing transparent and auditable records, enabling individuals to have greater control over their personal information.

However, implementing these emerging technologies for Cyber security and data privacy is not without challenges and considerations. Some key challenges include:

1. Complexity and Integration: Implementing emerging technologies like AI, ML, and blockchain requires expertise and a deep understanding of their complexities. Integrating these technologies into existing systems and

workflows can be challenging and may require significant investment in infrastructure, training, and resources.

2. **Ethical and Privacy Concerns:** The use of AI and ML in Cyber security raises ethical and privacy concerns. For example, AI-powered threat detection may involve analyzing vast amounts of personal data, raising questions about data privacy and consent. It is essential to ensure that these technologies are implemented ethically and in compliance with relevant privacy regulations.
3. **Security Risks:** While emerging technologies can enhance security, they can also introduce new risks. For instance, AI and ML algorithms can be vulnerable to adversarial attacks, where malicious actors manipulate input data to deceive or bypass the algorithms. Additionally, blockchain technology is not entirely immune to security vulnerabilities, such as 51% attacks or smart contract vulnerabilities.
4. **Data Quality and Bias:** The effectiveness of AI and ML algorithms depends on the quality and diversity of the data used to train them. Biased or incomplete data can lead to biased or inaccurate outcomes, which can have implications for data privacy and fairness. It is crucial to ensure that the data used for training these technologies is representative and free from biases.

To address these challenges, organizations must carefully evaluate the benefits and risks of implementing emerging technologies. They should prioritize transparency, accountability, and ethical considerations in the design and implementation of these technologies. Collaboration between technology experts, policymakers, and stakeholders is essential to navigate the complexities and ensure the responsible and secure deployment of emerging technologies for Cyber security and data privacy.

Thus, emerging technologies such as AI, ML, and blockchain have the potential to significantly enhance Cyber security and data privacy measures. While they offer innovative solutions, organizations must be mindful of the challenges and considerations associated with implementing these technologies. By addressing these challenges and promoting responsible use, organizations can leverage emerging technologies to strengthen their Cyber security defenses and protect sensitive data in the digital era.

Future Directions and Challenges

As technology continues to advance, new trends in cyber threats and data privacy are anticipated to emerge. Some key trends include:

1. **Advanced Persistent Threats (APTs):** APTs are sophisticated and targeted cyber attacks aimed at infiltrating systems, stealing sensitive information, and

maintaining long-term access to networks. These attacks often involve multiple stages and are carried out by well-funded and highly skilled adversaries. As technology evolves, APTs are expected to become more sophisticated and challenging to detect.

2. Internet of Things (IoT) Security: With the proliferation of connected devices in homes, businesses, and critical infrastructure, IoT security becomes a significant concern. Weaknesses in IoT devices, such as default passwords, lack of encryption, and inadequate security controls, can expose networks and sensitive data to cyber attacks. Protecting IoT devices and securing the vast amounts of data they generate will be crucial in maintaining data privacy and Cyber security.
3. Cloud Security: As more organizations move their data and operations to the cloud, ensuring robust cloud security becomes essential. Data breaches, unauthorized access, and misconfigurations can pose significant risks to sensitive data stored in the cloud. Cloud service providers and organizations must work together to implement strong security measures, including encryption, access controls, and regular security assessments.
4. Artificial Intelligence (AI) in Cyber Attacks: While AI has positive applications in Cyber security, there is also concern about its potential use in cyber attacks. Malicious actors could leverage AI algorithms to automate attacks, evade detection, and exploit vulnerabilities at a scale and speed not seen before. Defending against AI-driven attacks will require the development of advanced AI-based defense mechanisms and continuous monitoring.

Maintaining Cyber security and data privacy in an ever-evolving digital landscape poses significant challenges. Some key challenges include:

1. Rapidly Evolving Threat Landscape: Cyber threats are constantly evolving, with attackers employing new tactics and techniques. Staying ahead of emerging threats requires continuous monitoring, threat intelligence sharing, and proactive defense strategies.
2. Lack of Cyber security Skills and Workforce Gap: The demand for Cyber security professionals surpasses the available talent pool. Organizations face challenges in recruiting and retaining skilled Cyber security professionals who can effectively protect their systems and data. Bridging the workforce gap requires investment in Cyber security education, training programs, and collaboration between academia and industry.
3. User Awareness and Behavior: Human error remains a significant factor in cyber attacks. Phishing attacks, social engineering, and weak passwords are

often successful due to the lack of user awareness and adherence to security practices. Educating users and promoting a Cyber security culture are crucial in mitigating these risks.

4. **Compliance with Data Privacy Regulations:** Organizations must navigate a complex landscape of data privacy regulations, such as the GDPR and other regional or industry-specific frameworks. Compliance requires understanding and implementing privacy requirements, ensuring data protection measures, and establishing mechanisms for data subject rights and consent management.

To address these challenges and ensure robust Cyber security and data privacy, potential solutions and areas for future research and development include:

1. **AI and Machine Learning in Defense:** Developing advanced AI-driven security tools and algorithms can enhance threat detection, automate incident response, and strengthen defense mechanisms against evolving cyber threats.
2. **Secure IoT Design and Standards:** Establishing industry-wide standards and best practices for IoT security, including authentication mechanisms, encryption protocols, and regular firmware updates, can mitigate IoT-related vulnerabilities.
3. **Privacy-Enhancing Technologies:** Continued research and development of privacy-enhancing technologies, such as differential privacy, secure multi-party computation, and homomorphic encryption, can enable secure data sharing and analysis while preserving privacy.
4. **Collaboration and Information Sharing:** Encouraging collaboration between organizations, sharing threat intelligence, and establishing public-private partnerships can enhance cyber defense capabilities and promote collective resilience.

Thus, anticipating emerging trends in cyber threats, addressing challenges in maintaining Cyber security and data privacy, and investing in research and development are crucial in staying ahead of evolving risks. By embracing innovative solutions, fostering collaboration, and promoting a proactive Cyber security culture, organizations can effectively protect their systems, data, and the privacy of individuals in the digital era.

Conclusion

Cyber security and data privacy are of paramount importance in the digital era. The increasing reliance on digital technologies, interconnected systems, and the collection of vast amounts of data have made organizations and individuals more vulnerable to cyber threats. Safeguarding sensitive information, ensuring the integrity of systems, and respecting individuals' privacy rights are critical for

maintaining trust, security, and the smooth functioning of our digital ecosystem. As cyber threats continue to evolve in sophistication and frequency, there is an urgent need for continued efforts in addressing these threats and protecting data privacy. Organizations must prioritize Cyber security as a strategic imperative, allocating resources and investing in robust defense mechanisms. Governments should establish effective regulatory frameworks to safeguard individuals' privacy rights, enforce data protection standards, and hold accountable those who violate Cyber security and data privacy laws.

Collaboration is key in addressing cyber threats and protecting data privacy effectively. Governments, industry stakeholders, academia, and individuals must work together to share threat intelligence, best practices, and lessons learned. Public-private partnerships can enhance collective defense capabilities, foster information sharing, and promote collaborative research and development efforts. Technological advancements also play a vital role in ensuring effective Cyber security and data privacy practices. Emerging technologies, such as AI, ML, and blockchain, offer innovative solutions for threat detection, data encryption, secure authentication, and privacy-preserving techniques. Organizations should embrace these technologies and continuously explore new advancements that can strengthen their Cyber security defenses.

Furthermore, regulatory compliance is crucial in maintaining Cyber security and data privacy. Organizations must adhere to relevant data protection regulations, such as the GDPR, and implement appropriate safeguards to protect personal data. Compliance ensures that individuals' privacy rights are respected, data is handled responsibly, and appropriate measures are in place to prevent unauthorized access or data breaches. Thus, Cyber security and data privacy are indispensable in the digital era. The call for continued efforts in addressing cyber threats and protecting data privacy is essential to safeguard our digital infrastructure, economic prosperity, and individuals' rights. Collaboration, technological advancements, and regulatory compliance are the pillars that underpin effective Cyber security and data privacy practices. By embracing these principles, organizations and individuals can navigate the digital landscape with confidence, trust, and resilience.

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PERCEPTION TOWARDS OTT PLATFORM (A STUDY WITH SPECIAL REFERENCE TO COIMBATORE DISTRICT)

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Abstract

The patterns of content consumption have changed drastically over a period of the last 20 years and as technology is making advancements in almost every arena, the evolution can be seen in the trends of entertainment and media services. Consumers have now turned towards Over-The-Top i.e. OTT Platforms which allow them to stream their choice of content via the means of the internet, instead of holding on to the more traditional forms of media. Consumers are now ready to pay more and more in order to customize their streaming experience at their convenience and this in turn is helping the entertainment industry thrive. Ever since the lockdown was imposed in the country in lieu of the Corona virus pandemic, more and more consumers are seeking out ways to keep themselves entertained at home. Currently numerous OTT video platforms are available for consumers to encourage them. These OTT video platforms are developed to reach customers easily through advanced provisions and technology. With the rapid advancement of technology, OTT services are advancing at a rapid rate.

Keywords: OTT Platform, Technology, Online service

Introduction

Watching movies and other digital content in India has been a consistent activity and a part of the lifestyle that provides relaxation and recreation from the frantic professional work. People from all age groups love to consume digital content via movies, web series, one-shot films, etc. The key aspect has been the shift in the medium on which these movies and series are consumed.

In the early digital era viz. the 1990s to 2010s, the cinemas and television were the major platforms on which movie content was consumed. The coverage and reach of these two platforms covered even the rural parts of India. Thus, people developed behaviour of watching movies at the cinemas as well as television. And since then with the internet developing quite fast, the medium of cinemas and television has been overtaken by OTT Platforms.

With the COVID-19 pandemic fuelling the OTT wave even further, impacting the cinemas to shut down; has helped the OTT players to set a strong foothold as the prime medium for watching movies, web series and much more digital content. This has impacted the Cinemas considerably in terms of revenue and market share that

leads to direct competitive rivalry between the two mediums viz. OTT and Cinemas despite differences in business model.

OTT (Over the Top) Platforms are web-based digital media libraries that enable users and viewers to stream different types of media content of several genres and languages. These platforms have gained a considerable audience and viewership over the last half-decade. Disney+ Hotstar, Amazon Prime Video, Netflix, Sony LIV are some of the leading OTT platforms in India.

These OTT platforms were a substitute and mainly a partner to the mainstream Cinema exhibition companies. The Cinema chains like INOX and PVR were the chief players in the entertainment industries that helped movie production companies to distribute their movies all across the country. Cinemas have been the prime platform for viewers and audience to watch movies firstly.

The major stimulator for the rivalry between OTT and Cinemas is the shift in consumer preferences towards OTT platforms for consuming digital content over the past 3-4 years since 2019. People have switched to OTT for several reasons and avoided going to Cinemas for watching movies.

Review of Literature

Jay Chopdar, Tanima Tarafdar (2021) conducted a study on **"A study on consumers' perception towards over the top (OTT) platforms with special reference to guwahati city"**. The aim of the study is to analyze Consumers preference towards OTT platforms and DTH services. The sample chosen for this study is 100 from Guwahati city. Judgement sampling method is used for this study. Tool used for this study is Anova . Primary data is collected for this study. The findings of this study is to identify the factors influencing consumers choice towards OTT platforms and also their level of satisfaction towards the services of OTT

Sony Varghese, Selvin Chinnaiah, (2021) conducted a study on **"Is OTT industry a disruption to movie theatre industry "**. The aim of the study is to analyze the Movie theatre industry and OTT industry in India. The sample chosen for this study is 326 from kochi. Convenient sampling method is used for this study. Tool used for this study is Anova and correlation. The study conclude on how movie theatres compete to stay relevant, in the minds of their consumers in the current marketplace, where video content is easily accessible on OTT platforms from the convenience of their homes.

Daniel Varun Paul (2020) conducted a study on **"A Study on Over the Top Platforms on DTH and its Impact on Consumer Behaviour"**. The aim of the study is to analyze whether OTT platforms can completely replace DTH. The sample chosen for this study is 114 from Bangalore. Convenient sampling method is used for this

study. Tools used for this study is Cronbach alpha , Descriptive analysis .The study conclude that mobility and price were the two primary factors that determine consumer choice and it was found that people prefer streaming content on OTT platforms.

Anindita Dey, Rahul Chanda (2022) conducted a study on " **A Study on OTT Content Versus Theatrical Released Cinema Preferences Among the Urban Population of Guwahati** " The aim of the study is To analyze the demand for Over-the-top content over TV and Cinema. The sample chosen for this study is 200 from Guwahati city. Convince and snowball sampling method is used for this study. The study concludes that whether the preferences of the viewers are diverting towards OTT content or it remains with commercial cinema released in theatres.

Statement of the Problem

The OTT (Over-The-Top) media platform is a digital media service that is offered directly to subscribers over the Internet. OTT bypasses corporations that have traditionally served as a regulator or distributor of comparable material, such as string, radio, and satellite TV channels. It has also been extended to no-carrier Cell phones, which charge all dispatches as data, thereby eliminating monopolistic competition.

An examination directed by Gomathi in his study have found that, the development of online streaming services like Netflix and Amazon Prime Video, among others, means that children and teenagers now have access to uncensored content because digital content on these OTT platforms is made available to the general public without any filtering or screening and there is no law or autonomous body to monitor and manage it. As is the case, OTT platforms ought to be in charge of promoting digital awareness that is, consumers ought to be made aware of the effects of their streaming and should determine whether watching those videos is really necessary. In addition, it is the viewer's responsibility to ensure that our children do not have access to such content, which can assist in accomplishing the very purpose. From this study following questions has been raised, what are the factors influencing OTT platforms usage? , and also to know about the customer perception ?

Objective of the Study

To find out the solution for the above problems, the present study has been undertaken with the following objectives. They are

- To determine the factors influencing the users to OTT platforms.
- To study the customers' perception toward OTT platforms

Research Methodology

The present study is based on primary data by distributing the questionnaire containing relating to socio economic profile to the OTT customers. Necessary guidance was given to the respondents for filling up the questionnaire.

Source of Data

Data collection is the one of the most important aspect of research. Primary data and secondary data were used in the study.

Sampling

The data required for the study have been collected by way structured questionnaire in order to know perception towards OTT platform ,satisfaction towards OTT platform, reason for using OTT platform .120 questionnaire are collected and 120 questionnaire are taken for analysis. Convenient sampling method is adopted to select the sampling customers .

Analysis and Intrepretations

Simple Percentage

S.no	Variables	Respondents information	No. of Respondents and Percentage
1	AGE	18-24yrs	45.0
		25-34yrs	25.0
		35-49yrs	20.8
		Above 50yrs	9.2
2	Gender	Male	38.3
		Female	61.7
3	Marital status	Married	45.0
		Unmarried	55.0
4	Occupation	Government employee	13.3
		Private employee	31.7
		Business	15.8
		Student	20.8
		Others	18.3
5	Income	Nil	30.8
		Below 1 lakh	37.5
		1 lakh – 2 lakh	21.7
		2 lakh- 3 lakh	5.8
		3 lakh – 4 lakh	3.3
		4 lakh and above	0.8

6	Types of family	Joint family	26.7
		Nuclear family	73.3
7	No. of earning members	1	27.5
		2	29.2
		3	22.5
		4	11.7
		Above 4	9.2
8	Most preferred OTT platforms	Netflix	20.8
		Amazon prime	8.3
		Disney+ hot star	36.7
		MX player	14.2
		Sun NXT	8.3
		Voot	5.0
		Aha	0.8
		Alt balaji	5.8
9	Language	Tamil	53.3
		English	24.2
		Hindi	9.2
		Telugu	9.2
		Other	4.2
10	No. subscribed channels	0-1 channels	36.7
		1-2 channels	38.3
		More than 3 channels	25.0
11	No. of hours	30 minutes	23.3
		1-2 hours	42.5
		2-3 hours	17.5
		More than 3 hours	16.7
12	About OTT platforms	Friends and relatives	37.5
		Advertisement	49.2
		Magazine and newspaper	13.3
13	Specific OTT platforms	Vast variety	22.5
		Personalized suggestion	26.7
		Easy to use	35.0
		Cost of subscription	15.8
14	Most attracts	Content	23.3
		No ads	38.3
		Convenience	28.3
		Price and offers	10.0

15	Most preferred genre's	Comedy	23.3
		Action	17.5
		Drama	23.3
		Romance	13.3
		Horror	10.8
		Anime	4.2
		Stand up	2.5
		Sport	5.0
16	Devises used to watch OTT platform	Mobile and tablet	46.7
		Laptop	32.5
		Smart TV	20.8
17	Usage of OTT platforms	Daily	26.7
		Weekly	50.0
		Monthly	23.3
18	Time preferred	Daily	11.7
		Afternoon	27.5
		Evening	29.2
		Night	31.7
19	Period of OTT platform	Less than 1 year	36.7
		2 years	49.2
		3 years	14.2
20	Amount spent for OTT platform	50-100	15.0
		100-200	12.5
		200-300	20.8
		300-400	9.2
		400-500	10.8
		Above 500	5.0
		999	5.0
		Free	21.7
21	Payment mode	Card payment	20.0
		UPI	36.7
		Net banking	25.8
		Wallet	17.5
22	Additional benefits	Yes	41.7
		No	58.3
23	Reason for choosing	To meet the need of	30.8
		different household	12.5
		member	30.8

		There is no single service that provide all the content I want I signed to a free trial and forgot to cancel Just have more platforms	25.8
24	Entertainment	Web series TV series Movies Documentaries Original	35.0 24.2 32.5 6.7 1.7
25	Price value	The price of OTT platform is affordable On the OTT platforms we get have content we pay for OTT platform I more affordable then traditional tv	32.5 25.0 42.5
26	Preference	Yes No	61.7 38.3
27	OTT platform or cinema hall	Cinema hall OTT platform Both	37.5 35.0 7.5
28	Convenient and cheaper	Yes No	60 40
29	Problem faced	Have poor internet connection Lack personal security and privacy Limits big screen experience Content in the OTT platform lacks censorship Peoples addition to OTT platform limits social life	29.2 17.5 8.3 26.7 18.3

Majority of the respondents 54(45.0%) falls between the age group 18-25 years. Majority of the respondents 74 (61.7%) are under category of female .Majority of the respondents 66 (55.0%) are unmarried. Majority of the respondents 25 (20.8%) are students. Majority of the respondents 45(37.5%) are earning below 1 lakhs. Majority of the respondents 88(73.3%) are living in nuclear family. Most of the respondents 35 (29.2%) are earning of 2 members. Most of the respondents 84 (36.7%) are mostly preferring are Disney + hot star. Majority of the respondents 64(53.3%) of them using Tamil language. Majority of the respondents 46(38.3%) are most of them have subscribed between 1-2 channels. Majority of the respondents (4.5%) are mostly spending 1-2 hours to watch OTT platforms. Most of the respondents 12 59 (49.2%) are known this OTT platform by Advertisement. Majority of the respondents 42(35.0%) most of them selected for easy to use OTT platforms. Majority of the respondents 46 (38.3%) are mostly attracted by No ads . Majority of the respondents 28(23.3%) have liked both comedy and action genres equally. Majority of the respondents 56 (46.7%) are using mobile and tablets. Most of the respondents 60(50%) of them are using OTT platform at weekly. Most of the respondents 38(31.7%) of them are preferring to watch OTT platforms at night timing only. Majority of the respondents 59(49.2%) of them are using OTT platforms for 2 years. Majority of the respondents 26(21.7%) of them are spending amount for free. Majority of the respondents 44(36.7%) of them are willing to pay in UPI App . Majority of the respondents 70(58.3%) have said no to get additional benefits. Majority of the respondents 37(30.8%) are reason for choosing OTT platforms to meet the need of different house members. Majority of the respondents 42(35.0%) of them are like to watch web series. Majority of the respondents 51 (42.5%) of them like OTT platform I more affordable than traditional TV. Majority of the respondents 74(61.7%) are mostly preferring OTT platforms . Majority of the respondents 45(37.5%) are like to watch in cinema hall . Majority of the respondents 72(60%) of them are saying that OTT platforms is convenient and cheaper. Majority of the respondents 35(29.2%) of them have poor internet connection problem

Satisfaction Towards OTT Platform

Data is to be collected from 120 respondents used for the questionnaire is divided into 3 parts and containing 29 questions is to allow assessing the satisfaction level of customers using OTT platforms. Satisfaction level is calculated based on standard deviation at (11.36) and average (77.25) respondents whose index value is below 65.89 is treated as “low level of satisfaction level “, whose index range between 65.90 to 88.660 is treated as ‘medium level of satisfaction level “, whose index -treated is above 88.61 is treated as” high level of satisfaction “ .Chi – square analysis has been - implemented and satisfaction level

S.no	Variables	No. of respondents %	Chi- square value	Significant /not
1	AGE 18-24 25-34 35-49 Above 50	54(45%) 30(25%) 25(20.8%) 11(9.2%)	12.940	Significant @10% level
2	INCOME Nil Below 1 lakh 1 lakh-2 lakh 2lakh-3 lakh 3lakh-4 lakh 4 lakh above	37(30.8%) 45(37.5%) 26(21.7%) 7(5.8%) 4(3.3%) 1(0.8%)	23.512	Significant @10% level
3	PREFERENCE OF OTT Netflix Amazon prime Disney +hotstar MX player Sun NXT Voot Aha Alt balaji	25(20.8%) 10(8.3%) 44(36.7%) 17(14.2%) 10(8.3%) 6(5%) 1(0.8%) 7(5.8%)	25.437	Significant @10% level
4	DEVISE USED TO WATCH OTT PLATFORM Mobile and tablet Laptop Smart TV	56(46.7%) 39(32.5%) 25(20.8%)	11.229	Significant @10% level

In order to know the satisfaction towards OTT platform by applying Chi - square. The associated variable are age, income, preference of OTT platform, devise used to watch OTT platform. When the age are increasing the satisfaction towards OTT platform reduced, When the income are increasing the satisfaction towards OTT platform reduced, When the preference of OTT platform are increasing the satisfaction towards OTT platform reduced, When the devise used to watch OTT platform are increasing the satisfaction towards OTT platform reduced.

Conclusion

From the Study have identified that the user friendliness and content richness as significant factors in the usage and promotion of OTT platform. Price sensitivity matters a lot to individuals. Cost effect makes the platform stronger than usual. It brings cost sensitivity to users and encourages to the platform. Life with ease, own comfort, and satisfaction brings the individuals closure to the OTT platform. Programme with own choice, time, location, duration makes possible everything with mobile phones. Mobile phone makes it easy to use this platform. It brings the control of an individual in all respects. Talking about millennia's to some extent and zen z, peer pressure, or as a status in society or better positions among friends does not force them to make an extensive usage of OTT. Exposure to the international content, and trends as well the other factors that influence the audiences to the platform.

Suggestion

- Current generation doesn't have the patience to wait for a show or movie to air on a linear platform like television. This viewer wants the content instant and on-demand
- From content selection to payment mechanism, all aspects of the user's experience must be properly managed to meet the expectations of their distinct audience base

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INDUSTRIAL INNOVATION – CROSS SECTIONAL STUDY ON STARTUPS

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Abstract

Start-ups play a crucial role in a country as they contribute to its economy, generate employment opportunities, and foster innovation. Within the Indian start-up landscape, we have witnessed significant growth, making it a pivotal force for the nation's development. These start-ups are responsible for introducing novel solutions and technologies that improve people's lives and well-being. This article specifically focuses on the realm of Indian start-ups and their innovative practices across various industries. Many start-ups in India have chosen to operate in remote areas, aiming to not only support the local community but also contribute to the overall economic growth. Social entrepreneurship, which involves establishing businesses with the dual objective of creating positive societal and environmental impact alongside financial returns, has gained substantial prominence in India. It now plays a crucial role in propelling progress towards a sustainable and equitable future.

Keywords: Start-ups, Innovation, Technology sectors

Introduction

A startup, by definition, is an enterprise dedicated to the development, commercialization, and creation of innovative products, services, or mechanisms driven by intellectual property or new technologies. Such startups are not isolated entities but function within a broader business environment that aims to generate impactful solutions, making them instrumental in driving socio-economic development and transformation. Recognizing the significance of fostering a startup culture in India and strengthening the national economy, the Government of India has implemented several measures. For instance, Prime Minister Narendra Modi launched the Stand-Up India initiative in August 2015 as one of these initiatives (Neeraj Tyagi 2022).

In the last ten years, the Indian startup landscape has made significant progress, driven by the emergence of digital technologies and a rising number of young entrepreneurs. As a result, India now boasts the world's third-largest startup ecosystem. With a flourishing economy, disruptive technological advancements challenging conventional business models, and a vast pool of talented individuals, the potential for Indian startups is enormous, particularly in sunrise and sustainable development sectors. The government has played a crucial role in supporting this growth through initiatives like the Startup India program, Atal Innovation Mission, and the Production Linked Initiative scheme (PLI). These initiatives create a favorable environment that promotes the success and expansion of startups (Neeraj Tyagi 2022).

Under India's G20 presidency, the Indian startup ecosystem is gaining momentum and garnering international recognition. The Start-up 20 initiative underscores the significance of startups in fostering economic growth and innovation, showcasing India's commitment to promoting this ecosystem on a global scale. The primary objective of the engagement group is to establish a platform for businesses to interact with policymakers, fostering collaboration and cooperation. Start-up 20 unites entrepreneurial ecosystems from G20 member countries, facilitating the exchange of ideas, collaborative initiatives, and worldwide development. Indian startups exhibit a diverse range, spanning various domains such as health tech, climate tech, and clean energy. They are strategically positioned to leverage opportunities presented by sunrise sectors industries poised for rapid growth that are expected to play a pivotal role in driving the country's economic progress.

Literature Review

Suresh babu and Sridevi (2019)¹ Start-up India is a prominent initiative by the Government of India aimed at fostering innovation and supporting the growth of startups. The primary objective of this initiative is to empower startup ventures, promoting entrepreneurship, stimulating economic growth, and generating employment opportunities throughout the country. India's thriving startup ecosystem has gained global recognition, becoming a subject of interest worldwide. The following paper explores the various challenges and issues faced by Indian startups and highlights the abundant opportunities available within the current ecosystem of the country.

Satyanarayana, Chandrashekar and Hillemane (2021)² In this paper, we delve into the influence of entrepreneurial factors, firm-specific characteristics, and the external environment on the competitiveness of high-tech startups in India. We consider the milestone of startup survival and employ survival analysis techniques for our analysis. The study's discoveries will provide valuable insights for startup owners and policymakers, enabling them to refine their policies and strategies to enhance the competitiveness of technology-based startups operating in India.

Mallikarjun (2023)³ India has established itself as the second-largest startup ecosystem globally, closely following the United States. It has become a thriving hub for startups, progressing rapidly. In a single year, 2001, Indian startups successfully secured over \$23 billion through more than 1,000 deals, leading to the inclusion of 33 startups in the esteemed unicorn club. The remarkable surge in investor confidence in Indian startups is palpable and continues to gain momentum throughout the different stages of a startup's journey. The study further highlights the immense potential and significant challenges that impact the growth of startups in India.

Indian Start-ups and Innovation Across Industries

India has emerged as a global leader in Innovation across various sectors. From healthcare to education, finance to agriculture, Indian start-ups are revolutionizing traditional industries with the help of technology. According to a study by Economic Times in 2022, Indian start-ups have experienced substantial growth in the past six years. The number of recognized start-ups has risen from a mere 741 in 2016 to an impressive 72,993 as of June 30, 2022, as reported by the Ministry of Commerce and Industry (Neeraj Tyagi 2022). Numerous start-ups are not only driving innovation and technology but also extending their benefits to the farthest corners, reaching remote customers. Fintech start-ups have expanded their reach to remote areas, providing accessible financial solutions in tier 2 and 3 cities. Fintech and Agritech start-ups act as comprehensive solutions for rural challenges by leveraging technology and labor, bridging the gap between rural and urban areas. Similarly, e-commerce start-ups and electric vehicle (EV) technology contribute to sustainable and emission-free last-mile delivery, these innovative start-ups, local entrepreneurs in rural regions now find it easier to market and sell their products

Indian Start-ups and Innovation Across Industries

Company Name	Industry	Descriptions
Practo	Health care	Healthcare technology startup. It offers a platform that assists consumers in finding top-notch doctors, scheduling appointments online, and making informed decisions regarding their healthcare needs.
Portea	Health care	In-home healthcare services in India
Cure.fit	Health care	Technology and data to empower individuals to lead healthy lifestyles and access affordable healthcare
Byju's	Education	EdTech
Vedantu	Education	'Live' online tutoring
Unacademy	Education	EdTech
Cred	Fintech	Unique platform that enables users to conveniently pay their credit card bills
Razor pay	Fintech	Web platform that enables businesses to accept, process, and disburse payments seamlessly
Phonepe	Fintech	Digital payments and financial services platform
Paytm	Fintech	Digital payment and financial services
Agro star	Agriculture	Agri Tech, innovative solutions are driven by a wealth of data and agronomy knowledge, which are

		seamlessly delivered through our advanced, in-house developed tech-enabled platform
Ninjacart	Agriculture	Fresh produce supply chain company - in-house applications to connect food producers directly with retailers, restaurants, and service providers
Nykaa	E-Commerce	Online store : online beauty and wellness industry
Myntra	E-Commerce	Indian fashion e-commerce
EGov	Governance	Open digital infrastructure and ecosystems - improving the lives of ordinary citizens in various aspects such as health, sanitation, public finance management systems, and government service accessibility and delivery
Janaagraha	Governance	Technology to enhance grassroots movement advocating for participatory democracy at the neighborhood level
Ola	Transportation	Largest mobility platform in India - customers can access a diverse range of mobility solutions, connecting them to drivers and various types of vehicles, including bikes, auto-rickshaws, metered taxis, and cabs
Rapido	Transportation	Indian bike taxi aggregator and logistics service provider
Swiggy	Foodtech	Online platform offering food, grocery, and parcel delivery services
Licious	Foodtech	Customers can conveniently order fresh and hygienic meat and seafood products

Conclusion

The world is currently grappling with critical issues caused by the rapid pace of economic growth and technological advancements. These factors have led to environmental degradation, the depletion of natural resources, and socioeconomic inequalities. As a result, achieving sustainable development has become of utmost importance. Looking ahead, the potential impact and scalability of sunrise and sustainable start-ups are tremendous. In India, start-up-friendly policies are not solely dependent on significant financial investments or incentives. Instead, what these start-ups require is assistance from accomplished founders and strategic angels throughout their various stages of development. This assistance encompasses crucial aspects such as business strategy, community building, and connecting with skilled

business mentors. According to TechCrunch, it is the youngest Indian startup to achieve a valuation of approximately \$2.2 billion. With over 6 million customers, CRED has captured approximately 22% of all credit card holders within its two years of operation. **(Akriti Galav 2023)**. Nykaa holds a valuation of over \$2.1 billion, and its growth trajectory indicates a projected raise of more than \$3.5 billion in the upcoming years. With a strong presence in over 55 retail sectors, the startup successfully completes over 1.5 million orders each month **(Yashil Garg 2023)**. Currently, BYJU'S holds an impressive valuation of approximately \$8.4 billion. The Indian EdTech industry, valued at \$750 million in 2020, is projected to reach \$4 billion by 2025, exhibiting a compound annual growth rate (CAGR) of 39.77% **(Roorkee 2022)**.

In order to harness the potential of India's vast and diverse population, it is crucial to cultivate robust state ecosystems through the implementation of start-up policies, establishment of start-up portals, and provision of helplines in every state. By doing so, Indian start-ups can play a pivotal role in shaping a sustainable future through the development of innovative solutions and new business models. Furthermore, the creation of incubation centers, co-working spaces, and entrepreneurial cells is imperative. Equally important is instilling an entrepreneurial spirit in students from a young age, ensuring they are equipped with the necessary skills and mindset to contribute to the start-up ecosystem. **(Neeraj Tyagi 2022)**.

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A STUDY ON THE CHALLENGES OF DIGITAL FINANCIAL INCLUSION

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Abstract

Financial inclusion through digital means has initiated the concept of digital financial inclusion which is intended to reach out vulnerable community without having digital financial access. This study is an attempt to analyze the various challenges concerning digital financial inclusion. As the main objective of this study was to assess the challenges and prospects of digital financial inclusion, ABCD analysis also has been undertaken to assess its Advantages, Benefits, Constraints and Disadvantages. This research is conducted through secondary sources in order to provide a full-fledged evidence-based study on the challenges of digital financial inclusion. The semi-systematic review is done through various published reports and articles from Springer, Taylor & Francis, Emerald, GoogleScholar, ResearchGate, etc.

Keywords: Digital Financial Inclusion, Challenges, ABCD Analysis.

Introduction to Digital Financial Inclusion

Financial inclusion is one of the cornerstones of a developing economy. Launched in 2015, Digital India has been regarded as a significant intervention to bring the unbanked population, who had been kept out of the mainstream economy, into the formal financial net. While there has been an improvement in digital transactions across the country, issues still remain of last-mile connectivity of banks and other financial institutions, dormant accounts, among others.

Financial inclusion relates to connecting marginalised and the underprivileged in the society to the mainstream economy, by means of providing financial literacy and access to banking and financial services. It is a multidimensional approach that involves bringing on board various stakeholders from the government and the people. India, with a population of more than 1.3 billion, has a large number of people who are still out of the formal financial net. As per the World Bank, about half of India's population is financially excluded (World Bank 2017a). On the other hand, a survey by Standard & Poor's Financial Services estimates that only 24% adults in India are financially literate (Klapper et al 2014). This study has been carried out to identify the major challenges in digital financial inclusion.

Objectives of the Study

- To understand the concept of digital financial inclusion.
- To identify the various challenges pertaining to digital financial inclusion.
- To assess the advantages, benefits, constraints and disadvantages of digital financial inclusion.

Research Methodology

Secondary sources have been surveyed in this research in order to provide a full-fledged evidence based study on challenges of digital financial inclusion. The semi-systematic review is done through various published reports and articles from Springer, Taylor & Francis, Emerald, Google Scholar, Research Gate, etc. Hence the source of data considered is from secondary source to explore the existing knowledge.

Digital Financial Inclusion

Financial inclusion refers to efforts to make financial products and services accessible and affordable to all individuals and businesses, regardless of their personal net worth or company size. Financial inclusion strives to remove the barriers that exclude people from participating in the financial sector and using these services to improve their lives. It is also called inclusive finance. Digital financial inclusion introduces new market participants and allocates roles and risks (both new and well-known) in different ways compared to traditional approaches to retail financial service delivery.

The Key Elements of Digital Financial inclusion

- Digital platforms enable clients to send and receive payments and transfers as well as store information electronically through the digital device that transmit and link to a bank or non-bank authorized to save electronic value.
- Customers can utilize mobile banking services that transfer information to a digital device like a point-of-sale terminal.
- Through retail mediators who have a digital connected device to transfer the information, customers can change cash into electronic storage value ("cash-in") and subsequently change stored value in return into cash ("cash-out").
- Banks and non-banks may offer various financial services via digital platform to the economically disadvantaged and excluded, frequently using digital data to target customers and manage risk.

Bottlenecks and Major Challenges

- There is no doubt that India has significantly improved the financial inclusion of the marginalised sections, and Digital India has turned out to be an important intervention. However, the digital divide is too wide and there exist many bottlenecks and challenges which need immediate attention.
- To begin with, High Level Principles for Digital Financial Inclusion, published by the G20 under the rubric of Global Partnership for Financial Inclusion in 2016, provides useful insights to address the issues impeding financial inclusion, and how digital technologies can help in the process (World Bank 2017b). These include the promotion of financial services as a national plan, the need to balance innovation and risk, providing legal and regulatory frameworks, and expanding the digital financial ecosystems, among others. Similarly, it suggests the need to ramp up investments for digital tools that can help integrate systems and databases making it easier for auditors and regulators to process information. It also highlights that the advent of digital systems would mean huge data volumes and without the presence of adequate data mining and data analytics, countries would have to handle too much data with limited outcomes.
- The most common barriers to the digital financial inclusion include the non-availability of suitable financial products, lack of skills among the stakeholders to use digital services, infrastructural issues, teething problems between various systems, and low-income consumers who are not able to afford the technology required to access digital services (Niranjan 2017).
- Another challenge to digital financial inclusion arises from the attitude of the stakeholders. For instance, take the case of Jan Dhan bank accounts. When the scheme was launched in 2015, banks were given ambitious targets to open accounts for the marginalised. This has resulted in the opening of many dormant accounts which never saw actual banking transactions. All such activities incur costs on the institutions, and thus, huge operative costs only proved to be detrimental to the actual objective. To avoid these counterproductive outcomes, it is important that all stakeholders participate in such programmes with proper intent and not just for the sake of it.
- Another major bottleneck faced by Digital India, with respect to financial inclusion, is the heavily dominated cash economy in the country. The data from RBI reveals that cash circulation has increased in 2018 after demonetisation. As per a report of the International Labour Organization (ILO), about 81% of the employed persons in India work in the informal sector (ILO 2018). The combination of a huge informal sector along with a

high dependence on cash mode of transaction poses an impediment to digital financial inclusion.

- There is also a gender dimension to financial inclusion in the country. According to the 2017 Global Findex database, 83% of males above 15 years of age in India held accounts at a financial institution in 2017 compared to 77% females (World Bank 2018). This is attributed to socio-economic factors, including the availability of mobile handset and internet data facility being higher among men than women.

Conclusion

In conclusion, for the success of digital initiatives, there has to be a multidimensional approach through which existing digital platforms, infrastructure, human resources, and policy frameworks are strengthened (Kim 2014). More importantly, human resources should be leveraged by skilling and positively engaging with them to achieve the last-mile connectivity of financial institutions. If corrective measures are taken to tide over the existing problems, interventions, such as Digital India, have the potential to amplify the benefits of economic growth to the poor. Not only will it reduce the costs for the financial institutions, but it would also address safety concerns and accuracy of the data involved in financial transactions.

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CYBER SECURITY

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Abstract

As the digital era continues to advance, ensuring robust cyber security and protecting data privacy have become paramount concerns for individuals, organizations, and governments. This paper explores the significance of cyber security and data privacy in the digital age, highlighting the associated challenges and proposing strategies to mitigate risks. By leveraging cutting-edge technologies, implementing robust encryption protocols, fostering awareness and education, and enforcing stringent regulations, we can fortify cyber defences and safeguard sensitive information. This paper emphasizes the need for a collective effort to address the evolving threats and protect the privacy of individuals and organizations in the interconnected world.

Keywords: Cyber security, Data Privacy, Digital Era, Threats, Encryption, Technologies, Awareness, Education, Regulations, Protection.

Introduction

Cyber security and data privacy are two critical areas in the field of technology that focus on protecting sensitive information and maintaining the security of digital systems. With the increasing reliance on technology and the interconnectedness of our digital world, the need for robust Cyber security measures and effective data privacy practices has become more crucial than ever before.

Cyber security refers to the protection of computer systems, networks, and data from unauthorized access, attacks, and damage. It encompasses a range of practices, technologies, and protocols designed to prevent, detect, and respond to potential threats to information systems. The goal of Cyber security is to ensure the confidentiality, integrity, and availability of digital assets, as well as safeguarding them from various types of cyber threats, such as malware, ransomware, phishing attacks, and data breaches.

Cyber security

Cyber security refers to the practice of protecting computer systems, networks, software, and data from unauthorized access, damage, theft, or disruption. It encompasses a wide range of measures and technologies designed to safeguard information and prevent cyber-attacks. Cyber threats can come from various

sources, including hackers, cybercriminals, statesponsored actors, and even insider threats. The consequences of successful cyber-attacks can be severe, leading to financial losses, reputational damage, and compromise of sensitive data.

Data Privacy

Data privacy is the concept of ensuring that individuals have control over their personal information and how it is collected, processed, stored, and shared by organizations. With the vast amount of data generated and collected in the digital age, protecting individuals' privacy is critical. Data privacy regulations, such as the General Data Protection Regulation (GDPR) in Europe or the California Consumer Privacy Act (CCPA) in the United States, aim to establish guidelines and requirements for organizations to handle personal data responsibly and ethically.

Challenges in the Digital ERA

- **Sophisticated Cyber Threats:**

Cybercriminals are continuously developing advanced techniques to breach security measures and exploit vulnerabilities in systems and networks.

- **IoT and Connectivity:**

The widespread adoption of the Internet of Things (IoT) devices and interconnected systems introduces new entry points for potential attacks.

- **Data Collection and Monetization:**

Companies gather vast amounts of personal data for analysis and monetization, leading to concerns about how this data is used and protected.

- **Cloud Security:**

The shift to cloud computing brings convenience but also raises concerns about the security of data stored on third-party servers.

- **Insider Threats:**

Employees or individuals with authorized access can also pose risks to data security through malicious actions or unintentional mistakes.

Importants of Cyber Security and Data Privacy

- **Protection of Sensitive Information:**

Cyber security measures help prevent unauthorized access to sensitive data, safeguarding personal, financial, and corporate information.

- **Maintaining Trust and Reputation:**

By prioritizing data privacy and security, organizations can build trust with their customers and stakeholders, leading to a positive reputation.

- **Compliance with Regulations:**

Adherence to data privacy regulations not only ensures legal compliance but also helps organizations avoid hefty fines and legal repercussions.

- **Economic Stability:**

Cyber security is crucial for the smooth functioning of economies, as cyber-attacks can disrupt critical infrastructure and financial systems.

Measures to Enhance Cyber security and Dataprivacy

- **Strong Authentication:**

Implementing multi-factor authentication (MFA) can add an extra layer of security to protect accounts from unauthorized access.

- **Regular Software Updates and Patching:**

Keeping software, applications, and operating systems up-to-date helps fix known vulnerabilities.

- **Encryption:**

Encrypting sensitive data both during transit and storage ensures that even if data is intercepted, it remains unreadable without the decryption key.

- **Privacy by Design:**

Organizations should incorporate data privacy considerations into their products and services from the outset rather than as an afterthought.

- **Data Minimization:**

Collect and retain only the necessary data to reduce the potential impact of a breach.

Differences between Cyber security and Data Privacy

FOCUS:

Cyber security:

Primarily concentrates on safeguarding computer systems, networks, and devices from unauthorized access, cyberattacks, and data breaches.

Data Privacy:

Focuses on ensuring the proper handling, collection, storage, and sharing of personal data, protecting individuals' rights to control their information.

Objective:**Cyber security:**

Aims to protect the entire digital infrastructure from potential threats, including viruses, malware, ransomware, and hackers, to maintain system availability, integrity, and confidentiality.

Data Privacy:

Aims to protect the personally identifiable information (PII) of individuals, ensuring it is collected and processed lawfully and only used for the intended purposes.

Scope:**Cyber security:**

Encompasses a broader range of measures, including network security, endpoint protection, firewall management, encryption, and incident response, to secure the organization's overall digital environment.

Data Privacy:

Focuses more specifically on the management of personal data, including compliance with data protection regulations (e.g., GDPR, CCPA) and establishing policies for data handling and consent.

Adversaries:**Cyber security:**

Addresses threats posed by cybercriminals, hackers, state-sponsored actors, and other malicious entities trying to exploit vulnerabilities in the system.

Data Privacy:

Concerns both external threats (e.g., data breaches) and internal risks, such as unauthorized data access or unintentional disclosure by employees.

Conclusion

Cloud computing has revolutionized the way businesses and individuals access, store, and process data. Its scalability and flexibility have empowered organizations to adapt rapidly to changing demands and leverage cutting-edge technologies without massive upfront investments. The cost-effectiveness of cloud services has

democratized access to powerful computing resources, leveling the playing field for startups and small businesses. However, security and privacy concerns remain significant challenges that require constant attention and innovative solutions. As we move forward, cloud computing will continue to be a fundamental driver of technological advancement, shaping the digital landscape for years to come.

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DIGITAL FINANCIAL INCLUSION IN INDIA - AN OVERVIEW

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Abstract

This article discusses what has been accomplished in the area of digital financial inclusion in India thus far, as well as how we may leverage modern technologies to develop a more inclusive society by using different digital drivers. This article outlines the different obstacle and challenges that remain in the way of attaining a digitally inclusive society. The development of E-commerce-enabled financial inclusion is discussed in this article. Policymakers and regulators have the opportunity to build a digital financial inclusion environment that promotes access and use of financial services in e-commerce markets.

Key words: Financial inclusion, E-commerce, Fintech, Payment Banks.

Introduction

The impact of digital finance on financial system reliability & stability is the main focus area of this study. Financial organizations, governments, and authorities are constantly promoting financial inclusion through digital media. However, despite these wide promoting initiatives, digital financial inclusion is not progressing as predicted or as it should be due to consumer ideology, which is one of the major roadblocks to the achievement of an e-commerce enabled economy or financial inclusion. This article sought to assess the various programs and initiatives and to what degree they have been successful, as well as to sort out some consumer ideology as barriers in the way of digital financial inclusion. The rise of e-commerce has resulted in an expansion in the number of digital financial services available to businesses and individuals. Services are increasingly being offered by non-profit organizations including electronic payments, credit financing, and insurance at the POS, this tendency known as E-commerce Enabling Financial Inclusion or Digital Financial Inclusion. The Government of India has always prioritized financial inclusion in its economic strategies. Initiatives like Jan Dhan, Aadhaar-Mobile, and Digital India have changed the game by ensuring that India's underbanked population has equal and economical access to financial services, hence lowering income disparity. While e-commerce has been quite successful in creating demand for digital financial goods and services for microenterprises and individuals at the bottom of the economic pyramid. Recent evolution in both the public and commercial sectors has fueled India's growth of digital financial inclusion. From

2014 to 2017, the percentage of adult Indians possessing financial institution account climbed from 52.8 percent to 79.8 percent (Source: Global Findex, 2017).

Objectives

1. To understand the concept of digital financial services.
2. To know the types of digital financial services.
3. To identify the Government initiatives towards digital financial services.
4. To study the advantages of digital financial services.

Research Methodology

The study is based on the secondary data collected from different journals, magazines, research articles, periodicals, websites.

Literature Review

Mukherjee (2011) the author discussed the role of Information and Communication Technology (ICT) to bring development in the rural sector. The rural dominated economies are striving for the growth and development. The ICT has started playing an important role in each segment of the society. It has a link with the financial services, receiving government benefits and many more. The nature of the requirement becomes more sophisticated because of which customer preference also changes drastically.

Gupta et al (2013)

The authors described the ICT based payment system in the Indian banking sector. It also helps to make process simpler and cost effective. Services like withdrawing money, opening bank accounts, transferring money from one account to another also becomes possible with the help of these facilities. Access to capital becomes easier. The timely availability of fund helps the business groups to generate cash for business requirement in a hassle-free manner.

Pallab Sikdar and MunishMakkad (2013)

Studies the benefits it provides from the point of view of bank's customers as well the banking organization. Internet banking, a major constituent of e-banking framework, has changed the dynamics of commercial banking worldwide by virtually bringing the entire banking set-up at the doorstep of a common banking customer.

Gurpreet Kaur (2015)

Studies the effect of digital India initiative on the concept of financial inclusion. The digital India initiative can easily connect the different groups of society and can help to achieve the objective of financial inclusion through digital banking.

Dr. N. Sundaram and M. Sriram (2016)

Discusses reviews on financial inclusion in the Indian perspective, discussed by different researchers all over the world and to highlight the awareness level of financial inclusion, digital financial inclusion and barriers confronted to financial access.

Suresh Aaluri, Dr. M. Srinivasa Narayana, Dr. P. Vijay Kumar (2016)

Studies the trends in banking sector for financial inclusion, regulation, technology in India. The recent initiatives taken by Government of India boost to promote financial inclusion and surely leading to the position where all Indians have their bank accounts, using Information Technology enabled services.

India's DFS Journey and Key Players in The Way of DFI

"Since 2014, the rise of DFS (Digital Financial Service) in India has been divided into three distinct periods. The first phase, which lasted from 2014 to roughly August 2016, was marked by a continuous increase in volume growth on the leading digital platforms of approximately 2% per month. The second period was mainly fueled by demonetization, whereas the third stage was fueled by the Unified Payments Interface rather than pre-paid instruments (UPI)" (Source: Journey Map Report, RBI data- 2014-2018). Following are the key players in the path of digital financial inclusion:

Jan Dhan Yojana

The Pradhan Mantri Jan-Dhan Yojana (PMJDY) is an initiative that promotes digital financial inclusion. It followed a legacy of bank-driven financial inclusion program in India when it was launched in August 2014. Data shows that the accessibility income Shodhsamhita, ISSN 2277-7067 Vol: XXIV, No: 11, July 2022 8 gap has begun to narrow since 2014, after widening between 2011 and 2014. "Only 27% of the lowest income Indians held a bank account in 2011, comparing to 41% of the wealthiest (a gap of 14 percent). In 2014, the disparity had grown to 16% (43 percent vs. 59 percent). However, by 2017, the disparity had shrunk to barely 5%. By 2017, the disparity had faded, with 79 percent of rural Indians having a bank account comparable to 76 percent of urban Indians" (Global Findex database, 2017).

Government-to-Person (G2P) payments and Direct Benefit Transfers (DBT):

The expansion "of the government's Direct Benefit Transfer (DBT) program, which presently administers 433 schemes from 56 ministry divisions, has been strongly related to PMJDY" (Journey Map Report, march 2019). 11 Direct Benefit Transfer (DBT) is a governmentdriven effort that consists of a number of schemes

wherein benefits are directly transmitted to beneficiaries, typically through state organizations.

RuPay:

Customers were given RuPay debit cards to let them to use their newly opened PMJDY bank accounts for ATM withdrawing cash and POS (point of sale) payments. "A RuPay card has been provided to 79 percent of the 330 million whom have PMJDY plan bank accounts" (Report of Ministry of Finance, GOI). As per the Global Findex report, penetration of debit card jumped from 22percent in 2014 to 33percent in India in 2017.

Aadhaar:

Aadhaar's expansion has been inextricably linked to PMJDY, as the Aadhaar number has become the legally recognized identity for rural Indians seeking to create their first bank account. "The number of e-KYC validations with Aadhaar grew from 48 million to 138 million during 2016-17 and 2017-18" (Source: Journey Map Report, march 2019). "As from August 2018, Aadhaar had been seeded in over 83 percent of active PMJDY accounts (excluding Assam, Meghalaya, and Jammu & Kashmir)" (Continuation of PMJDY, GOI).

Demonetization and GST:

Demonetization may have acted as a catalyst for rapid increase in digital transactions. The rise seen at the beginning of 2016 appears due to the development of UPI, which overlapped with improved business framework and with the introduction of the GST, rather than demonetization.

Licensing to new levels of banking institutions:

The establishment of a new differentiated banking structure was also a feature of India's financial inclusion era from 2014 to 2018. The competitive structure of India's financial and banking markets has evolved as a result of the new legislative agenda in favor of differentiated banking. Creating strategic models from across conventional banking, including some from fintech companies and global firms, were pushed to encourage competition and innovation.

Payments Banks:

Payment banks were created with the goal of bringing non-traditional performers into the formal banking system, such as telecommunications companies, fintech's, business tycoons, and the postal system, to use existing channels to expand DFI via modest savings and payment. "Paytm Payments Bank processes 124 million mobile

enabled banking transactions every month, which is 47% greater than SBI, the next largest bank in terms of mobile banking transactions. 0.35 percent of total transactions were handled by Aditya Birla Idea Payments Bank” Small Finance and Microfinance Banks: Goal of allowing and licensing a new layer of SFB (Small Finance Banks) has been to use digital technology to minimize the cost of banking services and expand their reach to lower-income customers. Ten institutions, dispersed around the country, were granted licenses. “As of June 2018, there were 17.6 million loan accounts, up above 17.3 million a year before and 15.8 million in 2016” (Source: MFIN data, March 2021).

Fintech:

Payment firms that process P2P and retail payments, along with technology firms such as Pine Labs and Mswipe, are examples of fintech. Many of these burgeoning fintech's now have a business rationale thanks to the underlying digital infrastructure provided by India Stack and the Aadhaar. The advent of e-commerce in India has intimately linked the expansion of India's payments fintech's. “Pre-paid instrument (PPI) transactions more than doubled (from 127m to 296m) from October 2016 to January 2017” (RBI data).

Penetration of Smart phone and Internet:

The rate where the smartphones and lowcost internet have touched communities traditionally underrepresented from the digital economy has enabled India's rapid growth in DFI. The former has benefited from the decreasing cost of hardware.

Current Barriers and Observation

There seems to be no doubt that India has made great progress in bringing the underprivileged segments of the economy into the digital financial inclusion. The digital divide, on the other hand, is far too wide, and there are several bottlenecks and obstacles that require rapid response:

- It's more difficult for emerging, private institutions to construct a degree of confidence and loyalty that will enhance customer's ideology to shift their cash into such a digital account because of the legacies of government-owned banks.
- Digital finance supplier companies expanding to relatively low-income regions will be challenged around low literacy and the capacity to interpret the principles and implication of utilizing digital financial products.
- Consumers prefer cash, and sellers also transact in cash, so staying in a cash system makes more sense. One of the main reasons for non-adoption of digital payments is a lack of demand.

- Some shopkeepers and merchants feel that transitioning from a cash-based economy to a digital one will push small enterprises and people to pay taxes that are not paying taxes yet.
- Many people living in remote and rural areas still don't have access to the network and digital infrastructure that is needed to foster confidence and frequent use of digital services.
- Rural economies remain predominantly cash-based, notwithstanding modest early proliferation of digital finance in remote and rural areas. People who are poorer are more responsive to data prices. so, prices of data are also a basic challenge connecting rural people to digital financial inclusion.
- The majority of digital financial products that is available in English and sometimes in Hindi. However, most rural people feel reluctance in other languages due to illiteracy and unfamiliarity, and they prefer digital financial products in their local language.
- The lack of relevant financial products is one of the most common hurdles to digital financial inclusion

Conclusion

With the digital shift in core business, finance needs to enable and drive the change. A holistic cooperation between consumers and Government can be the road-map to reap true potential of digital finance and financial inclusion. The application of technology can improve the payment facility more smooth and transparent. The ambitious flagship Scheme DIGITAL INDIA also has one pillar as digital financing as its target. The potential of digital finance is huge. Financial independence will give empowerment to women and weaker sections of society, which is imbedded motive of financial inclusion and digital finance. Adopting digitization in financial services and including most of population in the net of banking will help in growth and development of country. With several digital financial instruments in the market, the consumer now has more choice than ever.

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EXPLORING MAKE IN INDIA INITIATIVE OF GOVERNMENT OF INDIA – PROMOTING MANUFACTURING AND GROWTH PERSPECTIVE

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Abstract

This research paper focuses on strategies and best practices being employed to help India to achieve its vision by 2047. This paper throws light on the MSME formation, Make in India initiatives, startup India, and lastly state wise contributions towards Make in India initiatives. The results are concluded on the basis of impact of MSME formation, Contribution of Indian entrepreneurs and manufacturers and states, etc.

Keywords: Vision, Strategies, MSME, Startup, Make in India, entrepreneurs, Manufacturers.

Introduction

MAKE IN INDIA is an initiative rolled out by our honorable Prime Minister of India Shri. Narendra Modi on September 25, 2014. Which promotes domestic manufacturers to reach the international markets. This initiative started to make India self-reliant and lower down the dependency of China. This initiative includes the education of entrepreneurship, schemes and subsidies to give financial support to MSMEs. Though Ministry of MSME was formed in 2007, and it was not a part of Make in India, But I believe that the formation of MSME is the first steps to become India as a self-reliant country. Later on it was revised in 2020 and stated various new

regimes such as, manufacturing companies and service companies are treated equally, fund allocation for Subsidies has been increased since 2007, entrepreneurs and promoters can easily avail the schemes and subsidies. With time the Government of India initiates various initiatives to grow the economy and make India self-reliant like, MAKE IN INDIA, STARTUP INDIA, which stimulates the entrepreneurs to come up with new ideas, and execute them in the Indian market as startups. The STARTUP INDIA campaign was majorly designed to facilitate investment, foster innovation, protect intellectual property, and build best-in-class manufacturing infrastructure for the aspiring entrepreneurs. After the launch of STARTUP INDIA, entrepreneurs and startup founders got immersive support from the Government in terms of funding, subsidies, international market exposure, etc. Lastly, State Governments also took this as a serious business and equally contributed towards this MAKE IN INDIA campaign, such as Tamil Nadu, Assam, Uttar Pradesh, many more states.

Literature Review

Boat's co-founder AmanGupta said, highlighting that initiatives like Startup India and celebration of innovation has changed the mood of the nation towards entrepreneurship.

The major thrust of this initiative is to make India a global manufacturing hub. (Das, 2015). With its focus on twenty-five sectors the initiative vows to increase the share of manufacturing in the country's GDP from 16 percent to 25 percent by 2022. It also pledges to add 100 million new jobs by the year 2022. (Bhattacharya and Verma, 2016). Manufacturing has the potential to provide large scale employment, because, in addition to forward linkages it also has strong backward linkages. (Kapoor, 2015). India is considered a challenging nation to start a new venture as its business environment presents too many barriers (Nally, Kapoor, & Juan 2015). According to a report by Nasscom, the Indian startup ecosystem is expected to reach a valuation of USD 500 billion by 2025, up from USD 135 billion in 2021.

Objectives of this Study

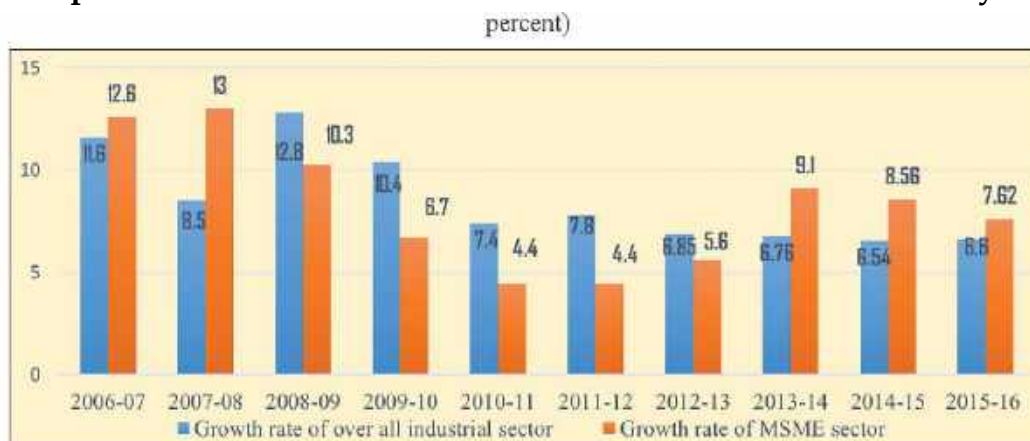
1. To study the MSME Contribution.
2. To study the Growth of the startup economy.
3. To study the impact of the Make in India campaign.
4. To study the contribution of state governments toward MAKE IN INDIA.

Research Methodology

This study is adopted descriptive research methodology and it based on secondary data. It has been collected from various books, journals, magazines and websites.

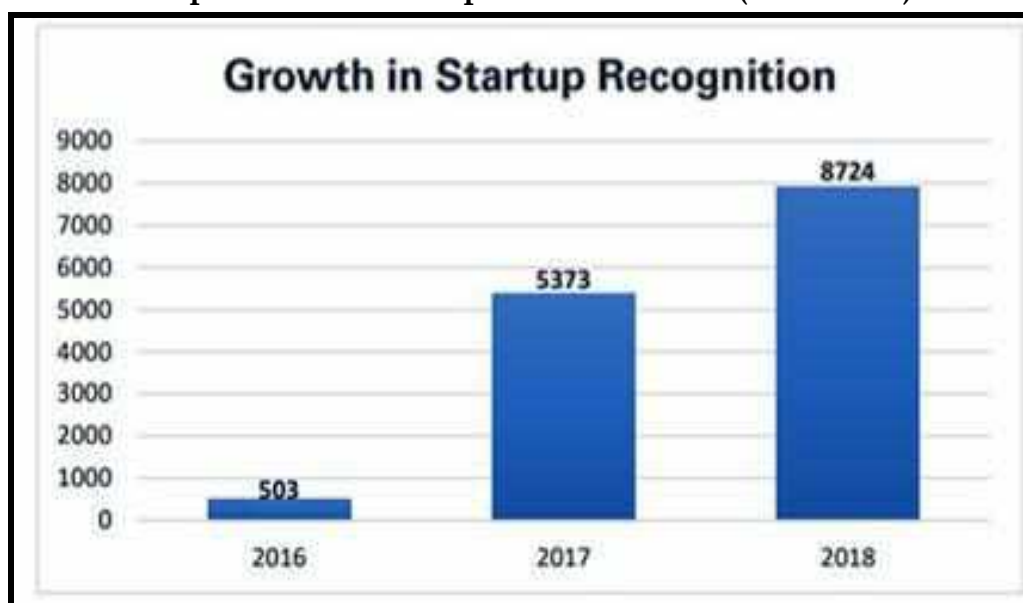
Analysis and Interpretation

Graph 1: Shows Msme Contribution Towards The Indian Economy



he Expert Committee on Micro, Small and Medium Enterprises (MSME), Reserve Bank of India, 2019

Graph 2: Shows Startup Growth in India (2016 - 2018)



Graph 3: Shows Number of Manufacturers Started after Make in India (2014) Campaign

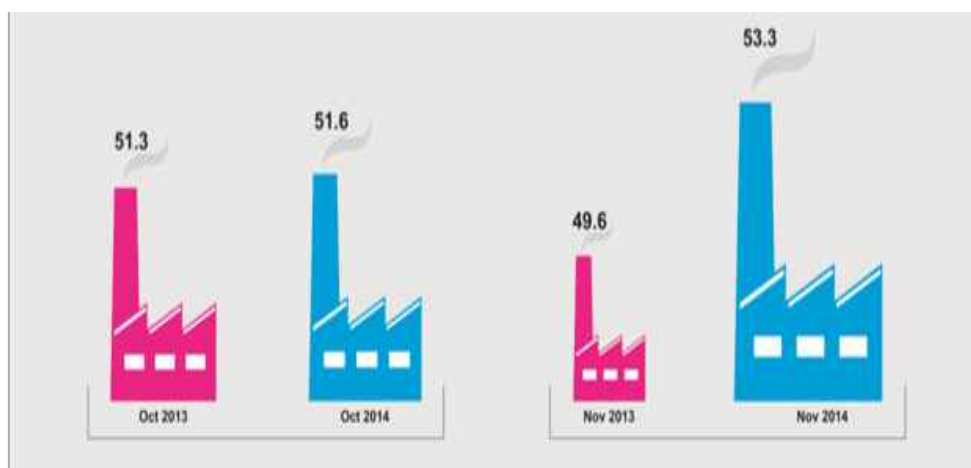


Table 1: Shows Contributions of 4 States towards the Make in India Campaign

States of India	Contributitional Schemes and Measures Towards Make in India Campaign
Uttar Pradesh	One District, One Product (ODOP)
Assam	Paramparagat Krshi Vikas Yojana (PKVY)
Tamil Nadu	Economic facilities for manufacturers, such as, free trade zones, infrastructure for transportation, etc.
Maharashtra	Maharashtra State Industrial Cluster Development Scheme (MSI-CDP) and Central Government's Micro, Small and Medium Enterprises Cluster Development Scheme (MSE-CDP)

Source: MSMEs Official Website.

Conclusion

Setting up a manufacturing unit in India, could be a great investment for MNCs in the long run, due to its business friendly laws and other economic infrastructures, such as communication, transportation and distribution networks, financial institutions and markets, and energy supply systems given by the Government of India. This stimulated the organization to set up their manufacturing plant in India. All this happened when our honorable Prime Minister Shri. Narendra Modi initiated the MAKE IN INDIA campaign and it got a huge reception among startup founders, entrepreneurs, promoters, manufacturers and investors. So far, the Government announced several MAKE IN INDIA projects to promote local businesses, such as Aadhar, UPI BHIM, ONDC, OCEN. By analyzing the developing interests of entrepreneurship among youngsters, the Prime Minister later announced, STARTUP INDIA on 16th January 2016 which reflects a meteoric growth in the startup economy.

According to a report by NASSCOM, the Indian startup ecosystem is expected to reach a valuation of USD 500 billion by 2025, up from USD 135 billion in 2021.

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EXPERIENTIAL LEARNING AND SKILL DEVELOPMENT IN NEP 2020

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Abstract

Experiential learning is an active learning method where students "learn by doing" and expressing opinions on the experience. Experiential learning activities include fieldwork, internships, practicals, undergraduate research, and classroom performances. This paper presents a thorough examination of the role of experiential learning methodologies in fostering skill development and enhancing the effectiveness of national education policies. There is a growing emphasis on providing students with both academic knowledge and practical competencies because the global economy is continually changing and demands a qualified workforce. This paper helps to know the key concepts of experiential learning and skill development aspects in nep and its integration into national education policies, analyzing the best practices to create a holistic and dynamic educational environment. The NEP 2020 makes use of experiential learning as one of its fundamental ideas. This is effectively used in schools, higher education, corporate training for educational learning, personal development and skills building. The NEP also emphasises skill development, which aims to provide students with a wide range of skills necessary for both their personal and professional development. The policy places a strong emphasis on developing 21st-century abilities like critical thinking, interaction, teamwork, innovation, and digital literacy.

Keywords: NEP 2020, Experiential learning, Skill development, Employability, Holistic learning, Indian education system.

Introduction

*"Education is simply the soul of a society as it passes
from one generation to another"*

— G.K. Chesterton

The National Education Policy 2020 is a comprehensive framework that aims to transform the education system in India. The Indian government approved NEP to solve many issues with the current educational system and offer a more comprehensive and contemporary approach to learning. The NEP 2020 places a strong emphasis on skill development and experience learning as essential elements to preparing students for the future. The instructors play an important role by

helping students learn through hands-on activities in the classroom. The Introduction of National Educational Policy 2020's was an important move that completely transformed the Indian education sector. It is anticipated that it will raise educational standards for students in both high schools and colleges.

Objectives

The objectives of this study on Experiential learning and Skill development in National Education Policy 2020 are:

- To know the key aspects of experiential learning and skill development in NEP.
- To identify the role of NEP 2020 in the Indian education system and the approaches adopted for promoting holistic learning among students.

Experiential Learning

Experiential learning is an approach that encourages students to learn through hands-on experiences, active engagement, and reflection. Students can get a greater understanding of the subject matter through the practical application of information and skills in real-world situations. The NEP 2020 recognises the value of experiential learning and intends to include it into the curricula at all educational levels.

Key Aspects of Experiential Learning in the NEP 2020:

Play-Based Learning:

The policy recognizes the significance of play-based learning in early childhood education. It promotes learning through play, which helps the children explore and understand their environment while fostering creativity and problem-solving skills.

Vocational Education:

The NEP 2020 places a strong emphasis on integrating vocational education at the secondary school level to give students useful skills and prepare them for the workforce

Internships and Practical Training

The strategy promotes requiring students in higher education to participate in internships and practical training opportunities. They can use their theoretical knowledge in practical situations and acquire skills necessary for their chosen professions.

Skill Development

The NEP 2020 places a strong emphasis on skill development to prepare students for the challenges of the 21st-century job market. The policy aims to bridge the gap between education and employability by equipping students with a wide range of skills that are essential for personal and professional success.

Key Aspects of Skill Development in the NEP 2020:**21st-Century Skills:**

The policy focuses on nurturing critical thinking, problem-solving, creativity, communication, collaboration, and other essential skills needed for the 21st-century workforce.

Multidisciplinary Approach:

The NEP 2020 encourages a multidisciplinary approach to education, where students have the flexibility to choose subjects of their interest from various disciplines, enabling them to develop a diverse skill set.

Flexible Curriculum:

The policy promotes a flexible curriculum that allows students to explore and specialize in areas aligned with their passion and aptitude, facilitating skill development in their chosen fields.

Continuous Assessment:

The NEP 2020 advocates for a shift from rote learning to continuous assessment methods that assess not only academic knowledge but also a student's practical application of skills.

Role of NEP in the Indian Education System**Curriculum and Pedagogy**

The conventional 10+2 school curricula structure is to be replaced by a 5+3+3+4 structure corresponding to ages 3-8, 8-11, 11-14, and 14-18 years respectively. This implies that a student must have 12 years of schooling preceded by 3 years of Anganwadi or pre-schooling experience. To implement this change at grassroots levels, curriculum, content, and pedagogy restructuring must be done as per the NCF (National Curriculum Framework) and content revisited in textbooks.

Holistic Learning

Holistic education is a teaching approach that focuses on preparing students to meet the problems they may face in both their personal lives and academic careers.

- NEP insists a creative and multidisciplinary curriculum that focuses equally on other subjects such as humanities, sports, fitness, languages, culture, arts, etc. apart from Science, Mathematics, etc.
- The National Education Policy 2020 also recognizes the importance of soft skills such as communication, teamwork, problem-solving, decision making, analytical thinking, resiliency, etc. as imperative life skills.
- In order to help students advance in their job paths, leadership qualities are also instilled in them along with other talents.
- NEP 2020 permits foreign institutions to establish campuses and conduct business in India. Students will benefit from having access to international education of the highest caliber. They will be ready to compete and meet the highest standards around the world. This will enable them to begin concentrating on developing themselves in accordance with their chosen job path.

Integrating Technology in Learning and Teaching Process

A regulatory body NEAT (National Educational Alliance for Technology) has been set up to integrate technology for better learning outcomes. NEAT aims to use Artificial Intelligence to personalize learning experience depending on learner's requirement. It even proposes to extend national alliance interests with EdTech companies for enhanced learning outcomes. However, one of the biggest challenges is to establish a robust digital infrastructure in remote areas.

Assessment

PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development), a national assessment centre has been proposed to set up to keep a regular check on the education system. NEP2020 aims to recognise the need to evaluate "higher order skills" such as creativity, critical thinking, problem-solving, visualisation, and idea generation. Shifting the focus of assessments from academic grades to higher order skills creates higher performance standards demonstrated through varying degrees of competency across social levels.

Mother Tongue as a Medium of Instruction

NEP 2020 focuses on using mother tongue as the instructional medium, although it does not compel anyone to use a specific language. It is preferred that children speak their native tongue or home language until eighth grade so they can readily understand complex ideas.

Teacher Training

The new education system is an evolved blend of the digital and traditional learning system. Educators, therefore, have to be trained digitally to blend into the new digital learning processes. NEP 2020 is a milestone in the history of the education system in India. It will provide the much-needed tectonic shift in the pedagogical structure emphasising experiential and practical learning that will inculcate 21st-century skills in children.

Conclusion

Experiential learning and skill development occupy a central position in the National Education Policy 2020. India's education system aspires to create learners who are not only academically proficient but also possess the practical skills, creativity, and adaptability needed to thrive in a rapidly changing world. Numerous programmes in higher education rely on case studies, real-world projects, study abroad opportunities, internships, field trips, etc., but these activities come at a cost and with other practical implications. These challenges could be removed to achieve the aim of NEP in shaping the individuals who can contribute to society and lead India toward progress and prosperity.

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CYBER SECURITY

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Abstract

As technology continues to advance and permeate every aspect of our lives, the need for robust Cyber security measures becomes increasingly critical. This paper aims to address the challenges and propose effective solutions to enhance Cyber security in the current digital landscape. The abstract begins by emphasizing the growing significance of Cyber security in the face of escalating cyber threats and attacks. It highlights the need to adapt to the evolving nature of cyber threats and outlines the potential consequences of failing to do so. The paper then proceeds to discuss key areas where Cyber security measures can be improved. It explores the significance of user awareness and education in fostering a cyber-resilient culture. Furthermore, it delves into the importance of implementing strong authentication mechanisms and encryption protocols to safeguard sensitive data. Additionally, the abstract highlights the significance of adopting proactive security measures such as intrusion detection and prevention systems, as well as regular vulnerability assessments and patch management. It emphasizes the importance of timely response and incident management to mitigate the impact of cyber incidents. The proposed solutions aim to foster a multi-layered approach to Cyber security, acknowledging that no single measure can provide absolute protection. By combining technical solutions with human factors, organizations can strengthen their security posture and reduce the likelihood of successful cyber attacks. Lastly, the abstract concludes by underlining the significance of collaboration among stakeholders, including government bodies, industry experts, and individual users, in addressing the collective challenges of Cyber security. It emphasizes the need for ongoing research, innovation, and knowledge-sharing to stay ahead of cyber threats and ensure a secure digital environment for all. In summary, this paper's abstract provides an overview of the importance of Cyber security, identifies key areas for improvement, and proposes comprehensive solutions to enhance Cyber security measures in the modern digital landscape.

Keywords: Cyber security, Cyber attacks, digital landscape, Strong authentication

Introduction

The Journal of Cyber Security Research is a prominent scholarly publication dedicated to advancing the field of Cyber security. It serves as a platform for researchers, academics, and professionals to share systems. Their innovative ideas, research findings, and practical insights in the realm of Cyber security. This esteemed journal provides a comprehensive and up-to-date understanding of emerging threats, vulnerabilities, and countermeasures in the rapidly evolving digital landscape.

Network Security: This section explores techniques and methodologies to protect computer networks from unauthorized access, intrusions, and data breaches. **Data Protection and Privacy:** This area focuses on safeguarding sensitive information, preserving privacy, and ensuring secure data handling practices across various domains. **Cryptography and Cryptanalysis:** The journal publishes cutting-edge research on encryption algorithms, cryptographic protocols, and methods to analyze and break cryptographic

Threat Intelligence and Incident Response: This section addresses the detection, analysis, and mitigation of cyber threats, as well as strategies for effective incident response and recovery.

Secure Software Development: It encompasses the methodologies, tools, and best practices for developing secure software applications, emphasizing the prevention of vulnerabilities throughout the software development life cycle.

Internet of Things (IoT) Security: This area delves into the unique challenges and solutions in securing interconnected devices, systems, and infrastructures in the IoT ecosystem.

Artificial Intelligence (AI) and Machine Learning (ML) Security: It explores the intersection of Cyber security and AI/ML, including adversarial attacks, robust AI models, and secure AI deployment.

The Journal of Cyber Security Research maintains a rigorous peer-review process to ensure the quality, validity, and relevance of the published articles. It encourages submissions from both academia and industry, fostering collaboration between researchers and practitioners.

By disseminating the latest research advancements and practical insights, the Journal of Cyber Security Research plays a pivotal role in strengthening Cyber security practices, improving resilience against cyber threats, and contributing to the overall security posture of organizations, individuals, and societies.

Researchers, professionals, and students interested in staying at the forefront of Cyber security knowledge are encouraged to engage with the Journal of Cyber Security Research by submitting their work, reviewing papers, and accessing the published articles to stay informed about the latest trends and developments in the field.

Cyber security

- Cyber Security is a application of technologies, process and control to protect the system, network, device and data from cyber attacks.
- It also refers to a practice of securing electronic devices from unauthorized access or attack

Principals of Cyber Security

- The primary objective of Cyber security is to protect data. The security community commonly refers to a triangle of three related principles.

Confidentiality

- Ensuring sensitive data is only accessible to those people who actually need it and are permitted to access according to organizational policies, while blocking access to others.

Integrity

- Making sure data and systems are not modified due to actions by threat actors, or accidental modification. Measures should be taken to prevent corruption or loss of sensitive data, and to speedily recover from such an event if it occurs.

Availability

- Ensuring that data remains available and useful for its end-users, and that this access is not hindered by system malfunction, cyber attacks, or even security measures themselves

Active Attack

Active attack harms the system. In active attack system resources can be damaged. Active attack is dangerous. Victims actually know about attack.

Application Security

Application security describes security measures at the application level that aim to prevent data or code within the app from being stolen or hijacked. It encompasses the security considerations happen during application development and design, but it also involves systems and approaches to protect apps after they get deployed know about the attack

Passive Attack

Passive attack does not harm the system. In passive attack system resources is unchanged. Victims doesn't know about the attack.

Cyber Attacks

The most common types of dos(Denial-of-Service) and ddos. Distributed Denial of Service) attacks or the TCP, SYN, Flood attack, Tear drop attack, SMURF attack, ping of death attack and bot led.

There are different types of Cyber security. They are Critical infrastructure security, Application security Network security. Cloud security.

Critical Infrastrucure Security

Critical infrastructure security is the area of concern surrounding the protection of systems, networks and assets whose continuous operation is deemed necessary to ensure the security of a given nation, its economy, and the publics health and safety.

Application Security

Application security describes security measures at the application level that aim to prevent data or code within the app from being stolen or hijacked. It encompasses the security considerations that happen during application development and design, but it also involves systems and approaches to protect apps after they get deployed.

Network Security

Network security is a set of technologies that protects the usability and integrity of a company infrastructure by preventing the entry or proliferation within a network of a wide variety of potential threats. Network security consists of the policies, processes and practices adopted to prevent from unauthorized access.

Cloud Security

Cloud security, also known as cloud computing security, is a collection of security measures designed to protect cloudbased infrastructure, applications, and data. These measures ensure user and device authentication, data and resource access control, and data privacy protection. They also support regulatory data compliance. Cloud security is employed in cloud environments to protect a companys data from distributed denial of service (DDoS) attacks, malware, hackers, and unauthorized user access or use.

Main Threats of 2021

Social engineering threats: these cyber security threats use the psychology of individuals to trick them into giving away confidential and sensitive data,often using social media platforms as the vehicle.

Ransomeware Attacks

These are where the hacker holds the data and IT systems hostage until a ransom is paid.

Internet of things Threats

Many of the Internet of Things' devices have immature or non-existent security measures installed. Patch management: Failing to keep your systems and applications up-to-date with the latest patches leaves you open to known threats.

Phishing Emails

These are emails that seem to be genuine but come from hackers.

Cases of attack in Cyber security in Digital banking

In India, banks have seen relentless attacks from organized criminals and hackers. It was illustrated in a recent case with Canara Bank where a hacker attacked and defaced the bank's site by inserting a malicious page and tried blocking some of the bank's e-payments.

Conclusion

In conclusion, this journal article has shed light on the crucial and evolving field of cyber security. The study delved into various aspects of cyber threats, vulnerabilities, and countermeasures, providing valuable insights and recommendations for individuals, organizations, and governments to enhance their cyber defenses.

Throughout the article, the authors emphasized the escalating nature of cyber attacks and the increasing sophistication of malicious actors. They highlighted the significance of adopting a proactive and multi-layered approach to cyber security, which includes technological solutions, robust policies and procedures, and a well-trained and vigilant workforce.

Furthermore, the article emphasized the importance of continuous monitoring, threat intelligence sharing, and collaboration among various stakeholders in the cyber security ecosystem. The authors stressed that cyber security is not just a technical issue but also a societal one, requiring the collective efforts of individuals, organizations, and governments to protect critical infrastructure, personal data, and intellectual property.

While advancements in technology have brought numerous benefits, they have also introduced new vulnerabilities and attack vectors. The article highlighted the need for ongoing research and development in cyber security to keep pace with emerging threats, such as artificial intelligence-based attacks, IoT vulnerabilities, and social engineering techniques.

In conclusion, this journal article has underscored the critical importance of cyber security in today's interconnected world. It serves as a reminder that cyber threats are pervasive and ever-evolving, necessitating a proactive and collaborative approach to safeguarding our digital systems, infrastructure, and information. By staying informed, implementing best practices, and investing in robust cyber defenses, individuals, organizations, and governments can mitigate risks and ensure a secure and resilient digital environment.

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THE IMPACT OF WOMEN EMPOWERMENT SCHEMES IN TAMIL NADU STATE TRANSPORT CORPORATION LIMITED (TNSTC), COIMBATORE

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Abstract

Economic development of a country is largely conditioned by the adequacy, efficiency, regularity, safety and punctuality of transport services. It links up villages, towns, cities and metropolises and it also integrates the economy. Transport is an infrastructure, a public utility and a commercial venture and therefore it is unique in more than one sense. Among the four major modes of transport namely road, rail, water and air, the first one lends itself to a greater flexibility, variety and versatility. The road transport which encompasses the passenger and cargo segments is, in fact the best possible mode of linking remote hinterlands with growing cities. On May 7 2021 Tamil Nadu's honorable Chief Minister M.K.Stalin, announced the scheme that enables all women in the state of Tamil Nadu to travel free of cost in Government-owned city and town buses. The main intention of this scheme is to increase the rate of women participation in all the sectors and to promote public transportation. It is also said that it has generated ideas for women to undertake self-employment. Thus, present paper will highlight the Impact of Women Empowerment Schemes in Tamil Nadu state Transport Corporation Limited (TNSTC)

Keywords: Economic, Transport, Tamilnadu and Passengers

Introduction

No transport business can exist without passengers. No transport business can survive without satisfying the needs of the passengers. In general compared with other modes of transport, bus transport and its services are more indispensable, convenient and very easy to access. In certain situations, bus transport may suit with the needs of the passengers and facilitate more in all aspects. It carries the people from one place to another place to enable the people to carry out their day to day activity; business etc. therefore bus transport and its quality serviced is too important in a man's day to day life of the general public. Bus transport services are similar to central nerves system of a human body. Bus transport connects different levels of people and it aid the people to have, build their business contact, celebrating festivals and in, many ways. The increasing importance of transport in the world of agriculture can't be over emphasized. Before and after harvesting, transport plays an important role. Transport services, the productivity of agricultural of improved manures and fertilizers. Before the introduction of motor truck and railways, this

facility was not available. Besides, the transport helps marketing of agricultural products. Industrial progress depends upon transport that helps new industries. Industrial development would not have taken place if there was no transport. Transport industry has been set quantities of goods and transport millions of passengers. Thus transport has contributed to the industrial development of the world.

In 1944 British Government appointed a committee to analyse public transport in the country. On 01.01.1972, Pallavan Transport commission was established under companies act 1956 and buses operated in Chennai and Chengalpattu were brought under it and paved the way for inception of other state transport undertakings. 21 state transport undertakings were created by bifurcation from 1972 to 1996. Now it is functioning as eight from 2004. Tamil Nadu state transport corporation limited (TNSTC) is fully owned and operated by the government of Tamil Nadu. TNSTC owns 321 depots and 5 workshops with a combined fleet strength of 21,678 buses. TNSTC covers 38 districts with the road length of 2,16,352 km with 32,598 buses. The total number of daily bus passenger is around 1.6 crore in Tamil Nadu, which implies there are 839 daily passengers for every bus. An estimated 53 lakh passengers travels everyday in city and town buses in Tamil Nadu.

According to Government assumption, 40 percent of the passengers, or 18 lakh, could be women. Tamil Nadu has become the third state in India to make public bus transport free for women after Delhi and Punjab and it is also the first state to introduce pass to travel in the corporation buses at free of cost for school students. On May 7 2021 Tamil Nadu's honorable Chief Minister M.K. Stalin, announced the scheme that enables all women in the state of Tamil Nadu to travel free of cost in Government-owned city and town buses. The main intention of this scheme is to increase the rate of women participation in all the sectors and to promote public transportation. It is also said that it has generated ideas for women to undertake self-employment. After this government's announcement, most of the women passengers are likely to shift from private buses to government buses. The free travel for women in town buses across the state also led to an increase in the share of women passengers from 40 percent to 61 percent.

Passenger is the occupant of a transportation vehicle other than the person operating it. Women passengers satisfaction is indefinite and a conceptual term, which will vary from one person to another and from one service to another service. Impact is the force of impression of one thing on another. Positive and negative, primary and secondary long term effects produced by a development intervention, directly or indirectly, intended or unintended.

Objectives of the Study

To study the Impact of Women Empowerment Schemes in Tamil Nadu state Transport Corporation Limited (TNSTC), Coimbatore District.

Review of Literature

Vijayaganeh (2019), has analysed “the satisfaction level and discomfort of the passenger, using TNSTC buses” Primary data was collected through the interview method. Simple percentage method, weighted average method and Rank method was applied to find the results. The study suggested that bus conductor and driver should be trained to behave with the passenger. **Kiruthika and Ravi (2022)**, have conducted the performance of women free bus operations and the complications faced by women passengers. The data for the study was secondary data which is collected from various journals and articles. The research found out that it is very useful for college students, women who want to study, house wife’s who want to do small business at home. The study concluded that the safety and ease of travel can encourage greater numbers of women to take self-employment as well as wage employment that requires them to commute or travel. **Kalimuthu and Preethika (2023)**, have conducted “Impact of Women Passenger towards Tamilnadu Free Bus Scheme Provided by Tamilnadu State Transport Corporation “(With Special Referenceto Coimbatore City). The study reveals that most of the respondents are aware about this free bus scheme. with the gdp growth rate of the country.

Methodology

The study has a descriptive nature. Secondary data have been collected in order to prepare this document in a comprehensive manner. The data have been collected from publications in various journals, periodicals, conference papers and websites.

Profile of Tamilnadu State Transport Corporation Limited (TNSTC)

Tamil Nadu State Transport Corporation Ltd.-(TNSTC) is a Government owned public transport bus operator in Tamil Nadu, India. It operates Intercity bus services to cities within Tamil Nadu, and from Tamil Nadu to its neighboring states. It also operates town busses from major cities and towns of Tamil Nadu to its neighborhoods, with the exception of Chennai, where the public bus service is operated by MTC, a subsidiary of TNSTC. It is the largest Government bus transport corporation in India. It operates intercity bus services to cities within Tamil Nadu and from Tamil Nadu to its neighbouring states with a combined fleet strength of 23,078 buses as of 2016-17. It also operates public transport bus service in many cities of Tamil Nadu, with the exception of Chennai, where the public bus service is

operated by MTC, a subsidiary of TNSTC. TNSTC is fully owned and operated by the Government of Tamil Nadu. It caters to all the districts within Tamil Nadu and also operates services to neighbouring states of Andhra Pradesh, Karnataka, Kerala, Telangana and union territory of Puducherry.

History of Tamil Nadu State Transport Corporation (TNSTC), Coimbatore

In pursuance of Government Nationalization policy, Cheran Transport Corporation Limited was incorporated as a company under companies act on 17.02.1972. It commenced its services on 01.03.1972 with 109 buses taken over from the Anamalais Bus transport pvt. Ltd., Pollachi in Coimbatore district at the time of formation. Subsequently, it took over 121 buses from 19 private operators in Nilgiris district in pursuance of Tamil Nadu State Transport carriages and contract act 1973 on 14.01.1973.

The name of the company, Cheran Transport corporation limited, Coimbatore was changed as "Tamil Nadu state transport corporation Coimbatore Division-I limited", and the name of the company, MahakaviBharathiyar Transport Corporation Limited, Udhamandalam has been changed as "Tamil Nadu state transport corporation (Coimbatore Division-III) Ltd., with effect from 23.07.1997.

Tamil Nadu state transport corporation (Coimbatore Division-III) Ltd., Udhamandalam was merged with M/S. Tamil Nadu state transport corporation (Coimbatore Division-I) Ltd., Coimbatore with effect from 07.11.2000 Subsequently, Tamil Nadu state transport corporation (Coimbatore Division-II) Ltd., Erode was merged with Tamil Nadu state transport corporation (Coimbatore Division-I) Ltd., from 30.12.2003, and this corporation is at present functioning in the name of "Tamil Nadu state transport corporation (Coimbatore) Ltd., Under this corporation there are four regions covered. Districts covered are Coimbatore, Ooty, Erode, Tirupur.

Scheme Details

Free travel facilities have been provided for all women including working women, Transgender and girls who are pursuing higher education in ordinary fare city buses operated under the control of the Tamil Nadu State Transport Corporation since 2021.

- Tamil Nadu Government announces and implement lots of scheme for the welfare of people of Tamil Nadu.
- One of the social welfare scheme for Tamil Nadu Women is Zero Ticket Bus Travel Scheme.
- The main objective behind launching Zero Ticket Bus Travel Scheme is to encourage women of Tamil Nadu for higher work participation and reduce the dependency on private mobility.

- Most of the Working Women, Girls Students and Women Labourers doesn't have their own convenience to commute one place to another.
- They regularly pay for travelling fare which overburden them financially.
- So to unburden the Women of Tamil Nadu financially, Government came up with a idea to provide free of cost travel in government run buses.
- Under Tamil Nadu Zero Ticket Bus Travel Scheme, No women have to any fare if they are travelling in Government of Tamil Nadu run buses.
- Zero Fare Ticket will be issued to women beneficiary at the time of travelling.
- Free of cost travel in government run buses will only valid up to 30 kilometers.
- Women Beneficiary has to carry one photographed identity card for verification purpose.
- Transgenders are also eligible for free of cost travel under Zero Ticket Bus Travel Scheme of Tamil Nadu.
- Free of Cost Bus Service will only provided in Tamil Nadu Government run Ordinary/ City Buses or Buses operated under the control of Tamil Nadu State Transport Corporation.
- There is no need to apply anywhere to avail the benefit of free of cost travel in buses.
- Women Beneficiary can directly travel free of cost under Zero Ticket Bus Travel Scheme for Women of Government of Tamil Nadu.

Benefits of Women Empowerment Schemes in TNSTC

There is a lot of gender disparity in Indian society, and the mobility of women is restricted for a host of social and economic reasons. Fare free bus travel will, therefore, lead to economic, emotional, and social benefits for women.

Economic Benefits

In most Indian households which have a vehicle (car, two wheeler or even bicycle), it is primarily used by the male members, which restricts the mobility of women to a great extent. Women, especially women from lower socio-economic backgrounds, are often forced to take up jobs in locations which are close to their residence, which restricts the number of job opportunities available to them.

- Offering fare free bus travel enables women to look at taking up jobs with are a distance away from home, and will, hopefully, lead to improved labour force participation.
- Women who are currently spending a substantial chunk of their earnings on bus fares will be able to save the amount and can then use it on other basic expenditure like education or healthcare.

- Fare free bus travel enables women to use public transport for running errands and for other purposes, therefore saving the time which might otherwise be spent on walking to their destination.
- Women who might have earlier walked to their place of work and back can now save time by taking the bus.
- Many mothers, for instance, wait outside the school compound after dropping the children off, since they cannot afford to spend on bus fare to return to their homes.
- Fare free bus travel will empower these women to spend their time more productively if they choose.

Emotional Benefits

Fare free bus travel will give women the freedom to move freely within the city, and will reduce their dependence on other family members for their mobility.

- School students who are forced to drop out of school after primary school because the secondary school is a distance away, can now avail of fare free bus travel to travel to school without imposing an additional financial burden.
- Women can visit family and friends, without having to depend on others to take them. Women, particularly from rural areas, can now access better medical facilities.
- Being able to study and work without worrying about the cost of the commute is a big benefit for women.
- Equally important, fare free bus travel empowers women to use public transport for shopping and leisure which is good for their mental well-being.

Social Benefits

- Fare free bus travel will lead to more female passengers in the bus. Since we always feel more comfortable when we are with more people like us, this will increase our perception of safety and security.
- After fare free bus travel was introduced in Delhi, women said that travelling by DTC buses had become safer than traveling by private buses. Women also reported that incidents of casual molestation had gone down with the increase in number of female passengers. This is a virtuous cycle, which will eventually lead to greater safety for women.
- Hopefully, this will lead to more women switching from private vehicles which they can ill afford to public transport.

Conclusion

The main aim of the paper is to know the impact of women passenger using TNSTC free busses provided by Tamil Nadu State Transport Corporation in Coimbatore city. Based on study findings, it can be concluded that free buses have helped women passengers to save. The money which is saved is used in household expenses of the women passengers family. Students and working women are benefited by this scheme as they can study and go to work places also and many women travel 5 kilometers-10 kilometers per day to fulfill their needs. This scheme is great initiatives by the government for the welfare of women in Tamil Nadu.

Acknowledgement

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A STUDY ON WOMEN ENTREPRENEURSHIP IN INDIA

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Abstract

This study aims to examine the state of women entrepreneurship in India in the year 2023, exploring the opportunities, challenges, and socio-economic impact of women-owned businesses. India has witnessed a significant rise in women entrepreneurs in recent years, and this study seeks to understand the factors contributing to their emergence, as well as the barriers they face.

The study adopts a mixed-methods approach, incorporating both qualitative and quantitative research methods. Qualitative methods include interviews and focus group discussions with women entrepreneurs, industry experts, government officials, and relevant stakeholders. Quantitative data is collected through surveys distributed among a diverse sample of women entrepreneurs across different sectors and regions of India.

The research explores various aspects of women entrepreneurship, including the motivators and drivers behind women's decision to start businesses, the types of industries they are engaged in, and the challenges they encounter. It also examines the role of government policies and support mechanisms in fostering women entrepreneurship, along with the impact of cultural and societal factors on women's entrepreneurial journey.

The findings of this study will shed light on the current state of women entrepreneurship in India, identifying the key factors that enable or hinder women's participation in business activities. Moreover, the study aims to provide insights into effective strategies and policies that can further promote and support women entrepreneurs, contributing to their economic empowerment and overall socio-economic development.

The results of this research will be valuable for policymakers, industry associations, and organizations working towards empowering women entrepreneurs. By understanding the unique challenges faced by women in the entrepreneurial ecosystem, stakeholders can develop targeted interventions to foster a conducive environment for women's business growth and success.

Keywords: *women entrepreneurship, India, socio-economic impact, challenges, government policies, cultural factors, empowerment.*

Introduction

Entrepreneurship plays a crucial role in economic growth and development, and women's participation in this realm is increasingly recognized as a catalyst for

inclusive and sustainable progress. In India, women entrepreneurship has witnessed significant growth and has become a prominent force driving innovation, job creation, and social change. This introduction provides an overview of women entrepreneurship in India, highlighting its emergence, impact, and the challenges faced by women entrepreneurs.

In recent years, India has witnessed a notable surge in women-owned businesses across various sectors. Women entrepreneurs have demonstrated their ability to break traditional gender norms, challenge societal expectations, and create successful enterprises. This shift can be attributed to several factors, including the increasing education levels among women, improved access to finance and technology, evolving social attitudes, and supportive government initiatives.

The emergence of women entrepreneurship in India has brought about substantial socio-economic transformations. Women-owned businesses have contributed to employment generation, empowering women as job creators rather than job seekers. Additionally, these ventures have played a vital role in addressing social issues, such as gender inequality, by creating opportunities for women's economic empowerment and providing platforms for their voices to be heard.

However, despite the progress made, women entrepreneurs in India face unique challenges. Deep-rooted cultural and societal norms, including gender bias and stereotypes, still pose obstacles to women's full participation in entrepreneurship. Limited access to capital, lack of business networks, and inadequate mentoring and support systems further compound the challenges faced by women entrepreneurs. These barriers hinder their growth and impede the realization of their full potential.

Recognizing the significance of women entrepreneurship, the Indian government has introduced various policies and initiatives to promote and support women-led businesses. These measures include financial incentives, skill development programs, access to credit facilities, and dedicated platforms for networking and collaboration. However, there is a need for continuous evaluation and improvement of these initiatives to address the specific needs and challenges faced by women entrepreneurs effectively.

This study aims to delve into the current landscape of women entrepreneurship in India, analyzing the opportunities, challenges, and socio-economic impact. By understanding the experiences, motivations, and barriers faced by women entrepreneurs, this research aims to provide valuable insights to policymakers, organizations, and stakeholders. The findings will aid in designing targeted interventions, fostering an enabling ecosystem that encourages and nurtures women's entrepreneurship, and promoting their economic empowerment.

Women entrepreneurship in India has witnessed remarkable growth and has the potential to contribute significantly to the nation's socio-economic development. However, it is essential to address the unique challenges faced by women entrepreneurs and provide them with the necessary support and resources to thrive. By promoting gender-inclusive policies, fostering mentorship and networking opportunities, and challenging societal norms, India can unlock the immense potential of women entrepreneurs and create a more equitable and prosperous entrepreneurial ecosystem.

Review of Literature

1. Tambunan T has researched Asian women business owners in emerging nations. It has focused on their growth and primary obstacles. Data analysis and a review of recent significant literature serve as the foundation for the author's work. Only women business owners in small and medium firms are the subject of this essay. According to the author, this investigation also exposes three key facts in each of the different categories.
2. A paper on the motives, challenges, and outcomes of female entrepreneurs in small service enterprises has been produced by Akehurst, Simarro, and Tur. Their investigation focused on a relatively small sample of businesses in one region of Spain. The report contributes to a deeper understanding of female entrepreneurs and the factors that contribute to their success.
3. Afrin, Islam & Ahmed labored on a multivariate version of micro credit score and rural women entrepreneurship improvement in Bangladesh. A multivariate analysis approach like component analysis became performed to discover the entrepreneurship improvement related factors. Structural equation modelling turned into used to improve the version of micro credit application.
4. García P & Capitán offers with factors that make contributions to enhance lady entrepreneurship through a potential evaluation. Their work pursuits to discover what environmental modulators factors favour and make a contribution to beautify girl entrepreneurship from a gender perspective. They have shown a qualitative look at that draws on 10 interviews in depth after being tested on their contents, from a relational perspective.

Objectives

1. To know the challenges faced by women entrepreneur by conducting online survey.
2. To analyze the roles of women entrepreneurs in economy.
3. To understand about the different government schemes for women entrepreneurs

4. To understand the mindset of people through personal interviews, and list out some successful stories

Research Methodology

1. Primary data has been collected through public survey in which a structured questionnaire was created and the responses were gathered from people of different age groups and professions.
2. Case studies have been collected from secondary sources like online blogs and articles.
3. Secondary data has been collected through National and International Journals, published reports of RBI, NABARD, Census Surveys, newspapers, publications from various websites which is focused on different aspects of the government focusing on the issue of Women Entrepreneurship.

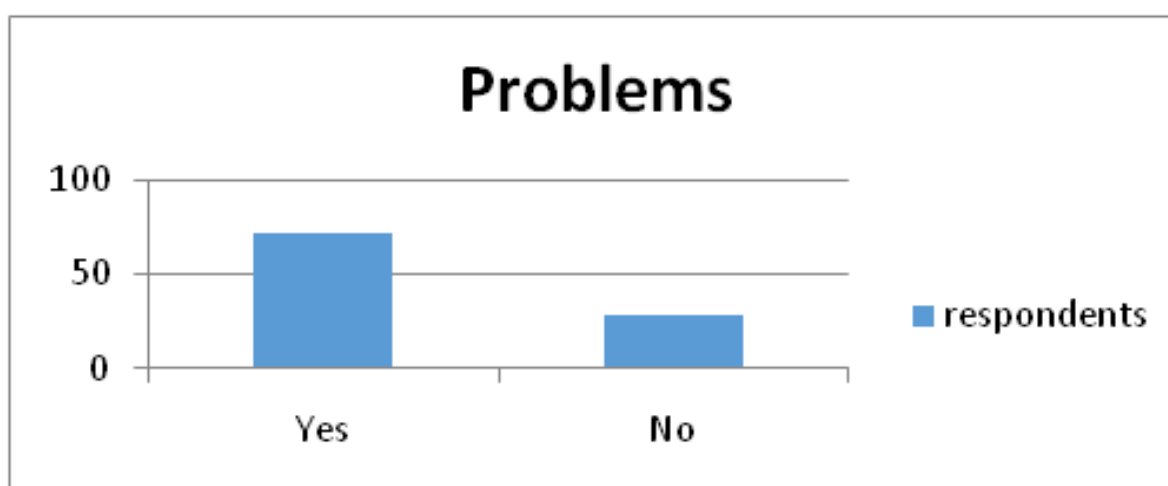
Government Schemes in India

Here are a few government schemes that have been implemented to support women entrepreneurship in India:

1. Stand-Up India Scheme: Launched by the Government of India, this scheme aims to facilitate bank loans between INR 10 lakh and INR 1 crore to at least one Scheduled Caste (SC) or Scheduled Tribe (ST) borrower and at least one woman borrower per bank branch for setting up greenfield enterprises.
2. Mahila Coir Yojana: Under the Ministry of Micro, Small & Medium Enterprises (MSME), this scheme provides financial assistance to women entrepreneurs for establishing coir-based enterprises, such as coir spinning, coir weaving, and production of coir pith compost.
3. Annapurna Scheme: Implemented by the Bharatiya Mahila Bank (BMB), this scheme aims to extend credit facilities to women entrepreneurs for setting up or expanding food catering units, including tiffin services, canteens, and food stalls.
4. Stree Shakti Package for Women Entrepreneurs: Offered by various banks, this scheme provides special benefits and concessions to women entrepreneurs in terms of interest rates on loans, collateral requirements, and processing charges. The scheme encourages and supports women in starting and growing their businesses.
5. Pradhan Mantri Mudra Yojana (PMMY): While not specific to women, PMMY is a government scheme that provides loans to micro and small enterprises, including women-owned businesses, in the form of Mudra loans. These loans are categorized into three categories based on the stage of business growth: Shishu, Kishor, and Tarun.

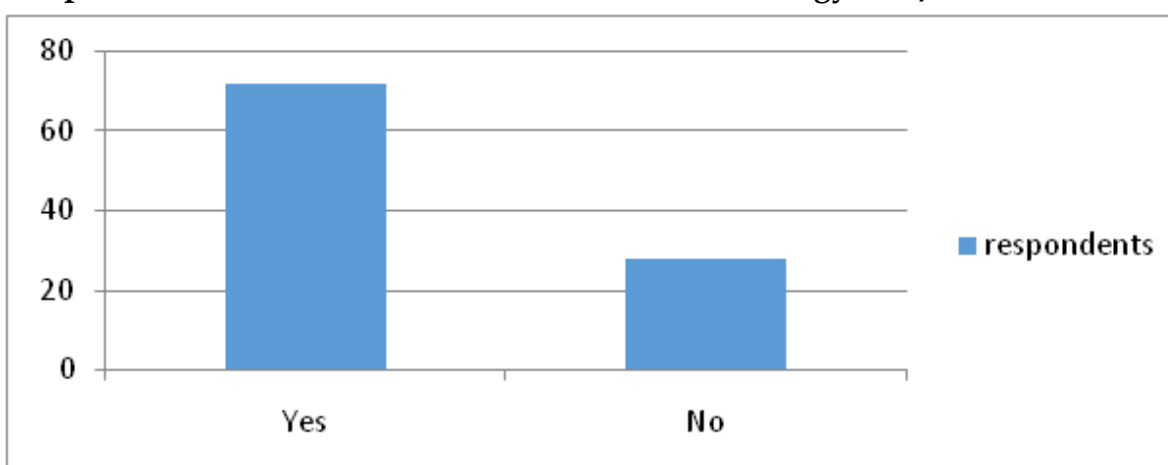
6. **Women Entrepreneurship and Empowerment (WEE) Scheme:** Launched by the Ministry of Skill Development and Entrepreneurship, this scheme provides training, skill development, and support for women entrepreneurs. It aims to foster an ecosystem that enables women to participate and succeed in entrepreneurial activities.

1. Do you believe that the women are facing any problems reaching managerial and decision-making positions? Yes/ No



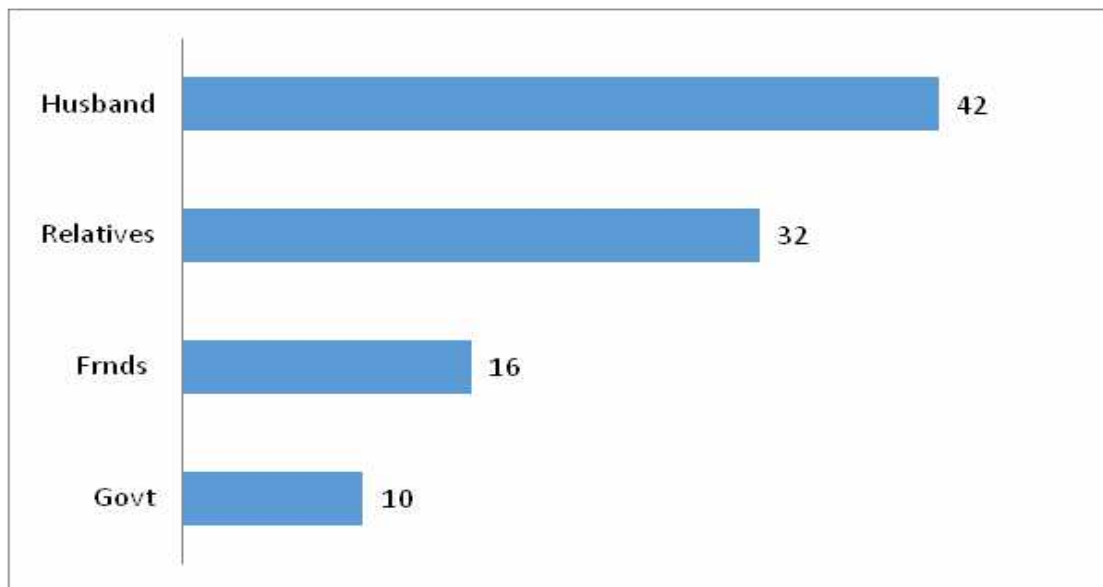
70 percent of the people believe that the women are facing problems reaching managerial & decision making positions. While our country's women are striving for greater heights, certain factors such as those listed below hinder their efforts.

2. Do you believe that there is a gender gap in both computer professions and new professions linked to new communication technology? Yes/ No



As the government has attempted to remove the prevailing gender barrier, it can only be removed through personal decisions and awareness if it still exists.

3. What are the motivators in starting the enterprise? (give rank) Husband / Family members / Friends / Relatives / Govt. Agencies



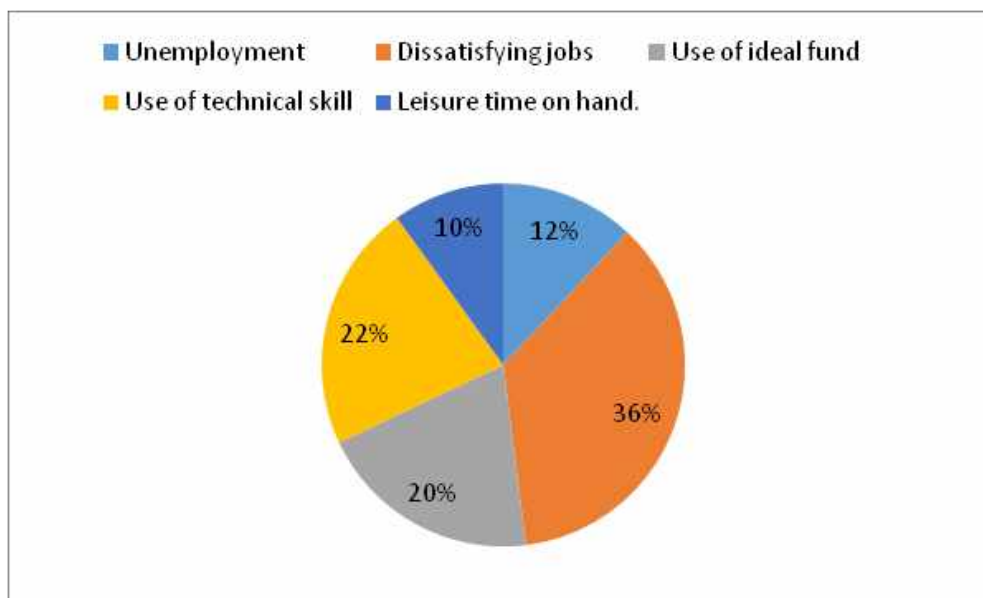
Husbands are the best supporters for women entrepreneurs.

**4. What are the ambitions of women entrepreneurs? (Give rank)
Success Stories / Previous Association / Inherited Property / Advice of Family**



Successful women stories are motivating to them to follow.

5. What according to you are the compelling reasons for starting the enterprise? (rank) Unemployment / Dissatisfying jobs / Use of ideal fund / Use of technical skill / Leisure time on hand.



Dissatisfying jobs is the major reason for women to shift to become entrepreneur

Conclusion

This study has been able to show women from many social groups how to transform their perspective from being limited to walls to pursue entrepreneurship despite some obstacles. These many techniques have inspired current businesspeople to develop their entrepreneurial abilities to greater heights than they previously thought possible. Discussions will undoubtedly boost the number of women working since they are qualified to handle duties just as well as men. Personal experiences might inspire women to pursue entrepreneurship as a career. Case studies will stimulate their thinking and carry them to the highest, most incredible heights. The main goal was to demonstrate the economic contribution that women can make. These creative brains have the potential to boost the economy to a level which even men can't imagine. India needs women to stand up and contribute towards the economy.

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TECHNOLOGY STARTUPS: INNOVATION AND GROWTH

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Abstract

Business technology is applications of science, data, engineering, and information for business practices and in industrial units, such as the achievement of economic and organizational goals. The main element of technology is the idea of change in the business startups, and it will affect business and society. Business Technology students will learn the necessary skills to be fluent in business models, regulatory issues, business development, managing cross-functional and international teams, strategic management, product innovation, and go-to-market strategies to all startups are possible. There is no denying the fact technology increases the efficiency of the Startup company. The advancements in the world of robotics and applied sciences help businesses startups facilitate their customers. Moreover, due to the emergence of artificial intelligence, Startup companies can now make better use of technology. In India Technology start-up landscape has evolved to become the 4th largest in the world. Since 2010 there has been a significant rise in the growth of technology startups and in e2014 India was home to 3,000 technology start-ups. The report – first in the start-up series, conducts an in-depth analysis of the various aspects of the ecosystem. It identifies the current scale and size, factors impacting growth, and steps required to make the start-up environment more conducive. The implementation of technology in Startup business saves time and effort involved in employing human labor and increases productivity, which is in huge advantage.

Keywords: Technology, Startup, Environment, Business, Innovation.

Introduction

The Technology Is Moving Startups Beyond Conventional Tactics with its robust intervention. Technology is vital to startups, leveling the playing field and making more things than ever before accessible to new businesses. It will be always thought that it's important to be able to step outside your comfort zone when you're running a Startup business, A Startup is a young company which seed money founded by one or more entrepreneurs to develop a unique product or service and bring it to market in the competitive spirit and which will also help customers to get product at lower price and to create a greater number of employment opportunities. The biggest benefits of technology for daily business operations are the increase in flexibility so it will be useful in case of technology also.

Technology has not only helped to improve the flexibility of a number of deadlines, but advancements such as a business call app can improve the flexibility

of employees whilst reducing the need for a second phone. By its nature, the typical Startup tends to be a shoestring operation, with initial funding from the founders or their friends, families and Government. Technology and automation can help a business improve efficiencies across functions. From manufacturing to marketing, and ensure costly errors are prevented from happening. This in turn can add to business growth. Insights and Technology also prove valuable insights about the business.

A Startup business a new business that is in the initial stages of operation, beginning to grow and is typically financed by an individual or small group of individuals. It is a young entrepreneurial, scalable business model built on technology and innovation. The technology affects a firm's ability to communicate with customers. Fast shipment options allow businesses to move products over a large geographic area. When customers use technology to interact with a business, the business benefits because better communication creates a stronger public image. In startups the role of technology is very important because of its scope of growth. The role of technology enables the Startup an idea that manifests into a commercial undertaking. Indian government is serious in promoting entrepreneurship at the Startup level and has taken a number of initiatives to ensure appropriate support. easier, faster and more effective communication, better, more efficient manufacturing techniques, less wastage, more efficient stock management and ordering systems, the ability to develop new, innovative approaches, more effective marketing and promotion and new sales avenues. In this aspect it is relevant to mention 'Make in India' campaign introduced in September '14 to attract foreign investments and encourage domestic companies to participate in the manufacturing sector. The government increased the foreign direct investment (FDI) limits for most of the sectors and strengthened intellectual property rights (IPRs) protection to instill confidence in the Startup in different business segment. In the case of startups technology has important effects on business operations.

An Analysis Role of Technology for Startup

In process of industrialization startups technology is growing fast, prices are dropping, and new innovations are being rolled out constantly. If you haven't been consistently looking out for new technology to assist your business, chances are that you have missed something. Technology has changed the pace of business and raised the expectations of customers. The role of technology on business doesn't stop there. Increased access has allowed us to leverage new and different technologies to grow and adapt our Startup businesses. There certainly are technology solutions out there that can improve your business. Whether you like it or not, technology is

essential to business success. Employees rely on it for day-to-day operations. Outside companies, clients, and prospective clients evaluate you on your use of technology. HR relies on technology to train and develop employees.

Technology can assist in ensuring that you are prepared for even the most difficult communication obstacles sustainable growth of business which will enables. It's no secret that there have been some awesome technological advancements in recent years. Advancements such as Life size's video conferencing technology and Zulty's VOIP phone cloud solution are strategically designed to improve efficiency and reduce lay time in the office. Cyber attacks are growing at an alarming rate. So too are the amazing cyber-security defenses Top-notch cyber security being essential for protecting your business from thefts of data or money, primarily if you use computers and other technological tools. The latest cyber security advancements, like antivirus or cloud protection systems, secure your crucial and sensitive data from being hacked by malicious parties.

Being Startup technological innovations, Germany is leading other countries in business innovation and technology. As per IMF data, Germany has the largest business software market in Europe and accounts for nearly a quarter of the value of the business technology market on the continent. A report by the IZA Institute of Labour Economics showed that technological innovations were one of the main driving forces behind Germany's formidable economic growth. Technological adoption in German businesses reduced stagnation in business ideas, and predictive analytics gave entrepreneurs the insights to make data-backed decisions. The Sophos' Deep Learning technology. In an age where almost all-important business assets are stored in the cloud or on endpoints, it is imperative that businesses employ security technology to protect those assets.

Startups and Economy

Startups play the most crucial role in an economy. Most of us feel that startups grow in the developed economy due to adequate availability of resources. On the contrary, these ventures can start from anywhere as per market demand.

Economic Prosperity

Startups boost economic activity that helps the nation to expand. In addition to this, it also maximizes profits through technological innovations. This eventually improves the GDP of an economy and transfers money into the hands of the customers. It brings competitive dynamics to the economy to encourage existing businesses and adopt newer technologies.

Developments and Innovations

Older businesses or industry leaders are more inclined to spend money on incremental innovation and R&D on already established technologies. While startups are more concerned with cutting-edge innovation and innovative technologies. Startups are more agile and able to develop a concept into a product and update it in response to customer demand with quicker decision-making communications as they are not constrained by a multi-layered corporate bureaucracy. Employees are driven to go above and beyond to succeed by the high risks involved. Giant corporations, like Google and Microsoft, frequently buy out startups to better innovate and increase sales through their size and distribution networks.

Increase the Production of Goods and Services

Startups tend to have more advanced technology. The output of products and services increases as a result. With this, they are able to produce greater revenue from the same amount of capital inputs as more established businesses. In short, the new ventures enhance the production of goods and services which increase the revenues of the nation also.

Direct Impact

Startups also directly affect the cities they are based in, just like Google and Microsoft have impacted Mountain View and Redmond, respectively. They bring riches and a sizable influx of graduates and seasoned professionals looking for employment chances from other places.

Entrepreneurship is a Powerful Economic Force

Startups are growth-oriented forces. It is necessary to find ways to encourage competition and support transformational entrepreneurs to prevent economic stagnation. Although obtaining support at the federal level is crucial, the effort must be concentrated at the local level. Cities must support initiatives that promote entrepreneurship. Politicians and lawmakers cannot ignore entrepreneurs any longer since doing so would be detrimental to both local and national growth. Removing obstacles, fostering interaction, and assisting startups are just a handful of the ways civic leaders may give entrepreneurs a greater advantage.

Better Standard of Living

The level of living for people in society is raised through start-ups. New ideas and technologies introduced by start-ups contribute to raising the level of living in the community. For instance, a business that makes healthy products contributes to

raising the standard of living of its customers by providing solutions for their health. When they employ people, they also provide a higher standard of living. They contribute to their improvement because they now have jobs and can support themselves. To develop quickly, generate more jobs, and ultimately raise the standard of life of people via their innovations and creativity, successful start-ups must have ambition and potential.

Creates Competitive Dynamics

Startups make society very dynamic and give economic dynamism and competitiveness, which keeps the economy strong, active, and attentive. They employ their inventions to produce innovative products that are dynamic and diverse and boost the economy.

Encourage Activism

Startups alter the value of any culture in which they exist and introduce a new attitude consistent with the knowledge- and creativity-based civilization. It helps people understand their responsibilities and encourages them to think and act proactively about their job, careers, and the advancement of society. It helps people focus on delivering their best effort to their work by bringing their duties to light and assisting them in understanding how significant and relevant their tasks are in their society. Thus we can say that entrepreneurship benefits an economy and promotes its growth of it as well.

Factors that Influence Innovation

Turnover

Measures the percentage of Return on Investment over the course of the year

Financing

The availability of financial resources, equity and debts for small and medium enterprises (SMEs) (including grants and subsidies)

Post education

The extent to which training in creating or managing SMEs is incorporated with in the

Education and training system in higher education such as vocational, college, business schools, etc.

R&D

The extent to which national research and development will lead to new commercial

Opportunities and is available to SMEs.

Internal Market Openness

The extent to which new firms are free to enter existing markets

Cultural and social norms

The extent to which social and cultural norms encourage or allow actions leading to new business methods or activities that can potentially increase personal wealth and income.

Issues and Challenges

The important issues and challenges in space of Techno- Startup is witnessing by different ways. Assembling a good team is the first major requirement, failure to have one sometimes could break the Startup (Skor,2016). Tenacity of founders Skor of startups have to be tough when the going gets tough. For an outside observer, India's tech Startup ecosystem has for many years buzzed with action. Startups in popular domains like data analytics, artificial intelligence and block chain have routinely mopped up angel and seed funding; a few have even made headlines for their acquisition by global tech giants like Facebook, Google and Apple. These early stage success stories naturally inspire more young people to test the waters.

The number of startups who have successfully scaled their business to cover the whole of India or even ventured abroad can be counted on hands. For every Flipkart, Zomato and OYO Rooms; there are dozens of startups that just could not scale up despite showing a lot of promise in early stages. India has the world's largest smart phone and the Internet-connected population at 300 million, with an ever-increasing spending power thanks to a growing economy. Regulations pertaining to labour laws, intellectual property rights, dispute resolution etc. are rigorous in India. Lack of mentorship: Lack of proper guidance and mentorship is one of the biggest problems that exist in the Indian Startup ecosystem (Choudhury, 2015). Financial resources Availability of finance is critical for the startups and is always a problem to get sufficient amounts. A number of finance options ranging from family members, friends, loans, grants, angel funding, venture capitalists, crowd funding etc. are available. A large part of this population lives outside the metros, in cities and towns- big and small.

There is an even bigger emerging opportunity in serving the technology needs of Indian small and medium businesses. Some of the issues and challenges are the techno-business needs to be persistent, persuasive, and should never give up till he/she achieves desired results. Regulations Starting a business requires a number of permissions from government agencies. One such deficiency is lack of trust during hiring, in contracts and their enforcement. Our judicial system is unreliable

and unpredictably slow and as a result, businesses are never sure of being able to enforce signed contracts.

Conclusion

The Technology has revolutionized the way companies conduct business by enabling small businesses to level the playing field with larger organizations by the way of different small startups. Small businesses use an array of tech everything from servers to mobile devices to develop competitive advantages in the economic marketplace. Small start-up business owners should consider implementing technology in their planning process for streamlined integration and to make room for future expansion which enables sustainable growth of business. This allows owners to create operations using the most effective technology available for the future expansion of business.

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EASE OF DOING BUSINESS: ENHANCING ECONOMIC GROWTH AND INVESTMENT

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Abstract

The ease of doing business is a critical factor in fostering economic growth and attracting investment. This abstract provides an overview of the importance of the ease of doing business, its impact on economic growth and investment, and the measures governments can take to enhance it. A favorable ease of doing business environment simplifies administrative procedures, reduces bureaucracy, and improves the overall business climate. This, in turn, promotes entrepreneurship, innovation, and productivity gains. Countries with a high ease of doing business index experience higher economic growth rates, as streamlined processes facilitate business formation and expansion, leading to job creation and increased tax revenues. Additionally, a conducive business environment attracts domestic and foreign investors by reducing risks and uncertainties and providing stability and predictability. Improving the ease of doing business requires governments to implement measures such as simplifying administrative procedures, enhancing transparency, and investing in infrastructure. Streamlined business registration, access to finance, and digitalization of services are also crucial. Furthermore, strong contract enforcement, property rights protection, and fair competition foster trust and confidence in the business environment. Governments can learn from international best practices and collaborate with private sector stakeholders to identify areas for improvement and implement targeted reforms. Thus, the ease of doing business plays a pivotal role in driving economic growth and investment. Governments must prioritize reforms to create a favorable business environment by simplifying regulations, reducing bureaucracy, and improving transparency. These efforts will unleash the potential of businesses, attract investment, and spur economic development, resulting in job creation, increased competitiveness, and improved living standards.

Keywords: *Ease of doing business, Economic growth, Investment, Business environment, Entrepreneurship*

Introduction

The ease of doing business is a comprehensive concept that encompasses the level of simplicity, efficiency, and transparency involved in the entire lifecycle of starting, operating, and growing a business within a specific country. It takes into account a wide range of factors that influence the business environment, including

regulations, administrative procedures, legal frameworks, access to finance, infrastructure, and overall governance. The significance of the ease of doing business cannot be overstated. It serves as a crucial determinant of a country's attractiveness to both domestic and foreign investors. A favorable business environment encourages entrepreneurship, innovation, and productivity, which are essential drivers of economic growth. When the process of starting a business is streamlined and bureaucratic hurdles are minimized, entrepreneurs are more likely to take the initiative to establish new ventures. This leads to increased business formation, job creation, and the development of a vibrant entrepreneurial ecosystem.

Moreover, the ease of doing business has a direct impact on investment inflows. Investors seek jurisdictions where they can operate with ease, efficiency, and transparency. When the administrative burden is reduced and regulatory processes are simplified, it becomes more enticing for both domestic and foreign investors to establish or expand their businesses. An attractive business environment fosters confidence in the stability and predictability of the market, which in turn encourages investment and capital inflows. This, in the long run, contributes to economic growth, technological advancement, and increased employment opportunities. To improve the ease of doing business, governments can implement various measures. One essential aspect is to simplify regulations and administrative procedures. Reducing unnecessary red tape, eliminating bureaucratic inefficiencies, and enhancing coordination among government agencies can significantly streamline the process of starting and operating a business. Additionally, the legal framework should be clear, transparent, and enforceable, providing businesses with a predictable operating environment.

Access to finance is another crucial factor in facilitating the ease of doing business. Governments can take steps to improve the availability and affordability of financing options for businesses, particularly small and medium-sized enterprises (SMEs). This can be achieved through initiatives such as promoting financial inclusion, establishing credit guarantee schemes, and fostering relationships between financial institutions and businesses. Investing in infrastructure is equally important. Adequate infrastructure, including transportation networks, energy supply, and digital connectivity, enables businesses to operate efficiently and effectively. Governments should prioritize infrastructure development to support the needs of businesses and facilitate the movement of goods, services, and information. Furthermore, ensuring transparency and accountability in governance is vital for improving the ease of doing business. This includes transparent and fair regulatory practices, efficient dispute resolution mechanisms, and a robust legal system that protects property rights and enforces contracts. By promoting good

governance practices, governments can instill trust and confidence in the business environment, attracting both domestic and foreign investors. Thus, the ease of doing business plays a pivotal role in fostering economic growth and attracting investment. A favorable business environment, characterized by simplicity, efficiency, and transparency, encourages entrepreneurship, drives innovation, and boosts productivity. Governments can take measures to simplify regulations, enhance administrative procedures, improve access to finance, invest in infrastructure, and ensure transparent governance to improve the ease of doing business. By doing so, countries can create an attractive environment for businesses to thrive, leading to increased economic growth, job creation, and improved standards of living.

Importance of Ease of Doing Business

The ease of doing business plays a pivotal role in fostering economic growth, attracting investment, and promoting entrepreneurship. A favorable business environment creates an ecosystem that encourages innovation, job creation, and productivity gains. When businesses can operate with ease and efficiency, it allows them to focus on their core operations and explore new opportunities. This leads to increased innovation as businesses have the freedom to experiment, develop new products or services, and adopt new technologies. Furthermore, a conducive business environment provides a platform for small and medium-sized enterprises (SMEs) to thrive. SMEs are often the backbone of economies, contributing significantly to job creation and economic development. When the barriers to starting and operating a business are low, SMEs can emerge and grow rapidly, creating employment opportunities and contributing to the overall GDP. They also foster competition and drive innovation, as they are often more agile and adaptable to changing market dynamics.

A favorable business environment also attracts both domestic and foreign investors. When the regulatory framework is transparent and the administrative procedures are efficient, it reduces the risks and uncertainties associated with business operations. This provides confidence to investors, encouraging them to allocate capital and resources into the country. Investment inflows, whether domestic or foreign, lead to increased economic activity, job creation, and technology transfer. Foreign investors often bring with them expertise, knowledge, and access to global markets, which can have significant positive spillover effects on the local economy. Moreover, a conducive business environment fosters a culture of entrepreneurship. When aspiring entrepreneurs see that the process of starting and operating a business is streamlined, they are more likely to take the leap and pursue

their entrepreneurial aspirations. This leads to a vibrant and dynamic entrepreneurial ecosystem, where new ideas, products, and services are constantly being developed. Entrepreneurship is a key driver of economic growth and social mobility, as it creates employment opportunities and contributes to the overall economic diversification of a nation. Thus, the ease of doing business is crucial for fostering economic growth, attracting investment, and promoting entrepreneurship. A favorable business environment encourages innovation, job creation, and productivity gains. It provides opportunities for SMEs to thrive, attracts domestic and foreign investors, and fosters a culture of entrepreneurship. Governments must prioritize creating a conducive business environment by simplifying regulations, reducing bureaucracy, and enhancing transparency. By doing so, they can unlock the potential of businesses, drive economic growth, and create a sustainable and inclusive economy.

Impact on Economic Growth

Countries with a high ease of doing business index have a distinct advantage when it comes to economic growth. Such countries often experience higher rates of economic growth compared to those with more cumbersome regulatory frameworks and bureaucratic procedures. A streamlined regulatory framework is a crucial aspect of a favorable business environment. When regulations are clear, consistent, and easily understood by businesses, it reduces uncertainty and minimizes the need for businesses to navigate complex legal requirements. This streamlining of regulations helps to lower compliance costs and administrative burdens. Businesses can focus more on their core operations and growth strategies, rather than being bogged down by excessive paperwork or regulatory hurdles. As a result, the formation of new businesses becomes faster and more efficient.

Efficient bureaucratic procedures are another key component of a conducive business environment. When bureaucratic processes are streamlined and conducted in a timely manner, it reduces delays and unnecessary waiting times for businesses. This expedites important activities such as obtaining permits and licenses, registering property, or accessing essential services. As a result, businesses can operate more smoothly and seize opportunities promptly, contributing to their growth and expansion. Transparent business processes also play a vital role in facilitating ease of doing business. Transparency fosters trust between businesses and government institutions, ensuring that interactions are fair, predictable, and devoid of corruption. Transparent processes enable businesses to make informed decisions and plan their operations effectively. This transparency helps to create a level playing field, reducing barriers to entry and promoting healthy competition. It

also encourages businesses to comply with regulations and engage in ethical business practices.

The growth in business activities resulting from a high ease of doing business contributes significantly to job creation. As businesses find it easier to operate and expand, they require a larger workforce to meet their needs. This leads to increased employment opportunities, reducing unemployment rates and improving the overall standard of living. Job creation has a positive impact on households, as it provides stable incomes, boosts consumer spending, and drives economic activity in related sectors. Furthermore, higher levels of business activities generate increased tax revenues for governments. As businesses thrive and expand, they contribute more to the tax base through corporate taxes, income taxes, and other forms of taxation. These additional tax revenues enable governments to invest in infrastructure development, public services, and social welfare programs, further supporting economic growth and development. Thus, countries with a high ease of doing business index tend to experience higher rates of economic growth. Streamlined regulatory frameworks, efficient bureaucratic procedures, and transparent business processes reduce costs, administrative burdens, and delays for businesses. This facilitates faster business formation, expansion, and increased productivity. The resulting growth in business activities contributes to job creation, higher tax revenues, and overall economic development. Governments should strive to create a favorable business environment by simplifying regulations, enhancing efficiency, and promoting transparency, as this will support sustainable economic growth and prosperity.

Encouraging Investment

A favorable ease of doing business environment is a crucial factor in attracting both domestic and foreign investment. Investors, whether local or international, seek jurisdictions where they can establish and operate businesses smoothly, without facing excessive bureaucratic hurdles or legal complexities. A conducive business environment reduces risks and uncertainties, providing investors with confidence in the stability and predictability of the market. This confidence plays a vital role in attracting investment and driving economic growth. A favorable ease of doing business environment offers several advantages for investors. First, it minimizes bureaucratic red tape, allowing investors to navigate the regulatory landscape more efficiently. Simplified administrative procedures and streamlined processes reduce the time and effort required to establish or expand a business. This not only saves costs but also enables investors to focus on their core business operations and growth strategies.

Second, a conducive business environment fosters transparency and fairness. It ensures that legal frameworks and regulations are clear and enforceable, protecting investors' rights and investments. It provides a level playing field, reducing the risks of arbitrary decision-making or corruption. Investors value the rule of law and a transparent regulatory framework, as it enhances their trust in the market and reduces uncertainties associated with business operations. Third, an ease of doing business environment reduces transaction costs and risks. When administrative procedures are streamlined, it becomes easier for investors to comply with regulations and obtain necessary permits or licenses. This saves time, effort, and financial resources, making investment more attractive. Additionally, a conducive business environment helps to mitigate risks associated with unpredictable regulatory changes or cumbersome legal processes.

By improving the ease of doing business, governments can attract more investment, which has numerous positive effects on the economy. Increased investment inflows bring capital, technology, and expertise, stimulating economic growth and development. Investment leads to the creation of new businesses and expansion of existing ones, resulting in job creation and improved employment opportunities. This, in turn, enhances household incomes, reduces poverty, and improves living standards. Moreover, attracting foreign investment can have additional benefits such as technology transfer, knowledge sharing, and market access. Foreign investors often bring advanced technologies, best practices, and managerial expertise, which can benefit domestic industries and contribute to overall productivity gains. Foreign companies can also serve as a gateway to international markets, helping domestic businesses access global supply chains and expand their export capabilities. Thus, a favorable ease of doing business environment is a key factor in attracting domestic and foreign investment. By reducing bureaucratic hurdles, providing transparency, and ensuring stability and predictability, governments can create an environment that attracts more investment, stimulates economic growth, and creates employment opportunities. A conducive business environment not only benefits investors but also leads to broader socio-economic development, improved living standards, and enhanced competitiveness in the global market. Governments must prioritize reforms to improve the ease of doing business to attract investment and drive sustainable economic growth.

Promoting Entrepreneurship

A favorable ease of doing business environment plays a significant role in encouraging entrepreneurship and promoting the establishment of new businesses.

When the barriers to entry are reduced, aspiring entrepreneurs are more likely to take the leap and pursue their entrepreneurial aspirations. This has numerous positive impacts on the economy and society as a whole. Simplified registration procedures are a crucial aspect of an entrepreneur-friendly business environment. When the process of registering a business is straightforward and streamlined, it reduces the time, effort, and costs associated with setting up a new venture. Entrepreneurs can quickly navigate the necessary paperwork, obtain necessary permits and licenses, and legally establish their businesses. This eliminates unnecessary bureaucratic hurdles and minimizes delays, allowing entrepreneurs to focus on the core aspects of their business idea.

Reduced bureaucratic red tape is another important element in fostering entrepreneurship. Excessive administrative burdens, complex regulations, and convoluted processes can discourage individuals from starting their own businesses. However, when governments take steps to simplify and streamline bureaucratic processes, it significantly lowers the barriers to entry. This enables entrepreneurs to devote their time and resources to developing innovative products, services, and business models, rather than getting entangled in unnecessary administrative complexities. Streamlined licensing processes further contribute to fostering entrepreneurship. Obtaining licenses and permits required to operate a business can often be time-consuming and cumbersome. However, when these processes are simplified and made more efficient, entrepreneurs can obtain the necessary approvals in a timely manner. This not only reduces the burden on entrepreneurs but also provides them with the confidence and certainty required to embark on their entrepreneurial journeys.

By promoting entrepreneurship through an improved ease of doing business framework, governments foster innovation, competition, and the emergence of new ideas. Entrepreneurs are encouraged to develop innovative solutions to address existing market gaps, consumer needs, or societal challenges. This leads to the creation of new products, services, and business models that drive economic growth and contribute to societal well-being. Furthermore, entrepreneurship and the establishment of new businesses are vital drivers of economic diversification. By supporting the emergence of a diverse range of businesses, economies become less reliant on a single industry or sector. This enhances resilience and reduces vulnerabilities to external shocks. Economic diversification stimulates job creation, enhances competitiveness, and promotes sustainable economic growth. Entrepreneurship also contributes to job creation and reduces unemployment rates. As new businesses emerge and grow, they require a skilled workforce to support their operations. This leads to the creation of employment opportunities, reducing

dependency on a few large employers and promoting a more inclusive labor market. Moreover, entrepreneurs often hire individuals who possess specialized skills or knowledge, thereby driving skill development and improving the overall human capital of the economy. Thus, a favorable ease of doing business environment plays a crucial role in encouraging entrepreneurship and promoting the establishment of new businesses. Simplified registration procedures, reduced bureaucratic red tape, and streamlined licensing processes lower the barriers to entry, allowing aspiring entrepreneurs to pursue their business ideas. Supporting entrepreneurship through an improved ease of doing business framework fosters innovation, competition, and economic diversification. It contributes to job creation, skill development, and overall economic growth. Governments must prioritize creating an environment that nurtures entrepreneurship, as it leads to increased economic opportunities, drives innovation, and contributes to the overall prosperity of a nation.

Measures to Improve Ease of Doing Business

Governments have a crucial role in enhancing the ease of doing business by implementing a range of measures that improve the business environment and reduce barriers for entrepreneurs and businesses. The following are key measures that governments can undertake:

1. **Simplifying administrative procedures:** Governments can streamline administrative procedures and reduce unnecessary paperwork to make it easier for businesses to comply with regulations. This can include simplifying the process of obtaining permits, licenses, and certifications, as well as minimizing the number of required documents and steps.
2. **Reducing bureaucracy:** Governments can work towards reducing bureaucratic red tape by eliminating unnecessary regulatory requirements, simplifying approval processes, and establishing clear timelines for decision-making. This helps businesses save time, effort, and resources.
3. **Enhancing transparency:** Transparent regulatory processes and governance practices build trust and confidence in the business environment. Governments can promote transparency by ensuring that laws, regulations, and administrative procedures are readily accessible to businesses and the public. Transparent decision-making processes, such as public consultations and clear criteria for regulatory decisions, can also contribute to a more favorable business environment.
4. **Implementing effective regulations:** Governments can develop and implement regulations that are efficient, effective, and targeted. Regulations should be designed to achieve their intended objectives while minimizing

- unnecessary burdens on businesses. Governments can conduct regulatory impact assessments to evaluate the potential costs and benefits of proposed regulations and identify ways to improve their effectiveness.
5. Investing in infrastructure: Adequate infrastructure is vital for facilitating business operations and economic growth. Governments can invest in physical infrastructure such as transportation networks, energy systems, and digital connectivity to improve logistics, reduce costs, and enhance efficiency for businesses.
 6. Streamlining business registration processes: Simplifying the process of registering a business can significantly reduce the time and effort required for entrepreneurs to start their ventures. Governments can implement online registration systems, establish one-stop shops, or introduce e-governance solutions to streamline the registration process and make it more user-friendly.
 7. Facilitating access to finance: Access to finance is critical for business growth and expansion. Governments can promote access to affordable financing options by working with financial institutions to develop innovative financial products, establishing credit guarantee schemes, and supporting initiatives that improve financial literacy among entrepreneurs.
 8. Promoting digitalization of services: Embracing digital technologies can greatly enhance the ease of doing business. Governments can promote digitalization by offering online services, simplifying tax filing and payment processes, and supporting the development of digital platforms that facilitate business transactions and interactions.
 9. Strengthening contract enforcement: Effective contract enforcement mechanisms are essential for businesses to have confidence in engaging in contractual agreements. Governments can establish robust legal frameworks, efficient dispute resolution mechanisms, and clear procedures for contract enforcement to ensure that businesses can rely on their contractual rights.
 10. Protecting property rights: Secure property rights are fundamental for business operations and investment. Governments can strengthen intellectual property protection, implement effective land registration systems, and ensure that property rights are enforceable and respected.
 11. Ensuring fair competition: Governments can create a level playing field for businesses by enforcing competition laws, preventing anti-competitive practices, and promoting fair market conditions. This encourages healthy competition, fosters innovation, and protects consumers' interests.

Thus, governments have various tools at their disposal to enhance the ease of doing business. By simplifying administrative procedures, reducing bureaucracy, enhancing transparency, implementing effective regulations, investing in infrastructure, and promoting digitalization, governments can create a business-friendly environment that supports entrepreneurship, encourages investment, and drives economic growth. These measures are essential for attracting businesses, stimulating innovation, and fostering a vibrant and competitive business ecosystem.

International Best Practices

Governments have a valuable opportunity to learn from international best practices and benchmark their ease of doing business initiatives against successful countries. This learning process can help governments identify areas for improvement and implement effective reforms. There are several ways in which governments can leverage international best practices:

1. **World Bank's Doing Business Index:** The World Bank's Doing Business Index provides an objective assessment of the ease of doing business in different countries. Governments can utilize this index to evaluate their own performance and identify areas that need improvement. The index covers various indicators, such as starting a business, getting credit, protecting investors, and enforcing contracts. By analyzing the indicators and rankings, governments can gain insights into areas where they may be lagging behind and develop strategies to enhance their business environment.
2. **Learning from successful countries:** Governments can study countries that have excelled in creating a favorable ease of doing business environment. By examining the policies, regulatory frameworks, and initiatives implemented by these countries, governments can gain valuable insights and adapt relevant practices to their own contexts. This learning process can help identify innovative approaches, effective regulations, and successful strategies that can be implemented to improve the ease of doing business.
3. **Collaboration with private sector stakeholders:** Engaging with private sector stakeholders, such as business associations, industry leaders, and entrepreneurs, is crucial for understanding their perspectives, challenges, and recommendations. Governments can establish regular dialogue and consultation mechanisms to seek feedback from businesses and incorporate their insights into policy-making processes. Collaborating with the private sector can help identify practical solutions, address regulatory bottlenecks, and design reforms that align with the needs and aspirations of businesses.

4. **Fostering public-private partnerships:** Governments can establish public-private partnerships (PPPs) to jointly work towards enhancing the ease of doing business. PPPs allow for shared responsibility, expertise, and resources, enabling governments and the private sector to collaborate in developing and implementing reforms. By leveraging the knowledge, experience, and networks of private sector partners, governments can effectively address barriers, improve processes, and implement reforms that enhance the business environment.
5. **Creating feedback mechanisms:** Governments can establish mechanisms to gather feedback from businesses regarding their experiences and challenges in operating within the country. This can include surveys, focus group discussions, or online platforms where businesses can provide their feedback, suggestions, and concerns. Such feedback mechanisms enable governments to have a deeper understanding of the issues faced by businesses and take targeted actions to address them.
6. **Benchmarking against best practices:** Governments can benchmark their ease of doing business initiatives against countries that have achieved notable success. By comparing their performance against countries with similar economic structures or challenges, governments can identify gaps and implement measures to bridge them. Benchmarking against best practices provides valuable insights and allows governments to set realistic goals for improvement.

Thus, governments can learn from international best practices to enhance the ease of doing business. Leveraging resources such as the World Bank's Doing Business Index, collaborating with private sector stakeholders, fostering public-private partnerships, and establishing feedback mechanisms are essential steps in identifying areas for improvement and designing targeted reforms. By adopting successful practices and adapting them to their own contexts, governments can create a more business-friendly environment, attract investment, stimulate economic growth, and improve the overall competitiveness of their nations.

Conclusion

The ease of doing business is a critical factor in driving economic growth, attracting investment, and fostering entrepreneurship. A favorable business environment creates the conditions for businesses to thrive, innovate, and contribute to the overall development of a nation. Governments play a crucial role in prioritizing reforms and implementing measures to improve the ease of doing business. A conducive business environment reduces barriers for businesses, making

it easier for them to operate, grow, and succeed. Simplifying regulations and administrative procedures is essential to minimize complexities and bureaucratic hurdles. Governments can review and streamline regulations, eliminating unnecessary requirements and simplifying processes to ensure they are efficient, transparent, and easy to navigate. This simplification helps businesses save time, effort, and resources, enabling them to focus on their core activities and strategies.

Reducing bureaucracy is another key aspect of improving the ease of doing business. Governments can work towards minimizing excessive paperwork, cumbersome approval processes, and administrative delays. By eliminating unnecessary red tape and creating efficient administrative structures, businesses can operate more efficiently, respond quickly to market opportunities, and make timely decisions. This reduces transaction costs and improves the overall business climate. Enhancing transparency is crucial for building trust and confidence in the business environment. Governments can promote transparency by ensuring that laws, regulations, and government procedures are readily accessible to businesses and the public. Transparent decision-making processes, such as public consultations, clear criteria for regulatory decisions, and open data initiatives, contribute to a fair and accountable business environment. Transparent governance practices help businesses make informed decisions, increase predictability, and reduce corruption risks.

Investing in critical infrastructure is essential for improving the ease of doing business. Governments must prioritize infrastructure development, including transportation networks, energy supply, digital connectivity, and logistics capabilities. Efficient infrastructure reduces transportation costs, facilitates the movement of goods and services, and improves connectivity. Reliable and affordable access to energy and digital infrastructure is vital for businesses to operate efficiently, access markets, and leverage technological advancements. Creating a favorable business environment unleashes the potential of businesses and attracts investment. A conducive business environment fosters innovation, entrepreneurship, and productivity gains. It encourages businesses to invest in research and development, adopt new technologies, and improve their operations. This, in turn, drives economic growth, job creation, and increased tax revenues.

Moreover, an improved ease of doing business attracts domestic and foreign investment. Investors seek jurisdictions with favorable business environments that offer stability, predictability, and a level playing field. A conducive business environment reduces risks and uncertainties, providing investors with confidence to invest capital and resources. Foreign direct investment brings new technologies, expertise, and market access, contributing to economic diversification and enhancing

competitiveness. The benefits of a favorable business environment extend beyond economic growth. Job creation reduces unemployment rates, increases household incomes, and improves living standards. Enhanced competitiveness stimulates innovation, raises productivity, and enables businesses to compete in global markets. The ease of doing business is also crucial for promoting social inclusiveness, as it enables businesses in underserved areas and supports entrepreneurship among marginalized populations. In conclusion, improving the ease of doing business is vital for driving economic growth, attracting investment, and fostering entrepreneurship. Governments must prioritize reforms that simplify regulations, reduce bureaucracy, enhance transparency, and invest in critical infrastructure. By creating a favorable business environment, nations can unleash the potential of businesses, attract investment, and accelerate economic development. This leads to job creation, increased competitiveness, and improved living standards for the benefit of all citizens.

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INSIGHT OF SAGARMALA SAGARTAT SAMRIDHI YOJANA SCHEME WITH SPECIAL ADDRESS TO MAKE IN INDIA, SHIPPING SECTOR

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Abstract

Make in India is an initiative by the Government of India to create and encourage companies to develop, manufacture and assemble products made in India and incentivizes dedicated investments into manufacturing. The policy approach was to create a conducive environment for investments, develop a modern and efficient infrastructure, and open up new sectors for foreign capital. The initiative targeted 25 economic sectors for job creation and skill enhancement and aimed "To transform India into a global design and manufacturing export hub". The aim is to improve the manufacturing output of India and reduce dependence on foreign imports for which campaigns like "Atmanirbhar Bharat" which translates into "Self-Reliant-Green" India has also been started. It focuses specifically on "Startups", MSME's, young scientists, R&D labs and traditional manufacturing units that have little access to financial support but are an integral part of the Indian manufacturing ambit. The paper focus on Sagarmala – Sagartat Samridhi Yojana scheme under the Make in India Manufacturing sector, that enhance the growth of Shipping Industry.

Keywords: Manufacturing, Decision, Growth, Shipping Industry, Development.

Introduction

*"Design in India is as
Important as make in India"*

-PM Narendra Modi

The Make in India initiative was launched by Prime Minister in September 2014 as part of a wider set of nation-building initiatives. Devised to transform India into a global design and manufacturing hub, Make in India was a timely response to boost the domestic manufacturing sector and also augment investment into the country. Manufacturing currently accounts for slightly more than 15% of national GDP. The government intends to create jobs, attract significant foreign direct investment, and transform India into a favored manufacturing hub worldwide. The 4 pillars of Make in India initiative are New Mindset, New Sectors, New Infrastructure, and New

Processes. Hence, the Make in India initiative not only aims to boost the manufacturing sector but also other sectors. Make in India has 25 focus sectors. The main aim of the Make in India initiative is to make India a global manufacturing hub by encouraging domestic as well as international manufacturing companies to invest in India, manufacture in India and to generate employment in India.

Highlights of Make in India

Since years policy-makers have been debating how to give an impetus to manufacturing in India and make India a Global Manufacturing Hub. But it is Narendra Modi, who within a matter of months, launched the 'Make in India' campaign to facilitate investment, foster innovation, enhance skill development, protect intellectual property & build best in class manufacturing infrastructure.

The "Make in India" initiative is based on four pillars, which have been identified to give boost to entrepreneurship in India, not only in manufacturing but also other sectors.

- **New Processes:** 'Make in India' recognizes 'ease of doing business' as the single most important factor to promote entrepreneurship. A number of initiatives have already been undertaken to ease business environment. The aim is to de-license and de-regulate the industry during the entire life cycle of a business.
- **New Infrastructure:** Availability of modern and facilitating infrastructure is a very important requirement for the growth of industry. Government intends to develop industrial corridors and smart cities to provide infrastructure based on state-of-the-art technology with modern high-speed communication and integrated logistic arrangements. Existing infrastructure to be strengthened through up gradation of infrastructure in industrial clusters. Innovation and research activities are supported through fast paced registration system and accordingly infrastructure of Intellectual Property Rights registration set-up has been upgraded. The requirement of skills for industry are to be identified and accordingly development of workforce to be taken up.
- **New Sectors:** 'Make in India' has identified 25 sectors in manufacturing, infrastructure and service activities and detailed information is being shared through interactive web-portal and professionally developed brochures. FDI has been opened up in Defence Production, Construction and Railway infrastructure in a big way.
- **New Mindset:** Industry is accustomed to see Government as a regulator. 'Make in India' intends to change this by bringing a paradigm shift in how

Government interacts with industry. The Government will partner industry in economic development of the country.

The Make in India program has been built on layers of collaborative effort. There has been from Union Ministers, Secretaries to the Government of India, state governments, industry leaders, and various knowledge partners.

Manufacturing Sector

The link between shipping and manufacturing might be one of the most important connections in the business world. The energy sector of manufacturing is now expanding and **shipping carriers** are benefiting greatly. Often when the manufacturing industry expands, so does the shipping industry. Just as a spike in manufacturing helps shipping, it turns out that improved shipping can also boost manufacturing.

Shipping

According to the Ministry of Shipping, around 95% of India's trading by volume and 70% by value is done through maritime transport. In November 2020, the Prime Minister, Mr. Narendra Modi renamed the Ministry of Shipping as the Ministry of Ports, Shipping and Waterways. The Indian Government plays an important role in supporting the ports sector. India has 12 major and 200+ notified minor and intermediate ports. Under the National Perspective Plan for Sagarmala, six new mega ports will be developed in the country. The Indian ports and shipping industry play a vital role in sustaining growth in the country's trade and commerce.

Make in India' policy of the Government of India, Ministry of Shipping has reviewed the ROFR (Right of First Refusal) licensing conditions for chartering of vessels/Ships through tender process for all types of requirements. To promote the demand of the ships built in India, priority in chartering of vessels is given to vessels built in India, flagged in India and owned by Indians under the amendments in the guidelines of ROFR (Right of First Refusal).

Sagarmala - Sagartat Samridhi Yojana

Prime Minister launched the Sagarmala - Sagartat Samridhi Yojana during the release of "Maritime India Vision 2030" in March 2021. NSAC is the apex body providing policy directions and guidance for port led development-Sagarmala projects and reviews its implementation.

The Sagarmala Programme was approved by the Union Cabinet in 2015 which aims at holistic port infrastructure development along the 7,516-km long coastline through modernisation, mechanisation and computerisation. The Sagartat Samriddhi Yojna has identified a total of 1,049 projects with an estimated cost of Rs.

3,62,229 crores. The Sagarmala Programme is an initiative by the Shipping Ministry to utilize India's 7,500 km of coastline and advantageous location in the Indian Ocean Region. It is a port-led development initiative that aims to enhance infrastructural growth, which will improve logistical competitiveness, increase industrialisation and job creation, and ultimately support the growth of the coastal economy as a whole.

It strives to improve connection with major economic centres and beyond by expanding rail, inland water, coastal, and road services. It also promotes the optimal modal split and develops access to new growth zones.

Vision of Sagarmala

The vision of the Sagarmala Programme is to reduce logistics costs for EXIM (Export-Import) and domestic trade with minimal infrastructure investment. Sagarmala could boost India's merchandise exports to USD 110 billion by 2025 and create an estimated 10 million new jobs (four million in direct employment). The Ministry has started the ambitious Project of Sagarmala Seaplane Services (SSPS) with potential airline operators.

Pillars of Sagartat Samridhi Yojana

- Port modernisation includes the creation of new ports as well as increasing the capacity and efficiency of existing ports.
- Port connectivity includes the creation of logistics parks, the use of inland waterways and coastal shipping, as well as the development of new rail and road connections and the upgrading of existing ones.
- Industrial clusters, coastal employment zones (CEZ), maritime clusters, smart industrial port cities, and port-based special economic zones are all examples of port-led industrialisation (SEZ).
- Development of fishing ports and fish processing facilities, coastal tourist initiatives, and community skill building include coastal community development. An eco-friendly means of freight transportation is coastal shipping and inland canal transit.

Components of the Sagarmala Programme

- **Port Modernization & New Port Development:** De-bottlenecking and capacity expansion of existing ports and development of new Greenfield ports.
- **Port Connectivity Enhancement:** Enhancing the connectivity of the ports to the hinterland, optimizing cost and time of cargo movement through multi-

modal logistics solutions including domestic waterways (inland water transport and coastal shipping).

- **Port-linked Industrialization:** Developing port-proximate industrial clusters and Coastal Economic Zones to reduce logistics cost and time of EXIM and domestic cargo.
- **Coastal Community Development:** Promoting sustainable development of coastal communities through skill development & livelihood generation activities, fisheries development, coastal tourism etc.
- **Coastal Shipping & Inland Waterways Transport:** Impetus to move cargo through the sustainable and environment-friendly coastal and inland waterways mode.

Initiatives Under Sagarmala Programme to Unlock the Potential of Waterways

- Ministry of Shipping has notified licensing relaxation to foreign flag vessels for carrying transshipment containers, empty containers, fertilizers and agricultural, fisheries, animal husbandry and horticultural commodities on coastal routes.
- Under coastal berth scheme, financial assistance up-to 50% of total project cost or maximum funding limit can be provided to the implementing agency for creation of infrastructure to promote movement of cargo/passengers by sea/National Waterways.
- Minimum 40% discount is offered by major ports on vessel and cargo related charges to coastal vessels.
- To promote inland water transport (IWT) in the country, 111 (including 5 existing and 106 new) National Waterways (NWs) have been declared under the National Waterways Act, 2016.
- Feasibilities studies have been completed by the Inland Waterways Authority of India (IWAI) .
- Fairway development work in Vijayawada-Muktyala stretch of river Krishna in Andhra Pradesh) has been completed.

Investments Schemes for Shipping Sector through Make In India Scheme:

The Government is providing ample scope of investment opportunities for Shipping Sector,

- Shipbuilding
- Ship repair
- Ship recycling
- Development of inland waterways and inland water transport

- Port and harbor construction projects
- Port and harbor maintenance projects

Need of Make in India in Shipping Sector

The 'Make in India' initiative offers tremendous opportunities in the maritime sector, particularly in the shipbuilding and ship repair industry. Its strategic role in tapping all Indian vessel requirements within the country and the benefits of a vibrant shipbuilding industry cannot be overemphasized. The government's shipbuilding policy provides a boost by encouraging Indian shipyards to bag foreign orders in a more aggressive manner and meet the requirements of Indian ship-owners. A cost-effective & skilled manpower base, established steel industry, technology know-how, and increased demand in domestic shipbuilding could enhance India's global shipbuilding share from one percent to five percent by 2020. The Indian Navy too is giving a strong push to the Make in India initiative as it strives for self-reliance in the production of warships. A plan to manufacture LNG vessels at the Cochin Shipyard has also been approved. Other Indian shipyards have developed investment plans and accessed capital markets to play an increasing role under the Make in India program. The government has been incredibly successful in reaching its goal thus far thanks to the Programme's quick daily progress, and we have great faith in its capabilities, strength, and power. The Sagarmala Project will enable India to improve its game in terms of commerce, logistics, and port development.

The Sagarmala Project will assist in establishing a network of roads, trains, and waterways. It will ultimately drive down the cost of various goods since water transportation is 5%–6% less expensive than other means of transportation. Additionally, it will contribute to an increase in India's GDP.

The Sagarmala Pariyojna can provide more than a million people with assistance and full-time employment near ports and beaches. The initiative will make it easier for those who live close to ports to make a good income. The funding will aid in the development of rural communities close to ports or beaches.

Conclusion

The make in India initiative was launched to encourage manufacturing in India and ultimately transform India into a global hub for the same. The link between shipping and manufacturing is as strong as ever. As it grows to be one of the major economies in the world, India will require a vibrant and strong maritime industry for economic as well as strategic reasons. There are many factors conducive to the development of a robust and sustainable maritime sector. The Sagar Mala Project's intensive and efficient port operations and coastal community development have the

potential to dramatically increase India's GDP. It has already given residents of 72 districts along the coastal area growth, jobs, and essentials of life. As it grows to be one of the major economies in the world, India will require a vibrant and strong maritime industry for economic as well as strategic reasons. There are many factors conducive to the development of a robust and sustainable maritime sector. Government has a role to develop the Indian port sector, which would contribute to the growth of Indian shipping. The players in the shipping and associated sectors have also a role to play for the development of the industry, for it to carve a niche in the world shipping map.

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THE FOURTH INDUSTRIAL REVOLUTION (I4.0) IN INDIA: CHALLENGES & OPPORTUNITIES

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Abstract

The so-called fourth industrial revolution, which is being hailed as the next industrial revolution, is becoming a strong force on a global scale. It is characterized by the rising digitalization and connectivity of its business models, value chains, and products. Data volumes, computing power, the Internet of Things (IoT), business analytics, augmented reality, artificial intelligence, elemental design, simulation, advanced robotics, additive manufacturing, sensor-based technologies, and cyber-physical systems are some of the emerging technologies that are powering Industry 4.0. Industry 4.0 is the next step in fusing traditional and contemporary industrial technology. It would entail the convergence of the real and virtual worlds. As a result, the "Smart Factory" will be created, which is distinguished by adaptability, resource efficiency, ergonomic design, and direct integration with business partners. Due to the fact that modern production is cutting edge and highly skilled. The manufacturing industry is currently structurally changing on a worldwide scale. Despite relying significantly on its service sector for growth, India's manufacturing sector must have a big impact on the country's economy. The strong growth in India now needs to be supported by manufacturing. The 'Make in India' program was started by the Indian government to promote India as a global manufacturing base. After agriculture, the manufacturing sector contributes significantly to employment in India and is particularly important for MSMEs. It is crucial to boost manufacturing's proportion of the country's Gross Domestic Product from 16% to 20% in order to achieve the goals of growth and employment by 2022, to 25%, and to produce 100 million new employments. The foundation for implementing the cutting-edge technology needed for the industrial revolution is digital connectivity. The presence of businesses on the internet has become inescapable due to the growing internet penetration in India and the growth of e-Commerce. The Government of India started the Digital India Program to ensure complete broadband connectivity in industrial clusters with the goal of transforming India into an I4.0-adopted knowledge economy and digitally empowered society.

The Evolution of the Connected Ecosystem

Water and steam power caused the first industrial revolution by enabling the transition from manual to automated manufacturing. Electricity served as the foundation for the second industrial revolution's mass production. After two centuries of continuous advancement driven by mechanization, electrification, and the introduction of the assembly line, the global industrial sector adopted information technology in the 1960s as computers dominated technological advancement and sped up the process of human labor. Manufacturing was

automated during the third industrial revolution using electronics and computer technologies. The fourth is the present trend in manufacturing technology toward automation and data sharing. Since then, both operational technology and information technology have advanced significantly, and I4.0 has opened up a huge array of opportunities on the factory floor.

Mid-1780s: the first industrial revolution
Mechanization: Steam and water-powered mechanization. In 1784, the first mechanized loom was created. (mid-1870s) Second Industrial Revolution
Electrification: Using electrical power, assembly lines facilitated mass production energy. The first conveyor belt was set-up by Cincinnati's laughter house in 1870.

3rd Industrial Revolution (mid 1960s) Automation

Information technology led automation as computers were developed to simplify various tasks. The first program able logic controller was invented in 1969.

4th Industrial Revolution (2011) Cyber Physical Systems

While Industry 3.0 focused on the automation of single machines and processes, Industry 4.0 focuses on the end-to-end digitisation of all physical assets and integration into digital ecosystems with value chain partners. Generating, analysing and communicating data seamlessly underpin the gains promised by Industry 4.0, which networks a wide range of new technologies to create value.

Digitisation and Integration of Vertical and Horizontal Value Chains

Industry 4.0 digitizes and integrates processes vertically across the entire organisation, from product development and purchasing, through manufacturing, logistics and service. All data about operations processes, process efficiency and quality management, as well as operations planning are available real-time, supported by augmented reality and optimised in an integrated network. Horizontal integration stretches beyond the internal operations from suppliers to customers and all key value chain partners. It includes technologies from track and trace devices to real-time integrated planning with execution.

Digitisation of Product and Service Offerings

Digitisation of products includes the expansion of existing products e.g. by adding smart sensors or communication devices that can be used with data analytics tools, as well as the creation of new digitized products which focus on completely integrated solutions. By integrating new methods of data collection and

analysis, companies are able to generate data on product use and refine products to meet the increasing needs of end-customers.

Digital Business Models and Customer Access:

Leading industrial companies also expand their offering by providing disruptive digital solutions such as complete, data-driven services and integrated platform solutions. Disruptive digital business models are often focused on generating additional digital revenues and optimizing customer interaction and access. Digital products and services frequently look to serve customers with complete solutions in a distinct digital ecosystem.

Industry 4.0 Key Technologies

I4.0 brings together technology forces such as Internet of Things (IoT), cloud computing, big data analytics, additive manufacturing, Augmented Reality (AR), robotics, cyber security and Machine-to-Machine (M2M) communication. While some of these digital technologies are already in use in industrial applications, some others are still not ready for application at scale. Manufacturers need to carefully pick the right mix of technologies that would maximize returns on investment.

Internet of Things (IoT)

IoT enables real-time machine-machine interaction by connecting them chain Big Data Analytics: The use of data analytics to support quick and wise decision-making Augmented reality: By utilizing mathematical modeling, AI, and virtual reality, AR could improve company processes.

Cyber security

To protect data security, cyber security aids in the establishment of secure communication protocols. Cloud computing: Cloud computing provides a platform with enormous processing, storage, and networking capabilities, allowing for easier interaction across diverse technologies. Manufacturing Additive: By shortening the lead time from product design to product delivery and enhancing customization, additive manufacturing facilitates production in small batches in a time- and cost-efficient manner. Robotics: Connected robots that make it possible to automate production processes and increase productivity using industrial equipment and sensors to capture and transmit data directly to software is known as machine-to-machine (M2M) technology.

Industry 4.0's current state in India

By 2023, the I4.0 market is projected to grow to a global value of INR 13,90,647 crore.¹ I4.0 has begun to be adopted by nations such as the United States, China, Japan, and European countries like the United Kingdom, Ireland, Sweden, and Austria. The manufacturing industry is an essential component of India's long-term goal, the sixth-largest manufacturing nation, as seen by the government's intense emphasis on the "Make in India" program. By 2022, the government wants to increase manufacturing's current 17% contribution to GDP to 25%. The government has implemented a variety of initiatives and policy reforms, including the implementation of the GST (Goods and Services Tax) and relaxing the FDI policy.

Currently, India In terms of I4.0 adoption, it trails behind its international competitors. In India, a sizable chunk of the manufacturing industry is still in the post-electrification stage, with technology usage restricted to stand-alone equipment. I4.0's fundamental tenet, the integration of physical systems on digital platforms, is still in its infancy. Additionally, due to the significant cost barrier, the Micro, Small & Medium Enterprises (MSME) group has very limited access to automation technology.

The following can be used to describe the I4.0 implications' current situation in India:

1. Lack of knowledge of the technology
2. A methodical approach to upgrading.
3. A reluctance to use new technologies
4. Access to cheap labor causes hesitation to deploy automation
5. Product volume is not too great in order to adopting automation improves investment return on investment.
6. There are not enough skill sets available to utilize automation.
7. Government's Role: The Indian government is a crucial participant in the Industry 4.0 transformation. The fourth industrial revolution in India will require a considerable push in terms of resources, infrastructure, technological know-how, and exposure-areas.

To facilitate the smooth implementation of the Internet of Things, telecommunications infrastructure must be improved. Adequate cyber security rules must be developed. The convenience of doing business must also be improved. And both institutions and socio-political platforms must assume this obligation.

Governmental Initiatives

In order to capture a sizeable portion of the global IoT market¹⁵, the Indian government introduced an IoT Policy in 2015 with the goals of skill development,

technological advancements, and the creation of IoT goods tailored to Indian needs. A National Policy for Advanced Manufacturing is also being developed by the government to increase India's competitiveness in the global manufacturing market. Recently, the government declared the beginning of a mission on Cyber-Physical Systems (CPS) and allocated a starting corpus of INR 100 crore. These plans would be essential tools to increase the contribution of manufacturing output once completely implemented.

The 2017 National Manufacturing Policy By consolidating the Make in India initiative and putting a focus on the adoption of digital platforms for Industry 4.0, the government unveiled a new policy in July 2017 to increase the manufacturing sector's share of the GDP to 25%. The Centre of Excellence (CoE) on IT for Industry 4.0 would serve as a knowledge hub for entrepreneurs and startups, spreading the idea of IT and its use in I4.0.

National Artificial Intelligence Program The government stated that NITI Aayog will establish a road plan for a national AI program that will concentrate on creating new AI applications in the Union Budget 2018–19.

Cyber-physical systems mission

As per The Department of Science and Technology will start the CPS mission to support the establishment of CoE for training in robotics, AI, digital manufacturing, etc. as part of the Union Budget 2018–19.

Organizations' Functions

- If manufacturers see a return on their investments, especially major, international manufacturing corporations, they will adopt Industry 4.0. and gain from Industry. 4.0 improvements:
- Have a long-term strategic vision to guide the change of your organization.
- As Adopter (Sector of Manufacturing):
- Make MSMEs a part of their supplier chain
- embrace business model disruption
- Invest in Leadership 4.0 as a Supplier (Technology Sector): To raise the caliber of output, spend money on I4.0 research and innovation.
- Continue to create industry-specific vertically integrated technological solutions. 4.0

It is crucial to create a roadmap for technology adoption at all levels that is appropriate for varied operational scales, especially for MSMEs. The institute/organization is advised to implement the following guidelines. Talent Pool: Put an emphasis on retaining talent and retraining it; enable timely upskilling of the

workforce in line with I4.0 trends. To encourage creativity and trust within the business, create a working environment where people and robots can coexist. To reinforce corporate data privacy and cyber security policies in light of potential dangers posed by a linked ecosystem.

Role of Academia

Promote a culture of research in emerging fields like I4.0 and serve as the test beds for innovation and new learning. Improve the caliber of teachers and modernize the learning infrastructure. Align course curricula with I4.0 requirements, with well-regulated and industry-relevant updated content. Focus more on practical, result-oriented knowledge than theoretical content.

Obstacles to I4.0 Implementation

A number of obstacles must be removed in order to successfully embrace cutting-edge technologies and realize Industry 4.0's potential. Below are a few significant difficulties:

- Absence of a distinct digital vision
- A lack of data analysis skills
- Promoting a robust digital culture
- Data Security Digitization Level Large volumes of client data that are recorded, stored, and analysed carry a significant danger of being misused.
- A lack of uniformity Price and technical problems
- Inadequate Physical and Digital Infrastructure India continues to lack basic infrastructure, like roads and electricity, despite government efforts. Moreover, India's telecommunications network continues to experience slow data speeds and Unstable connection. 79 percent of Indian firms have identified cyber security as one of the top five business concerns, according to KPMG's 2017 India Cybercrime Survey Report. In addition to cyber security, the legal framework governing data privacy would need to be tightened.
- The high cost of digital technologies may make it difficult to build the factory of the future, which will have a fully interconnected system. Due to the high cost of these technologies, it is still difficult for MSMEs, who serve as the foundation of India's manufacturing industry, to access digital technology.
- Lack of Industry 4.0-ready corporate executives in India poses a skill and talent issue that may thwart efforts to make the technology widely available in the nation. Although, India Inc. has excellent traditional leadership, but it lacks digital CXOs with a clear strategy for embracing Industry 4.0. The time is now for agility. India should put leadership and overcoming this challenge first.

Although the majority of CXOs recognize the need for Industry 4.0, their ability to execute is largely unproven.

- **Skills Gap in the Workforce:** India's existing workforce is underqualified and unexperienced in cutting-edge technologies like data analytics, additive manufacturing, and IoT. To enable an industry 4.0-ready workforce, the government, business, and academics must work together.

Opportunities Should Be Seized

India's INR10,85,224 crore IT services sector is one of the main advantages of the country's entry into the I4.0 era.¹⁸ India is one of the most sought-after locations for IT outsourcing in the world and is home to some of the biggest IT firms. India's infrastructure and IT know-how can now be used locally to spur I4.0 India adoption. In the I4.0 age, the IT industry is anticipated to have a significant impact. In order to take advantage of the untapped opportunity, Indian IT companies are already looking for ways to strengthen their I4.0 skills through R&D. For instance, a prominent IT company recently said that a "Factory of the Future" lab would be established in Bengaluru. According to reports, the lab is working on cutting-edge technological solutions to deeply integrate cyber and physical systems. In addition, Indian IT companies have been looking towards organizational alliances and partnerships to expand their I4.0 skills and offers. Companies have begun putting more emphasis on collaborating with businesses from different industries and nations to develop new IoT and M2M solutions that are pertinent to I4.0. For instance, an I4.0 cloud platform has been announced in conjunction with a global leader in automation with headquarters in Germany by a Bengaluru-based IT company. Another scenario is a major Indian IT company looking to collaborate with a significant Japanese IT firm in the field of smart factories. According to analysts, the fourth industrial revolution will modernize the production base through 4.0 solutions, enabling capital to be employed more profitably. Industry will need less capital since it will be able to better utilize its foundation. Earnings and Return on Investment The number of employed will increase and lead to new investment opportunities, which is essential for funding new projects and generating employment. Industry 4.0 technology adoption will lead to an improvement in both the quality of the manufactured goods and labor productivity. Due to the rise in demand for well-made goods, businesses will be forced to expand their capacity in order to keep up with the demand. There is no denying that some low-skilled positions will go. However, it is anticipated that increased capacity will positively impact job growth.

Conclusion

Industry associations might lead the way in India's adoption of I4.0. Overall, industry associations would need to work together to promote I4.0 adoption. These organizations can take action to spot technology advancements, locate infrastructure and political needs, evaluate the impact on various industries, and draw out a road map for worker upskilling. Additionally, the associations may closely cooperate with the government to promote I4.0 adoption more quickly in India. Adoption of Industry 4.0 might propel India to the top of the manufacturing food chain. Jobs would be created as a result of the consumerist tendency in India's demand and volume growth, which is anticipated to somewhat offset job losses brought on by I4.0. Government can focus on improving the ease of doing business and attracting FDI investments in the space through policy reforms. Collaboration between countries, corporations as well as academia would catalyse I4.0 adoption.

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TECHNOLOGY STARTUPS: INNOVATION AND GROWTH

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Abstract

India the largest country in population is now moving towards the economic growth. Inspite of huge availability of man power for working, now the country concentrates on entrepreneurship. With lots and lots of unique idea, the new entrepreneurs are emerging day to day. To support and motivate the emerging entrepreneurs, Government of India is taking lot of initiatives. Startup India is one such scheme. A person with a unique idea and skill, can avail this startup scheme through the banks. Through the emergence of new business, lots of employment opportunities are being created, which leads to the growth of a nation. In this article, innovation and growth of technology through startups is analysed.

Keywords: *Startups, Technology, Innovation, Growth, Entrepreneur*

Introduction

Startups create innovative solutions and technologies. Many startups in India are operating in remote areas with the aim to support the overall local community. When Indian start-ups maintain the requirement for a requisite product or service, it reduces the import of that foreign product or service. This not only minimises the cash flow to another nation but increases the flow of capital within the Indian market, which is pivotal to the growth of the Indian economy. When a startup creates employment for locals, they also begin to purchase goods and services, increasing the influx of cash and revenue to the government and thus boosting the economy. When several startups are blooming in one location, the market of that geography rises as well. Since many individuals desire to reside there to work, this dramatically changes the infrastructural facilities of that city., When infrastructure upgrades, numerous guesthouses, homestays, food outlets, and transport service unlocks, creating countless job opportunities and increasing the city's revenue.

Role of Startups

Nowadays, more and more startups are growing with modernization and creativity, which have a large potential to change the world's economy. Startups can be initiated anywhere, and it's often the countries with the highest needs that have the biggest opportunities. Startups are at home in underdeveloped countries. Such

environments offer many problems that startups can take advantage of, not just to make a profit, but also make an impression in a struggling economy. Entrepreneurship is the only way to augment the economic growth of any nation. A small startup idea can be turned into a big innovative solution that can change the future of developing countries.

Startups, being small entities, play a dominant role in economic growth. The reason behind this is that they generate jobs, which means lower unemployment rates, and lower unemployment means an economy that is refining and improving. Startups also generate competition and inspire individuals to be more pioneering and inventive because new entrepreneurs have novel ideas to present, which stirs even more innovation and creativity. Since the number of startups is growing, competition between them is also increasing. But healthy competition is significant for startups and customers to curate the startup environment. As of now, many startups have introduced the latest technologies like the Internet of Things, Artificial Intelligence, Robotics, etc. Most technology giant companies outsource their tasks to startups nowadays, which will help to upsurge the cash flow of startups.

Employment Creation

One of the main advantages of startups is that it generates new jobs. Global data shows that startups are creating more jobs in any country than large companies or enterprises in the same sector. Thus it lowers the unemployment problems in developing nations like India.

Wealth Creation

As entrepreneurs are attractive investors by supporting and financing their own resources, the people of the nation would get the benefit when the startups grow. As money is allocated within society, wealth is created within the nation.

Research and Development

Research and development (R & D) in developing countries can be highly subsidized by startups as they often deal with high technology and knowledge-based services. The startup's R & D team supports as an innovation searcher and retains the company's growth. It supports well in an applied orientation or research work in a university or other educational institution. Consequently, startups can inspire students or researchers to implement their ideas by working at a startup.

Innovation and Growth

Startups come in all shapes and sizes. While small in number, a small group of successful startups is important for understanding aggregate outcomes such as employment and productivity. These Startups have an uncertain fate. While some grow to become large and successful companies, many end up transferring their operations to older incumbents through an acquisition. In recent years, such acquisitions have attracted the attention of media and policymakers alike.

Conclusion

Given the widely acknowledged importance of new venture creation to innovation, employment and economic growth, in recent years a variety of policy initiatives aiming at promoting the establishment, growth and impact of innovative start-ups have been issued worldwide. Yet, there is substantial heterogeneity in terms of criteria and approaches used to define innovative start-ups and lack of systematic understanding of how these relate to firm's and policy rationales.

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DIGITAL INDIA: TRANSFORMING INDIA THROUGH TECHNOLOGY AND CONNECTIVITY

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Abstract

India's government launched a program called "Digital India" with the goal of making the country more technologically advanced. The program's main goals include building a national digital infrastructure, giving citizens digital empowerment, and offering government and services on demand. This essay is the result of study into the Digital India program and its potential effects on preparing India for the digital age. The nine pillars of Digital India – Jobs in IT, Electronics Production, Information to All, Early Harvest Programme, Broadband Connections, eKranti, E-Governance, Public Internet Access, and Universal Access to Phones – are examined in the paper along with various initiatives, opportunities, and challenges. Each of these initiatives appears to be benefiting and assisting the Indian people. The inhabitants are still dealing with various difficulties. Illiteracy, socioeconomic disparities, and cultural and technical limitations are a few.

Keywords: Digital India, Digital payment, Digital Transformation.

Introduction

The key to maximizing the benefits of digital finance and financial inclusion can be found in a comprehensive partnership between the government and the general public. The use of technology can make the payment process more streamlined and open. One component of the ambitious flagship program Digital India has as its goal digital funding. The future of digital finance is really bright. Financial independence would empower women and other underprivileged groups in society, which is a core goal of financial inclusion and digital banking. Adopting digitisation in financial services and bringing the majority of the population into the banking system will contribute to the country's growth and development.

Every financial institution believes that online service delivery is the future, with the number of smart phone users in India set to reach 450 million by 2022. For financial services to change quickly, broadly, and for the better, technology-led innovation is required. The goal of financial inclusion through digital banking can be achieved with the support of the digital India. Digital financial services have a great deal of promise to offer a variety of accessible, practical, and safe banking services to

the underprivileged in developing nations. Public education about the fundamentals of digital finance services is urgently needed, especially in rural and semi-urban areas.

Cash will no longer be used in India. To lessen the country's reliance on cash and combat money laundering, the Indian government started the "Digital India" campaign. Various digital payment systems appropriate to different sectors of the economy are being coordinated to make them accessible and user-friendly in order to achieve expedited movement into the cashless, digital payments economy across all states and sectors and to promote rapid adoption of digital payment systems. The country needs to become digital if it wants to compete with developing nations and expand the financial sector to meet the demands of the modern world.

Digital payment is a method of payment which is made through digital modes. In digital payments, payer and payee both utilize digital modes to send and get cash. It is likewise called electronic payment. No hard money is engaged with the digital payments. All the exchanges in digital payments are finished on the web. It is a moment and advantageous approach to make payments. In the event that we talk about money payments, you need to initially pull-out money from your record. At that point you utilize this money to pay at shops. Businessperson goes to the bank to store the money which he got from you. This cycle is tedious for you and furthermore for the retailer. Be that as it may, in digital payments, the cash moves from your record to the retailer's record right away. This cycle is programmed and neither you nor the retailer is needed to visit the bank

Digital payment services offer convenience, ease of transactions and security while transacting. This analytical study focuses on growth of digital payments with respect to its volume and value of transactions. A digital transactional platform enables a customer to use a device to make or receive payments and transfers and to store value electronically with a bank or nonbank permitted to store electronic value. Retail agents armed with a digital device connected to communications infrastructure to transmit and receive transaction details enable customers to convert cash into electronically stored value and to transform stored value back into cash. Depending on applicable regulation and the arrangement with the principal financial institution, agents may also perform other functions. The customer device can be digital (e.g., mobile phone) that is a means of transmitting data and information or an instrument (e.g., payment card) that connects to a digital device (e.g., POS terminal).

Digital Payment Methods

1. Banking card:

Banking sector provides various cards to avoid the time spend over the banking transaction. It offers consumers more security, convenience, and control than any other payment method. There are many types of cards Rupay, mastercard, visa etc. they provides more security to the customer while using it. Payment cards give people the power to purchase items in stores, on the Internet, through mail-order catalogues and over the telephone. They save both customers and merchants' time and money, and thus enable them for ease of transaction.

2. USSD:

The innovative payment service works on Unstructured Supplementary Service Data (USSD) channel. This service allow to users mobile banking without internet facility available to make money transfer from one person to another without using internet and smart phones. Service has been launched to take the banking services to every common man across the country. The Common number across all Telecom Service Providers on their mobile phone and can make transaction using an interactive menu on the mobile screen. Using this customer can check balance, transfer money, can get mini statement etc.

3. Adhar enabled Payment system:

AEPS is a bank led model which allows online interoperable financial transaction at PoS (Point of Sale or Micro ATM) through the Business Correspondent or Bank Mitra of any bank using the Aadhar authentication.

4. UPI:

UPI is a Unified Payments Interface system that allow to multiple bank accounts into a single mobile application, merging several banking features. It is use to transfer money receive money, bill payments and others. Now it is getting popularity among the Indian people. It is interesting and easy to use and not need to remember frequently use beneficiary's account number. The customer can get transaction history quick payment.

5. Mobile Wallets:

There are several mobile wallets are available and each bank have their own application. The customer can carry digital cash trough mobile wallet. By use of wallet customer can link credit card or debit card in mobile device to make transaction. An individual's account is required to be linked to the digital wallet to add the money. The Paytm, Freecharge, Mobikwik, Airtel Money, Jio Money, SBI

Buddy, itz Cash, Vodafone M-Pesa, Axis Bank Lime, ICICI Pockets, Speed Pay etc. are the mobile wallets use in India.

6. Point of Sales:

A point of sale (PoS) is where sales are made. It allow to PoS holder to collect money from their customer by the way of swap Also and no need to go bank for making transaction of purchase and selling. On a micro level, retailers consider a PoS to be the area where a customer completes a transaction, such as a checkout counter. But its require GPS system internet and bank account of merchant.

7. Internet banking:

Internet banking, also known as online banking, e-banking or virtual banking, is electronic payment systems that allow customers of a bank to make transaction using website of the bank using ID and password.

8. National Electronic Fund Transfer:

(NEFT) National Electronic Funds Transfer is a nationwide payment system which provides funds transfer from any bank any branch to any bank. Using the system individual firms and corporate can electronically transfer funds from any bank branch to any individual, firm or corporate having an account with any other bank branch in the country. Not only account holders but also without having account people can sent money to others account by depositing money from anywhere. However, such cash transaction have limit of Rs. 50000/- using this service individual can deposit money on 50000/- and this facility can use in working days only.

9. Real Time Gross Settlement (RTGS):

RTGS is settlement of funds transfers individually on an order by order basis. 'Real Time' means the processing of instructions at the time they are received rather than at some later time. Considering that the funds settlement takes place in the books of the Reserve Bank of India, the payments are final and irrevocable. Transferring large amount RTGS is used. Customers can send minimum 2 lakh and maximum have no limit. RTGS can use in banking hours.

10. Electronic Clearing System (ECS);

ECS is an alternative method for the payment transactions like utility-bill-payments such as telephone bills, electricity bills, insurance premium, card payments and loan repayments, etc.,

11. Immediate Payment Service (IMPS):

IMPS offers an instant, 24x7x365, interbank electronic fund transfer service through mobile phones. IMPS are a tool to transfer money instantly across India using mobile, internet and ATM it is safe and cost-effective.

12. Mobile banking:

Mobile banking is a portable system provided by banks to customer on their mobile phones, smart phones with a special application using software. It provided by the banks or financial institution for the purpose. Each Bank provides its own mobile banking App for Android, Windows.

13. Micro ATM:

Micro ATM meant to be a device that is used by the million Business Correspondents to deliver basic banking services. The micro ATM enables Business Correspondents to make instant transactions. It helps to withdrawals, transfers transaction instantly.

Advantages of Digital Payment System

1. **Time Sever:** Using digital payment system customer can pay to merchant transfer money quickly and no need to make payment by cheque and waiting for clearing. Because Digital Payment system take less time than traditional payment system.
2. **Availabilities:** Digital payment system can use by customer from anywhere and anytime there is no need to go banks for every transaction.
3. **Easy Purchasing:** The Digital payment system provides facility to user for purchasing by using ATM card Credit card and POS therefore it is easy for making transaction and no hard cash required to travel with us.
4. **Use of Wallet:** The Digital Payment system includes digital wallets which make payment easy and with that wallet customer can get discount as well as cash back.
5. **Less Risk:** In digital Payment system it provides us securities for every transaction it require MPIN or OTP which can be avoid frauds in the system.

Conclusion

The concept of a digital India is enormous. A significant step toward creating an empowered nation is Digital India. If this concept is a success, it will unquestionably change India by granting Indian citizens access to multimedia information, content, and services. The Digital India initiative offers a lot of prospects, but we must acknowledge that it is still a long way from reaching its goals because most of the

nine pillars are having difficulty being implemented. In order to prevent the failure of this program, it is crucial that each and every pillar receive focused, sustained attention. In reality, as Indian citizens, we should all mentally prepare for this significant change.

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ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING: IMPLICATIONS AND APPLICATIONS

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Abstract

Artificial intelligence is the ability of a machine to perform cognitive functions that we normally associate with human minds. AI applications include advanced web search engines, recommendation systems, understanding human speech, self-driving cars, generative or creative tools, and competing at a higher level. Strategy games. Different subfields of AI research focus on specific goals and the use of specific tools. To solve these problems, I researchers have adapted and integrated various problem-solving techniques, including search and mathematical optimization, formal logic, artificial neural networks, and methods based on statistics, probability, and economics. Machine learning is a branch of artificial intelligence (AI) and computer science that focuses on using data and algorithms to imitate the pattern that humans follow, gradually improving its accuracy. Machine learning is an important component of the growing field of data science. Machine Learning Training Basic and Advanced Machine Learning Concepts.

Keywords: Vihwa Guru India - Global Leadership - Artificial Intelligence - Machine Learning - Implications and Applications etc

Introduction

John McCarthy is considered the father of artificial intelligence. John McCarthy is an American computer scientist. The term "Artificial Intelligence" was coined by him. Alan Turing was one of the founders of artificial intelligence along with Marvin Minsky, Alan Newell and Herbert. Artificial intelligence (AI), the ability of a digital computer or computer-controlled robot to perform tasks typically associated with intelligent organisms. The term is often applied to a program that creates systems with the intellectual process characteristics of humans, such as reasoning, finding meaning, generalizing, or learning from past experience. AI has become a catchy term for applications that perform complex tasks that require human input, such as interacting with customer's online or playing chess. The term is often used interchangeably with subfields that include machine learning (ML) and deep learning.

Artificial Intelligence was established as an academic discipline in 1956. The sector has gone through several cycles of confidence followed by disappointment and financial loss. After 2012, deep learning surpassed all previous AI techniques, leading to a huge increase in funding and interest. Traditional goals of AI research include reasoning, knowledge representation, planning learning, natural language processing, perception, and robotics support.

Machine learning is a field of artificial intelligence that allows computers to learn and improve from experience without being explicitly programmed. It has become an increasingly popular topic in recent years due to its many practical applications in various industries. Machine learning is an umbrella term for solving problems where creating algorithms by human programmers can be cost-prohibitive, instead solving problems by helping machines 'discover' their 'own' algorithms without the need for anyone to explicitly tell them what to do. Human-made algorithms. Today, machine learning is at work all around us. Machine learning and the technology surrounding it are evolving rapidly, and we're only just beginning to scratch the surface of its capabilities. Machine learning is used in web search engines, email filters to sort out spam, websites to provide personalized recommendations, banking software to detect unusual transactions, and loss of applications such as voice recognition. At the highest level, machine learning is the process of teaching a computer system how to make accurate predictions when fed data.

Types of Artificial Intelligence

Artificial Intelligence can be classified in any number of ways there are four types of artificial intelligence. They are;

- Reactive Machines
- Limited Memory
- Theory of Mind
- Self-Aware

Reaction Engines

Reaction engines perform basic operations. This level of A.I. Simple. These types react to certain inputs with certain outputs. No learning occurs. This is the first step for any A.I. System "They cannot improve their functioning through experience and can only respond to a limited combination of inputs." This is what "super" AI does because the average human can't process a customer's entire Netflix history and make personalized recommendations. Fixed. Machine learning models are reactive machines. Their architecture is simple and you can find them in GitHub repositories all over the web. These models can be downloaded, traded, shipped and easily loaded into the developer toolkit.

Limited Memory

The next step in the evolution of AI is to develop the next ability to store knowledge. But according to Rafael Tena, Senior AI researcher at Acrisure Technology Group. AI an insurance company that can store and use knowledge that progress will take nearly three decades. Learn and practice for future assignments.

With limited memory, the machine learning framework is a bit more complex. Every machine learning model needs to build a finite memory, but the model can be used as a reactive machine type. Self-driving cars are one of the best examples of finite memory systems. These cars can store the latest speed of nearby cars, distance to other cars, speed limit and other information to navigate the road. These AI models were very good at absorbing the characteristics of their training data. But more importantly, they improved over time. Limited-memory AI can be used in a wide range of scenarios, from small-scale applications such as chatbots, self-driving cars, and other advanced use cases.

Theory of Mind

AI theory of mind is a more advanced form of artificial intelligence. Machines of this type are encouraged to play an important role in psychology. This type of AI mainly focuses on emotional intelligence so that it can better understand the beliefs and thoughts of humans. As it has been developed, theory of mind AI should not have the ability to understand the world and how other entities have thoughts and emotions. In turn, this affects how they interact with those around them. Mental state can be AI. To better understand the organizations it interacts with by discovering their needs, emotions, beliefs and thought processes. AI's theory of mental states should be well developed in other branches of AI. A Theory of Mind AI can be a great companion. AI can sense and respond to human emotions, and can perform the tasks of limited memory machines.

Self-Aware

AI that can recognize the emotions of others, plus self-awareness and human-level intelligence; the final phase of AI. A final grant for the evolution of AI is the design of self-aware systems, conscious understanding of their existence. This kind of AI doesn't exist yet. Finally, in some distant future, perhaps AI reaches nirvana. It is self-aware. This kind of AI only exists in the story, and, as stories often do, both are incredibly believable. And fear for the audience. These machines will be highly intelligent and will have their own consciousness, feelings and self-awareness. These machines will be smarter than the human mind. Self-aware AI doesn't actually exist yet, it's a fantasy. Concept. Such systems understand their internal characteristics, states and conditions and perceive human emotions. This type of AI not only understands and evokes emotions in those it interacts with, but also has emotions, needs and beliefs of its own.

Implications of Artificial Intelligence

However, the impacts of AI are not all positive. AI can be used for malicious purposes such as data manipulation or election interference. AI will also lead to job losses and displacement of workers as machines are used to perform tasks performed by humans. Otherwise should do. With the advancement of technology, life has become easier than before. In the field of technology, artificial intelligence has served as no less than a savior. Now AI is integrated into our lives like never before. It is time to ensure that technology is used ethically and that our policies are democratic. One of the most important impacts of AI in the workplace is increased efficiency and productivity. Ai-powered tools automate repetitive and time-consuming tasks, freeing up employees to focus on more strategic and creative work. Indian business is leveraging AI as a pioneer in improving customer experience, innovating new products and services, and transforming businesses. Capabilities, Products and Solutions.

Also, AI-powered machines can determine soil and crop health, provide fertilizer recommendations, monitor weather and even determine crop quality. All the benefits of AI in agriculture help farmers to make better decisions and practice efficient farming. AI brings cost savings. AI has the potential to bring about many positive changes in society, including improved productivity, improved healthcare and increased access to education. .Training an AI model can require a significant amount of computational power, which in turn requires a large amount of energy. This energy is mostly generated using fossil fuels, which leads to an increase in greenhouse gas emissions. Another concern is the possibility of overpowering AI. You plan on existing environmental problems.

Applications of Artificial Intelligence

Here is the list of top eight applications of AI(Artificial Intelligence)

Applications of AI in e-commerce

AI has significantly benefited the e-commerce industry by improving customer service, personalizing the shopping experience, managing vast amounts of data, improving cyber security, predicting market trends and automating tasks such as creating product descriptions. Machine learning and artificial intelligence. Entrepreneurs can use modern solutions like these to improve their vision on the digital platform. Besides product recommendations, online merchants use ecommerce intelligence to provide chat bot services, analyze customer feedback, and provide personalized services to online shoppers. By integrating AI into their digital experience, businesses can give customers what they want, when they want it.

Applications of Artificial Intelligence in Education

Although the field of education has been the most influenced by humans, artificial intelligence has slowly started to penetrate its roots in the field of education as well. AI systems can "measure a student's learning style and pre-existing knowledge to provide personalized support and instruction." The use of artificial intelligence in education to improve learning, assist teachers, and fuel more efficient personalized learning is exciting. Increased availability of smart devices and web-based curriculum.

Applications of Artificial Intelligence in Lifestyle

Whether we're trying to read our emails, get driving directions, or get music or movie recommendations, AI helps us in every area of our lives. From voice assistants to smart devices, artificial intelligence (AI) is all around us, and its impact on the way we live and work will continue to rise. AI is playing an increasingly important role in improving the way we entertain ourselves, interact with mobile devices, and drive our vehicles for ourselves. We encounter machine learning algorithms and natural language processing in everyday tasks. By controlling devices like lights, thermostats, and security systems, AI improves energy efficiency and improves safety in our homes. Platforms like YouTube use recommendation systems to capture user data and provide personalized recommendations to increase user engagement. It is a widely used application of artificial intelligence in almost all industries.

Applications of Artificial Intelligence in Navigation

The technology uses a combination of convolutional neural networks and graph neural networks to automatically detect the number of lanes and road types behind obstacles on roads, making life easier for users. GPS technology can provide users with accurate, timely and complete information. Security service, tour operators can streamline their operations and reduce staff workload. Due to the rapid development and widespread diffusion of AI, navigation can be effectively supported by newly established AI techniques. Military units. Just like there are different ways to describe a location, there are different ways to go places. The three main types of navigation are celestial, GPS, and map and compass.

Applications of Artificial Intelligence in Human Resource

Artificial intelligence helps blind hiring. By using machine learning software, you can analyze applications based on specific parameters. AI derived systems can scan profiles of job applicants, and provide employers with an understanding of the talent pool they need to select from. Organizations around the world today are

realizing that the adoption of smart technology such as multi-professional and artificial intelligence is radically changing the workplace. Artificial intelligence is the stimulation of human intelligence processes by machines, especially computer systems. Specific applications of AI include expert systems, natural language processing, and speech. Authorizing and machine-viewing applications, conducting initial candidate screening, and scheduling interviews saves HR teams time and resources.

Applications of Artificial Intelligence in Social Media

AI in social media has the potential to change how brands market themselves on platforms like TikTok, Snapchat, Facebook, Instagram, Twitter and LinkedIn. Today, AI can generate social media posts for you. Automates tracking. And it powers most of what you see on any social network. AI-based social media monitoring refers to the use of artificial intelligence technologies across various social media platforms. Artificial intelligence continues to play a game-changing role in many aspects of our lives. One of the areas where this impact is most evident is the social media landscape. AI tools help improve features of social media platforms and lead the community. Scale operations across multiple use cases, including text and visual content creation, social media monitoring, advertising management, influencer research, brand awareness campaigns, and more.

Applications of Artificial Intelligence in Finance

The adoption of artificial intelligence systems and techniques in the financial sector has grown significantly, enabled by the abundance of data and increasing affordability of computing capabilities. If there's one technology that's paying dividends for the financial sector it's artificial intelligence. AI has delivered. The world of banking and finance has opened up new ways to meet the needs of customers with smarter, safer and more convenient ways to access, spend, save and invest. It is reported that 80% of banks have recognized the benefits that AI can provide. Be it personal finance, corporate finance, or consumer finance, the highly developed technology powered by AI will help significantly improve a wide range of financial services. Besides fraud detection and task automation, AI can better predict and assess credit risks.

Applications of Artificial Intelligence in Healthcare

Artificial intelligence uses computers and machine processes to simulate human intelligence and perform complex automated tasks. While seeking to mimic the capabilities of the human mind, AI-enabled machines are capable of surpassing it in many ways, particularly by sorting large blocks. Big data is efficient for detecting

patterns, anomalies and trends. The role of artificial intelligence in healthcare includes accurate cancer diagnosis, early detection of dangerous blood diseases, customer service chats and virtual health assistants. Describes the use of AI. Machine learning algorithms that mimic human knowledge to collect and understand complex medical and healthcare data. Artificial intelligence has found various applications in the healthcare sector. AI applications are being used in healthcare to develop sophisticated machines that can diagnose diseases and identify cancer cells. Artificial intelligence can help analyze chronic conditions with lab and other clinical data to ensure early diagnosis. AI uses a combination of historical data and clinical intelligence to discover new drugs.

Conclusion

AI is leading to transformative applications within an array of industrial, intellectual, and social applications, far beyond those brought about by previous industrial revolutions. Also, AI has proven to be superior to human decision-making in some areas. The term artificial intelligence is widely bandied about. Applications of technology to perform tasks similar to human cognitive function and is generally defined as "the ability of a machine to imitate intelligent human behavior". AI generally involves the theory and development of computer systems. The productivity of artificial intelligence can boost our workplaces. It benefits people by helping them get more done. As the future of AI replaces difficult or dangerous tasks, human workers are freed up to focus on tasks that require creativity and empathy.

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WOMEN ENTREPRENEURS SHAPING THE FUTURE OF INDIA

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Abstract

This conceptual paper indicates and emphasizes the women entrepreneurs as the potentially emerging human resource in the 21st century. The primary objective of this paper is to find out the status of women entrepreneurs in India and also studies the success story of Hina Shah the most successful women entrepreneurs of India in plastic packaging and Founder of ICECD. Women of 21st century is no more a traditional resource confined to homes only rather an educated, knowledgeable and innovative part of the overall population possessing the capacity to transform economies into thriving enterprises. On the basis of this analysis some recommendations are given to promote spirit of women entrepreneurship and helping the women to become a successful entrepreneur.

Keywords: *women entrepreneurs, Indian Economy, Business, Government Initiatives.*

Introduction

In India's economy, women entrepreneurs are growing more substantial, and their contributions shouldn't be undervalued. These female entrepreneurs play a crucial role in the Indian economy and have a significant effect on it by generating employment, accelerating development, and fostering prosperity. As per recent figures, women comprise 14 per cent of the total entrepreneurs in India, which works out to 8 million. Also, 10 per cent of all formal enterprises are owned by women.

About 20.37 per cent of the MSME industry in India is made up of women-led businesses, which also employ about 23.3 per cent of the labour population. Between 13.5 and 15.7 million businesses are owned by women, who also hire between 22 and 27 million individuals. They are thought of as the economic foundation of India. Not only can women's employment opportunities be expanded, but also the strain of working two shifts per week for women can be lessened. All areas of legislation must adopt the 3Rs approach, which involves Recognising, Reducing, and Redistributing unpaid care work provided by women.

The inclusion of women in the workforce has created jobs and assisted millions of families in escaping destitution. Because of their superior leadership abilities and higher levels of output, women predominate in new-age sectors where they make up a sizable portion of the workforce. This work ethic and admirable business acumen have also highlighted the significance of women in the contemporary workforce.

Manu Awasthy, CEO and founder, Centricity Wealthtech, said, “Women entrepreneurs and their increasing presence in India have significantly influenced the social and economic demographics of the country. Women entrepreneurs are empowering 50 per cent of India’s start-up ecosystem, driven by Recognition, Results, Fulfilling unmet needs and Education. According to a survey by Bain & Company, more than 45 per cent of Indian women in rural areas were driven to start a business to gain recognition and Women-led start-ups provide 35 per cent higher ROI compared to those led by men. The inherent need in women to provide for the family is a key factor. As they make 85 per cent of purchase decisions, the need to provide a better lifestyle motivates women. With up to 40 per cent of women finishing in the area of science and technology, India is among the top countries in the world for creating these professionals. Businesses that have women at the helm are considered to run very efficiently because businesses led by women require less investment but generate higher net revenue, women are great multi-taskers, women entrepreneurs are known to take more risks and Women have a dynamic ability to adapt.”

Women entrepreneurs and their increasing presence in India have significantly influenced the social and economic demographics of the country. The participation of women in the labour force has helped millions of families to pull out of poverty and has led to job creation. Women are well known for their leadership skills and hence dominate in new-age industries such as electronic manufacturing, where more than 50% of the employees are women because of their high-precision work and better productivity levels. This attitude towards work and commendable business skills have also emphasised the importance of women in the modern workforce.

Role of Women in India's Economy

In India 20.37% of women are MSME owners which account for 23.3% of the labour force. They are considered to be the backbone of the economy. According to McKinsey Global, India can potentially add US\$ 700 billion to global GDP by increasing women’s participation in the labour force. The percentage of women working in the manufacturing and agriculture sectors is higher than that of men. These sectors are usually credited with helping families come out of poverty and

contributing to higher household income. Moreover, literacy rates among women grew at 8.8% in FY21, which further highlights the bright prospects of the country.

Women-led Business Impact

Women-led businesses provide a great impetus to the economy. India has 432 million working-age women and 13.5 -15.7 million women-owned businesses that provide direct employment to 22-27 million people. In addition, a number of businesses are being controlled by women. Indian women are independent and have a strong motivation to start their own business. According to Boston Consulting Group, start-ups founded or co-founded by women generate 10% more cumulative revenue over a five-year period. These start-ups have a more inclusive work culture and employ 3x more women than men. Moreover, women-led businesses are estimated to grow 90% in the next five years.

Factors Driving Women to Start Businesses or Join Workforce

Women entrepreneurs are empowering 50% of India's start-up ecosystem, driven by:

- **Recognition:** Recognition in the form of admiration, regard, esteem and renown motivates women entrepreneurs. According to a survey by Bain & Company, more than 45% of Indian women in rural areas were driven to start a business for gaining recognition.
- **Results:** Women-led start-ups provide 35% higher ROI compared to those led by men. This ability to generate more returns encourages women to start their own businesses.
- **Fulfilling unmet needs:** The inherent need in women to provide for the family is a key factor. As they make 85% of purchase decisions, the need to provide a better lifestyle motivates women.
- **Education:** India ranks among the top worldwide for producing female graduates in the science, technology, engineering and mathematics (STEM) industry, with as many as 40% of women graduating from this field. Indian women are game changers in the fields of science and technology.

Women-run Businesses Operate Efficiently

Businesses that have women at the helm are considered to run very efficiently, and some of the compelling reasons to invest in a such a business are:

- **Higher return potential:** Businesses led by women require less investment but generate higher net revenue. For every dollar invested, women-led start-ups provide 78 cents return compared to 31 cents by men-led start-ups.
- **Multi-tasking:** Women are great multi-taskers as majority of them juggle multiple things at once. These women could prove highly valuable in

generating various income streams and helping to nurture start-ups. As per a survey conducted by psychologists at the University of Hertfordshire, When women and men were given two tasks at the same time, women slowed by 61%, whereas men slowed by 77%.

- **High risk appetite:** Women entrepreneurs are known to take more risks, as per a survey taken by KPMG 43% of women are willing to take more risks. Moreover, women are found to be better than men at envisioning opportunities.
- **Adaptability and higher EQ:** Women have a dynamic ability to adapt. A survey conducted by Bain & Company, Google and AWE Foundation of 350 women solopreneurs and small company owners in urban India found that companies run by women founders were resilient and fast to adapt. The results also showed that women also had a higher emotional quotient (EQ).

Major Businesses Run by Women in India

In India, 45% of the start-ups are run by women, of which over 50,000 are recognised by the government. The country witnessed the most women-led start-ups turning into unicorns in 2021. Major start-ups run by women are listed below.

Brand	Founder / Co-founder	Date of Establishment	Total Funds Raised	Market Valuation
 BYJU'S The Learning App	Divya Gokulnath	2011	US\$ 8.5 billion	US\$ 18 billion
 NYKAA	Falguni Nayar	2012	US\$ 148.5 million	US\$ 12.5 billion
 MobiKwik	Upsana Taku	2009	US\$ 380 million	US\$ 750 million
 zolo	Isha Choudhry	2015	US\$ 90 million	US\$ 100 million
 Thrillophilia	Chitra Gurnani Daga	2009	US\$ 1.24 million	US\$ 4.48 million

Government Initiatives to Encourage Women Participation

The Indian government has increased the budget for Women and Child Development by 14% in 2021. It has set aside over Rs. 30,000 crores (US\$ 3.97 billion) in FY21. This budgetary allocation also includes various development schemes as listed below.

- **Bharatiya Mahila Bank Business Loan**

This type of business loan was set up in 2017 to help women access cheap loans and dream big despite their lack of resources. The scheme provides loans of over Rs. 20 crores (US\$ 2.46 million) for women entrepreneurs. A collateral-free loan can also be availed of for loans worth less than Rs. 1 crore (US\$ 0.13 million).

- **Dena Shakti Scheme**

This scheme was launched for women entrepreneurs looking to start their business in certain sectors such as agriculture, retail and manufacturing. The scheme provides loans at an interest rate that is 0.25% below the base rate. The maximum loan application is Rs. 20 lakhs (US\$ 26,468).

- **Udyogini Scheme**

This scheme is for women with an annual income of Rs. 1.5 lakh (US\$ 1,985). It provides loans of up to Rs. 3 lakh (US\$ 3,890) for women wanting to start a business but have no capital.

- **Women Entrepreneurship Platform**

This is a flagship platform started by NITI Aayog to promote women entrepreneurship. The platform hosts various workshops and educational events to motivate women to start their own business.

- **Pradhan Mantri Mudra Yojana**

Even though the scheme was started to help anyone looking to set up a micro/small enterprise get an institutional credit of up to Rs. 10 lakhs (US\$ 13,240), it was mostly availed of by women.

Conclusion

India was a country where a woman even owning a bank account was considered a major benchmark. However, it currently has over 15.7 million women-owned enterprises, with women leading the start-up ecosystem. This drastic transformation clearly underlines the potential of Indian women and their determination. In the coming decades, India is set to witness a major shift, with women dominating the workforce as well as shaping and enhancing the future of the country. It is estimated that over 30 million more women-owned businesses are expected to provide 150–170 million jobs by 2030. This could be a game changer and help the economic outlook look brighter than ever.

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ROLE OF TECHNOLOGY IN NEP 2020

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Abstract

Education plays a powerful role in building nation, education decides the future of the nation, the density of its people. The role of education and its importance cannot be ignored in today's scenario. The growth and development can be seen if we compare the pre independence and post independence era. NEP 2020 is the first education policy of the 21st century and replaces the 34 year old national policy on education 1986. "the purpose of education is to make better human beings with skill and expertise. Enlightened human beings can be made by efficient teachers". This paper explains about the vision of NEP 2020, history, features, evolution.

Keywords: Future of education, Education policy, Role of education.

Introduction

Education is fundamental for achieving full human potential, developing an equitable and just society, and promoting national development providing universal access to quality education is the key to India's continued ascent, and leadership on the global stage in term of economic growth, social justice and equality, scientific advancement, national integration and cultural preservation. Education thus, move towards less content, and more towards learning about how to think critically and solve problems how to be creative and multidisciplinary, and how to innovate, adapt and absorb new material involve and changing fields. The national policy on education is a policy formulated by the government of India to promote education amongst India's people. The policy covers elementary education to higher education in both rural and urban India. The first NEP was promulgated by the government of India by honorable prime minister India Indira Gandhi in 1968, the second by honorable prime minister by prime minister Rajiv Gandhi in 1986 and the third honorable prime minister Narandra Modi in 2020. Now, this paper explains about the policy, history and features regarding higher education.

History of Nep in India

Since the country's Independence in 1947, the India government sponsored a variety of programmes to address the problems of illiteracy in both rural and urban India. The national educational policy of India 2020 (NEP 2020), which was started by

the Union Cabinet of India on 29 July 2020, outlines the vision of new education system of India. The new policy replaces the previous national policy on education, 1986. Maulana Abul Kalam Azad, India's first minister of Education, envisaged strong central government control over Education throughout the country, with a uniform educational system.

1968:

Indira Gandhi government announces first national policy on education in 1968 based on recommendation of the education commission, which called for a "RADICAL RESTRUCTURING" and proposed equal educational opportunities in order to achieve national integration and greater cultural and economic development.

1986:

In 1986, the government led by Rajiv Gandhi introduced a new educational policy focusing on adult education and empowerment of minorities. This policy is especially for rural area peoples to equalise educational opportunity.

1992:

The 1986 national policy on education was modified in 1992 by the P. V. Narasimha Rao government. In this period the government added a common entrance examination for professional and technical programmes.

2005:

New education policy introduced by Manmohan Singh government based on "COMMON MINIMUM PROGRAMME". It will fully empower women politically, economically, and legally. The CMP is a document outlining the minimum objectives of a coalition government in India.

2020:

New education policy by Narendra Modi government addressing gender discrimination, creation of educational tribunals, and a common curriculum for science, mathematics and English. Research methodology has been added in the last year of graduation course and student will have the choice to leave the course and receive the certificate / degree.

Vision of NEP 2020:

This education system must provide quality education to our children and youth to enable them to realize their individual potential and contribute to development of

society and nation. Use of this technology –in teaching and learning removing language barriers through education In this NEP2020 education we can learn in our mother tongue till class 5.Moving towards a more multidisciplinary undergraduate education.NEP 2020 aims to provide flexibility of learning paths of students.It introduces the traditional system of 10+2 for promoting higher education for students. It also introduces the foundation stage (ages 3-8) focus on play based and activity based learning. This vision NEP2020 make the student to think critical, creativity, own decision making, and innovation through the learning of education .

Features of NEP 2020:

- Holistic development of learners.
- Multilingualism
- Teachers
- Equitable and inclusive education.
- Service environment and culture.
- Focus on skill development
- Establishment of the NRF
- Multi entry and exit
- Online education

Conclusion

Every student should follow his/her her passion and the education policy 2020 provides the student the option to choose the policy 1986 issued on what to think but the national educational policy 2020 emphasizes how to think. The NEP will help set a global standard, and the 5+3+4+4 system aims to make the students a global citizen while being connected to their roots. The current education policy 2020 it bring creativity, innovative ideas, and experimental activities to the students. It avoids the root learning.

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AN OVERVIEW OF WOMEN EMPOWERMENT THROUGH EDUCATION

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Abstract

Women's empowerment refers to the process of enabling women to have greater control over their lives and to be able to make their own decisions. This can include empowering women to participate fully in the economy and in the political process, as well as empowering them to make decisions about their own health and well-being. Women's empowerment is important because it can lead to a range of positive outcomes, including increased economic growth and development, improved health and well-being, and greater gender equality. In India, women's empowerment has been a key issue for many years. Despite some progress in recent decades, women in India continue to face significant challenges when it comes to gender equality. These challenges include discrimination, lack of access to education and employment, and gender-based violence.

Keywords: Women Education, Empowerment, Gender Equality.

Introduction

Women education in India has a major preoccupation of both the government and civil society as educated women can play a very important role in the development of the country. Education is milestone of women empowerment because it enables them to responds to the challenges, to confront their traditional role and change their life. So that we can't neglect the importance of education in reference to women empowerment and India poised to becoming superpower in recent years. Education of women is the most powerful tool to change the position in society. Women education in India has been a need of the hour, as education is a foundation stone for the empowerment of woman. . Education also brings a reduction in inequalities and functions as a means of improving their status within the family and develops the concept of participation.

Challenges Facing Women in India

Discrimination: Women in India often face discrimination in many areas of life, including in the home and in the workplace. This can make it difficult for them to access education and employment opportunities, and can lead to unequal treatment and lower pay.

Lack of access to education and employment: Women in India face significant barriers when it comes to accessing education and employment. For

example, data from the World Bank shows that only around 50% of women in India participate in the labour force, compared to around 80% of men. This is due in part to cultural and social barriers that prevent women from participating in the workforce, as well as lack of access to education and training.

Lack of access to education and employment: Women in India face significant barriers when it comes to accessing education and employment. For example, data from the World Bank shows that only around 50% of women in India participate in the labour force, compared to around 80% of men. This is due in part to cultural and social barriers that prevent women from participating in the workforce, as well as lack of access to education and training.

Gender-based violence is a major problem in India. The National Crime Records Bureau reports that in 2021, there were over 428,278 reported cases of violence against women in India. This included incidents of physical and sexual assault, as well as dowry-related violence and female infanticide. The statistics are alarming, with 31,677 reported rapes against women in 2021 alone.

Poverty: Many women in India live in poverty, particularly in rural areas. Poverty can make it difficult for women to access education and employment, and can lead to other challenges such as poor health and malnutrition.

Disparities between urban and rural areas: Women in rural areas of India often face greater challenges when it comes to empowerment. For example, they may have less access to education and health care, and may be more isolated and vulnerable to gender-based violence.

Rural Education and Women Empowerment



Role of Women Empowerment

Women empowerment is a pivotal part of any society, state or country. It is a woman who plays a dominant role in the basic life of a child. Women are an important section of our society. Education as a means of empowerment of women can bring about a positive attitudinal change. It is, therefore, crucial for the socioeconomic and political progress of India. The Constitution of India empowers the state to adopt affirmative measures for promoting ways and means to empower women. Education significantly makes difference in the lives of women.

Women Empowerment is a global issue and discussion on women political right are at the forefront of many formal and informal campaigns worldwide. The concept of women empowerment was introduced at the international women conference at NAROI in 1985. Education is the milestone of women empowerment because it enables them to respond to the challenges, to confront their traditional role and change their life. Hence, we cannot neglect the importance of education in reference to women empowerment. To see the development in women education India is supposed to the upcoming superpower of the world in recent years. With the increasing change in women education, the empowerment of women has been recognized as the central issue in determining the status of women. For becoming a superpower we have mostly to concentrate upon women's education. By which it will force women's empowerment. As per United National Development Fund for Women (UNIFEM), the term women's empowerment means:

- Acquiring knowledge and understanding of gender relations and the ways in which these relations may be changed.
- Developing a sense of self-worth, a belief in one's ability to secure desired changes and the right to control one's life.
- Gaining the ability to generate choices exercise bargaining power.
- Developing the ability to organize and influence the direction of social change, to create more just social and economic order, nationally and internationally.

Women Empowerment through Education

Women empowerment is the pivotal part in any society, state or country. It is a woman who plays a dominant role in the basic life of a child. Women are an important section of our society. Education as means of empowerment of women can bring about a positive attitudinal change. It is therefore, crucial for the socioeconomic and political progress of India. The Constitution of India empowers the state to adopt affirmative measures for prompting ways and means to empower women. Education significantly makes difference in the lives of women. Women

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- Developing the ability to organize and influence the direction of social change, to create a more just social and economic order, nationally and internationally.

Thus, empowerment means a psychological sense of personal control or influence and a concern with actual social influence, political power and legal rights. It is a multi level construct referring to individuals, organizations and community. It is an international, ongoing process centered in the local community, involving mutual respect, critical reflection, caring and group participation, through which people lacking an equal share of valued resources gain greater access to the control over this resources.

Conclusion

Women play an imperative role in making a nation progressive and guide it towards development. They are essential possessions of a lively humanity required for national improvement, so if we have to see a bright future of women in our country, giving education to them must be a pre-occupation Empowerment means moving from a weak position to execute a power. The education of women is the most powerful tool to change the position of society. Education also brings a reduction in inequalities and functions as a means of improving their status within the family. To encourage the education of women at all levels and for dilution of

gender bias in providing knowledge and education, established schools, colleges and universities even exclusively for women in the state. The education develops the idea of participation in government, panchayats, public matters etc for elimination of gender discrimination.

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SIGNIFICANCE OF KNOWLEDGE CREATION AND INNOVATION IN HIGHER EDUCATION INSTITUTIONS

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Abstract

Education creates pathway for obtaining and creating knowledge among the human beings. New Education Policy also emphasizes the importance of knowledge creation and innovation. Innovation is the mother of inventions. Innovation is never ending since the technology keeps on updating itself with new standards and formats. The knowledge creation and innovation are inter-related and inter-dependent. Schools, colleges and universities involve in the process of knowledge creation and transmission. Knowledge creation is not so easy task as one thinks. It is complicated, perishable and different from person to person in terms of reachability. Teachers' role is crucial in creation of knowledge and transmission of knowledge to the leaning community is also important. So, the current articles highlights the knowledge creation and innovation in Higher Education Institutions (HEIs), including the sub topics: Knowledge, Types of knowledge, Process of knowledge creation, Information Technology in Knowledge creation, Innovation in knowledge creation, Higher education institutions in knowledge creation and Problems in knowledge creation. The important and relevant concepts were discussed in this article to signify the knowledge creation and innovation methodologies.

Keywords: *Knowledge, Types of knowledge, Process of knowledge creation, Information Technology in Knowledge creation and Innovation in knowledge creation*

Introduction

Knowledge is fundamental aspect of many aspects. All the disciplines such as Engineering, Science, Mathematics, Commerce, Management, Computing and so on require the application of knowledge. Knowledge is understood by different people in different meanings. But, it is common that it is related to understanding and experience. This current article discusses the creation of knowledge and innovation in higher educational institutions. Higher education plays major role in social development and economic infrastructure in the country. As per the policy of NEP 2020, Higher education institutions should play major role in creation, retention and transmission of knowledge. The knowledge creation and innovation are the primary functions of education service. Both are continuous and ongoing process.

Knowledge

Knowledge means awareness, familiarity or understanding of a factual information, descriptions. It is always acquired through experience or education by assuming, discovering or learning. Knowledge is different from skill and talent. Talent is inborn in human beings. Skill is acquisition of ability to do something. Knowledge includes talent and skill. But they are not one and same. Knowledge is not limited to education. Education just supports in acquisition of knowledge.

Knowledge creation and development are the essentials of man making process. Especially, Education sector is more concerned with the creation, development and retention of knowledge in the minds of human beings. Knowledge means different to different people. Process of knowledge creation includes many methods and techniques. Knowledge may be theoretical or experimental.

Types of Knowledge

Knowledge	
Explicit knowledge	Tacit knowledge

Explicit knowledge is a kind of informational fact which is searchable and easy to find. Users of such knowledge can integrate regarding the value and use of this knowledge. Eg. Manuals, documents, plans and procedures, how-to-do videos, etc.

Tacit knowledge means knowledge existing in minds of people virtually. Usually it is not explorable like explicit knowledge. It is also not sharable information or content with another person orally or in writing. Eg. Knowledge of walking, running, riding bicycles swimming, etc.

Though ideas are created in the minds of individuals, but the interaction critically between individuals which plays a critical role in developing these ideas. To mention typically, Interacting communities shall contribute to the creation and development of new knowledge sets. In today's marketing world, knowledge creation and knowing how management of knowledge are of top priority for everyone. Businesses which manage the information well, have an important edge over their competitors. The advanced economies of today rapidly become economies of knowledge, where the creation and marketing of knowledge turn overruling.

Knowledge Creation

Knowledge Creation literally means the continuous integration, transferring and conversion of different types of knowledge to the users or people. It happens when users try to interact, to practise and to learn. In simple words, it is the creation of various ideas, which is similar to the heart of a company's competing advantage.

Competitive or competing advantage is one that a company possesses while it has the edge over its competitive enemies and rivalries. Especially, when it has the corner of the provision for a certain product or service or brand. Knowledge creation is the formulating process of new notions, technics and conceptual facts. It happens through the human interactions between explicit and tacit knowledge of people.

Generally *intuition is accepted and valued* and where *experience is nothing more than merely a theory*. These concepts flashbacks to the idea of theory in use (pointing out to working environments that do not usually follow strict, "official" rules, protocols and procedures) and the acceptance and support of environments which allow brain-storming tasks, trial and error methods and unstructured interaction activities.

In the view of innovation theory, one shall refer to the practice of establishing key teams to solve problems of queries, unhindered by the bureaucracy policies that may exist in the firm alike the value of chaos and the benefits of smaller alongside fast-acting teams. One common alternative method is the usage of cross-functional project teams in the institutions and organizations. They are normally a group of experts persons from different parts of the organizations, which is guided by a "generalist" known project leader. If those teams are allowed with the decision making powers and independence to experiment and work in an autonomous and freed or virtually autonomous environment, it could be a great catalyst for bringing innovation and new knowledge creation practically in the process.

Once the activity is completed, the members return back to their role in the organizations, by extending help to the firm to spread this knowledge back into their respective community of practices. The project team shall also facilitate the creation of bridges normally between communities of practice and at any times may even serve as a provision to extend them on as and when required basis. Deviations of this concept can be seen in many places in innovation theory in existences.

To provide facility for supporting the work tasks and flow: It can be normally groupware systems which facilitate communication or brainstorming activities. Anyhow, they should not be interference with creative processing or communities of practices, or should not enforce the rigidly stiff organizational practices.

To provide knowledge-base personnel with timely, relevant information and data. In today's rapidly fast and rapid-paced environment, It is invisibly synonymous with the implementation processes of IT systems which can store, retrieve, organize, and exhibit information and data in a helpful manner effectively.

IT and Knowledge Creation

The usage of IT is unavoidable and very much indeed. The IT is for sharing knowledge, allowing for support in the transferring process of all the knowledge kinds. An important view is that it must be supportive and should not interfere with informal collaboration works. For example, groupware systems shall be devised to enhance communication between clustering groups or teams, particularly if the support is varied (Eg: audio, video, textual materials—as per the necessities of the individual firms) informal communication.

Beyond this argument, IT also has a crucial role to play through information management systemized services, by offering access to data and information facts, for empowering the managers to perform in-depth analysis often. Even more, IT systems shall also be programmed to find out current and future trends in data and information science and showcase them to the management for decision making. It essentially stimulates the manager to take better decisions of business and helps in knowledge creation by offering some of the building blocks tactics for new knowledge delivery efficiently. IT tools and methods shall also be utilized in the innovation processes. But they are outside the limits of knowledge management in most of the cases.

Knowledge Creation Management

Knowledge creation management usually refers to the systematic process of sharing, creation, usage and management of an organization's knowledge sets and information effectively, timely and efficiently. It is based on multidisciplinary approach to take advantages of the best usage of knowledge or information. It is a wide and popular field among various services. In fact, many large institutions and companies, non-profit organizations and public undertaken institutions devote the resources to the knowledge management properly.

The management of knowledge is quite often a part of business strategies making, human resource management or IT department's policies in the business and non-business sphere. IT here means Information Technology (Computing). Its efforts usually focus on overall objectives such as innovation, R&D and higher output productivity. It also concentrates on competitive advantage, integration of resources, the sharing of lessons and experiences learned and the on-going improvisations and mechanisms of the business ventures. Almost in all the cases, these efforts can overlap normally with organizational learning pattern.

Knowledge Creation Process in HEIs

The *knowledge creation process* has the elements of invention and innovation of new concepts, patterns, approaches, methods, techniques, products, services, and

ideas which can be utilized for the ultimate benefits of stakeholders including people, society and organizations. Generating and exploring of new sources of customer demands, stimulating personal and organizational growth and rethinking – redesigning of the existing rules of the law can help organizations to develop, thrive and endure in knowledge domain. Failure in doing so, will lead to a situation of stagnation, decay or death of the enterprise or education institutions in due course.

In HEIs, knowledge management usually tries to help in triggering the imagination by offering a continually refilled source of ideas, facts and experiences for the students and learners. People do help to bring out the best ideas in each domain and discipline and other through the interactions as a part of networking systems physically or virtually. Analysis of collected knowledge showcases the patterns and opportunities for new developments and ventures. Many HEIs always like to be familiar for their innovations, but it is not always easy to turn the thought process into reality. Some measures such as connecting creative people by various communities like departments and associations, exploring patterns through analysis and testing and establishing flows of process or algorithms for creation of new knowledge could help to stimulate innovation among the students and faculties.

Examples

- First example is “Patent disclosure process”. When an ideology for an invention is being shared with others within a HEI, it can result in helpful suggestions for improvements and corrections. Colleagues acting as a sounding board for testing process, assumptions and referrals to others shall help in doing similar tasks.
- Second example is a process for converting practical experience into new standard methods. Providing a process for practitioners who discover improved methods of doing things or tasks to convert their thoughts into new ways or procedures, which will result in creation of new knowledge being provided to others of the ecosystem.
- Third example is frequently inviting innovation practitioners to share their latest ideas and inventions during community events or students programmes can become a process of knowledge creation. As part of those presentations, building in time for the community members like students and faculty to brainstorm about methods to apply the concepts, facts and ideas. Suggesting good ideas shall be taken and followed up on them during forthcoming events may be implemented.

- Forth example is providing a simple process for white papers normally to be submitted, clearly reviewed and published which helps in facilitating knowledge creation in HEIs. Providing a new way to subscribe to the recent publications in respective subject areas of interest, connecting with the authors and co-authors and collaborating on further nuances of published ideas can be implemented.

Practical Ideas for Innovation in HEIs

1. Motivating students and faculties to practise innovations both internally and externally, for ideas generation.
2. Following good standards and best practices from other organizations, say: **Netflix prize**.
3. Conducting testifying experiments and events to test innovative methods and ideas.
4. Using analytics methods and metrics to analyze the results and pick the ones that are mostly effective and workable.
5. Collection of suggested improvements, using rapid prototyping to find them out and then iterate and improve where required.
6. Enabling innovation by supporting integration of diversified tools.
7. Encouraging students and faculties to work on projects that are innovative and risky.
8. Encouraging the formulation of book clubs portals, discussion forums or groups and brainstorming engagements and events to involve people in thinking about innovative and better ways of doing things alternatively.
9. Taking the best ideas and methodology invented and implementing them.
10. Holding regularly innovation challenging tasks, tournaments, contests, programmes and activities of jams.
11. Asking people to use collaborative tools such as enterprise social networks (ESNs) to explore ideas and thoughts for improvisations, new steering and break-throughs if really required.
12. Inviting people outside the institution to speak over calls, present in meetings and participate in conferences, seminar and workshops.
13. Adapting the methodologies proposed by external speakers for use in the HEIs.
14. Setting up prediction forums to devise the knowledge of crowds to select between options or opportunities.

Conclusion

Knowledge creation usually depends upon the various mechanisms mentioned in the sub-section on knowledge sharing, integrated with the potential to use knowledge into real time practices in an environment that supports interaction and experiential experimentations among the students and faculties of Higher Education Institutions (HEIs). The creative knowledge creation process is really a delicate, quite complicated and sensitive one and it is easily vanished by strict following to rules and regulations or by bureaucracy rule system of supervisions and supports. Similarly, IT systems of HEIs must be implemented along with due-care and should not attempt to replace processes of importance to knowledge creation in the HEIs.

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A STUDY ON INNOVATION AND ENTREPRENEURSHIP IN INDIA

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Abstract

Start-up is the base thing that an individual trying to achieve something new and original. Technology based entrepreneurs are stated as technopreneurs, they are the new trend setting entrepreneurs, they discover and create innovative product and services to the society with the effective usage of science and technology. At present the government of India takes further initiatives for the growth and development of indigenous production through startups and also assisting the young entrepreneurs through various schemes for meeting up the challenges with the global competitors. With hundreds of innovative youngsters choosing to follow the path of entrepreneurship instead of joining the multinational corporations and government ventures, the business world has witnessed an explosion of ground-breaking startups providing solutions to the real problems at a mass level in the past years.

Keywords: Innovation, Entrepreneur, Technology, Entrepreneurship

Introduction

Introduction The role of start-ups in India's economic development and their potential in creating employment opportunities have been recognized by the Government of India with the launch of the "Startup India Initiative". 14,036 enterprises have been recognised as Startups by Department of Industrial Policy and Promotion (DIPP) till November 2018 with various support including tax exemption of up to 7 years, establishment of 'fund of funds' of INR 10,000 crore till 2025, establishment of Atal Innovation Mission (AIM) etc. (MCI 2018). The ecosystem is developing with a number of startups, new venture funds and angel investors, evolving technology, incubators and accelerators, etc.

Objectives of the Study

1. To understand the Startup Schemes providing by Indian Government
2. To identify various government initiatives for the development of startups.
3. To analyze the growth and opportunities of startups

Research Methodology

The study is based on the secondary data which has been collected through journals, magazines, newspapers, research papers, books and websites etc.

Statement of the Problem

The emergence of startup wave in India is a relatively a new phenomenon. Today India is undergoing a fundamental shift with entrepreneurship and innovation is being primary catalyst in job creation and solving everyday problems. A decade ago, there is to be only a handful of startups such as Make My Trip.com and Naukari.com. But, now with the success of such as Flipkart, Quicker, Practo, Zomato and Inmboi, the Indian startup eco-system has indeed come a long way.

Significance of the Study

Startups have played and continue to play significant roles in the growth, development and industrialization of many economies all over the world. Startup is flagship initiative of the government of India, intended to build a strong ecosystem for nurturing innovation. Startup will drive sustainable economic growth and generate large scale employment opportunities and minimize unemployment.

Startup India

A startup venture could be defined as, a new business that is in the initial stages of operation, beginning to grow and is typically financed by an individual or small group of individuals. It is a young entrepreneurial, scalable business model built on technology and innovation wherein the founders develop a product or service for which they foresee demand through disruption of existing or by creating entirely new markets. Startups are nothing but an idea that manifests into a commercial undertaking.

The global business community accepted India as one of the most influential destinations for investments. It has discovered India's potential for innovation and creativity. The last three years India is significantly scaling up in international investments in start-ups valuations, exceeding \$ 1 billion in some cases, a phenomenon that would have been unbelievable in just five years ago. Prime Minister Narendra Modi recognized this fact and started working on it and understands that it is the right time to bring in the government to define an effective policy framework, followed by necessary tax and financial incentives and nourish the creativity and innovative potential among youth. Start-ups created 65,000 new jobs in 2014 and by 2021, the number is expected to touch 250,000 according to the NASSCOM Start-up Report 2015, and as of now, that is driven mostly by private sector initiative. Furthermore, India has to boast about its own billion dollar club. This includes startups like Flipkart, Paytm, Zomato, Snapdeal, Ola, InMobi, Hike, MuSigma, and Quikr. Fintech startup MobiKwik too looks to join the unicorn club with the next \$100 Mn funding raise.

Startup Rankings

The first ever startup state rankings were declared on December 2018 by the Department of Industry and Internal Trade based on the criteria of policy, incubation hubs, scaling innovation, procurement, regulatory change, communication, seed innovation, North-Eastern states and hill states. Among various states some of the states secured their places in different aspects as follows:

- Top performers: Kerala, Karnataka, Odisha and Rajasthan
- Best performers: Gujarat
- Leader: Telangana State, Andhra Pradesh, Bihar, Madhya Pradesh and Chhattisgarh
- Aspiring Leaders: Jharkhand, Uttar Pradesh, Haryana, Himachal Pradesh and West Bengal
- Emerging states: Delhi, Goa, Assam, Maharashtra, Punjab, Tamil Nadu, Jammu & Kashmir and Uttarakhand.
- Beginners: Manipur, Mizoram, Nagaland, Chandigarh, Puducherry, Sikkim and Tripura

Opportunities for Startups

In spite of challenges and problems that startups are facing, Indian markets provide a plethora of opportunities to find solutions tailored to solve them. Below is a list of few of the opportunities that are discussed for consideration by startups.

1. **India's Large Population** The population of India is a huge asset for the country. By 2020, it is expected that the working age population would surpass the non-working population. This unique demographic advantage will offer a great opportunity to any startup. Various infrastructure issues and the bottom- of the- pyramid market would provide huge opportunities for the startups.
2. **Change of Mind Set of Working Class** Traditional career paths will be giving way to Indian startup space. Challenging assignments, good compensation packages would attract talented people to startups. Also, it is seen that several high-profile executives are quitting their jobs to start or work for startups.
3. **Huge Investments in Startups** Huge investment in Indian startups from foreign and Indian investors is taking place. In 2015, more than 300 deals were done by 300+ angels and venture capital/ private equity players with around \$6.5-billion (Rs 42,300Cr) investments making India the most sought-after destination for investments. Some of the active players are New Yorkbased Tiger Global Management, Russian company- DST Global, Japanese telecom giant Softbank, Kalaari Capital, Sequoia Capital and Accel Partners. More and

more are going to join the bandwagon as this is the tipping point in Indian commerce for making good returns by backing potential unicorns.

Government Initiatives

There are numerous government and semi-governmental initiatives to assist startups.

1. Start-Up India This initiative provides three-year tax and compliance breaks intended for cutting government regulations and red tapism.
2. Mudra Yojna Through this scheme, startups get loans from the banks to set up, grow and stabilize their businesses.
3. SETU (Self-Employment and Talent Utilization) Fund Government has allotted Rs 1,000 Cr in order to create opportunities for self-employment and new jobs mainly in technology-driven domains.
4. E-Biz Portal Government launched e-biz portal that integrates 14 regulatory permissions and licenses at one source to enable faster clearances and improve the ease of doing business in India.
2. Royalty Tax Indian government has reduced the royalty tax paid by businesses and startup firms from 25 per cent to 10 per cent

Conclusion

The current economic scenario in India is on expansion mode. The Indian government is increasingly showing greater enthusiasm to increase the GDP rate of growth from grass root levels with introduction of liberal policies and initiatives for entrepreneurs like 'Make in India', 'Startup India', MUDRA etc. 'Make in India' is great opportunity for the Indian start-ups. With government going full hog on developing entrepreneurs, it could arrest brain drain and provide an environment to improve availability of local talent for hiring by startup firms. The startup arena has lot of challenges ranging from finance to human resources and from launch to sustaining the growth with tenacity. Being a country with large population, the plethora of opportunities available are many for startups offering products and services ranging from food, retail, and hygiene to solar and IT applications for day to day problems which could be delivered at affordable prices. It is not out of place to mention that some of these startups would become unicorns and may become world renowned businesses by expanding into other developing and underdeveloped countries.

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START-UP IN INDIA: OPPORTUNITIES AND CHALLENGES

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Abstract

The basic purpose of this article is to put some light on the challenges to be countered and opportunities to be capitalised upon by the start-ups entrepreneurs and the initiative taken by the Indian govt. The start-ups are the kind of companies which are innovative in their course of development, analysis, evaluation, research for the target segment. In this paper various govt. policies, plans, schemes, start up life cycle, financial and operational strategies related to start-ups will be discussed. Start up is one of the scorching events this era which everyone is talking about. This campaign is particularly based on enhancing the bank financing for the start-ups to encourage the entrepreneurship and creating skilled job availability towards the strengthening of economy at large.

Keywords: Entrepreneur, Govt. plans, Initiatives, Start-ups life cycle.

Introduction

Technological innovation is a new or improved product or process whose technological characteristics are significantly different from before. Implemented technological product innovations are new products (product innovations) or processes in application (process innovations) that have been brought to market. A startup or start-up is a company or project undertaken by an entrepreneur to seek, develop, and validate a scalable business model. While entrepreneurship includes all new businesses, including self-employment and businesses that do not intend to go public, startups are new businesses that intend to grow large beyond the solo founder. At the beginning, startups face high uncertainty and have high rates of failure, but minorities of them do go on to be successful and influential.

Startups typically begin by a founder (solo-founder) or co-founders who have a way to solve a problem. The founder of a startup will do the market validation by problem interview, solution interview, and building a minimum viable product (MVP), i.e. a prototype, to develop and validate their business models. The startup process can take a long period of time (by some estimates, three years or longer), and hence sustaining effort is required. Over the long term, sustaining effort is especially

challenging because of the high failure rates and uncertain outcomes. Having a business plan in place outlines what to do and how to plan and achieve an idea in the future. Typically, these plans outline the first three to five years of your business strategy.

Starting business ground up can be very hard especially without a proper introduction to startup. Apart from the risk factors involved, it can be emotionally and mentally challenging. If you are pondering about setting out on a new business venture and are confused about the basics of startups, you're at the right place because here, you'll be enlightened about what a startup is and be introduced to the concept of startups.

Objectives

- To know the opportunities for Startups
- To identify Challenges in Startups
- To understand the role of technology based startups.

Opportunities for Startups

Large Population:

The population of India is a huge asset for the country. By 2020, it is expected that the working age population would surpass the non-working population. This unique demographic advantage will offer a great opportunity to any startup. Various infrastructure issues and the bottom- of- the- pyramid market would provide huge opportunities for the startups.

Connectivity:

Indian telecom industry has nearly 100 crore subscribers, mobile connectivity has made inroads in the rural and urban population. Government of India's digital push is going to improve connectivity and data to the next level. The race to cheapest data has started and disruption is certain. The cheap data has helped everyone to get their hands on it, start-ups will have an easier time to tap into markets, territories and even traditional businesses.

Change of Mind Set of Working Class:

Traditional career paths will be giving way to Indian startup space. Challenging assignments, good compensation packages would attract talented people to startups. Also, it is seen that several high profile executives are quitting their jobs to start or work for startups. To reinforce the trend being seen, a survey conducted by Economic Times also confirmed that the number of Students joining startups and e-commerce companies have grown considerably in the recent years.

Innovation Society:

India has the largest youth population, which is the largest driver for innovation, workforce, talent and future leaders. India has its own challenges of education, health, infrastructure and the rising gap between India and Bharat. This presents big opportunity for start-ups to solve a variety of problems. India has the population of 1.3 billion people; the country's middle class is growing along with the consumers. The large diversity in the India's population makes a strong case for a rich services and products economy. Start-ups should look at banks; our banking system has reaped the maximum benefit of our population size.

Challenges for Startups:**Revenue Generation:**

Several startups fail due to poor revenue generation as the business grows. As the operations increase, expenses grow with reduced revenues forcing startups to concentrate on the funding aspect, thus, diluting the focus on the fundamentals of business. Hence, revenue generation is critical, warranting efficient management of burn rate which in common parlance is the rate at which startups spend money in the initial stages. The challenge is not to generate enough capital but also to expand and sustain the growth.

Supporting Infrastructure:

There are a number of support mechanisms that play a significant role in the lifecycle of startups which include incubators, science and technology parks, business development centers etc. Lack of access to such support mechanisms increases the risk of failure.

Financial Resources:

Availability of finance is critical for the startups and is always a problem to get sufficient amounts. A number of finance options ranging from family members, friends, loans, grants, angel funding, venture capitalists, crowd funding etc. are available. The requirement starts increasing as the business progresses. Scaling of business requires timely infusion of capital. Proper cash management is critical for the success of the startups

Creating Awareness in Markets:

Startups fail due to lack of attention to limitations in the markets. The environment for a startup is usually more difficult than for an established firm due to uniqueness of the product. The situation is more difficult for a new product as the startup has to build everything from scratch.

Government Policies:

If entrepreneurs are the planets in the solar system, then the government is the sun, the single largest facilitator. The government policies are slowly and steadily increasing, although, it must be noted that India still maintains dismal ease of doing business ranking as per the World Bank report. Due to a maze of laws and regulations, it takes more of an effort for an entrepreneur to start a business in India than most of the other places in the world, and after he /she succeeds in setting up a business, it takes even a greater effort to comply with sector, department, state and center laws.

Benefits of Technology Startups

Technically sound population: India's position as the third-largest startup hub following the US and China is strongly backed by its rising tech-savvy English-speaking talent, meeting the IT sector's demand for superior communication skills. Growth of smaller cities: The Indian Tier 2 and Tier 3 cities have become the new and emerging loci of development for IT/IT companies. Cities like Jaipur and Ahmedabad are emerging as the new hubs and have experienced 40 per cent growth. Government-backed endeavors like The Digital India, Startup India campaigns, JAM Trinity, and Smart City Mission promote urban transformations of India's Tier 2 and 3 cities. Zinnov reports out of the 1,257 Global In-house Centers established by 976 MNCs, 68 are in Tier 2 cities. Government initiatives: The GOI is proactively supporting the growth of Indian startups through a slew of policies and campaigns like the Startup Leadership Program, Startup India Seed Fund, and ASPIRE, among others. The recent budget extended startup income tax benefits till March 2024 to boost the country's entrepreneurship environment. Extending the Daglocked benefits will also go a long way to provide ease of doing business, ensuring paperless administration.

Internet Connectivity: India has the second largest internet user base after China, thanks to the affordable data plans available. The 5G rollout will further increase the number of internet users and positively impact the Indian tech space. Startups working with AR, VR, AI, and IoT can introduce more advanced features with 5G connectivity. Though the rollout was initially slow, it is moving on hot wheels. Indigenous innovation: India's innovation capabilities are not new to the world, and one such was the UPI or Unified Payments Interface. Launched in 2016, the UPI proved favorably for the country's SMBs, simplifying transactions and eliminating costly point-of-sale devices. Its success is now crossing borders, piquing the interest of many nations.

Challenges exist in every sector, and the Indian startup ecosystem is no different. But despite the multiple challenges, there are ample opportunities in the industry that tip the scales in favour of the country's tech entrepreneurs. India has the required capabilities, a stable banking system, responsive administrative bodies, and a strong government supporting the country's startup dream– and in time, will be leading the global tech space.

Role of Tcehnology for Strtups

The Technology Is Moving Startups Beyond Conventional Tactics A Startup is a young company which seed money founded by one or more entrepreneurs to develop a unique product or service and bring it to market in the competitive spirit and which will also help customers to get product at lower price and to create a greater number of employment opportunities. The biggest can benefits of technology for daily business operations are the increase in flexibility so it will be useful in case of technology also. Technology has not only helped to improve the flexibility of a number of deadlines, but advancements such as a business call app can improve the flexibility of employees whilst reducing the need for a second phone. By its nature, the typical Startup tends to be a shoestring operation, with initial funding from the founders or their friends, families and Government. Technology and automation can help a business improve efficiencies across functions. From manufacturing to marketing, and ensure costly errors are prevented from happening. This in turn to business growth. Insights and Technology also prove valuable insights about the business. A Startup business a new business that is in the initial stages of operation, beginning to grow and is typically financed by an individual or small group of individuals. It is a young entrepreneurial, scalable business model built on technology and innovation. The technology affects a firm's ability to communicate with customers. Fast shipment options allow businesses to move products over a large geographic area. When customers use technology to interact with a business, the business benefits because better communication creates a stronger public image. In startups the role of technology is very important because of its scope of growth. The role of technology enables the Startup an idea that manifests into a commercial undertaking. Indian government is serious in promoting entrepreneurship at the Startup level and has taken a number of initiatives to ensure appropriate support easier, faster and more effective communication, better, more efficient manufacturing techniques, less wastage, more efficient stock management and ordering systems, the ability to develop new, innovative approaches, more effective marketing and promotion and new sales avenues. In this aspect it is relevant to mention 'Make in India' campaign introduced in September '14 to attract foreign

investments and encourage domestic companies to participate in the manufacturing sector. The government increased the foreign direct investment (FDI) limits for most of the sectors and strengthened intellectual property rights (IPRs) protection to instill confidence in the Startup in different business segment. In the case of startups technology has important effects on business operations. No matter the size of your enterprise, technology has both tangible and intangible benefits that will help you make money and produce the results your customers demand with the intervention of technology. Technological infrastructure affects the culture, efficiency and relationships of a Startup business.

Categories of the Best tech Startups

- Fintech startups
- Biotech startups
- Health tech startups
- Ed tech startups
- Insurtech startups
- Proptech startups
- Cleantech & Greentech startups

Conclusion

Present time's startups in India are witnessing a golden chapter in the history of Indian entrepreneurship. However, still the Indian government has a crucial role to play in positioning India as the Tech Garage of the World. It should act as a catalyst, and bring together the synergies of the private sector with the aim of innovating for India and the world. India had over 50,000 startups, with around 8,900–9,300 of these being technology-based. In 2019, alone, 1300 new tech startups were established, indicating that 2-3 new tech startups are founded every day. This adoption has enabled the growth of various sectors making it accessible for both the service providers and the consumers. Post-pandemic, one such sector is e-commerce which has witnessed massive growth both in terms of number of consumers and profit figures and all this has been possible only because of the tech adoption and digital transformation during the pandemic, especially during lockdown. Technology consulting is the process of advising businesses on how to best use technology and software to benefit their business. It can refer to the design and development, implementation, or management of new technology. Tech refresh is the cycle of regularly updating key elements of your IT infrastructure to maximize system performance. Instead of using systems until they can no longer function,

many companies choose to upgrade or replace certain infrastructure on a regular schedule.

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AN OVERVIEW OF WOMEN'S ENTREPRENEURSHIP

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Abstract

In today's modern era, women are shouldering the responsibilities with their male counterparts in all walks of life whether it is private sector or public sector, one can find growing of females in almost all sectors. In this context, the increasing numbers of women's in organization indicates that women must be recognized as active participant in the nation development process. From pastoral society to contemporary information and global society, the role of women has changed drastically. Still lots have to be done yet for aspiring women toward Entrepreneurship.

Keyword: Entrepreneur, Women, Empowerment, Financial initiatives.

Objective

- To examine the issues and challenges in the way of women entrepreneur.
- To analyze the available financial assistance and Government schemes for women entrepreneur.

Concept of Women Entrepreneurship

Women entrepreneurs are those women who conceive the idea of a business enterprise initiate it organize and combine the factors of production, operate the enterprise, undertake risks and manage the economic uncertainty involved in running a business enterprise. A women or a group of people who initiate, organize and run a business enterprise is defined as women entrepreneur. The government of India has defined women entrepreneur as an enterprise owned and controlled by a women having a minimum financial interest of 51% of the capital and fixing at least 51% of the employment generated in the enterprises to women.

Functions of Women Entrepreneurship

- Exploration of the prospects of starting a new business enterprise.
- Undertaking of risks and the handling of economic uncertainties involved in business.
- Introduction of innovation or imitation of innovations.
- Coordination, administration and control.
- Supervision and leadership.

Challenges faced by Women Entrepreneurs

Conflicts between Work and Domestic Commitments:

Women's family obligations also bar them from becoming successful entrepreneurs in both developed and developing nations. "Having primary responsibility for children, home and older dependent family members, few women can devote all their time and energies to their business"(Starcher, 1996)

Gender Gaps in Education

While women are making major strides in educational attainment at primary and secondary levels, they often lack the combination of education, vocational and technical skills, and work experience needed to support the development of highly productive businesses.

Lack of Finance

Access to finance is one of the most common challenges that entrepreneurs face and this is especially true for women who are further, impeded by lack of personal identification, lack of property in their own name and the need for their husband's countersignature on many documents.

Legal Constraints in Family Law

The institutional and legal environment is critical to the growth of female-owned enterprises. Laws regulating the private sphere specifically those regarding marriage, inheritance and land can hinder women's access to assets that can be used as collateral when securing a loan.

Heavy Household Responsibilities

Leave a demand on women especially those in rural areas who have more children. They are required to perform their traditional role as housewives and therefore, they have fewer hours of free time than men, both during the weekend and on weekdays. An ILO report on women entrepreneurship identifies the following problems faced by women entrepreneurs.

Lack of Family Support

Sometimes the family may make the women feel guilty of neglecting household duties in her pursuit of business obligations. Cultural traditions may hold back a woman from venturing into her own business.

Lack of Capital

Traditional sources of finance like banks are reluctant to lend to women entrepreneurs especially if they do not have any male or family backing. This is especially true of lower income females. Women do not have adequate finance or legal knowledge to start an enterprise.

Lack of Confidence and Faith

Lack of role models undermines the self confidence of women entrepreneurs. The activity of selling is considered abhorrent to the female gender.

Lack of right public/ private institutions

Most public and private incentives are misused and do not reach the woman unless she is backed by a man. Also many trade associations like ministries, chambers of commerce do not cater to women expecting women's organizations to do the necessary thing.

Problems of Women Entrepreneurships

- **Problems of Finance:**
Finance is regarded as life-blood for any enterprise, be it big or small.
- **Scarcity of Raw Material:**
Most of the women enterprises are plagued by the scarcity of raw material and necessary inputs.
- **Stiff Competition:**
Women entrepreneurs do not have organization set-up to pumps in a lot of money for canvassing and advertisement.
- **Limited Mobility:**
Women mobility in India is highly limited due to various reasons. A single women asking for room is still looked upon suspicion.
- **Family Ties:**
Support and approval of husbands seem necessary condition for women's entry into business.
- **Male Dominated Society:**
Women suffer from male reservation about a women's role, ability and capacity and are treated accordingly.
- **Low risk-bearing ability:**
Women in India idea a protected life. They are less educated and economically not self-dependent.

Role of Women Entrepreneurs

1. Infrastructure

Infrastructure set up plays a vital role for any enterprise. Government can set some priorities for women entrepreneurs for allocation of industrial plots, sheds and other amenities. However, precautionary measures should be undertaken to avoid the misuse of such facility by the men in the name of the women.

2. Personality Development

Attempts should be there to enhance the standards of education of women in general as well making effective provisions for their training, practical experience and personality development programmes, to improvise their over-all personality standards.

3. Self help groups of women entrepreneurs

Self help groups of women entrepreneurs can mobilize resources and pool capital funds to help the women in the field of industry, trade and commerce.

4. Business Development Training Programs

It includes basic day-to-day management training like how to keep track of accounts, handle taxes and understand compliance rules and regulations. They can also focus on strategy and the long-range success of a business from writing a business plan to targeting specific markets, along with product innovation within business clusters and incubators.

5. Access to Finance Programs

Efforts to facilitate access to finance for women entrepreneurs typically encompass initiatives that reform restrictive bank and regulatory policies. Such reforms accept less traditional forms of collateral, look at a lenders willingness to repay and simplify business registry. They also help financial institutions develop innovative loan and savings products for female entrepreneurs. To establish all India forums to discuss the problems, grievances, issues, and filing complaints against constraints or shortcomings towards the economic progress path of women entrepreneurs and giving suitable decisions .

Leadership Qualities

- Adventurous
- Driver
- Conscious
- Hard work

- Educated
- Motivations
- Determination to excel
- Skill full
- Experienced
- Industrious
- Intelligent
- Studious
- Perseverance
- Patience
- Unquenchable optimism
- Accept Challenges

Fostering Factors

- Motivational needs
- Economic necessity
- Independences
- Education and qualification
- Family occupation
- Success stories of friends of friends & relatives

Facilitating Needs

- Adequate financial facilities.
- Experienced and skilled people at work development training programs.
- Co-operation of family.

Conclusion

Entrepreneurship among women, no doubt improves the nation in general and of the family in particular. Women today are more willing to take up activities that once considered the preserve of men, and have proved that are second to no one with respect to contribution to the growth of the economy. Women entrepreneurship must be molded properly with entrepreneurial traits and skill to meet the changes in trends, challenges global markets and also is competent enough to sustain and strive for excellence in the entrepreneurial arena.

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VISION TO VICTORY; INDIA'S GLOBAL LEADERSHIP BY 2047

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Abstract

This paper examines India's global leadership in 2047, analyzing the impact of NEP 2020, Women Empowerment, Agriculture Reform, and Make in India. It explores how NEP 2020 fosters skilled individuals and innovation, while women empowerment initiatives drive social and economic progress. The agricultural reform enhances productivity and food security, and 'Make in India' campaign boosts industrial growth. This study sheds light on the interconnected effects of these policies, offering insights into India's rise as a global leader and emphasizing the significance of visionary reforms and empowerment for sustainable development.

Keywords: Empowering India's Journey to Global Leadership in 2047: A Comprehensive Analysis of NEP 2020, Women Empowerment, Agriculture Reform, and Make in India

Introduction

As India charts its path towards 2047, the centenary year of its independence, the nation's aspirations for global leadership have never been more resolute. This paper endeavors to examine the pivotal role played by key policy initiatives - the National Education Policy (NEP) 2020, Women Empowerment, Agriculture Reform, and Make in India - in propelling India towards its envisioned position on the global stage. Each of these transformative drivers brings unique dimensions to the country's journey, fostering inclusive growth, gender equality, agricultural sustainability, and industrial prowess.

Education – A True Driving Factor:

1. **Human Capital Development:** Education and NEP 2020 nurture skilled individuals, fostering creativity and critical thinking. A well-educated workforce drives economic growth and innovation, enhancing India's global competitiveness.
2. **Knowledge Economy:** NEP 2020 emphasizes research and innovation, positioning India as a leader in technology, science, and medicine. Leveraging

intellectual assets in a knowledge-driven world strengthens its global standing.

3. **Social Inclusivity and Equality:** NEP 2020 ensures equitable access to education, reducing disparities and empowering marginalized communities. Education uplifts all citizens, driving collective progress and social harmony.
4. **Global Collaborations:** A dynamic education system attracts international students and scholars, enhancing India's soft power and promoting cultural exchange. Global academic and research partnerships strengthen international ties.
5. **Sustainable Development:** NEP 2020 integrates environmental consciousness and sustainability into education, equipping future leaders to address global challenges responsibly. India's commitment to sustainable practices enhances its global leadership in sustainable development.
6. **Policy and Governance:** Education fosters an informed citizenry, enabling active participation in democratic processes and accountable governance. NEP 2020's focus on civic education cultivates responsible citizenship, reinforcing India's democratic foundations.

Education vs Knowledge

Education

1. **Formal Learning:** Education is a formalized process of acquiring knowledge and skills through structured instruction in institutions such as schools, colleges, and universities.
2. **Curriculum-driven:** It follows a predetermined curriculum designed to cover specific subjects and learning objectives, providing a systematic and organized approach to learning.
3. **Credentialed Recognition:** Successful completion of education often leads to the attainment of degrees, diplomas, or certificates, serving as formal credentials of the individual's educational achievements.

Knowledge

1. **Comprehensive Understanding:** Knowledge encompasses a broader spectrum of information and understanding acquired from various sources, including formal education, self-learning, experiences, and observations.
2. **Diverse Sources:** It can be gained through reading books, articles, engaging in discussions, practical experiences, exposure to different cultures, and more.
3. **Ongoing and Lifelong:** Knowledge acquisition is a continuous and lifelong process that extends beyond formal education, allowing individuals to keep learning and growing throughout their lives.

Education provides formalized learning with credentials, while knowledge encompasses continuous, diverse understanding from various sources and experiences.

Women Empowerment-Need of The Hour

“We Can’t Develop if half of us are held back” – Malala Yousafzi

1. Women empowerment has become a driving force in India's pursuit of global leadership.
2. India recognizes that empowering women is crucial for sustainable development and enhancing its global standing.
3. India has made significant progress in promoting women's rights and gender equality.
4. Legal reforms and policy initiatives have been implemented to empower women and create an enabling environment.
5. Women's education, economic participation, and representation in decision-making roles have increased.
6. Women's empowerment has positively impacted India's economy.
7. Increased access to education and employment opportunities has led to greater participation in various sectors.
8. Women's involvement has fueled economic growth and enhanced innovation and creativity.
9. Women's empowerment has contributed to reducing poverty and driving inclusive development.
10. Studies show that investing in women's economic empowerment leads to better outcomes for families and communities.

These highlight the significance of women's empowerment in India's global leadership vision and the various aspects where it has made a positive impact.

Agriculture Reform and its Need

Agriculture reform in India is a critical aspect of the country's pursuit of global leadership. As one of the world's largest agricultural economies, India's agricultural sector plays a significant role in ensuring food security for its vast population and contributing to the global food supply.

1. **Food Security:** India's agriculture sector feeds a massive population, and ensuring food security is crucial for national stability and prosperity. Agricultural reforms can enhance productivity, improve supply chains, and address distribution challenges to meet the food demands of a growing population.

2. **Sustainable Development:** With increasing environmental concerns and climate change impacts, India needs to adopt sustainable agricultural practices. Implementing eco-friendly techniques, promoting organic farming, and enhancing water management can lead to more sustainable agricultural growth.
3. **Modernization and Technology:** Embracing modern agricultural technologies and practices can significantly boost productivity and efficiency. India has the potential to become a leader in agricultural innovation, leveraging artificial intelligence, precision farming, and advanced machinery to optimize yields.
4. **Rural Development:** Agriculture is the backbone of rural India, and comprehensive reforms can lead to improved rural livelihoods. By enhancing infrastructure, providing better access to credit, and promoting value addition, India can empower rural communities and reduce rural-urban migration.

In conclusion, agriculture reform is essential for India's journey towards global leadership. By embracing sustainable practices, modern technologies, and inclusive policies, India can not only ensure its own food security but also make significant contributions to global food systems and sustainable development.

Make in India- The Transition

"Make in India" is a flagship initiative launched by the Indian government in 2014 to promote domestic manufacturing and attract foreign investment. This campaign has made significant contributions to India's development across various sectors. Here are some key areas where "Make in India" has positively impacted India's development:

1. **Boost to Manufacturing Sector:** "Make in India" has given a substantial boost to India's manufacturing sector, which is a vital component of economic growth and job creation. The initiative has encouraged both existing and new businesses to set up manufacturing units in India, leading to increased industrial production and diversification.
2. **Job Creation:** The growth of the manufacturing sector has resulted in the creation of millions of jobs across the country. This has been particularly beneficial for the youth and has contributed to the reduction of unemployment rates.
3. **Enhanced Infrastructure:** To support the growth of manufacturing and facilitate ease of doing business, the Indian government has invested heavily in improving infrastructure, such as transportation, logistics, and power.

supply. These developments have made India a more attractive destination for investment.

4. **FDI Inflows:** "Make in India" has been successful in attracting foreign direct investment (FDI) into the country. Many global companies have shown interest in setting up manufacturing facilities in India to cater to both the domestic and international markets.
5. **Promoting Innovation:** The initiative has encouraged indigenous innovation and research and development (R&D). Several companies have been incentivized to invest in R&D activities, leading to the development of new technologies and products.

In conclusion, "Make in India" has played a vital role in India's development by promoting manufacturing, job creation, infrastructure development, foreign investment, innovation, and export growth. The initiative continues to be a key driver of India's economic progress, contributing to its emergence as a global manufacturing hub and an attractive destination for investors.

Conclusion

Women empowerment, NEP 2020, agriculture reform, and Make in India collectively propel India's journey to global leadership by 2047. These initiatives foster inclusivity, education, modernization, and self-reliance, driving sustainable development and bolstering India's standing as a responsible and influential global leader.

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EMPOWERMENT OF WOMEN THROUGH SELF HELP GROUPS

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Abstract

Women participation in Self Help Groups have obviously created tremendous impact upon the life pattern and style of poor women and have empowered them at various levels not only as individuals but also as members of the family members of the community and the society as whole. They come together for the purpose of solving their common problems through self-help and mutual help. The more attractive scheme with less effort is "Self Help Group" (SHGs). It is a tool to remove poverty and improve the women entrepreneurship and financial support in India.

The concept of SHG services the principle, 'by the women, of the women and for the women'. Self-help groups are voluntary associations of people with common interests formed to achieve collective social and economic goals. Such groups are organized for mutual help and benefit. It is formed democratically without any political affiliations. Self-help groups (SHGs) is as an instrument to change the conditions of women socially and economically. Once socio-economic experiment is achieved it would have implication on the overall development of women. SHGs enable economic, social, political and psychological empowerment of women.

Keywords: *tremendous, poverty, entrepreneurship, associations, empowerment*

Introduction

Self Help Groups are considered as one of the most significant tools in participatory approach for the economic empowerment of women. It is an important institution for improving life of women on various social components. The basic objective of SHG is that it acts as the platform for members to provide space and support to each other. SHGs Comprises very poor people who do not have access to formal financial institutions. It enables its members to learn to cooperate and work in a group environment. Today, in India, Self Help Groups (SHGs) represent a unique approach to financial intermediation. This combines access to low-cost financial services with a process of self-management and development for the women who are SHG members. SHGs are formed and supported usually by Non - Governmental organizations by Government agencies.

SHG are seen to confer many benefits, both economic and social. SHGs are enable women to grow their savings and access the credit which banks are increasingly willing to lend. SHGs can also be community platform from which women become active in village affairs, stand for local election to take action to address social. In India before introduce this scheme for rural women were largely negligible. But in

recent years the most significant emerging system called Self Help Group is a major breakthrough in improving lives of womenfolk and alleviating rural poverty. However, the significant success of several SHGs show that the rural poor indeed efficient to manage credit and finance. Women participation in Self Help Groups have obviously created tremendous impact upon the life pattern and style of poor women and have empowered them at various levels not only as individuals but also as members of the family members of the community and the society as whole. They come together for the purpose of solving their common problems through self-help and mutual help. The more attractive scheme with less effort is "Self Help Group" (SHGs). It is a tool to remove poverty and improve the women entrepreneurship.

Types of Empowerments through SHGs

The term Empowerment refers to measures designed to increase the degree of autonomy and self-determination in people and in communities in order to enable them to represent their interests in a responsible and self-determined way, acting on their own authority. It is the process of becoming stronger and more confident, especially in controlling one's life and claiming one's rights. Empowerment as action refers both to the process of self-empowerment and to professional support of people, which enables them to overcome their sense of powerlessness and lack of influence, and to recognize and use their resources.

Economic Empowerment

"Economic empowerment" can be defined as the development of the ability of the historically disadvantaged to engage in economic activity that benefits both the individuals in question and the broader society. It is seen as a more productive and less costly way to help those who would otherwise remain dependent on the social welfare system. Welfare has its critics who contend that welfare removes the incentive to find employment while drawing excessively from the treasury. By empowering individuals to become economically or financially self-sufficient, they are removed from welfare payrolls and become more productive members of society. Economic empowerment is often applied to women who have been subject to discrimination in education and professional opportunities. These women are not necessarily economically disadvantaged, but they have been denied opportunities to become self-sufficient due to cultural or religious obstacles. In most instances, though, they do fall on the lower end of the socioeconomic spectrum. The economic contribution of women has been found to be related to her role and status in the society. The Self-help groups provide economic benefits to the women by providing income generating activities. Economic independence facilitates in bringing about

sexual equality and increase in women's income translates more directly into family wellbeing.

Social Empowerment

Self-help Groups improve the equality of status of women as participants, decision-makers and beneficiaries in the social, democratic, economic and cultural spheres of life. SHGs ensure the equality of status of women as participants, decision-makers and beneficiaries in the democratic, economic, social and cultural spheres of life. Social empowerment is indispensable to achieving quality of life for people with disabilities and it is both a continuous process as well as a result. Though social empowerment can be achieved through other areas of practice, such as inclusive education and socioeconomic integration, it is also a specific area of practice where tools, methods and approaches exist to facilitate social inclusion. Personalised social support is one specific and tailored approach to social inclusion where a person is accompanied to thrive in his/her personal situation and environment.

Political Empowerment

SHGs as active, articulate and organized citizenry act on a range of issues, holding the Panchayati accountable in terms of the use, production and distribution of public resources for the common public good. SHGs enable women to develop their communication skills to speak at the Gram Sabha, public meetings, etc. An SHG functions through its regular meetings, where members perform transactional activities and discuss over different related issues. Social mobilization through SHGs is inevitable for political empowerment.

Psychological Empowerment

Self-help groups enhance the equality of women as participants, decision-makers and beneficiaries in the democratic, economic, social and cultural spheres of life. The SHGs inculcate a great confidence in the minds of rural women to success in their day-today life.

Conclusion

Empowerment is not essential economic one alone; it is a process having personal, economic, social and political dimensions with personal empowerment being the core of the empowerment process. Women's participation in SHGS has altered the lives of many of them, and these women can be prospective leaders in the local political field. The basics of this change are empowerment, self-assurance, political consciousness and assertion of identity. With respect to the control of

resources, changes in behaviour and the decision-making reveals that many strides have been made in the right direction and women are in the process of empowering themselves.

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ROLE OF ENTREPRENEURSHIP IN PROMOTING RURAL WOMEN EMPOWERMENT

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Abstract

Women's entrepreneurship contributes to the economic well-being of the family and communities, reduces poverty, ensures country's economic growth and development. The empowerment of women to a large extent depends on taking part in some development activities. Therefore, the promotion of micro and small scale enterprises has been recognized as an important strategy for advancing the economic empowerment of women. However, it is seen that, the economic status of women is very low especially in rural areas and opportunities of earning are very less. In this scenario, the Self Help Groups (SHGs) are considered as institutional innovation that fosters empowerment of rural women. Therefore, the need for designing exclusive self-employed and other development programmers for promotion of women empowerment is essential. The present study aims at discussing some important aspects of women empowerment through micro entrepreneurship development and SHGs.

Keywords: *women entrepreneurship, SHG's, empowerment.*

Introduction

Entrepreneurship plays an eminent role in creating an employment opportunity for rural communities, providing self-employment for those who have started-up a business of their own and enhancing the economic status of the rural sector as well. Now women are also interested to establish their own business as professionally both in the urban and rural areas due to overcome poverty, generate family income and increasing standard of living. Entrepreneurship development and income generating activities are a feasible solution for empowering women who leads to economic independence, the opportunity to have control over their lives, self-reliance, self-determination, and a way to achieve for themselves.

Objective

The study has the following objectives:

- Know the role of SHG's in empowering women
- Know about micro enterprises for rural women & its areas of development
- Know the advantages of micro enterprise in building women empowerment
- Know the impact of entrepreneurship development in women empowerment

Scope of the Study

This study would be of great help to the implementing agencies to bring necessary improvements in the self-help groups for attaining the overall improvement of women. The knowledge on these aspects could be used to develop strategies to motivate self-help group members for their enhanced participation in the group. Further the study would highlight the role and importance of micro enterprises in women empowerment.

Methodology of the Study

Research design: The nature of the study is both exploratory and descriptive. It is exploratory as the study aims at identifying the significance of women empowerment through entrepreneurship.

Sources of data: The study is based on secondary data. The data is collected from books and literature review is done by online available studies and journals.

Self Help Group: The definition of SHG as approved by National Bank For Agriculture and Rural Development [NABARD] the apex banking body in India, is "An SHG is a small, economically homogeneous and affinity group of rural poor voluntarily formed to save and mutually agree to contribute common fund to be lent to its members as per group decision for their socio-economic development".

As the name indicates, self-help group is an informal group of about 15-20 people from a homogeneous class, who come together for addressing their common problems. The main aim of SHG is to make group members self-sufficient and self-reliant [independent] by self-employment and empowerment through group dynamics.

Role of SHG's in Empowering Women: Participation in income generating activities helps in the overall empowerment of women. The SHGs had major impact on social and economic life of rural women. It empowers women and trains them to take active part in the socio-economic progress of the nation and make them sensitized, self-made and self-disciplined. In this regard Pattanaik (2003) has stated that SHGs are continuously striving for a better future for rural women as participants, decision-makers and beneficiaries in the domestic, economic, social and cultural spheres of life. But due to certain constraints like gender inequality, exploitation, women torture, various SHGs is not organized properly and effectively. The SHGs have inculcated great confidence in the minds of rural women to succeed in their day-to-day life. The SHGs bring out the capacity of women in moulding the community in right perspective and explore the initiative of women in taking the entrepreneurial ventures.

Makandar&Mulla (2013) argued that women's participation in SHGs enabled them to discover inner strength, gain self-confidence, social, economic, political and psychological empowerment and capacity building. SHGs helps women come out in open and discuss their problems. SHGs also helps to bring about awareness among rural women about savings, education, health, environment, cleanliness, family welfare, social forestry, etc. again SHGs could be linked to literacy programmes run by government and it could be made an integral part of SHG activities. Raised literacy level could be helpful for the SHG members to overcome cognitive constraints and to understand government policies, technical understanding and gaining required skills.

Empowerment should be extremely induced so that women can exercise a level of autonomy. There should also be '**self-empowerment**' so that women can look at their own lives. The process of '**learning by doing and earning**' would certainly empower rural women. More and more rural women need to be involved in self-employment. Self-employment in agriculture, village and small industries and retail trade and services should be expanded. Self-employment is also conducive to the development of individual initiative and entrepreneurial talent and offers greater personal freedom. The added advantage is that the institution of family remains undisturbed. The emergence of self-help groups in this context is a welcome development. The groups would provide a permanent forum for articulating their needs and contributing their perspectives to development.

SHG should be developed as an institution for financial intermediation as well as people's network rather than a vehicle for credit disbursal only. SHG is able to overcome most of the practical problems encountered in the implementation of the various income generating programmes for the economic empowerment of women.

The possible outcomes of women's entrepreneur through SHGs at household level are self-employment, sustainable livelihoods, enhanced social dignity and better status of women. SHG would lead to benefits not only to the individual women and women's group but also for the family and community as a whole through collective action for development. Empowerment is not just for meeting their economic needs but also for more holistic social development.

Micro Enterprises for Rural Women and Its Areas of Development

Micro enterprises: The concept of micro enterprise and microfinance was pioneered in 1976 by Nobel Prize recipient Muhammad Yunus, founder of the Grameen Bank (Bank of the Poor), in Bangladesh. The enterprises from small scale to medium scale grouped together are called "Micro, Small and Medium Enterprises" (MSME). Microenterprises mainly focus on developing and utilizing the

entrepreneurial skills and potential of rural women below poverty line to meet local needs (Kaushik & Rengarajan, 2010). It helps to generate employment for a number of people within their own social system. This is more beneficial for women in rural areas as it enables them to add to the family income while taking care of their own home and livestock task. The micro entrepreneurship are strengthening the women empowerment and remove the gender inequalities.

Areas of Development: Depending on number of factors ranging from landholdings, subsidiary occupations, agro climatic conditions and socio-personal characteristics of the rural women and her family member the areas of micro-enterprises also differ from place to place. The micro enterprises are classified under three major heads:

- i. Micro-enterprise development related to agriculture and allied agricultural activities like cultivating to organic vegetables, flowers, oil seeds and seed production are some of the areas besides taking up mushroom growing and bee keeping. Some more areas can be like dehydration of fruits and vegetables, canning or bottling of pickles, chutneys, jams, squashes, dairy and other products that are ready to eat. This is common form of microenterprise in rural areas.
- ii. Micro-enterprise development related to livestock management activities like dairy farming, poultry farm, livestock feed production and production of vermicomposting using the animal waste can be an important area in which women can utilize both her technical skills and raw materials from the farm and livestock to earn substantial income and small scale agro-processing units.
- iii. Micro-enterprise development related to household based operations. It is generally handicraft related enterprises where women perform activities like knitting, stitching, weaving, embroidery etc.

Now Indian women entrepreneurs are showing their presence in different areas like herbal marketing, food processing, farming, dairying, making of handcrafted gift items, such as bangles, glass, utensils, by using wood, stone, and metals like bronze, iron& steel, making furniture with the help of cane and bamboo, statues of Indian deities, pots, vessels, other decorative pieces, making baskets from straw, tailoring & embroidery, carpet making and retailing, agarbatti / chalk / candle preparation, making of door mats, rope, jute bags/ baskets/ hats etc. Therefore, it can be said that entrepreneurship is an active, multidimensional process, which helps women to realize their full identity and power in all spheres of life.

Advantage of Micro Enterprise in Building Women Empowerment: Micro enterprises in rural area can help to empower women in rural areas. A micro enterprise is not only enhancing national productivity, generate employment but also helping to develop economic independence, personal and social capabilities among rural women. Following are some of the personal and social capabilities, which were developed as result of taking up enterprise among rural women:

- Economic freedom
- Improved standard of living
- Self confidence
- Increased social interaction
- Engaged in political activities
- Increased participation in social meetings
- Development in leadership qualities
- Involvement in solving problems related to women and community
- Decision making capacity in family and community

The rural women are having basic indigenous knowledge, skill, potential and resources to establish and manage enterprise. Therefore, promoting entrepreneurship through microenterprise approach has been recognized as the solution for incorporating women into the overall economic development process and enables eradicating the rural poverty in developing economies to a larger extent. Finally, we can say that economic empowerment of rural women through micro entrepreneurship led to the empowerment of women in so many things such as socio-economics opportunity, political participation and representation, social equality, personal right, family development, market development, community development, societal development, state development and at last development of the nation.

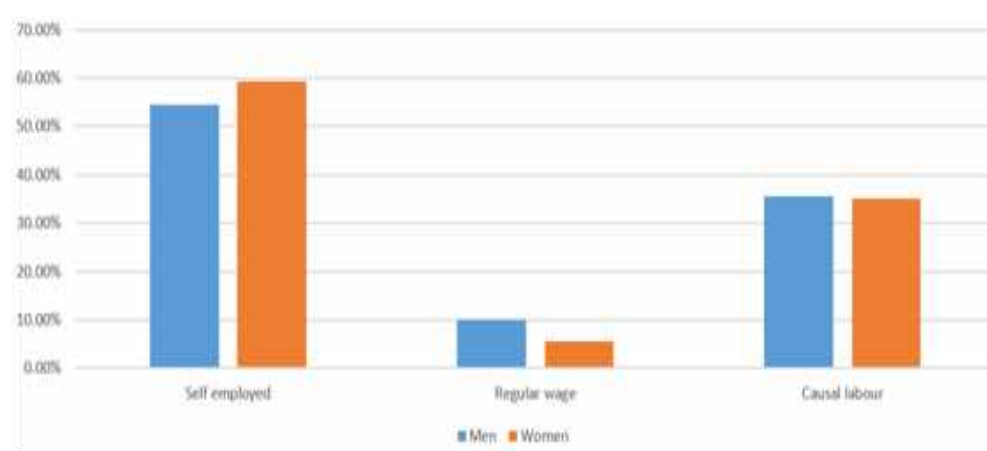
Women Empowerment through Entrepreneurship

Following are the impact of entrepreneurship development on women empowerment:

1. Through entrepreneurship development self confidence level of women are increased and gave them a prosperous future.
2. Rural women are engaged in small scale entrepreneurship programs with the help of SHG's by which they were economically empowered and attaining very good status in family and community.
3. Entrepreneurship also helps to bring about awareness among rural women about savings, education, health, environment, cleanliness, family welfare, social forestry etc.

4. Micro-enterprise is the best tool for rural women as it enables them to add to the family income and as such it provides family members to a better life style, including education for the children and improvement of family health.
5. Some aspects of household decision making are reported to have changed as a result of women's contribution in family income. Most of the men now consult with their wives in important family matters.
6. Promoting entrepreneurship through microenterprise approach enables eradicating the rural poverty in developing economies to a larger extent.

Gender wise Percentage of participation in Indian Rural Economy during year 2011-2012 is as under-



	Self employed	Regular wage	Causal labour
Men	54.50%	10.00%	35.50%
Women	59.30%	5.60%	35.10%

Source: Central Statistical Office as per National Sample Survey 68th round (2011-2012)

As per above graphical representation 59.30% rural women are self-employed while the ratio of male is only 54.50%, 5.60% rural women are engaged in regular wages while male candidates are 10.00% and casual labour comprise 35.10% of women and 35.50% of men in rural economy of India. As per result it makes us clear that interest of rural women is being increased towards the entrepreneurship in India.

Suggestions

Women entrepreneurs are contributing a lot in rural & economic development in India. However, it is potentially empowering and liberating only if it provides women an opportunity to improve their well-being and enhance their capabilities. Kumari, (2010) argued that lack of supportive network, financial and marketing

problems are the major problem areas for rural women entrepreneurs and major demotivator for other women to initiate entrepreneurial activity. Therefore, the following efforts can be taken into account for effective development of women entrepreneurs: -

- Various schemes & plans of government for the encouragement of women entrepreneurs should be strongly executed at different levels.
- Information should flow in right direction with the help of NGO's and government organizations about policies, plans and strategies on the development of women in the field of industry, trade and commerce.
- Interest free consumption credit for vulnerable women should be provided by the Government, Banks, financial institutions and wealthy individuals.
- Special training course should be offered for women entrepreneurs to improve skills.
- Provisions should be made for micro credit system and enterprise credit system to the women entrepreneurs.
- Special assistance is to be provided to specially disadvantaged groups like women in extreme poverty, women in conflict situations, women affected by natural calamities, the disabled widows, elderly women, single women in difficult circumstances, women those displaced from employment, migrants, women who are victim of material violence etc.

Conclusions

It can be said that today we are in a better position wherein women participation in the field of entrepreneurship is increasing at a considerable rate, efforts are being taken at the economy as well as global level to enhance women involvement in the enterprise sector. At present women have broken the monopoly of men and proved that they are not inferior to men. The SHGs and micro enterprises had major impact on social and economic life of rural women. The study concludes that there was an increase in self-confidence, self-reliance and independence of rural women due to the involvement in the entrepreneurial and other activities of SHGs. Now women entrepreneurs are aware of opportunities available to them, but there is scope for improvement in it. The economic status of the women is now accepted as an indicator of a societies stage of development and therefore it becomes imperative for the government to frame policies for development of entrepreneurship among women. Raised literacy level could be helpful for the SHG members to overcome cognitive constraints and to understand government policies, technical understanding and gaining required skills.

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GENDER EQUALITY AND WOMEN EMPOWERMENT IN INDIA

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Abstract

The term gender refers to the economic, social and cultural attributes and opportunities associated with being male or female. In most societies, being a man or a woman is not simply a matter of different biological and physical characteristics. This paper deals with importance of gender equality towards achieving the goal of women empowerment. It outlines the gender inequality scenario in India and types of inequalities between men and women. This paper sheds light on importance of gender equality and role of gender equality in women empowerment, gender concern in development and gender mainstreaming in development. This paper concludes with some interesting findings along with policy suggestions.

Keywords: Gender, Attributes, Empowerment, Inequality, Economic development etc.

Introduction

Gender equity is the process of being fair to women and men. To ensure fairness, strategies and measures must often be available to compensate for women's historical and social disadvantages that prevent women and men from otherwise operating on a level playing field. Equity leads to equality. Gender equality requires equal enjoyment by women and men of socially-valued goods, opportunities, resources and rewards. Where gender inequality exists, it is generally women who are excluded or disadvantaged in relation to decision-making and access to economic and social resources. Therefore a critical aspect of promoting gender equality is the empowerment of women, with a focus on identifying and redressing power imbalances and giving women more autonomy to manage their own lives. Gender equality does not mean that men and women become the same; only that access to opportunities and life changes is neither dependent on, nor constrained by, their sex. Achieving gender equality requires women's empowerment to ensure that decisionmaking at private and public levels and access to resources are no longer weighted in men's favour, so that both women and men can fully participate as equal partners in productive and reproductive life .

Review of Literature

An analysis of gender equality is very essential to understand the level of women empowerment in Indian society. According to Dijkstra and Hanmer (2000), gender inequality in India refers to health, education, economic and political inequalities between men and women in India.

As per the report by Tisdell, Roy and Ghose (2001), various international gender inequality indices rank India differently on each of these factors, as well as on a composite basis, and these indices are controversial. Gender inequalities, and its social causes, impact India's sex ratio, women's health over their lifetimes, their educational attainment, and economic conditions. Gender inequality in India is a multifaceted issue that concerns men and women alike. Some argue that some gender equality measures, place men at a disadvantage. However, when India's population is examined as a whole, women are at a disadvantage in several important ways.

Objectives

- To know the gender equality and women empowerment in india.
- To identify the key issues and linkages of women empowerment.

Research Methodology

Secondary data have been collected for this study from various websites, journals and e-books.

Empowering Women

Despite many international agreements affirming their human rights, women are still much more likely than men to be poor and illiterate. They usually have less access than men to medical care, property ownership, credit, training and employment. They are far less likely than men to be politically active and far more likely to be victims of domestic violence. The gender equality is need of the hour to prevent the violence against women. The ability of women to control their own fertility is absolutely fundamental to women's empowerment and equality. When a woman can plan her family, she can plan the rest of her life. When she is healthy, she can be more productive. And when her reproductive rights—including the right to decide the number, timing and spacing of her children, and to make decisions regarding reproduction free of discrimination, coercion and violence—are promoted and protected, she has freedom to participate more fully and equally in society.

Gender Equality and Women's Empowerment

Gender equality means a world where women and men in all aspects of life experience the same opportunities, results, freedom, and obligations. Gender equality happens when both sexes can participate equally in the allocation of power and influence; have equal opportunities for financial freedom through employment or the establishment of businesses; have equal access to education and the opportunity to develop personal ambitions. The empowerment of women is a vital component of fostering gender equality, with an emphasis on recognizing and redressing power imbalances and allowing women more flexibility to control their own lives.

The empowerment of women is necessary for sustainable development and the realization of human rights for all. Where the status of women is small, family size appears to be high, making it harder for families to thrive. Population and growth programs, reproductive health services are more successful when addressing women's educational opportunities, status and empowerment. Once women are empowered, it benefits whole families, and these benefits also have rippling effects on future generations. The positions that men and women play in society are not decided biologically and are socially determined, evolving and changeable. While they can be justified as involving culture or faith, these positions differ widely depending on the place and change over time.

Key Issues and Linkages

Reproductive Health:

Women, for both physiological and social reasons, are more vulnerable than men to reproductive health problems. Reproductive health problems, including maternal mortality and morbidity, represent a major – but preventable cause of death and disability for women in developing countries. Failure to provide information, services and conditions to help women protect their reproduction health therefore constitutes gender-based discrimination and a violation of women's rights to health and life.

Stewardship of Natural Resources

Women in India are generally responsible for obtaining water, food, and fuel and supervising the health and diet of their families. Therefore, they prefer to bring everything they know about nutrition into immediate action and protect the ecosystem and natural resources.

Economic Empowerment

In India, there is more poverty amongst women than men. Gender inequalities exist in part because most of the unpaid labor within families and societies fall on women's shoulders and because they face racial discrimination.

Educational Empowerment

Approximately two-thirds of India's illiterate adults are female. Higher educational rates for women are closely correlated with lower infant mortality and lower fertility, as well as higher educational and economic opportunities for their children

Political Empowerment

In fundamental civil and human rights, in access to or ownership of the land or other resources, in jobs and earnings and social and political participation, social and legal systems often do not guarantee women equality. Domestic abuse laws are still not followed on the women's behalf

Importance of Gender Equality

Gender equality is intrinsically linked to sustainable development and is vital to the realization of human rights for all. The gender equality is very essential to achieve the goal of women empowerment. The overall objective of gender equality is a society in which women and men enjoy the same opportunities, rights and obligations in all spheres of life. Equality between men and women exists when both sexes are able to share equally in the distribution of power and influence; have equal opportunities for financial independence through work or through setting up businesses; enjoy equal access to education and the opportunity to develop personal ambitions, interests and talents; share responsibility for the home and children and are completely free from coercion, intimidation and gender-based violence both at work and at home. Within the context of population and development programmes, gender equality is critical because it will enable women and men to make decisions that impact more positively on their own sexual and reproductive health as well as that of their spouses and families. Decision-making with regard to such issues as age at marriage, timing of births, use of contraception and recourse to harmful practices female genital cutting stands to be improved with the achievement of gender equality.

However it is important to acknowledge that where gender inequality exists, it is generally women who are excluded or disadvantaged in relation to decision-making and access to economic and social resources. Therefore a critical aspect of promoting gender equality is the empowerment of women, with a focus on identifying and

redressing power imbalances and giving women more autonomy to manage their own lives. This would enable them to make decisions and take actions to achieve and maintain their own reproductive and sexual health. Gender equality and women's empowerment do not mean that men and women become the same; only that access to opportunities and life changes is neither dependent on, nor constrained by, their sex.

The achievement of gender equality implies changes for both men and women. More equitable relationships will need to be based on a redefinition of the rights and responsibilities of women and men in all spheres of life, including the family, the workplace and the society at large. It is therefore crucial not to overlook gender as an aspect of men's social identity. This fact is, indeed, often overlooked, because the tendency is to consider male characteristics and attributes as the norm, and those of women as a variation of the norm.

But the lives of men are just as strongly influenced by gender as those of women. Societal norms and practices about "masculinity" and expectations of men as leaders, husbands or sons create demands on men and shape their behaviour. Men are too often expected to concentrate on the material needs of their families, rather than on the nurturing and caring roles assigned to women. Socialization in the family and later in schools promotes risk-taking behaviour among young men, and this is often reinforced through peer pressure and media stereotypes. So the lifestyles that men's roles demand often result in their being more exposed to greater risks of morbidity and mortality than women. These risks include ones relating to accidents, violence and alcohol consumption.

Men also have the right to assume a more nurturing role, and opportunities for them to do so should be promoted. Equally, however, men have responsibilities in regard to child health and to their own and their partners' sexual and reproductive health. Addressing these rights and responsibilities entails recognizing men's specific health problems, as well as their needs and the conditions that shape them. The adoption of a gender perspective is an important first step; it reveals that there are disadvantages and costs to men accruing from patterns of gender difference. It also underscores that gender equality is concerned not only with the roles, responsibilities and needs of women and men, but also with the interrelationships between them.

Conclusion

From the above discussion, it could be seen that gender equality is very important to achieving women's empowerment targets. It is noted that in India, women have been exposed to various forms of oppression and disabilities despite

the enjoyment of the developmental benefits arising from disempowerment. Therefore, women's advancement may be possible by gender achievement. Gender equality is very essential to achieve the goal of women empowerment. It is observed that women in India have been subjected to various types of discrimination and disabilities towards enjoyment of benefits of development consequent upon disempowerment. Hence the empowerment of women could be possible through attainment of gender equality. In order to promote gender equality in socio economic development, the following measures can be considered.

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3. Websites
4. Research Gate
5. Research scholar

ROLE OF ENTREPRENEURSHIP IN PROMOTING RURAL WOMEN EMPOWERMENT

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Abstract

Woman creates a family which leads to society and nation. The social and economic development of women is essential for the overall economic development to any society or country. Although entrepreneurship is in the mindset of any woman, it is not invested in India the way it should be. Although there are some exceptions, due to the changing environment, people are comfortable accepting the important role of women in our society. Entrepreneurial development of women is an essential part of human resource development. Any strategy aimed at economic growth without engaging women, who make up half of the world's population, will back fire. Evidence has unequivocally established that entrepreneurial spirit is not a male prerogative. Women-owned businesses are increasing rapidly in almost all economies. Women's latent entrepreneurial potential is gradually changing with growing sensitivity to role in society and economic status. Skill, knowledge and adaptability in business are the main reasons why women emerge in business ventures. The main objectives of the study are to find out the factors that contribute to the formation of female entrepreneurs. The study also highlights the major barriers and challenges faced by women entrepreneurs and the opportunities available to them. Finally the paper makes some commendations to increase or promote women entrepreneurship and healthy development of women entrepreneurship in India.

Keywords: Women Entrepreneurship, Role, Self-Fulfillment, Entrepreneurship Development.

Introduction

Women's empowerment is a social process in which women expand and recreate what it means to be in a previously denied situation. There are many principles that define women's empowerment, for one to be empowered; they must come from a position of disempowerment. Entrepreneur is the agent who buys means of production at certain prices, in order to sell at prices that are certain at the moment at which he commits himself to his cost". According to P.F Drucker "he is one who always searches for change: responds to it & exploits it as an opportunity". Hence, Entrepreneurship refers to the act of setting up a new business or reviving an existing business so as to take advantages from new opportunities. Women have

developed tremendously in their mentality. With increasing dependence on the service sector, many entrepreneurial opportunities have been created, especially for women, where they can enhance their skills while maintaining a balance in their lives.

Objectives

The study has the following objectives

- To understand the philosophy and concept of women empowerment and entrepreneur development in rural area.
- To identify the impact of entrepreneur development on women empowerment; and
- To suggests one possible solution for encouraging; developing; and improving the women empowerment in emerging economies.

Methodology

Given the nature of the present study, data had to be collected from secondary sources. The author was always mindful of the objectives of the study and collected data accordingly to achieve those objectives. Secondary data was collected from research studies, books, journals, newspapers and on going academic work papers. The collected data can be processed and analyzed to make the present study useful for the practitioners, researchers, planners, policymakers and educators of the concerned area.

Analysis and Findings

1. Empowerment

Empowerment means that people have power and control over their own lives. People get the support they need. Empowerment means that people are equal citizens. They are respected and trusted in their community. Empowerment as action refers to the process of self-empowerment and professional support of people to overcome their feelings of powerlessness and lack of influence, and to identify and use their resources. The term empowerment originates from American social psychology and is associated with social scientist Julian Rappaport (1981).[1] However, the roots of empowerment theory extend further into history and are linked to Marxist sociological theory. These sociological concepts are continuously developed and refined through neo-Marxist theory. Empowerment redistributes power from the powerful to the powerless. It is more than participation in decision making, it must also include the process that lead people to perceive themselves as able and entitled to make decisions (Prasad & Sahay, 2000). Empowerment must

involve undoing negative social construction, so that people come to see themselves as having the capacity and the right to act and influence decisions (Rowlands, 1997).

II. Entrepreneurship

Entrepreneurship is the creation or extraction of economic value. With this definition, entrepreneurship is viewed as change, generally entailing risk beyond what is normally encountered instarting a business, which may include other values than simply economic ones. An entrepreneur is an individual who creates and/or invests in one or more businesses, bearing most of the risks and enjoying most of the rewards. The process of setting up a business is known as entrepreneurship. The entrepreneuris commonly seen as an innovator, a source of new ideas, goods, services, and business/or procedures. More narrow definitions have described entrepreneurship as the process of designing, launching and running a new business, which is often similar to a small business, or as the "capacity and willingness to develop, organize and manage a business venture along with any of its risks to make a profit. The people who create these businesses are often referred to as entrepreneurs. While definitions of entrepreneurship typically focus on the launching and running of businesses, due to the high risks involved in launching a start-up, a significant proportion of start-up businesses have to close due to "lack of funding, bad business decisions, government policies, an economic crisis, lack of market demand, or a combination of all of these."

Characteristics of Entrepreneurship

Not all entrepreneurs are successful; there are definite characteristics that make entrepreneurship successful. A few of them are mentioned below:

- **Ability to take a risk:** Starting any new venture involves a considerable amount of failure risk. Therefore, an entrepreneur needs to be courageous and able to evaluate and take risks, which is an essential part of being an entrepreneur.
- **Innovation:** Its hould be highly innovative to generate new ideas, start a company and earn profits out of it. Change can be the launching of a new product that is new to the market or a process that does the same thing but in a more efficient and economical way.
- **Visionary and Leadership quality:** To be successful, the entrepreneur should have a clear visionof his new venture. However, to turn the idea into reality, a lot of resources and employees are required. Here, leadership quality is paramount because leaders impart and guide their employees towards the right path of success.

- **Open-Minded:** In a business, every circumstance can be an opportunity and used for the benefit of a company. For example, Paytm recognized the gravity of demonetization and acknowledged the need for online transactions would be more, so it utilized the situation and expanded massively during this time.
- **Flexible:** An entrepreneur should be flexible and open to change according to the situation. To be on the top, a business person should be equipped to embrace change in a product and service, as and when needed.

III. Empowerment of women through empowerment

In the early 1980s, the United Nations reported that women performed two-thirds of the world's work. The world's labor earned one-tenth of the world's income and owned one-hundredth World Economic Resources (Laois, 2000). A tool for women empowerment is self-employment or entrepreneurship. Why women choose self-employment or Entrepreneurship? In one study autonomy was rated highly as a means to gain Personal freedom. This level of autonomy offers opportunities to:

- (1) Be able to their Own Decisions
- (2) Able to do optional work
- (3) To reach Financial Independence

The impact of ED on Empowerment

1. Self- confidence of women

Increased self-confidence through entrepreneurship development for women a prosperous future.

2. Economic Solvency

Economic solution the most significant changes come from increases in income, not just upgrades the individual's life but increases her quality of life, the economy increases hardness within the family. Increase in her income also increase in family income and it provides better lifestyle including education to the family members improving child and family health.

3. Capital Building

Women economic success enables women to expand their business, procure new machinery, tools, accessories and relevant necessities. Modernization of the workplace, introduction of new technology for increase production, increase of labourers, along with the increase in purchasing power, upgrades their status both socially and economically.

4. Role of Status

Some aspects of household decision making are reported to have changed as a result of women's contribution in family income. Most of the men now consult with

their wives in important family matters. Their power of decision making has increased because they have money. Since women retain control over earnings, women can easily lend small and big amounts to business and others without asking for their husbands' permission. Since women perceive that their bargaining power within the family has increased as an indirect outcome of participating in the business. Women's status has changed in the family and society gradually.

Conclusion

Empowerment is scalable. Women develop their managerial skills and develop visions of growth that embrace strategic planning areas. Empowerment Women's economic independence leads to control over their lives, self-determination and self-fulfillment. Empowerment by Self-employment is associated with women's ability to gain control over economic resources and participate fully in the wealth building process. Empowerment leads to the self-fulfillment of knowing where women are headed.

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NATIONAL EDUCATION POLICY 2020

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Abstract

The New Education Policy announced by Government of India (NEP 2020) was a welcoming change and fresh news amidst all the negativities surrounding the world due to the challenges posed by Covid-19 pandemic. The announcement of NEP 2020 was purely unexpected by many. The changes that NEP 2020 has recommended were something that many educationists never saw coming. Though the education policy has impacted school and college education equally, this article mainly focuses on NEP 2020 and its impact on Higher Education. This paper also outlines the salient features of NEP and analyses how they affect the existing education system.

Keywords: NEP 2020, Features of NEP, Challenges

Introduction

The Ministry of Human Resource Development formed a Committee chaired by Dr K. Kasturirangan for preparing the National Education Policy. The Committee was constituted in June 2017. The Committee submitted its report on May 31, 2019. The National Policy on Education covers elementary and university education in urban as well as rural India. The very first policy for education was promulgated in 1968 with the second one following in 1986. The first NPE was based on the recommendations of the Education Commission (1964-66). This policy sought to have a 'radical restructuring' of India's educational system and equalizing opportunities for education for all, to accomplish national integration and better economic and cultural development. The NPE also called for realizing compulsory education for every child until the age of fourteen, as mentioned in the Indian Constitution. It also aimed at providing enhanced training and improving teachers' qualifications. Compare NEP 2020 with NEP 1991 in the linked article. Some relevant points from the official NEP 2020 PDF that can be useful for the UPSC Mains Exam: NEP 2020 is the 21st Century's first education policy in India. The development of the creative potential of each student is emphasized in the National Education Policy 2020.

The principles of National Education Policy 2020 as mentioned by the government are:

- Flexibility
- No hard separations between subjects, curricular and extra-curricular activities
- Multi-disciplinary education
- Conceptual understanding
- Critical thinking
- Ethical Values
- Teachers as the heart of the learning process
- The strong public education system

Implementation

The new education policy in 2020 came after 30 years and is all set to change the existing academic system of India with the purpose of making it at par with the international standard of academic. The Government of India aims to set up the NEP by the year 2040. Till the targeted year, the key point of the plan is to be implemented one by one. The proposed reform by NEP 2020 will come into effect by the collaboration of the Central and the State Government. Subject wise committees will be set up the GOI with both central and state-level ministries for discussing the implementation strategy

Features

The New Education Policy, popularly known as NEP, is being seen as designed to transform India into a global superpower. To this end, the policy heralds a big shift in the overall approach to education. Released by the Ministry of HRD on July 29th, 2020, the policy replaces the old Education policy that was formulated in 1986 & thereafter underwent revisions in 1992 & 1998. A major change in India's education system, the big focus area of the New Education Policy is to ensure that education is more inclusive and accessible to all. The key pillars of the new policy include:

- Access
- Equity
- Quality
- Affordability
- Accountability

Features of the Policy

- The policy has a clear focus on offering quality and affordable education to all in the age group of 3 to 18 years.
- It marks a major shift from rote learning to multi-disciplinary, holistic education. The focus, therefore, will not be on how much information students can memorize & reproduce, but on how they can use the information to solve real-world problems.
- Importantly the NEP has a great focus on the development of critical 21st-century skills that would stand in good stead to the soon-to-be citizens of the world and will prepare them for the challenges & opportunities of the 21st century.
- It marks a transition from the 10+2 education structure to a 5+3+3+4 system.
- A new curriculum for early childhood care and education, referred to as ECCE, aims at providing high-quality education to children between the age of 3-6 that brings about their physical, social, emotional as well as cognitive development.
- The policy provides for an interdisciplinary college education that has flexible study plans.
- Enough & more reports have highlighted the employability gap in India where graduates lack the necessary skills to make them valuable to employers. The new policy, therefore, lays emphasis on vocational & technical education right from the school level so as to bridge the gap.
- Importantly, with NEP a shift is envisaged from summative assessment to regular and formative assessment. These assessments are competence-based and test higher-order skills. The board exams for grades 10 & 12 however will continue although they will be redesigned to be in sync with the overall aim of the NEP as the child's holistic development.
- The focus of the policy is on a three-language formula, wherein students will learn three languages in their school. At least two of the three languages should be native to India. In fact, the policy has emphasized the mother tongue/local language/regional language being the medium of instruction at least till Grade 5, but preferably till Grade 8 and beyond.
- There is a marked focus on improving the quality of teaching as seen in professional development programs for teachers as also scientific eligibility tests.
- A key goal of the new policy is to promote research & innovation. In fact, NEP aims to increase the Gross Enrollment Ratio in higher education to 50% by 2035.

- A big emphasis of the new policy is on the usage of technology in order to improve accessibility.
- The policy also provides for the setting up the National Higher Education Regulatory Authority (NHERA) which will regulate all institutions offering higher education. NHERA will ensure quality accreditation, promoting research & innovation, among other things. Along with the National accreditation board, NHERA will also work to ensure the accreditation of higher education institutions.
- PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development) will be set up as a standard-setting body.
- An autonomous body, the National Educational Technology Forum, will be set up to facilitate the use of technology to enhance learning.
- The policy aims to achieve 100% youth & adult literacy.
- Under the policy, the center and the states will work together to ensure that public investment in the education sector reaches 6% of the GDP.

Global Education

Under NEP foreign universities can set up their campus in India. This will lead to improved access to a world-class education. A set of rules has already been released under which such campuses can be set up. In fact, we have already heard of some announcements of intent from foreign universities to make an entry into India. Even other than foreign universities coming to India, NEP is making possible the ability of students to select multi-disciplinary subjects as opposed to being restricted by watertight compartments of science, arts & humanities.

NEP 2020 Major Changes

The new policy was created based on the suggestions of a panel led by former Indian Space Research Organisation (ISRO) director Mr. K Kasturirangan, who in May 2019 sent the draught of the new policy to the minister of human resource development, Mr. Ramesh Pokhriyal “Nishank.”

The Ministry received almost two lakh comments and ideas about the draught policy. The Ministry of Education will now be known as the Ministry of Human Resource Development, as agreed by the Union Cabinet.

School Education

NEP 2020 ensures universal access to education from pre-school to secondary level. The government supports infrastructure and innovation centers to reintegrate dropouts. It monitors student progress, offers diverse learning pathways, and establishes counseling associations. Open learning is available for grades 3, 5, and 8

via NIOS and State Open Schools. The plan includes secondary education programs, vocational courses, adult literacy, and life-enrichment programs.

Early Childhood Care and Education with new Curricular and Pedagogical Structure

The school curriculum structure will change from 10+2 to 5+3+3+4, corresponding to ages 3-8, 8-11, 11-14, and 14-18 years. The policy recognizes the crucial development years of 3-6 and includes them in the school curriculum. The new system will provide 12 years of schooling, including three years of pre-schooling or Anganwadi.

A framework for early childhood education (NCPFECCE) for kids up to age 8 will be created by the National Council of Educational Research and Training (NCERT). The Ministries of HRD, Women and Child Development, Health and Family Welfare, and Tribal Affairs will work together to accomplish this plan.

Attaining Foundational Literacy and Numeracy

MHRD will set up a National Mission on Foundational Literacy and Numeracy for achieving universal foundational literacy and numeracy in all primary schools for all learners from grade 3 to higher level by 2025.

Reforms in school curricula and pedagogy

School curricula and pedagogy will change to enhance essential learning, critical thinking, and experiential learning. Students will have more flexibility and subject choices, reducing gaps between arts and sciences, curricular and extra-curricular activities, and vocational and academic streams.

From 6th grade, students will receive vocational education and participate in 10-day internship programs. NCERT will develop the comprehensive National Curricular Framework for School Education (NCFSE) 2020-21.

Multilingualism and the power of language

Mother tongues and regional languages are prioritised as a medium of instruction under NEP 2020, at least up to Grade 5, but ideally up to Grade 8 and beyond. No one will make the students speak a foreign language. The national curriculum resources for use by students with hearing impairment and with ISL will be prepared in accordance with the standardisation of Indian Sign Language (ISL) across the nation.

Assessment Reforms

NEP 2020 emphasizes testing higher-order skills through learning-oriented assessments. School exams will be conducted in Grades 3, 5, and 8, while the Class 10 and 12 board exams will be redesigned for holistic development. A new national assessment center called PARAKH will be established.

Equitable and Inclusive Education

The policy prioritizes Socially and Economically Disadvantaged Groups (SEDGs), including gender, socio-cultural, geographical identities, and disabilities. It establishes a Gender Inclusion Fund and Special Education Zones for disadvantaged regions and groups. Children with disabilities will receive support throughout

The Advantage of New Education Policy 2020

- The Government aims to make schooling available to everyone with the help of NEP 2020.
- Approximately two crore school students will be able to come back to educational institutes through this new approach.
- According to the national education policy 2020, the 5+3+3+4 structure will replace the existing 10+2 structure. This structure is focused on student's formative years of learning. This 5+3+3+4 structure corresponds to ages from 3 to 8, 8 to 11, 11 to 14 and 14 to 18. 12 years of schooling, 3 years of Anganwadi and pre-schooling are included in this structure.
- For children up to the age of 8, a National Curricular and Pedagogical Framework for Early Childhood Care and Education will be designed and developed by NCERT.
- According to the national education policy 2020, the Education Ministry is to set up a National Mission on Foundational Literacy and Numeracy. The responsibility for successful implementation for achieving the foundation of numeracy and literacy for all students till class three falls upon the states of India. This implementation is scheduled to be done by 2025.
- One of the merits of NEP 2020 is the formation of the National Book promotion Policy in India.
- Appropriate authorities will conduct the school examinations for grades 3, 5 and 8. The board exams for grades 10 and 12 will continue but the NEP 2020 aims to re-design the structure with holistic development.
- Parakh national education policy is to be set up by the Government.

- Special daytime boarding school “BalBhavans” to be established in every state/ district in India. This boarding school will be used for participation in activities related to play, career, art.

Drawbacks

- In the National Education Policy 2020, language is a negative factor as there is a problematic teacher to student ratio in India, thus introducing mother languages for each subject in academic institutes is a problem. Sometimes, finding a competent teacher becomes a problem and now another challenge comes with the introduction of the NEP 2020, which is bringing study material in mother language.
- According to the national education policy 2020, students willing to complete their graduation have to study for four years while one can easily complete his/ her diploma degree in two years. This might encourage the pupil to leave the course midway.
- According to the national education policy 2020, students of the private schools will be introduced to English at a much earlier age than the students of the Government schools. The academic syllabus will be taught in the respective regional languages of the Government school students. This is one of the major new education policy drawbacks as this will increase the number of students uncomfortable in communicating in English thus widening the gap between sections of the societies

Conclusion

The National Education Policy is a comprehensive set of guidelines and recommendations for the Indian education system. It aims to make education more inclusive, relevant, and engaging for all students, and to foster the development of critical thinking and problem-solving skills. By implementing these recommendations, the NEP aims to ensure that all students have the opportunity to receive a high-quality education and reach their full potential. In conclusion, the New Education Policy represents a major shift in the way education is delivered in India, and it has the potential to bring significant benefits to the education system. Though it has faced a lot of criticism from students as well as educators and learners who are in the mid of the course which will no longer be considered a degree (like an M.Phil). However, its success will depend on effective implementation and adequate resources, and it will require continued effort and commitment from the government, educators, and the wider community.

WOMEN ENTREPRENEURSHIP

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Abstract

The concept of women entrepreneurs has gained traction globally, reflecting their growing presence and contributions in various sectors. Women entrepreneurs are individuals or groups of women who initiate, manage, and lead business ventures. While facing challenges such as financial constraints, marketing barriers, and self-confidence issues, women entrepreneurs are receiving increased support from both family and governments. Their role in economies, particularly in emerging nations like India, is significant, fostering economic growth and enhancing personal empowerment. Through initiatives like self-help groups, women entrepreneurs are forging pathways to economic independence and societal progress.

Keywords: Women entrepreneurship, Challenges, Government schemes.

Introduction

Women entrepreneurs can be defined as women or groups of women who start, organize and manage a business. The Government of India has defined women entrepreneurs based on the participation and employment of women in the business enterprise. They are often excellent communicators and able to inspire others. Successful women entrepreneurs have many characteristics. They are passionate about their business, have a strong work ethic, are good at networking and building relationships, and are constantly learning and developing.

Features of Women Entrepreneur

- 1. Women are great at multitasking:** Women are great at multitasking. They can juggle multiple tasks at once and still get things done efficiently. This is a valuable skill in the business world, where there are often many balls in the air at any given time. Women are also better at multitasking than men. This is because women can multitask without being overwhelmed. This allows them to do more in less time, making them more productive overall.
- 2. Women have better people skills:** One of the reasons why women entrepreneurs are actually better than men is that they have better people skills. Women are generally better at interpersonal relationships and networking than men. They are also better at communication and negotiation. This gives them an advantage

in building partnerships and securing funding. Another reason why women entrepreneurs are better than men is that they are risk takers. This means they are less likely to take unnecessary risks that could put their business at risk. Instead, they are likely to carefully consider all options before making a decision. This cautious approach can lead to more successful businesses in the long run. In general, there are many reasons why women entrepreneurs are better than men. The skills of these people and the risk-averse nature give them a distinct advantage in the business world.

3. **Women are more detail oriented:** One of the reasons why women entrepreneurs are better than men is that they are more detail oriented. Women tend to pay attention to small details that can **have a big impact on** the success of a business. They are also more likely to plan and prepare for **unexpected situations**. This attention to detail ensures that businesses run smoothly and efficiently. Women **tend to be more detail oriented** than men. They notice things that men **might miss** and are good at planning and organizing. This attention to detail can be a **huge advantage** in business.
4. **Women are better at networking:** Women are also good at networking. There are many reasons why women entrepreneurs are actually better than men. One of the main reasons is that women are better at networking. Women have been shown to be better at building relationships and interacting with other people. This is an important skill for entrepreneurs who need a network to succeed. Women are also more likely to ask for help when they need it, which can make them more successful in the long run. They have the ability to build strong relationships with other people that can prove useful in business. These relationships can lead to new opportunities and help women entrepreneurs move forward.

Challenges Faced by Women Entrepreneurs:

According to the World Economic Forum, India's gender equality ratio has improved slightly, although it remains low according to the Global Gender Gap Report, with economic conditions widening the gender equality gap across all sectors. Let's take a closer look at specific areas where women need work.

Limited Finance

According to a 2022 IFC report, about 90 percent of women entrepreneurs in India have not taken a loan from a formal financial institution. In addition, while 53 percent of male entrepreneurs lacked financing at the end of 2020, the number of women's businesses was up to 72 percent. In India, women receive credit for only

27% of deposits, while men receive credit for 52% of deposits. This difference may be due to the fact that financial institutions do not extend credit equally to women.

Access to Professional Networks

Another major problem faced by women entrepreneurs in India is the lack of access to professional networks. According to a Google-Bain survey, 49% of respondents feel that there is a lack of professional support because they are not connected to formal and informal networks.

Family Duties

Indian women should be housewives irrespective of their role in office or company. Juggling the roles, they are expected to be effective in both. It's time for women to start addressing these shortcomings and stop playing superwomen who end up threatening their bottom line.

Lack of Training

A large proportion of female entrepreneurs (44%) say that the lack of structured knowledge and skills is a significant barrier to expansion.

Government Schemes for Women Entrepreneurs

- **Mudra Yojana Scheme:**

The Mudra Loan Program is an initiative of the Government of India to promote entrepreneurship and provide financial support to micro and small businesses. The program focuses mainly on female entrepreneurs, as it aims to strengthen and promote female entrepreneurship in the country. Mudra loans for women are also available on easy terms and no collateral is required for loans up to Rs 10,000. The scheme also offers lower interest rates for women entrepreneurs, making it a viable option for those looking to start or expand their business.

- **Stand-Up India Scheme:**

The Stand-Up India scheme is a government program aimed at promoting entrepreneurship among women and other marginalized communities. It provides bank loans to at least one Scheduled Caste (SC) or Scheduled Tribe borrower and at least one woman per bank branch for setting up a new business. In non-private companies, SC/ST or women entrepreneurs must have at least 51% shareholding and majority shareholding. Under this scheme, women entrepreneurs can get a loan of ₹ 10,000 to ₹ 100,000 to start or expand a small business.

- **Mahila Coir Yojana**

Mahila Coir Yojana (MCY) intends to empower women by providing spinning equipment at reduced prices following proper skill development training. Under this scheme, women entrepreneurs can get a subsidy of up to 75% of the cost of equipment and machinery for coir processing. The scheme also provides a margin money subsidy of up to 25% of the project cost. The scheme is available to rural women artisans who are above 18 years of age and has completed a training programme in coir yarn spinning at any of the Coir Board's training institutes.

- **Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE):**

The Small Industries Development Bank of India (SIDBI) and the Ministry of MSME has launched an initiative to provide unbiased financing to micro and small enterprises. The scheme is open to both existing and new enterprises under which Credit Guarantee Fund for Micro and Small Enterprises (CGTMSE) has been set up to provide credit facilities up to ₹ 200 per guaranteed borrower, renewable as per project viability without collateral or third party guarantee. The extent of guarantee protection for micro and small businesses managed and/or owned by women is 85%; while other borrowers get up to 75 percent.

- **Udyam Shakti:**

It was launched by the Ministry of MSME to promote social entrepreneurship by creating affordable products and services. It offers help with business planning, incubators, training programs, mentoring, market research and more. Projects costing up to Rs 25 lakh are eligible for the scheme, with Rs 10 lakh earmarked specifically for service-based projects. The initiative's online portal has played an important role in empowering women outside the home.

- **Trade-Related Entrepreneurship Assistance and Development (TREAD):**

This initiative aims to increase the economic empowerment of women, among other things, by providing funding (through NGOs), training, development and consultancy, expanding their businesses, goods and services. Non-governmental organizations receive support from the Government of India (GoI) up to 30% of the total project cost as determined by the lending agency to promote entrepreneurship among the target groups of women. The remaining 70% of the project costs are financed by the lender as a loan for the implementation of the activities outlined in the project.

- **Economic empowerment of women enterprises and start-up by women:**

It is a program of the Ministry of Skill Development and Entrepreneurship that provides an incubation and acceleration program for women micro-entrepreneurs to start new businesses and expand existing businesses. The initiative is now operational in the states of Assam, Rajasthan and Telangana.

Need of Women Entrepreneur

In India's economy, ladies business visionaries are developing more significant, and their commitments ought not to be underestimated. These female business people assume a vital part in the Indian economy and fundamentally affect it by creating work, speeding up improvement, and encouraging thriving. According to late figures, ladies contain 14% of the complete business visionaries in India, which works out to 8 million. Likewise, 10% of all proper ventures are claimed by ladies.

Around 20.37 percent of the MSME business in India is comprised of ladies drove organizations, which likewise utilize around 23.3 percent of the work populace. Somewhere in the range of 13.5 and 15.7 million organizations are possessed by ladies, who likewise recruit somewhere in the range of 22 and 27 million people. They are considered the monetary groundwork of India. Not exclusively can ladies' business valuable open doors be extended, yet in addition the kind of working two movements each week for ladies can be decreased. All areas of regulation should take on the 3Rs approach, which includes Perceiving, Diminishing, and Reallocating neglected care work given by ladies.

The consideration of ladies in the labor force has made positions and helped large number of families in getting away from dejection. Due to their prevalent initiative capacities and more elevated levels of result, ladies prevail in trendy areas where they make up a sizable part of the labor force. This hard working attitude and excellent business discernment have likewise featured the meaning of ladies in the contemporary labor force.

Growth of Women Entrepreneurs in India

In India, in light of culture and customs, ladies should perform family exercises and deal with family in view of these reasons ladies business is exceptionally low. Be that as it may, due to the broad of training and social mindfulness during most recent thirty years now ladies are showing interest in beginning their own endeavor. Subsequently there is an impressive development of ladies business people.

Eg:-Mujumdar Shaw of Biochem, ShahanajHusana, MahilakhadiUdyog.

Presently a day's in Indian ladies will acknowledge demands and take on obligation in monetary social, political gathering. For the most part, they connect

with them in minuscule or little bungalow businesses however ongoing review show ladies have been beginning endeavors in all the area comparable to male.

Online Selling:

Web based selling is another central point that has helped the ascent of ladies business visionaries in India. Today, a lady can sell items right from home or can without much of a stretch send items anyplace the nation over or even around the world. They just have to set up an internet business site to feature and begin selling items. Internet selling has made it simple for ladies to fix up a business from the home.

Social Media:

Beforehand, the promoting of a business was one of the significant obstacles looked by all business visionaries. Be that as it may, today there are interpersonal organizations like Instagram, Facebook, LinkedIn, and others to advance and spread data about your items without any problem. With web-based entertainment organizing, the business can end up in a good place. For this reason web-based entertainment networks are one of the greatest assistance for ladies business visionaries in India.

Digital Lending:

The absence of capital is perhaps of the greatest obstacle ladies needed to look while setting up a business. Conventional approaches to loaning were severe in loaning business cash-flow to ladies. They need an underwriter and put numerous different circumstances. In any case, with the ascent of computerized loaning stages getting a business credit for ladies has become simple. Today, a lady need not hang tight for monetary help from her relatives or banks. She can undoubtedly get the capital from a computerized loan specialist to begin her endeavor, with negligible holding up time.

Not Considered as Leaders:

Ladies claimed organizations by and large need perceivability in administrative roles. It has been seen that most ladies business visionaries are in essential administrative roles in secretly held or family-claimed firms. They are not viewed as pioneers and won't get better open doors for authority in worldwide or public corporations.

Conclusion

The global rise of women's entrepreneurship is evident, with women making significant economic contributions. Female-led businesses are a robust path for women to showcase their capabilities. Encouraging emerging women entrepreneurs is crucial for rapid economic development. In India, where gender norms have traditionally favored men, women are gradually becoming less economically and socially reliant on males. While women entrepreneurs face challenges in finance, marketing, health, and family roles, family and government support has improved their conditions, reducing the number of those facing issues. Although some still grapple with financial constraints, marketing hurdles, self-confidence, and information gaps, the overall landscape is changing. Women's entrepreneurship, a recent phenomenon, holds potential, especially in emerging economies like India. Women entrepreneurs, those initiating and managing businesses, contribute significantly to the economy. Their growth enhances personal capacities and elevates roles in families and society. Engaging in income-generation programs through self-help groups empowers women, particularly in rural areas.

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ROLE OF TECHNOLOGY IN NEP 2020 (INTEGRATION OF TECHNOLOGY: A KEY FACTOR OF NEP 2020)

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Abstract

The country finally gets a new education strategy after 34 years thanks to the Union Cabinet's ratification of National Education strategy 2020. The NEP 2020 places a lot of focus on integrating technology because it can be a key role in fostering a development that is all-encompassing. In 2020, regional languages will receive further attention when E-courses are created in them. Additionally, virtual labs will be created. It is important to note that a National Educational Technology Forum (NETF) is also being established at this time. The NEP-2020 initiative is a ground-breaking step toward improving the educational system. Things are available thanks to technology, which has permeated practically every aspect of existence. Likewise, there is a rising demand for the educational sector to adopt technology. Constructive measures are being made toward its implementation, and NEP 2020 has cleared the way for it by putting forward numerous suggested digital platforms. We shall attempt to examine all of the policy's facets in this essay, with a particular emphasis on technology and its application.

Keywords: National Education Policy 2020, Technology, Multilingualism, Accessibility, ICT.

Introduction

The NEP 2020 initiative is regarded as a breakthrough step in improving education. The policy's main issue is how to use technology effectively in teaching and learning. The policy also places a strong emphasis on multilingualism in an effort to break down linguistic barriers. Access is made possible by technology, which also helps with management and planning of education. The National Education Policy, which emphasizes the learner, attempts to restructure education with the specific goal of meeting the demands of this globalized society. The National Education Policy 2020 is divided into four sections: school education (which is part I), higher education (which is part II), promotion of Indian languages, adult education, and online education (which is part 3), and policy implementation (which is part IV). The shared goal is to promote the learners' entire development while ensuring their basic education.

It provides a wide range of takeaways that will assist the stakeholders in furthering their creative contributions to society.

The policy calls for curriculum changes, digital infrastructure improvements, the development of solid and applicable fundamental skills, and a move from the conventional evaluation system in order to achieve this beneficial transformation. Both secondary and higher level vocational programs are included under the policy. Technology enabled virtual learning during the pandemic, enabling teaching and learning. The need for change in the educational system was overwhelming. New opportunities became available with the adoption of the new national education policy. It is fair to say that technology will play a significant role in helping India become “self-reliant,” given the efforts that have been made in this direction.

The goal is to foster learners’ creativity and empower them to imagine and produce. With the use of technology in the classroom, this can be successfully accomplished. The policy intends to enhance the quality of learning.

We’ll attempt to cover the major NEP 2020 components for higher education in this study, as well as the part technology plays in putting the new policy into practice. We will also talk about how technology is used in higher education and how it is integrated into the curriculum.

Five Pillars of NEP 2020:

The five pillars of NEP 2020—affordability, accessibility, quality, equity, and accountability—form the foundation of the initiative. NEP 2020 guarantees pupils’ entire holistic development in addition to lifelong learning.

With a choice-based education, students’ learning would be flexible and they will be allowed to pursue their interests.

Another fantastic strategy that will make transfers between institutions easier is the bank of credit. The ability to store academic credits will be beneficial to the pupils. In addition to this, funding for infrastructure and cutting-edge educational facilities are prioritized. NEP 2020 also supports several learning paths.

The necessity of the hour is to develop an ICT-literate community and to offer free access to ICT resources. Additionally, there is a critical need to inspire a larger group of educators to use ICTs to improve the educational system. In the next ten years, the new educational policy wants all instructors to have received their full training. The policy aims to have professionally developed and trained teachers by the year 2030.

Higher Education

- NEP-2020’s emphasis on multidisciplinary courses has significantly altered higher education. By guaranteeing ongoing learning, NEP-2020 focuses on

preparing the next generation to meet the challenges of a globalized society. The multidisciplinary institutions will open the door for the new and multifaceted abilities that are in demand.

- Lifelong learning possibilities are guaranteed by NEP-2020. The changes in primary and higher education that will increase access to work prospects are welcomed by the New Education Policy. The New Education Policy includes a number of crucial measures that will help students compete in the digital age. Problem-solving skills, multidisciplinary thinking, and digital literacy have all been emphasized. The goal is to help the students develop their whole personalities.
- Another area of emphasis in NEP 2020 is raising the Gross Enrolment Ratio (GER). By 2030, the goal is to increase it from 26% to 50% in the higher education system. The likelihood of greater accessibility to all is increased by increasing the usage of technology in the educational setting. Multiple exit points and a flexible curriculum are further features of the New Education Policy.
- In order to meet international quality standards, a number of areas will be prioritized, including Indian languages, yoga, the arts, music, history, culture, social sciences, and many more. This is indicated by the establishment of the National Research Foundation (NRF).
- Another notable development is the establishment of the Higher Education Commission of India (HECI) for all higher education. In order to implement the recommendations made by NEP, the Higher Education Council of India (HECI) would create a number of verticals.
- Accreditation, finance, and the establishment of academic standards will all be handled by separate verticals under the HECI, which would function as a single regulator. The University Grants Commission (UGC) and the All India Council for Technical Education (AICTE) will eventually be replaced by these regulatory agencies.
- There would be a “accreditation” carried out by an unbiased organization. The certification will make it easier for recognized institutions to offer online and open distance learning (ODL) programs. These programs will broaden the range of what they have to offer, make it easier to get in, increase GER, and create chances for lifetime learning.
- This accreditation program was created by the National Accreditation Board for Education and Training (NABET) and Quality Council of India (QCI) under the Department of Industrial Promotion and Internal Trade (DPIIT), Ministry of Commerce and Industries, Government of India.

- As we've already indicated, the New Education Policy gives high-quality research a prominent place. This action will provide access to innovation. NEP-2020's establishment of the National Education Technology Forum (NETF) is crucial. The establishment of technological development centers has been encouraged by higher education institutions. As a result, a tech-savvy and educated society will grow and the youth will be able to contribute successfully.

Digital India

- The creation of infrastructure, online learning environments, and technological tools has received particular attention under the new education policy. A lot of focus has been placed on training educators because there is also a huge need for teachers who are comfortable using technology. It will not be possible to generate online curriculum or online evaluations if educators are not tech savvy. Technology integration as a means of achieving universal literacy has also been proposed.
- Technology has received the acclaim it deserves because of its crucial contribution to societal advancement. There is no denying that technology can improve schooling. To promote the integration of technology, significant efforts must be made to accept and implement other changes to the current educational system as well as to give support for its integration. The state governments are primarily responsible for carrying out this obligation.
- It is crucial to inform the teachers about the adjustments and alterations that this new policy entails. Methods that encourage successful student participation are urgently needed. Teachers must receive sufficient training in order for NEP 2020 to be implemented successfully and for them to be fully informed of the future changes.
- In the new educational ecosystem, flipped classrooms and blended learning have received the attention they deserve. The pupils may be more engaged if they are informed in advance of the topics that will be discussed in class. Additionally, the students' active engagement will increase interest in the topic of discussion. The students in traditional education were not used to knowing what will be covered in class, and more time was spent giving lectures, but in the flipped classroom, students have the advantage of knowing the topic in advance because they receive study materials beforehand.
- As a result, the classroom becomes a lot livelier and they are better able to come prepared with their questions. Innovative ideas were appreciated, and new

teaching methods were given a favorable reception. The primary emphasis is on competency-based assessments, where frequent evaluations are done to help students realize when they may make mistakes. In order to help the students identify their individual potential and skills, feedback will be given to them.

- Other cutting-edge pedagogies and methods, such as teaching through videos, audio, and interactive real-time dialogues, will be used in addition to text-based instruction to improve learning effectiveness and outcomes. All of this will result in a deeper comprehension of the ideas.
- The establishment of virtual labs, digital infrastructure, online assessments, content development, digital repository, and online teaching platforms are some of the major projects for online and digital education. NEP 2020 suggests a more thorough integration of DIKSHA/SWAYAM in postsecondary education in addition to a wide range of educational software. The new National Education Policy makes investments in the establishment of open, public digital infrastructure to guarantee the equal use of technology. The implementation of cutting-edge technology like 3D, simulation, robots, and artificial intelligence (AI) has received significant consideration. Additionally, it makes online and experiential learning possible in blended learning. Additionally, it suggests growing the already-existing digital learning platforms.

Challenges

- Undoubtedly, the policy has successfully incorporated technology into education, but there are still some issues that need to be addressed. The policy's execution is a difficult endeavor, to say the least. Between July 2017 and June 2018, a study on "Household Social Consumption: Education" was undertaken. 49,238 urban households and 64,529 rural households made up the sample. In India, this sample was drawn from 6,188 blocks and 8,097 villages.
- According to the poll, the literacy rate for people aged 7 and older was roughly 77.7%. It was 73.5% in rural areas and 87.7% in urban areas. Additionally, there was a discrepancy in the literacy rates between men and women, which were 84.7% and 70.3%, respectively. It is crucial that all students have access to technology in order to integrate it into the classroom; at the very least, they should all have smartphones and PCs with internet connection. Unfortunately, the less wealthy pupils do not have access to the same, and overcoming this obstacle is one of the biggest hurdles. Controlling

unethical behavior and resolving network and power outages present additional challenges.

- Accepting the shift from the traditional rote learning system to the technology-driven critical thinking and experimental learning system presents another obstacle. The stakeholders' mindsets will need to shift, and ongoing efforts are required to comprehend and carry out this new vision.
- There is a critical demand for teachers with excellent digital literacy to meet the impending requirements. Additionally, there is a lack of infrastructure for digital resources, and some disciplines have restrictions on how they can be taught in a digital environment.
- The center and the states must collaborate for the policy's implementation to be successful because both the integration of technology and the policy's implementation provide difficulties. There is still more technological development to be done, and there is a long way to go. NEP 2020 is regarded as the century's most comprehensive education strategy and has the potential to bring about a variety of good changes to the current educational system.

Conclusion

India is making progress toward being more technologically advanced. There has been a significant advancement in this direction. But every significant reform takes time, therefore one must be patient and wait for the outcome. Due to the difficulty of making technology available in distant places, full technological integration into education will take some time. But it will be reached gradually and over time. For a better teaching and learning experience, it will be crucial to identify the main technologies that will address the demands of both teachers and students. This will be one of the key elements in the successful implementation of NEP, according to experts. NEP attempts to implement a learner-centric strategy.

The attention of the stakeholders in the National Education Policy 2020 has been impressively increased by the government. The vision and mission of the new policy have been communicated to the stakeholders in a positive manner. One instance of this was a 10-day "ShikshakParv" that featured a number of national-level activities.

In addition to this, a digital content repository will be built, with course material, simulations, and learning games for enjoyable learning. With explicit directions, the content will be created in several languages. Students will receive a backup system for distributing the e-content. If the digital divide is closed by making efforts, the advantages of digital education can be completely realized. To meet the needs of the stakeholders, digital programs are being offered. The drive for a digital India is moving in that direction, and positive outcomes are anticipated.

Collaboration and alliances between business and academic institutions may also be considered a strategy for integrating ICT into the classroom. Faculty that have experience in both industry and research can help with ICT integration.

Without a doubt, NEP 2020 has developed forward-thinking concepts. It has acknowledged how technology may advance education because it is so effective at facilitating teaching and learning. Although many states are in the process of implementing the new policy and many others have already launched it, there is still a long way to go. The New Education Policy, which places a strong emphasis on learning skills and technology, will pave the road for making students future-ready if the federal government and the states work together.

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GENDER EQUALITY AND WOMEN EMPOWERMENT

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Abstract

The term gender refers to the economic, social and cultural attributes and opportunities associated with being male or female. In most societies, being a man or a woman is not simply a matter of different biological and physical characteristics. This paper deals with importance of gender equality towards achieving the goal of women empowerment. Gender equality and women's empowerment have been specifically recognized over the past decades as vital not only to the welfare of nations but also to social and economic growth. Globally, women have fewer opportunities for economic participation than men, less access to basic and higher education, greater risks to health and safety, and less representation on the political level. Gender inequalities are still deep-rooted in every society. Women suffer from lack of access to decent work and face occupational segregation and gender wage gaps.

Keywords: Gender, Woman Empowerment, Equality, Economic, Inequality

Introduction

Gender equity is the process of being fair to women and men. Gender equality requires equal enjoyment by women and men of socially-valued goods, opportunities, resources and rewards. Gender equality does not mean that men and women become the same; only that access to opportunities and life changes is neither dependent on, nor constrained by, their sex. Achieving gender equality requires women's empowerment to ensure that decision making at private and public levels and access to resources are no longer weighted in men's favour, so that both women and men can fully participate as equal partners in productive and reproductive life. Women's access to jobs and educational opportunities decreases the probability of household poverty, and women's services provide a variety of beneficial outcomes for household human capital and skills. Women's empowerment and economic growth are closely linked: in one direction, development alone can play a major role in bringing down gender inequality; in the other, empowering women can support development.

Scope of Study

Women should live in a safe and equal society. Have equal access to power, resources and opportunities be treated with dignity, respect and fairness. Gender equality is when people of all genders have equal rights, responsibilities and opportunities. Everyone is affected by gender inequality - women, men, Trans and

gender diverse people, children and families. It impacts people of all ages and backgrounds. Women's studies not only focus on concepts such as domestic violence, discrimination in the workplace, and gender differences in the division of labor at home, but gives a foundation for understanding the root cause of these concepts, which is the first step to making for a better life for women.

Objective of the Study

1. To study the importance of Gender Equality in economic development.
2. To identify the key issues and challenges for women empowerment and Gender Equality.

Research Methodology

For the purpose of the present study data has been collected from secondary sources. It is collected from Journals, Magazines, including the reports. The aim of the study is to know the awareness of women empowerment and its impact on the quality of a women's life, and to examine the awareness of women empowerment and its impact on the quality of a women's life. How they have faced discrimination and how discrimination gives impact in their empowerment. So, the present study followed descriptive survey method.

Impact of Gender equality and women Empowerment in India

An analysis of gender equality is very essential to understand the level of women empowerment in Indian society. According to Dijkstra and Hanmer (2000), gender inequality in India refers to health, education, economic and political inequalities between men and women in India. As per the report by Tisdell, Roy and Ghose (2001), various international gender inequality indices rank India differently on each of these factors, as well as on a composite basis, and these indices are controversial. Gender inequalities, and its social causes, impact India's sex ratio, women's health over their lifetimes, their educational attainment, and economic conditions. Child marriage, which is still prevalent in our society, must be stopped. This is because an early age at marriage of women is an indicator of the low status of women in society and also curtails women's access to education. A woman needs to be physically healthy so that she is able to take challenges of equality. Women must have access to comprehensive, affordable and quality health care. Employment, particularly for cash and in the formal sector, can empower women by providing financial independence. Violence against women must be eradicated from the society.

Gender Equality and Women Empowerment in India

Gender equality implies a society in which women and men enjoy the same opportunities, outcomes, rights and obligations in all spheres of life. Equality

between men and women exists when both sexes are able to share equally in the distribution of power and influence; have equal opportunities for financial independence through work or through setting up businesses; enjoy equal access to education and the opportunity to develop personal ambitions. A critical aspect of promoting gender equality is the empowerment of women, with a focus on identifying and redressing power imbalances and giving women more autonomy to manage their own lives. Women's empowerment is vital to sustainable development and the realization of human rights for all. Where women's status is low, family size tends to be large, which makes it more difficult for families to thrive. Population and development and reproductive health programmes are more effective when they address the educational opportunities, status and empowerment of women. When women are empowered, whole families benefit, and these benefits often have ripple effects to future generations. The roles that men and women play in society are not biologically determined they are socially determined, changing and changeable. Although they may be justified as being required by culture or religion, these roles vary widely by locality and change over time.

Conclusion

Gender equality is very essential to achieve the goal of women empowerment. It is observed that women in India have been subjected to various types of discrimination and disabilities towards enjoyment of benefits of development consequent upon disempowerment. Hence the empowerment of women could be possible through attainment of gender equality.

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ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING: IMPLICATIONS AND APPLICATIONS

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Abstract

Artificial intelligence is a theory. It is the development of computer system that is able to perform tasks that would require human intelligence. Example of these is visual presentation, speech recognition, decision-making, and translation between languages. Machine Learning is an Artificial intelligence where a computer/machine learns from the past experiences (input data) and makes future predictions. The performance of such a system should be at least human level. AI is also being used to develop new drugs and treatments, which can help to improve the lives of millions of people around the world. Another area where AI is making a significant impact is in the field of finance. Machine learning algorithms are being used to detect fraudulent transactions and predict market trends.

Keywords: Artificial Intelligence, Machine Learning

Introduction

AI provides robots with adequate computer vision and motion to better understand the environment and act accordingly. Similarly, machine learning conditions the robots in such a way that with timely evolution, they learn from their own mistakes, thus preventing constant human intervention and parallel effort. In Artificial Intelligence, introduction is commonly used to account for the use of various levels of details in a given representation language or the ability to change from one level to another while preserving usefully properties. Introduction has been mainly studied in problem solving, theorem proving knowledge representation (in particular for and temporal reasoning) and machine learning.

Artificial Intelligence

Artificial intelligence is the simulation of human intelligence processes by machines, especially computer system. Specific application of AI includes expert system, nature languages processing, speech recognition and machine vision.

John McCarthy (September 4, 1927- October 24, 2011) was an American Computer Scientist and cognitive scientist. He is the Father of AI. He was one of the founders of the discipline of Artificial Intelligence.

AI can be described as “the ability of algorithms encoded in technology to learn from data so that they can perform automated tasks without every step in the process having to be programmed explicitly by a human”. AI has become a catchall term for applications that perform complex tasks that once require human input, such as communicating with customers online or bank transactions.

AI works by combining large amounts of data with fast, iterative processing and intelligence algorithms, allowing the software to learn automatically from patterns or features in the data. The term is often used interchangeably with its subfields, which include machine learning (ML) and deep learning.

Examples of AI

Google Assistant, Google Maps, Apple's Siri, Amazon's Alexa, Microsoft's Cortana, Instagram, Self-driving car, etc.

Machine Language

Machine Language is a type of Artificial Intelligence and is based on the use of statistical and mathematical modelling techniques to define and analyse data, algorithms are trained to recognize patterns or to make estimations or predictions without human interferences.

The four main categories in Machine Learning are Supervised Learning, Unsupervised Learning, Semi-supervised Learning and Reinforcement Learning.

The term “Machine Learning” was coined by Arthur Samuel, a computer scientist at IBM and a pioneer in AI and computer gaming. Python is the most popular and widely used programming language for machine learning. Machine Learning is important because it gives enterprises a view of trends in customer behaviour and business operational patterns, as well as supports the development of new products.

Implications of Artificial Intelligence

- Artificial Intelligence has the potential to bring about numerous positive changes in society, including enhanced productivity, improved healthcare, and increased access to education.
- AI-Powered technologies can also help solve complex problems and make our daily lives easier and more convenient.

- AI replaces tedious or dangerous tasks, the human workforce is liberated to focus on tasks for which they are more equipped, such as those requiring creativity and empathy.
- AI has played a major role in the digitalization of society, as it has enabled us to collect, process, and analyse large amounts of data at a faster rate than ever before. This has led to the creation of new technologies, improved business processes, and greater efficiency in many industries.
- AI has had a significant impact on various forms of media, from text to video and 3D. AI-powered technologies such as natural language processing, image and audio recognition, and computer vision have revolutionized the way we interact with and consume media.
- With AI, we are able to process and analyse vast amounts of data quickly, making it easier to find and access the information we need. The use of AI in smartphone technology has grown rapidly in recent years.
- AI-powered personal assistants, such as Siri and Google Assistant, have become a staple of many people's daily lives.
- AI-powered technologies are also being used to improve the user experience and to offer more personalized recommendations and services.

Applications of Artificial Intelligence

AI in Healthcare

The unique benefit of AI Technology allows healthcare professional to scan pre-existing medicines and use them to redesign medication in a way that allows them to fight against specific disease. Also AI algorithms can monitor patient health data over time and provide recommendations for lifestyle changes and treatment options that can help manage their conditions. This can lead to better patient outcomes, improved quality of life, and reduced health care costs.

AI in Business

AI refers to the ability of machines to learn and make decisions based on data and analytics. When used strategically, AI has the potential to make a tremendous difference in the way we go about our work. An AI-Powered system can clarify the importance of each datapoint on a granular level, and help human operators understand how that data can translate into real business decisions. For Example: Amazon uses AI to track customers spending behaviour and to determine how many units of a specific product it anticipates customer to buy, according to feedvisor.

AI in Education

AI enables adapting to a students learning process as it unfolds step-by-step, not simply providing feedback on right or wrong answers. AI can help each individual separately by giving them separate curriculum based on their interest and skills assessment.

AI in Social Media

Social media AI has been trained to go through numbers, clicks, user interest, age, regions, internet profiles, user preferences, and purchase habits. All this data helps digital marketers take proper action when it comes to creating content that fits different audience needs and interests.

AI in Tourism

Software powered by AI can help travel and tourism industry customers to better understand fluctuations in prices. Also AI assistants for travel booking, Travellers no longer need to visit travel agencies to book flights or search for recommendation. AI assistants and intelligent chat bots have now taken the place of travel agents allowing travellers to book flights and accommodations and hire vehicle online.

Implications of Machine Learning

- Machine Learning is an important part of our daily lives; it provides high-value predictions that can guide decisions and smart actions in real time without human intervention.
- Machine learning is a fast-growing field of study and research, which means that the demand for machine learning professionals is also growing. And also this demand is only going to increase in the future as more people become interested in learning about computer algorithms and how they work.
- Machine learning in education transforms the learning process and gives new tools for educational institutions to track and improve students' performance and engagement.
- The Machine Learning-enabled personalized approach helps to make education more inclusive, accessible, and engaging.
- Machine learning can help organizations boost their operational efficiency. Approximately 45% of operations in the workplace can be automated using existing technology, according to the McKinsey Global Institute, with 80% of it due to machine learning capabilities.
- Over time, machine learning also optimizes the processes, finding more efficient ways to complete tasks.

- Ideally, machines accomplish their goals without direct human input. This technology has transformed and reinvented many industries.
- Machine learning is revolutionizing multiple sectors of modern society, including healthcare, finance, and transportation.
- The technology provides advanced data analysis that improves decision-making, leads to better predictions, and creates new innovations.
- Machine learning helps to make decisions and adjust to changing road conditions in real-time, machine learning algorithms are employed to interpret data from sensors and cameras.
- Self-driving cars have the potential to reduce traffic congestion and increase fuel efficiency in addition to boosting safety.
- Machine learning enables faster software delivery, more automated, efficient software testing, and better operational performance.
- Launchable's Predictive Test Selection machine learning model helps our team only run the most relevant tests.
- A good example for this is Anti-virus software; they can learn to filter new threats as they are recognized. Machine Learning is also good at recognizing spam.
- Machine Learning is widely used by various e-commerce and entertainment companies such as Amazon, Netflix, etc., for product recommendation to the user.

Applications of Machine Learning

- Image Recognition.
- Speech Recognition.
- Traffic Prediction.
- Product Recommendations.
- Self-driving cars.
- Email Spam and Malware Filtering.
- Virtual Personal Assistant.
- Online Fraud Detection.
- Stock Market Trading.
- Medical Diagnosis.
- Automatic Language Translation.

These are the most trending real-world applications of Machine Learning.

Image Recognition:

Image recognition is one of the most common applications of machine learning. It is used to identify objects, persons, places, digital images, etc. The popular use case of image recognition and face detection is, Automatic friend tagging suggestion.

Speech Recognition:

While using Google, we get an option of "Search by voice," it comes under speech recognition, and it's a popular application of machine learning. Speech recognition is a process of converting voice instructions into text, and it is also known as "Speech to text", or "Computer speech recognition." At present, machine learning algorithms are widely used by various applications of speech recognition. Google assistant, Siri, Cortana, and Alexa are using speech recognition technology to follow the voice instructions.

Traffic Predictions:

If we want to visit a new place, we take help of Google Maps, which shows us the correct path with the shortest route and predicts the traffic conditions. It predicts the traffic conditions such as whether traffic is cleared, slow-moving, or heavily congested with the help of two ways: Real Time location of the vehicle from Google Map app and sensors Average time has taken on past days at the same time.

Product Recommendations:

Machine learning is widely used by various e-commerce and entertainment companies such as Amazon, Netflix, etc., for product recommendation to the user. Whenever we search for some product on Amazon, then we started getting an advertisement for the same product while internet surfing on the same browser and this is because of machine learning. Google understands the user interest using various machine learning algorithms and suggests the product as per customer interest.

Self-Driving Cars:

One of the most exciting applications of machine learning is self-driving cars. Machine learning plays a significant role in self-driving cars. Tesla, the most popular car manufacturing company is working on self-driving car. It is using unsupervised learning method to train the car models to detect people and objects while driving.

Conclusion

One of the most obvious ways AI is shaping the future is through automation. With the help of machine learning, computers can now perform tasks that were once only possible for humans to complete. This includes tasks such as data entry,

customer service and even driving cars. The future of AI is promising, with continuous advancements in machine learning, natural language processing, and computer vision. AI will enhance various industries and transform the way we live and work. Machine Learning offers growth opportunities and revolutionizes numerous industries by enabling more informed decisions, helping developers analyse problems with an innovative approach, and delivering information faster and with greater accuracy.

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CLOUD COMPUTING

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Abstract

Cloud computing has emerged as a prominent paradigm in the field of information technology, offering scalable and on-demand access to a variety of resources and services. This review of literature aims to provide an overview of the key concepts, technologies, benefits, risks and adoption strategy in cloud computing. By examining a wide range of scholarly articles, books, and reports, this review highlights the evolution of cloud computing, its underlying technologies, deployment models, security concerns, and the impact it has had on various industries. Additionally, it discusses of adopting strategy cloud computing and explores future research directions in this dynamic and rapidly evolving field.

Keywords: Cloud computing, Benefits, Adoption strategy, Information technology, Risks.

Introduction

The term "the cloud" describes the software and databases that run on servers that may be accessed via the Internet. Data centers all throughout the world house cloud servers. Cloud computing is used for anything that involves storing and processing massive amounts of data quickly and needs more storage and computing power than the majority of businesses can or want to invest in and implement on-premises. Cloud computing is the on-demand availability of computer system resources, especially data storage (cloud storage) and computing power, without direct active management by the user. Cloud Computing is the delivery of computing services such as servers, storage, databases, networking, software, analytics, intelligence, and more, over the Cloud (Internet). Moreover, cloud computing offers a high level of redundancy and backup at a reasonable price. The technology provides banking organizations with all the components they need to be future-proof. Depending on the level of service, cloud can be classified into a number of different levels.

- BPAAS (Business Process-as-a-Service)
- SAAS (Software-as-a-Service)
- PAAS (Platform-as-a-Service)
- IAAS (Infrastructure-as-a-service)

Review of Literature

- Cloud Computing Architecture: “Above the Clouds: A Berkeley View of Cloud Computing” by Armbrust et al. (2009) provides a comprehensive overview of cloud computing architecture, challenges, and opportunities.
- “Cloud Computing Security: A Systematic Literature Review” by Raza et al. (2015) presents a systematic review of cloud computing security research and identifies emerging trends and research gaps.
- “A Survey of Security Issues in Cloud Computing” by Subashini and Kavitha (2011) discusses various security concerns and challenges in cloud computing.
- “Big Data Analytics in Cloud Computing: A Comprehensive Review and a Framework” by Zhang et al. (2015) reviews the state-of-the-art big data analytics techniques and frameworks in cloud computing environments.

Evolution of Cloud Computing

One day in a speech at MIT around in 1960 John McCarthy indicated that likethrough a convenient website. Amazon Web Services were started by Amazon in 2002 and they were providing the services of storage and computation. In around 2009 big companies Hire Google, Microsoft, HP, Oracle had started to provide cloud computing services. Nowadays each and every person is using the services of cloud computing in their daily life. For example Google Photos, Google Drive, and Cloud etc. In future cloud computing will become the basic need of IT Industries water and electricity, computing can also be sold like a utility. And in 1999, the Salesforce Company started distributing the applications to the customers.

Types of Cloud Computing

1. Public cloud: The public cloud is a computing service supplied by the third party providers atop the public internet. These services are available for any user who wants to use them and they have to pay only for the services they consumed.
2. Private cloud: The computing services provided over the internet or private network come under the private cloud and these services are offered only to the selected users in place of common people. A higher security and privacy is delegated by private clouds through the firewall and internal hosting

3. Hybrid cloud: Hybrid cloud is the combination of public cloud and private cloud. In the hybrid cloud, each cloud can be managed independently but data and applications can be shared among the clouds in the hybrid cloud.

Types of Cloud Computing Services

1. Business process as a service (BPAAS): Business process as a service, is a type of business process outsourcing (BPO) delivered based on a cloud services model. BPAAS is connected to other services, including SaaS, PaaS and IaaS, and is fully configurable. Technology they need to operate as a pay-per-use service by making use of the availability and efficiency of a cloud-based system.
2. Software as a service (SAAS): This cloud service consists of crucial business software and the data that goes with it, which end users can access using web browsers. Customer relationship management, content management, accounting & invoicing, and service desk administration are among the systems hosted by SAAS solutions.
3. Platform as a service (PAAS): A complete environment for development and deployment is provided by this service delivery paradigm. For hosting enterprise program that are cloud-enabled, it often involves database development, web servers, operating systems, interfaces, and software and hardware tools. The creation, upkeep, and support of customized apps are made easier by PAAS.
4. Infrastructure as a service (IAAS): Many computing resources are provided by the IaaS in the form of storage, network, operating system, hardware, and storage devices on demand. IaaS users can access the services using a wide area network, such as the internet. For example, a user can create virtual machines by login to the IaaS platform.

Benefits of Cloud Computing

1. Faster time to market: Cloud computing supports new innovations by making it easy to test new ideas and design new applications without hardware limitations or slow procurement processes.
2. Scalability and Flexibility: Cloud computing gives your business more flexibility. You can quickly scale resources and storage up to meet business demands without having to invest in physical infrastructure.
3. Cost savings: Whatever cloud service model you choose, you only pay for the resources you actually use. This helps you avoid overbuilding and overprovisioning your data center and gives your IT teams back valuable time to focus on more strategic work.

4. **Advanced Security:** Despite popular perceptions, cloud computing can actually strengthen your security posture because of the depth and breadth of security features, automatic maintenance, and centralized management. Reputable cloud providers also hire top security experts and employ the most advanced solutions, providing more robust protection.
5. **Data loss prevention:** Cloud providers offer backup and disaster recovery features. Storing data in the cloud rather than locally can help prevent data loss in the event of an emergency, such as hardware malfunction, malicious threats, or even simple user error.
6. **Quality Control:** In a cloud-based system, all documents are stored in one place and in a single format. With everyone accessing the same information, you can maintain consistency in data, avoid human error, and have a clear record of any revisions or updates.

Risks of the Cloud Computing

1. **Limited visibility into network operations:** When moving workloads and assets to the cloud, organizations forfeit a certain level of visibility into network operations. This is because the responsibility of managing some of the systems and policies shifts to the cloud service provider. As a result, organizations must be able to monitor their network infrastructure without the use of network-based monitoring and logging.
2. **Malware:** By moving large amounts of sensitive data to an internet-connected cloud environment, organizations are opening themselves up to additional cyber threats. Malware attacks are a common threat to cloud security, with studies showing that nearly 90% of organizations are more likely to experience data breaches as cloud usage increases.
3. **Compliance:** Data privacy is becoming a growing concern, and as a result, compliance regulations and industry standards such as GDPR, HIPAA, and PCI DSS are becoming more stringent. Cloud systems typically allow for large-scale user access, so if the proper security measures aren't in place, it can be difficult to monitor access across the network.
4. **Data Leakage:** Data leakage is a growing concern for organizations, with over 60% citing it as their biggest cloud security concern. If the cloud service provider experiences a breach or attack, your organization will not only lose its data and intellectual property but will also be held responsible for any resulting damages.
5. **Data breaches:** One of the most impactful security risks the cloud faces is the potential for a data breach. These are a result of poor security measures that

allow malicious actors to gain access to sensitive data across cloud servers. One breach could cost an organization millions of dollars.

Developing a Cloud Adoption Strategy

1. **Assess your current IT environment:** Begin by evaluating your existing IT systems, applications, and infrastructure. Identify any pain points, limitations, and areas that could benefit from cloud computing.
2. **Set clear objectives:** Define your organization's goals and objectives for adopting cloud computing. Common objectives include cost savings, scalability, flexibility, improved performance, increased security, and enhanced collaboration.
3. **Plan for migration:** Develop a comprehensive migration plan to transition your existing applications, data, and infrastructure to the cloud. Identify critical applications and prioritize their migration based on business impact and complexity. Consider factors such as data transfer methods, potential downtime, and necessary training for your IT staff during the migration process.
4. **Train and educate employees:** Provide comprehensive training and education programs to familiarize your employees with cloud technologies and best practices. Help them understand the benefits, address concerns, and develop the necessary skills to leverage cloud services effectively.
5. **Address security and compliance:** Establish robust security measures and compliance practices to protect your data and meet regulatory requirements. Implement encryption, access controls, and threat detection mechanisms to safeguard your information in the cloud. Consider compliance certifications specific to your industry or geographical region.
6. **Develop a governance framework:** Define policies and procedures for cloud usage within your organization. Establish guidelines for data governance, access controls, service-level agreements, and vendor management. Regularly review and update these policies to adapt to changing needs and technological advancements.

Conclusion

In conclusion, cloud computing offers a transformative approach to computing, providing flexible and scalable access to computing resources. It enables organizations and individuals to optimize resource utilization, achieve cost savings, and enhance collaboration. Furthermore, cloud computing provides enhanced data security and disaster recovery capabilities. Cloud service providers often implement robust security measures, such as data encryption, regular backups, and

redundancy, ensuring that data is protected from unauthorized access, loss, or damage. This gives organizations peace of mind and enables them to focus on their core business activities.

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GENDER EQUALITY AND WOMEN'S EMPOWERMENT

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Abstract

Gender equality between women and men refers to the equal rights, responsibilities and opportunities for women and men and girls and boys. Equality does not mean that women and men will become the same but that women's and men's rights, responsibilities and opportunities will not depend on whether they are born male or female. Gender equality implies that the interests, needs and priorities of both women and men are taken into consideration recognizing the diversity of different groups of women and men. Gender equity that provides a level playing field for men & women so that they have a fair chance to realize equal outcomes are a precondition for ensuring gender equality and human rights. The ultimate goal in gender equality is to ensure that women and men have equitable access to, and benefit from society's resources, opportunities and rewards. Gender equality, also known as sexual equality or equality of the sexes, is the state of equal ease of access to resources and opportunities regardless of gender, including economic participation and decision-making; and the state of valuing different behaviors, aspirations and needs equally, regardless of gender. Sex equality/gender equality addresses the different interpretations that are given to the claim that men and women are equal or ought to be treated equally and the arguments used to advance claims for sex equality. This article examines some key interpretations and arguments. Sex equality raises a number of issues in applied ethics, feminist philosophy, and political theory. Because of liberalism's concern with equality and equal rights, discussion of sex equality is of particular interest to liberal political philosophy and ethics. Liberal theory views justice, or 'treating equals equally,' as a central concern; sex equality, then, involves discussion of just treatment.

Keywords: Gender equality, Inequality, Development, Education

Introduction

Gender equality is the situation in which both male and female has equal opportunity. Both Genders are equivalent intellectual and psychological competencies except in physical strengths. The equivalence in competencies is observed in academics, IT sector and in almost every area. Yet, the psychological barrier in accepting this equivalence or accepting ladies in higher positions. The refusal opportunities by authorities or self-denial of opportunities are of equal effect. But, refusal or denial of opportunities to those who are willing to take challenges for vague excuses is called glass ceiling. The bills for ensuring right proportion of reservation for ladies in appointments and positions. The bills ensure, equal pay, Women have the right to dignity and decency, Women have the right against

workplace harassment, Gender equality is a fundamental human right. Yet despite progress, women and girls around the world do not fully experience equal rights and their potential as economic, social and sustainable development change-agents remains untapped. It will currently take over 267 years to achieve equality in terms of women's economic empowerment and participation. Gender equality is a fundamental human right. Yet despite progress, women and girls around the world do not fully experience equal rights and their potential as economic, social and sustainable development change-agents remains untapped. It will currently take over 267 years to achieve equality in terms of women's economic empowerment and participation. Gender equality is a fundamental human right. Yet despite progress, women and girls around the world do not fully experience equal rights and their potential as economic, social and sustainable development change-agents remains untapped. It will currently take over 267 years to achieve equality in terms of women's economic empowerment and participation. Women are underrepresented across business. They receive unequal pay for equal work and they continue to be targets of physical and sexual abuse.

Objectives

- To achieve Equal career opportunities for women and men
- To achieve Fair distribution of unpaid and paid work among women and men, wages and salaries that women and men can live on independently
- To achieve Equality of women and men with regard to political representation and participation
- To achieve broadly equal opportunities and outcomes for women and men.

Impact on Gender Equality

- India has some of the highest levels of sex discrimination at birth. According to a 2017 analysis According to demographic data, India will still have the worst sex ratio in South Asia in 2050. 918 girls for 1000 boys (2011) called on the government to take action in the form of "betibachao, beti the padhao program which provides survival, safety and education to the girl child.
- It can shrink countries the ability to compete in international competition – especially for countries with export potential in goods and services in addition, with high female employment, gender inequality can damage a country's international standing.
- All factors strengthen the incentives for policy action aimed at gender equality worldwide. But in the absence of public policy, globalization alone cannot reduce gender inequality.

- New powers associated with globalization - understood as a combination of economic integration, tech dissemination and better access to information worked through markets, formal institutions and informal institutions to remove some of the constraints for greater equality between women and men.
- The openness of trade and the spread of new information and communication technologies have translated into more jobs and stronger connections to markets for many women, increasing their access to economic opportunities.
- Greater access to information allowed many people to learn about life and customs in other parts, can affect attitude and behavior.

Inequity

Gender inequality is the social phenomenon in which people are not treated equally on the basis of gender. The treatment may arise from distinctions regarding biology, psychology, or cultural norms prevalent in the society. Some of these distinctions are empirically grounded, while others appear to be social constructs. While current policies around the world cause inequality among individuals, it is women who are most affected. Gender inequality weakens women in many areas such as health, education, and business life.

Impact of Gender Inequality

- The biggest problem we're facing is that a lot of people still see gender inequality as a women's issue. However, by gender, we refer to all genders including male, female, transgender and others.
- When we empower all genders especially the marginalized ones, they can lead their lives freely. Moreover, gender inequality results in not letting people speak their minds. Ultimately, it hampers their future and compromises it.
- In addition, they also get objectified and receive socioeconomic inequality. All of this ultimately results in severe anxiety, depression and even low self-esteem. Therefore, we must all recognize that gender inequality harms genders of all kinds. We must work collectively to stop these long-lasting consequences and this gender inequality essay will tell you how.
- The gender inequality essay tells us that gender inequality impacts us badly. It takes away opportunities from deserving people. Moreover, it results in discriminatory Behaviour towards people of a certain gender. Finally, it also puts people of a certain gender in dangerous situations.

Gender and Development

Gender equality is considered a critical element in achieving Decent Work for All Women and Men, in order to effect social and institutional change that leads to sustainable development with equity and growth. Gender equality refers to equal rights, responsibilities and opportunities that all persons should enjoy, regardless of whether one is born male or female.

In the context of the world of work, equality between women and men includes the following elements:

1. Equality of opportunity and treatment in employment.
2. Equal remuneration for work of equal value.
3. Equal access to safe and healthy working environments and to social security.
4. Equality in association and collective bargaining.
5. Equality in obtaining meaningful career development.
6. A balance between work and home life that is fair to both women and men.
7. Equal participation in decision-making at all levels.

Given that women are usually in a disadvantaged position in the workplace compared to men, promotion of gender equality implies explicit attention to women's needs and perspectives. At the same time, there are also significant negative effects of unequal power relations and expectations on men and boys due to stereotyping about what it means to be a male. Instead, both women and men, and boys and girls, should be free to develop their abilities and make choices – without limitations set by rigid gender roles and prejudices – based on personal interests and capacities.

Empowerment of Women through Entrepreneurship

Instrument of women empowerment is self-employment or entrepreneurship. Why women are choosing self-employment or entrepreneurship? One study revealed that Autonomy was rated high as a means to obtain personal freedom. This level of autonomy provides the opportunities to: (1) Able to make their own decisions:-decision making indicates the choice which is the basis of empowerment. (2) Able to do preferable work-Work in non:- traditional fields implies opening to more powerful networks, which leads directly to the empowerment. (3) Attain financial independence:- financial independence is a major contributing factor in the empowerment of women. The following are the impact of ED on Empowerment.

Educational Equality

Another area in which women's equality has shown a major development as an effect of adult literacy programs is the area of enrolment of boys and girls in schools. As a result of superior contribution of women in literacy campaigns, the gender gap

in literacy levels is regularly getting reduced. Even more important information that gap in enrolment of boys and girls in neo-literate households is much lowered compared to the non-literate householders. The world has achieved equal opportunity in primary education between girls and boys. But few countries have achieved that target at all levels of education. The political contribution of women keeps rising. In January 2014, in 46 countries more than 30% of members of parliament in at least one chamber were women. In many countries, Gender in equality persists and women carry on facing bias in contact to education, work and economic assets, and contribution in government. Women and girls face barriers and disadvantages in every division in which we have worked. Around the world 62 million girls are not in school.

Conclusion

The paper attempted at raising some of the issues relating to gender equality e.g. women entrepreneurship and empowerment. It provided a brief discussion as well as Literature survey covering these important aspects of economic empowerment, including a feminist perspective as how the women themselves look at the problem of discrimination and the fact of entrepreneurial subordination. UNIDO's framework approach for development of women entrepreneurship, especially, the rural women entrepreneurship, in the developing economies like India was also described. The discussion derives an important conclusion that women's empowerment, entrepreneurship. Accelerating entrepreneurship and self-employment is also critical for large-scale job creation in India. The key to encouraging self-employment among Indian women is a skill development project that focuses on specific demands and issues experienced by developing businesses.

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PROBLEMS AND OPPORTUNITIES OF WOMEN ENTREPRENEURS IN INDIA

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Abstract

The change of social texture of the Indian culture, as far as expanded educational status of women and fluctuated desires for better living, required an adjustment in the way of life of Indian women. Entrepreneurs assume a key job in any economy. Entrepreneurs are the general population who have the skills and activity important to take great new plans to market and settle on the correct choices to make the thought gainful. The reward for the dangers taken is the potential economic benefits the entrepreneur could acquire. Entrepreneurship for Women development is a fundamental piece of human resource. In Comparison to different nations, the development of women entrepreneurship is low in India, particularly in rustic territories. Women entrepreneurship is picking up significance in India in the current economic condition. It has been distinguished as a powerful advance toward destitution mitigation in the nation. There exists a rundown of successful business people entrepreneurs both in social and economic fields in India. In fact, a women entrepreneur is any women who arranges and deals with any undertaking, as a rule with significant activity and hazard. The present investigation has been an endeavor to produce mindfulness and to comprehend meaning justification for broadening. A broad writing survey is done on women entrepreneur in India.

Keywords : Women entrepreneurs, Economic development, Economicfield, Development, Benefits, etc.

Introduction

“Women are the largest untapped reservoir of talent in the world.” Well said by Hilary Clinton. Women’s entrepreneurs is the economic activity that has to maintain the profit and to develop the new beginnings. The essential requisite of the successful entrepreneurs is risk bearing. An entrepreneur is an innovator brings new product to the product. An entrepreneurs is an agent of change.

A women entrepreneur is an individual who takes the initiative to establish, manage, and operate a business venture. This emerging trend reflects the increasing presence of women in the entrepreneurial landscape. Women entrepreneurs play a pivotal role in driving economic growth, innovation, and social change. They often navigate challenges such as access to funding, gender biases, and work-life balance while striving to build successful enterprises. Recognizing the potential of women entrepreneurs is crucial for fostering inclusive economies and empowering women to contribute significantly to various industries and societies at large.

Objectives of the Study

- To study about to realize potential of the women
- To enhances one's logical and analytical skills towards the field of the Entrepreneurship

Literature Review

ZethembeMseleku University of Kwa-Zulu Natal.(2020) in their study discussed about E-learning and E-Teaching about in the Era of Covid-19 pandemic. The user satisfaction is found to be related to E-learning and E-Teaching outcomes, challenges and opportunities in the era of Covid-19 pandemic. The literature presented a number of learning and teaching challenges faced by the academics and student. The rural area people faced the difficulties by low income, associated stress, depression and anxiety

Deepashree Chatterjee.(2019) In their provides the review of a step towards prosperity. The learner reviews that innovations and indispensable for development of the nation. This paper briefly discussed about the various plans and schemes which the government initiated through the scheme of started-up India. And discussed various steps taken by the start-ups to become successful and profitable. The challenges faced by the stand-ups are mentoring, politics, culture, hiring etc.

RitwikSaraswat and Remya Lathabahvan. (2020) In their article provides a review of the Women Entrepreneurship in India. In this factor the educated women standing tall from the rest of the crowd. Women facing many challenges towards the society. These people should have the various skills and innovative ideas. In the golden age of Digitalization and Start-up booms, India is clearly saw the revolution via women entrepreneurs. Today the women entrepreneurs established with the higher income sections. Women entrepreneurs provides the effective leadership in the all aspects of the business

FaternaKapadia (2021) aimed to analyze the Clean India, Green India .The learner found the people should see the cleanliness can impact everyone's life. Cleanliness is important in workplace, home, public places etc. Our surroundings plays a major role in our health and wellness. As a responsible citizen of our society we should keep our surroundings clean and it also beneficial for others. Swachh Bharat Abhiyan is the most impactful cleanliness campaign of the government of India. The government raised many schemes towards the cleanliness. The freedom fighter Mahatma Gandhiji's ambition of the clean and hygienic India. The reason behind processes, clean disposal, recycling and reuse of solid waste.

Problems Faced by Women Entrepreneurs in India

1. Lack of Education

The main reason of the barriers for lack of education are lack of economic conditions etc. But now a days Indian government expressed a strong commitment towards the education, however India still has one of the lowest female literacy rates in Asia.

2. Safety concern

Now a days the women facing many problems through the gender discrimination, sexual abuse, harassment, etc. so, the parents more concentrate on the women safety. Safety in educational settings is a barriers to equality for women. From the safety concern the women getting child marriage.

3. Poor Funding Prospects

In India the banks and financial institutions consider the women as less credit worthy. And many womens don't have the assets in their name. Women facing the problem of applying for collateral loans or private financing.

4. Lack of Social and Institutional Support

One of the major problem that women entrepreneurs faces lack of social and Institutional support. Due to the lack of proper guidance most women entrepreneurs lost their direction. In the lack of social support, the socio-culture of the ecosystem of India has traditionally placed men in the dominant role.

5. Balancing Responsibilities between Family & Business

Family as an opportunities. When the women belonging from the business family can give the career opportunity to the women. When the women without from the business background it is difficult to achieve their goals. when the married women enter into motherhood plays a major role in rearing their children. So its leads to take a small break. When the conflict with their family commitments that makes feel guilty about grade their business

Government Schemes to Develop Women Entrepreneurs

BharathiyaMahila Bank Business Loan

BharathiyaMahila Bank was establishes for the women to develop their career. And the government offers loan upto 20 crores to female entrepreneurs to start their business. The loan program that began in 2017 coalesce with State Bank Of India.

Mudra Yojana Scheme

Mudra Yojana is a scheme that beneficial to develop the business. This scheme is develop the small business. The loan ranging from 50000 to 10 lakh. The example of small business are beautyparlour, tailor shop, fancy store etc.

Dena Shakthi Scheme

Dena Shakthi Scheme is provides economic opportunities to women. The scheme is focused with the Agriculture, education, housing, micro and small manufacturing enterprises etc. This scheme provides loan upto 20 lakh.

Udyogini Scheme

Udyogini scheme is implemented for the women development. This scheme aims to build overall growth of the country. This scheme provides loan upto 3 lakh. This scheme is started in 2014 with the mission to make easier for women entrepreneurs to start the business.

Cent Kalyani Scheme

Cent Kalyani Scheme is to encourage the women entrepreneurs. It is the purpose to meet capital expenditure. The main objectives of the scheme is sustainable employment opportunities. It is started in the year 2006 accordance with the MSME Act .Under the scheme loans provide upto 100 lakh.

MahilaUdyamNidhi Scheme

MahilaUdyamNidhi Scheme is launched by the Punjab National Bank. This scheme aims to empowering the women entrepreneurs. Small industrial Development Bank of India(SIDBI) launched the MahilaUdyamNidhi Scheme. Which provides credit facilities who are into the production and service related industries. This scheme provides loan upto 10 lakh

Women Entrepreneurship Platform(WEP)

The government of India through NITI Aayog has started an initiative call the Women Entrepreneurship Platform. The benefits of the WEP is funding and financial assistance. WEB offers incubation and accelation support to women entrepreneurs. This scheme is provide necessary support to help them start and scale-up.

Facts about Women Entrepreneurs

- Women first started the businesses in 1972.what's more, women in America start 1,817 businesses every day
- Average employment per establishment per establishment for women owned establishment is 1.67.
- Total establishment owned by females, provide employment to 13.45 million people
- 47% of women started the business in the last year, compared to 44% of men.
- 88% of all women-owned businesses generate less than \$100000 yearly.

Conclusion

Women Entrepreneurs makes a significant contribution to economic growth and poverty reduction around the world. Women participating in the field of Entrepreneurship is increasing considerable rate, efforts and to enhance the women's involvement in the enterprise sector. Creativity results in value, and value provides a competitive advantage.

Successful entrepreneurs are those who have high tolerance to withstand a stressful world with courage. Entrepreneurs are the important part of the free enterprise system. All these theories provides a useful insight in understanding and explaining entrepreneurs.

The above characteristics are related to the entrepreneur. Identifying entrepreneurs success is an important task. So when women enter into the field of entrepreneurs to clash all the obstacles.

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GENDER EQUALITY AND WOMEN'S EMPOWERMENT

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Abstract

This Paper deals with "Women Empowerment" a burning issue all over the world. "Women empowerment" and "women equality with men" is a universal issue. Women Empowerment refers to the creation of an environment for women where they can make decisions of their own for their personal benefits as well as for the society. Gender equality, besides being a fundamental human right, is essential to achieve peaceful societies, with full human potential and sustainable development. Moreover, it has been shown that empowering women spurs productivity and economic growth.

Keywords: Gender, Equality, Women Empowerment.

Introduction

Women's empowerment in India has a long history. Great social reformers in the past like Raja Ram Mohan Roy, Swami Vivekananda, Acharya Vinobha Bhave and Ishwar Chandra Vidyasagar etc abolished ghastly practices like sati and child marriage and worked relentlessly in the past for the upliftment of women in India. The Indian National Congress, one of the first political parties of India, raised its voice to demand political rights for women in the year 1917.

The policy of women's empowerment is incorporated well into the constitution of India which became effective in the year 1950. Article 14 ensures the right to equality for women; Article 15(1) prohibits gender discrimination; Article 15(3) empowers the state to take affirmative steps in favour of women, to name a few.

The United Nations Development Programme's (UNDP) Gender Equality Strategy 2022-2025 has been created during turbulent times. Multiple crises and risks are threatening the world and we are witnessing an alarming backlash against women's rights and gender equality. Since the COVID-19 pandemic hit, women have been nearly twice as likely to lose their jobs compared to men. Yet less than 20 percent of policy measures implemented by countries across the world addressed women's economic insecurity. Gender inequality also takes a toll on men and other affected groups. For men, rigid gender norms can result in risky behaviour resulting in violence, poor health, and lower life expectancy.

At a time when progress towards achieving gender equality is often stalling or even reversing, this ambitious new Gender Equality Strategy will guide UNDP in its

efforts to assist countries to move beyond piecemeal efforts towards portfolio approaches that shift power structures and the economic, social, and political systems that perpetuate discrimination.

Principles

- Principle 1: Establish high-level corporate leadership for gender equality
- Principle 2: Treat all women and men fairly at work – respect and support human rights and non-discrimination
- Principle 3: Ensure the health, safety and well-being of all women and men workers
- Principle 4: Promote education, training and professional development for women
- Principle 5: Implement enterprise development, supply chain and marketing practices that empower women
- Principle 6: Promote equality through community initiatives and advocacy
- Principle 7: Measure and publicly report on progress to achieve gender equality

Importance:

- Giving women equal position as men.
- There's no difference between men and women.
- Women empowerment means allowing them to do everything that men do.
- Rights and laws shall be fair for all without gender bias.

Some people also defined Women Empowerment by mentioning the success and pride women have brought to India. We applaud all such achievements and rewards of women but there's a fair difference between Women Achievement and Women Empowerment.

- Gender Equality prevents violence against women/girls.
- Gender Equality in India is good for the economy of the Nation.
- Gender equality in India is also fundamental, as well as the human right of women.
- Gender Equality in India makes our society safer and healthier.

Need For Women Empowerment and Gender Equality

Women's empowerment is not simply a trendy idea; it is essential in today's society. Despite considerable advancements in women's rights as well as gender equality, there are still many obstacles and problems that prevent women from contributing fully to society and reaching their full potential. The following are some strong arguments in favour of women's empowerment:

Gender Equality

The empowerment of women is necessary to achieve gender equality. Social conventions, cultural practices, as well as discriminatory attitudes that restrict women's prospects and undercut their rights are at the heart of gender disparity. By empowering women, we question these expectations and work to create a society where men and women are afforded the same rights, opportunities, and obligations.

Economic Development

Economic growth and the empowerment of women are intimately related. Half of the world's population is made up of women, and economic sustainability depends on their active engagement. Whenever women have the same opportunity for education, work, and entrepreneurship, they make a substantial contribution to economic production, the eradication of poverty, and general development.

Violence and Discrimination

In order to overcome violence and prejudice against women, women must be empowered. Domestic abuse, sexual harassment, as well as human trafficking are just a few of the violent crimes against women that they still have to deal with. Challenges to these harmful practices, safer settings, and the advancement of a culture of equality and respect are made possible by the empowerment of women via education, awareness, & legal protection.

Leadership and Decision-Making

In order to create effective policies, strategies, as well as decision-making processes, women's voices and views are crucial. For inclusive governance to be promoted and to fulfill the many demands and objectives of society, gender parity in leadership roles must be attained in the private as well as public sectors. Women's empowerment ensures that they have an equal voice in decisions that impact their communities and way of life.

Schemes for Women Empowerment and Gender Equality

- Working Women Hostel Scheme
- One- stop centre scheme
- Women helpline scheme
- Mahila police volunteers scheme
- SWADHAR Greh
- STEP
- Mahila Shakti kendras(MSK)

Conclusion

The main emphasis is given to the indicators like women's household decision making power, financial autonomy, freedom of movement, women's acceptance of unequal gender roles, exposure to media, access to education, women's experience of domestic violence etc. Women's political participation is also analyzed by using indicators like percentage of women voters and women MPs. After analyzing the data it is found that household decision making power and freedom of movement of women vary considerably with age, education and employment. Freedom of movement of widow or divorcee is more than ever married or never married women. Similarly it is found that in the society the acceptance of unequal gender norms by women themselves are still prevailing. More than half of the women believe that wife beating is justified for any of the specific reasons like not cooking properly, not taking proper care of household and children, refuse to have sex with husband, showing disrespect to in-laws etc. However, this attitude is not varying much with age or household structure but decline sharply with education and places of residence. While studying women's access to education and employment it is found that gender gap exist in both the situations. A large gender gap in literacy exists and participation of girls at all stages of education is below 50%. Similarly less than 50% of women are employed and a significant portion of them are not paid for their work. However, having access to employment does not mean that women have full control over their earnings.

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MAKE IN INDIA, PROMOTING AND GROWTH - AN OVERVIEW

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Abstract

The development of manufacturing sector is must for employment generation and development of economy of any country's. The manufacturing sector is required to play a crucial role for India economy to achieve its goal of employment generation and economic development of the country. In view of the requirement of the time, Make in India was launched by the Honorable Prime Minister India's on Aug 15, 2014. The Prime Minister invited to both domestic and international industrialists, Make in India campaign is aimed to make the country a manufacturing hub that will help boost jobs and growth. The Govt. is ensuring a smooth sailing for investors, by setting up a dedicated cell to answer queries of business entities within 72 hours. The Make-in-India campaign will help in boosting economic growth, in job creation and revival of investment cycle in Asia's one of the largest economy. This study will attempt to study the objectives and the efforts being made by the Indian Government. The study will also assess the initiative, bottlenecks and effectiveness of Make in India campaign and the achievements so far.

Keywords: Make in India, Employment Generation, Business Growth.

Introduction

'Make in India' initiative was launched globally in September 2014 as a part of India's renewed focus on Manufacturing. The objective of the Initiative is to promote India as the most preferred global manufacturing destination. Since the launch of this landmark initiative, the Government of India has taken several reform initiatives to create an enabling environment for providing an impetus to manufacturing, design, innovation and startups. India has emerged as the fastest growing economy globally. India's rate of growth of 7.5% is accelerating and it remains an oasis of growth in the midst of a subdued economic landscape across the world. The Hon'ble Prime Minister has given impetus to growth with several innovative initiatives such as "Make in India", "Digital India", "100 Smart Cities" and "Skill India". The Make in India initiative aims to make India an integral part of the global supply chain. It is about making Indian companies excel in a globalized workspace. India has vigorously opened up its economy – Defence, Railways, Construction, Insurance, Pension Funds, Medical Devices have all been rapidly opened up for Foreign Direct Investment. India today is one of the most open economies of the world.

In order to achieve this, the Government of India has taken up a series of measures to radically improve Ease of Doing Business. Its objective – make the

regulatory environment easy and simple for business to flourish. It has effectively used technology to converge and integrate departments. 14 services are integrated with eBiz portal which will function as a single window portal for obtaining clearances from various government agencies.

Make in India – Vision

Manufacturing currently accounts for slightly more than 15% of national GDP. This program aims to increase this to a 25% contribution, as observed in other Asian developing countries. The government intends to create jobs, attract significant foreign direct investment, and transform India into a favored manufacturing hub worldwide. The Make In India campaign logo is an exquisite lion inspired by the Ashoka Chakra and intended to reflect India's achievement in many areas. The Prime Minister dedicated the campaign to the famous patriot, philosopher, and political leader Pandit Deen Dayal Upadhyaya, born on the same date in 1916.

Make in India – Objectives:

The Make in India project has numerous objectives. They are as follows:

- Increase annual manufacturing sector growth to 12-14 percent.
- Increase the number of manufacturing jobs by 100 million by 2022.
- Increase the manufacturing sector's contribution to GDP to 25% by 2022.
- Developing necessary skill sets among urban poor and rural migrants to promote inclusive growth.
- Domestic value addition and technological depth in the manufacturing sector have increased.
- The growth is environmentally sustainable.
- Increasing the Indian manufacturing sector's global competitiveness.

Make in India – Advantages

The Make in India program has resulted in several positive outcomes for the country. The following are some additional benefits that have resulted from this trip.

- Creating new job opportunities.
- Increasing GDP via accelerating economic growth.
- The rupee will rise as FDI inflows increase.
- Small manufacturers will benefit, mainly if foreign investors invest in them.
- When countries invest in India, they bring with them cutting-edge technology in a variety of industries.
- As a result of the Mission's many initiatives, India has risen in the EoDB index.

- Setting up manufacturing centers and companies in rural areas can also help these communities thrive.

Make in India – Schemes

Several initiatives have been undertaken to assist the Make in India initiative. These plans are described more below:

- This initiative intends to train 10 million people in diverse sectors in India each year. To make 'Make in India' a reality, the vast human resource must be upskilled. This is significant because India's formally skilled workforce accounts for barely 2% of the population.
- The primary goal behind this initiative is to create an ecosystem that promotes the growth of startups while also driving long-term economic growth and producing large-scale employment.
- The goal is to make India a knowledge-based and digitally enabled economy.
- This is a quest to make India cleaner and to promote basic sanitation and hygiene.
- The purpose of this strategy is to enhance ports and promote port-led growth in the country.
- The ISA is an alliance of 121 countries, most of which are sunshine countries that lie entirely or partially between the Tropics of Cancer and Capricorn.
- This is India's initiative to promote solar technology research and development and formulate policies in this area.
- AGNII, or Accelerating Growth of New India's Innovation, was established to propel the country's innovation ecosystem by linking people and supporting the commercialization of innovations.

Make in India – Challenges, Criticisms & Concerns

Despite the campaign's success in some circles, there have been some complaints. There are other hurdles that the country must overcome to meet the ambitious goals set by the establishment. Some of the complaints are listed below:

- India has over 60% cultivable land. The emphasis on the industry is thought to have a negative impact on agriculture. It has the potential to destabilize fertile land permanently.
- It is also claimed that fast industrialization (even with the emphasis on "becoming green") might contribute to natural resource depletion.
- Local farmers and small entrepreneurs may be unable to compete with foreign players due to welcoming large-scale FDI.

- The campaign's emphasis on manufacturing may result in pollution and adverse environmental effects.
- There are significant gaps in the country's physical infrastructure facilities. For the campaign to be effective, it is vital to improve the country's infrastructure while simultaneously addressing issues such as corruption at the grassroots level.
- India may learn from China, which increased its share of global manufacturing from 2.6 percent in the 1990s to 24.9 percent in 2013. China rapidly expanded its physical infrastructures, such as railways, roads, power, and airports.

Conclusion

The make in India initiative was launched to encourage manufacturing in India and ultimately transform India into a global hub for the same. This would result in increased economic growth as well as employment generation, and also increase the FDI in India. Various sub-schemes has been envisioned under this initiative that would help in the development of various sectors. This program is an absolute necessity if we are to eradicate unemployment in India while also fostering economic growth. We can significantly reduce poverty by addressing the issue of youth unemployment. A strong economy is inevitable following the success of the "Make in India" initiative. By doing so, various socio-economic problems in the country may be addressed. Make in India has the potential to make India a \$5 trillion economy. If measures are not taken by the Indian government to improve the FDI inflow and creating a favourable environment for the manufacturing sector, it may only be a distant dream.

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EASE OF DOING BUSINESS

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Abstract

The World Bank provides ten factors which form the basis of its ranking to different countries in respect of Ease of Doing Business (EODB). It is generally understood that this ranking affects the inflow of FDIs in the countries. Higher ranking carries higher chances of FDI inflows and vice versa. The present paper attempts to look into the comparative weightage of the factors of ranking and their applicability in different sets of economic developments stages. Other traits which responsible for ease of doing business on overall basis are also looked into influencing the investment flow. The basic plan of the paper is to consult the papers available on the topic and chalk out the different factors and their outcomes. Based on the literature survey, it is opined that improved rankings in general favours FDI inflow but not all the parameters are equally effective and their weightage vary on case to case basis. Extra commercial considerations are also bound to get priorities when it comes to serve strategic interests of the investors. Over prioritizing the EODB rankings also diverts specially underdeveloped countries from taking up their structural reforms as they try to value few one over those more vital aspects need to be looked into.

Keywords: The Ease of Doing Business (EoDB) index - ranking system by the World Bank Group - Inflow of FDI.

Introduction

Ease of doing Business may be defined as combined outcome of the simplified laws, rules and regulations, taxation process etc. facilitating the smooth business operations with proper back up of developed infrastructural facilities like transportation, law and order position, banking and financial system along with the presence of conducive equality population having the role, both as consumers and human resources for the business. A favourable business environment is a pre-requisite for the growth of a nation. A country like India which is among the fastest developing countries in the world has the potential to surpass the leading countries in terms of business. The Make in India initiative which has been launched by the government in 2014 with a vision of transforming India into a manufacturing hub has lead down its efforts towards easing out the process of doing business in India by attracting more domestic and international companies to invest and do business in India, which will boost the FDI the country and the will also be essential in updating the overall economic growth of the country.

Ease of Doing Business

The term has been introduced and defined by the World Bank, to indicate the positive and negative aspects in economic life of any country which contribute and hinder the development of healthy business environment there. It underlines the necessary steps that need to be taken to maximise those positive aspects and minimise the negative ones. Based on these aspects, the World Bank also declares annual rankings of various countries, thus acknowledging their business environment globally. It's a general opinion that the higher rank holders become the preferred choices of global investors for their stakes. From the investors' point of view, analyses of factors of EODB are vital phenomena which will suggest the safety and viability of their investment. Another aspect is that how the host country is able to guide these investments according to its specific needs which cannot always be related to profitability only. Parallely, it should not be forgotten that around the globe, there are so many contenders who are trying to woo these foreign investors with various reforms on their domestic fronts. In fact, in modern era's global economy, every country tries to get higher on the ladder of scale on EODB standards in the eyes of World Bank. Under these circumstances, huge young population, training institutions, growing economy etc. are of course giving India an edge over its other global contenders, but to be very frank these factors alone cannot turn the scales on board. Further massive efforts are mandatory to bring more ease in doing the business in this country in order to motivate the investors to zero in on India as their favourable destination. We can see the much publicised news about the India's improvement in the latest EODB rankings from 100 in 2017 to 77 in the year 2018 with further jump to 63rd position 2020 World Bank Report. It's all about giving new hopes and impetus to slowing down Indian economy. It also generates the positive feelings among the masses about the reform measures being undertaken by the Government. It is further helpful for the latter to pursue such policies to push the reforms more aggressively while calming down the opposition from many quarters. Of course, it also offers more favourable terms for the government's persuasiveness for the potential investors around the world. World Bank has identified ten factors to determine the rankings on EODB such as Starting a business, Dealing with construction permits, Getting electricity, Registering property, Getting credit, Protecting minority investors, Paying taxes, Trading across borders, Enforcing contracts and Resolving insolvency. that second, fourth, sixth, ninth and tenth one i.e. five out of total ten factors, relate to legal aspects. Appropriate changes and reforms in laws and their implementation can ensure the proper functioning of these five factors. These include Arbitration and Adjudication process, Dispute settlement mechanisms, labour laws and other

related statutes, entry and exit procedures for the business etc. In modern era, time consumed in these legal processes are very important for the business firms and is considered as very effective tool in attracting or frustrating the investors. The Legislature and Lawmakers have to take care of these aspects along with the bureaucratic ranks and files of the land. The rest i.e. seventh factor relates to one of the most important aspect i.e. paying taxes. Kautilya (Chanakya) has said in Arthashastra that wise people get the fruits only up to certain limit but never harm the trees so that they can bear the fruits for a long time to come. Similarly, a wise king never harms the taxpayers, but facilitates them for paying their taxes in foreseeable futures to come. Here fruits are the taxes and trees are the taxpayers. High rates of taxes beyond certain limits will only be counterproductive to economic activities of the country. Besides rate of taxes, their compliance cost and procedural formalities along with the attitude of the government and tax department towards taxpayers plays a very important role in the hardships or ease to them. All countries which are striving for FDI are trying to reform their tax structures, simplify them and ensuring the removal of compliance procedural bottlenecks. If we go around the world, several countries, especially Asian countries are very busy in revamping their tax structures. As per the different research papers, World bank reports, articles, books some of the major constructs has been playing vital role to promote foreign investment. First factor i.e. "Starting a business" relates to smooth functioning of Government departments and steps like time taken in various clearances, land acquisition, single window systems, maintenance of law and order situation, attitude of general public as well as those of administration etc. Fifth one i.e. Getting Credit owes its effectiveness in healthy functioning of the financial systems of the country. Though the law of the land has the role to play here but strengthening of the financial institutions are long drawn procedures and take a considerable period of time. Third and eighth factor relates to infrastructure developments in power sector, transportation in all forms i.e. surface, air and water so that the products and services are ready on time and to be delivered on time at proper destination

Starting a Business

In India starting a business was a very complicated affair but after the launch of make in India campaign things have become much more easier for the people to start their own venture a lot of changes has been made in order to ease out the life of the people interested in having their own firm. The topic measures the minimum paid up capital requirements, no of procedures involved and cost for a small-to-medium-sized limited liability company to start up and formally operate in the economy's

largest business city. Earlier India's rank was 164 but now there is an improvement due to which it has climbed up the ladder and has acquired the 156th spot in the current ease of doing business ranking by the world bank.

Getting Credit

This indicator is basically concerned with measuring the legal rights of borrowers and lenders concerned with secured transactions and the reporting of credit information. India witnessed an improvement of 15 ranks this year, from 44 to 29.

Dealing with Construction Permits

This indicator is concerned with recording procedures which are required for a business in the construction industry in order to build a warehouse along with the time and cost to complete each procedure. It is also concerned with studying quality control indices, evaluating the quality of building evaluation, insurance regimes, safety mechanism and certified professional requirements. Earlier India's rank was 185 and now it is at 181 spot which depicts an improvement of 4 ranks this year.

Trading Across Borders

This indicator is concerned with recording time and cost associated with the process of exporting and importing goods and related with other things such as documentary compliance border compliance and domestic transport. The ranking shows a decline of 3 ranks from 143 in 2016 to 146 in 2015 compared to last year which means more changes needs to be done to climb up the ladder in the rankings.

Protecting Minority Investors

This indicator is concerned with measuring the protection of minority interest from conflict of interest and shareholders rights in corporate governance. Many amendments have been made to the Companies Act which has strengthened the minority investor protection in India. India has made an improvement of 9 ranks i.e. from 13 to 4, making it to top 5 economies in the world.

Getting Electricity

The indicator is concerned with recording all the procedures required by the business in acquiring permanent electricity connection and supply for a standardized warehouse. This indicator has shown a major improvement from being at 99 spot in 2015 it has climbed up to the spot 26 in 2016 but a drop of 3 ranks in its ranking in 2017 has put it down to 29th rank which means more initiatives needs to be taken to improve the overall condition.

Enforcing Contracts

This indicator measures the time and cost involved for resolving a commercial dispute through a local first-instance court, the quality of judicial processes index and evaluate whether each economy has adopted practices that promote good quality and efficiency in the court system. India has shown an improvement of 8 ranks this year from 172 to 164.

1. Paying Taxes

The indicator records the taxes and mandatory contribution which has to be made by firms in a given year. It is also concerned with the firm's administrative burden of payment of taxes, contributions and complying with post-filing procedures. India recorded a major improvement of 53 ranks this year from 172 to 119.

2. Resolving Insolvency

This indicator is basically concerned with the time, cost and recovery rate under the bankruptcy proceeding. It also takes into consideration the outcome of insolvency proceedings which involves domestic entities and the strength of the legal framework which is applicable to judicial liquidation and reorganization proceedings. India's rank has improved from 136-103.

3. Registering Property

This indicator measures the procedures, time and cost which is needed to register the commercial real estate. This indicator has not shown much improvement it was at the 138th spot in 2015 & 2016 and has further dropped down in its rank to 154.

Challenges in Ease of Doing Business in India

In the World Bank Doing Business report of 2018 India is at 100 spot out of 190 countries making an improvement of 30 spots in one year, it has earned a lot of glory for India making it the fastest improving economy in the world still there are lots of challenges to tackle down in the road of achieving India's dream of being at the 50th rank in the ease of doing business ranking of the world and withholding its position.

The challenges are as follow:

- The starting of a business indicator has shown a dip of one rank from 155 to 156 which indicates that steps taken to ease out the process are still not sufficient the reason behind it is the cost involved in starting a business in India is sky high as compared to other countries. The no of procedures required to set up a business is still cumbersome which takes almost a month (27 days) to complete which is above the OECD average of 12 days.

- The trading across border is one such indicator which is showing a continuous dip in the ranking from 133 in 2015 to 143 in 2016 and now 146 in 2017 which clearly indicates that steps taken to improve its ranking are not sufficient still there is something which is lacking which the government is not able to identify which worsens even further as the thick layers of bureaucracy are making it very challenging for India in efficiently moving the goods. Despite opening its doors for international trade, still there are lots of hurdles to overcome in exporting and importing of goods and the fulfillment of long list of documents before moving goods is making it even worse.
- The cost of getting electricity which shows a dip of three ranks compared to last year from 26 to 29 clearly indicates more improvement is required in uplifting this indicator though the cost of getting electricity is cheap in comparison to other countries, it is the no of procedures involved which has led to a dip in its ranking because each procedure itself is time consuming which requires around 8 days for site inspection and around three weeks to get externally connected which further delays the start of a business.

Suggestion to Improve Ease of Doing Business Rank in India

India one of the fastest improving countries has shown a tremendous growth in its rank compared to previous years still a lot needs to be done though it has introduced major reforms that enables entrepreneur in starting and operating their small and medium- sized business faster and simpler. The ways by which India can improve its ease of doing business ranking are as follows:

- Implementing e-governance will result in filling the procedures online which means no visiting government officials, reduce case of bribery and corruption.
- There are various platforms for collecting feedback of users who are impacted by the regulatory measures which has been implemented it will be beneficial in knowing the opinion of users and what further improvements need to be made.
- It is essential to speed up the process of dealing with construction permits for which there should be a specific manufacturing zone and central business district having their own government body to cooperate with other government bodies.

Conclusion

In 2016 India was at 130th rank due to which the government faced a lot criticism for its policies as India was lagging behind in the rankings compared to its counterparts of BRICS nations. Within a year India has reached the 100th rank which

indicates an improvement of 30 ranks a result of the improvement made by the government in its policies launched under the Make in India campaign that targets creating more than 100 million jobs by the year 2022, making India a manufacturing hub and raising the contribution of manufacturing sector's share to GDP to 25%. The hopes are high with the backing of the government India will be able to enter the top 50 rank in the ease of doing business rank. Although various steps have been taken to improve the rankings especially GST the impact of which will be factored in the 2018 ranking which is going to improve India's ranking further. The government needs to concentrate more on weak areas such as starting a business, dealing with construction permits, trading across borders, registering property these are some indicators which need special attention because these are the main reason India is lagging behind in the world bank ranking so it is essential to make sure that it is not the job of one department but for everyone concerned with the regulatory process. India needs to run faster to further improve its ranking. Through sheer hard work and perseverance India can achieve its target of top 50 in ease of doing business rank.

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BLOCKCHAIN TECHNOLOGY INNOVATION, OPPORTUNITIES, AND CHALLENGES

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Abstract

A blockchain is essentially a distributed database of records or public ledger of all transactions or digital events that have been executed and shared among participating parties. Each transaction in the public ledger is verified by consensus of a majority of the participants in the system. And, once entered, information can never be erased. The block chain contains a certain and verifiable record of every single transaction ever made. Bitcoin, the decentralized peertopeer digital currency, is the most popular example that uses blockchain technology. The digital currency bitcoin itself is highly controversial but the underlying blockchain technology has worked flawlessly and found wide range of applications in both financial and nonfinancial world. This paper describes blockchain technology and some compelling specific in innovation, opportunities and benefits. We then look at the challenges ahead and business opportunities in this fundamental technology that is all set to revolutionize our digital world.

Keywords: Bitcoin, Transaction, Digital currency, Fundamental technology

Introduction

Blockchain is a public ledger that makes it nearly difficult to change a transaction. a decentralised database where transactions are transparent and there is no middleman. The digital money (bitcoin) was the first application of blockchain technology. Other applications for this technology, however, have not yet been investigated. Cyber security, the internet of things, supply chain management, market forecasting, governance, information management, financial transactions, and other application fields are anticipated to be impacted. Due to blockchain's efficacy, particularly in terms of security, it has changed how individuals manage their money up to this point. Therefore, research into blockchain technology in a variety of application domains is essential from the perspective of data analytics.

Type of Blockchain

1. Public Blockchain:

These networks allow anyone to join the network and execute transactions visible to every network user. There is no trust relationship among the network users before

joining the network. Transaction can be verified by any node. All nodes participate in the transaction consensus process. Bitcoin and Ethereum belong to the class of public block chain.

2. Private Blockchain:

These networks are permission based. These are also referred to as “permissioned ledgers” and are constructed using Hyper ledger Fabric which is hosted by Linux Foundation. The digital records can be encrypted and are visible only to authorized users, thus privacy requirements of the data are fulfilled. The main difference between private and public networks is user verification and authentication mechanism. In public block chain networks, there is no trust relationship among the network nodes. Before any transaction can be performed, there is computing overhead involved in user validation which increases the time for each transaction. Contrarily, in private block chain networks, permission based trust is involved before any transaction is made. It significantly reduces the computation overhead for running the authentication and validation algorithms. Consequently, thousands of transactions can be performed per seconds on private blockchain networks as compared to a few transactions per second in public networks. The blockchain network can be owned by a single network provider or multiple consumers. The owner of the network determines whether it is public or private in nature

3. Consortium Blockchain :

In consortium networks, block authentication is performed by a set of specific nodes. It is categorized as semi private and permissioned blockchain. It is a partially centralized system controlled by a few selector nodes, contrary to public blockchain (decentralized) and private blockchain (centralized). Network nodes having authority can configure the data in blockchain to be public or private. R3CEV and Hyperledger are examples of Consortium Blockchain networks

Innovation of Blockchain Technology

Blockchain technology has the potential to significantly contribute to the integration of renewables by automating procedures, enhancing power system flexibility, and lowering transaction costs. It can speed up the adoption of other technologies at the same time, such as storage and electric vehicles (EVs), which will improve grid management and system performance.

With the relatively recent increase in power sector complexity comes a need for greater intelligence and transparency. Surging numbers of smart devices coming online are generating vast amounts of granular data – important fuel for burgeoning

technologies, such as artificial intelligence, to increase the efficiency of power systems and reduce energy usage. New tools to manage all this data in a secure, efficient and transparent manner are being sought, and blockchain technology is already proving useful. New business models in the energy sector enabled by blockchain technology continue to emerge and evolve, with the spotlight currently on local peer-to-peer (P2P) and wholesale power trading as well as innovative means of project financing in developing countries, among others.

How Blockchain will Change the World

- **Banking and Payments:** Not only does blockchain allow anyone to exchange money faster, more efficiently and more securely (see bitcoin currency), but many banks are already working on adopting blockchain technology to improve their transactions.
- **Cyber security:** All data is verified and encrypted in blockchain using advanced cryptography, making it resistant to unauthorized changes and hacks. Centralized servers can be very susceptible to data loss, corruption, and human error and hacking. Just look at the many hacks we've seen in the past few years with Target, Verizon, Deloitte and Equifax. Using a blockchain decentralized, distributed system would allow data storage in the cloud to be more robust and protected against attacks.
- **Internet of Things:** Today the Internet of Things (IoT) includes cars, buildings, doorbells and even refrigerators that are embedded with software, network connectivity and sensors. However, because these devices operate from a central location that handles communications, hackers can gain access to the car you're driving or to your home. According to Kamil Przeorski, an expert in Bitcoin and Ethereum capabilities, Blockchain has the potential to address these critical security concerns because it decentralizes all of the information and data. This is increasingly more important as IoT capabilities increase.
- **Unified Communications:** Blockchains can enable faster, safer and more reliable automated communication. Automated or digital communication based on pre-built algorithms is already occurring at scale in some industries. Examples of this include emails, system alerts and call notifications. Matt Peterson, co-founder of Jive Communications and an early adopter and miner of Bitcoin told me that while a lot of communication is currently automated, this type of communication is generally non-critical and asynchronous. He said that "Blockchains can shift the playing field to allow authorized, bi-directional communications and transactions that occur more freely in an

automated environment and produce an immutable record of communication.” This will greatly enhance the safety and reliability of our communications.

- **Government:** If corrupt politicians and long lines at the DMV give you a headache, you’re not alone. With blockchain, we could reduce bureaucracy and increase security, efficiency and transparency. Welfare and unemployment benefits could also be more easily verified and distributed and votes could be counted and verified for legitimacy.
- **Crowdfunding and Donating to Charities:** Donating to a worthy cause is never a bad idea. But what percentage of your donation is actually being given to those it’s meant for? Blockchains can help ensure that your money gets exactly where you need it to go. Bitcoin-based charities are already creating trust through smart contracts and online reputation systems and allowing donors to see where their donations go through a secure and transparent ledger. The United Nations’ World Food Programme is currently implementing blockchain technology to allow refugees to purchase food by using Iris scans instead of vouchers, cash or credit cards.
- **Healthcare:** Wouldn’t it be great if doctors did not have to “fax over referrals” anymore? Why can’t all of our medical information be stored in a central database? The centralization of such sensitive information makes it very vulnerable. With all of the private patient data that hospitals collect, a secure platform is necessary. With the advent of blockchain, hospitals and other healthcare organizations could create a centralized and secure database, store medical records and share them strictly with authorized doctors and patients.
- **Rentals and Ride-sharing:** Uber and Airbnb may seem like decentralized networks, but the platform owners are in complete control of the network and naturally take a fee for their service. Blockchain can create decentralized peer-to-peer ride-sharing apps and can allow car owners to auto pay for things like parking, tolls and fuel.

While blockchain is still relatively new and many experiments will fail before they succeed, the possibilities for innovation are endless. Along with the eight points listed, it will affect retail, energy management, online music, supply chain management, forecasting, consulting, real estate, insurance and much more.

Opportunities of Blockchain Technology

Gaming

The online gaming community participating in pay-to-play or play-to-win platforms is one of the biggest untapped markets. They extract money out of their

pockets with no rewards. The face of these models can be changed through blockchain by establishing a pay-to-earn model

Identity Check

Our lives are ruled by ID cards, Aadhar cards, voter IDs, etc. Unfortunately, these can be easily forged by miscreants. With blockchain technology, using QRC to verify the authenticity of any identification becomes possible. All that is required is a blockchain log to store ID details that can be verified at any point at the click of a button.

Managing a Retail Business

Extensive development is not required for setting up a retail operation using blockchain. Most countries already have a framework in place in the private sector that allow customers to handle their grocery shopping using their smart devices. These existing technologies can be integrated into the coding of blockchain technology, making it possible for business owners to make conversions.

Notaries

Transferring ownership of goods and assets through notaries is a common feature. It is usually done in front of a law officer by signing a piece of paper and normally involves a monetary transaction. Blockchain can ensure that these digital records of notaries be maintained in a tamper-proof manner.

Digital Voting

Blockchain can ensure fair elections. When the electronic voting systems are integrated with blockchain technology they would become fraud-proof and the results can be made public without any human intervention.

Digital Assets or Services

The ICO (Initial Coin Offering) structure can work really well for any smallbusiness that needs crowdfunding. A participating role may be offered to the investors, offer them some sort of asset related to the business initiative, or a tokenized utility.

Gambling

Starting a casino using crypto assets is possible in countries where gambling is permitted.

Blockchain technology is poised to dramatically transform commerce across every sector, including financial, legal, agriculture, healthcare, and more. Currently, the most prevalent example of Blockchain technology is Bitcoin. But, the technology that underpins Bitcoin is encountering applicability across a wide spectrum of use cases.

Here are four innovative ways companies using Blockchain technology can pioneer new solutions to old problems.

Financial Sector

Banks are using outdated systems with modern updates, workarounds are modifications are just grafted on. For businesses, this puts the entrepreneurs at risk from phishing, social engineering, and cyberattacks. The financial details can be used to make fraudulent payments, or you could unknowingly send a payment to a cybercriminal, with little hope of getting the money back. This is where the Blockchain technology makes its way through. Now, the banks need to find a way to implement Blockchain solutions within a complex technology stack, to improve the speed and security of financial transactions for everyone.

Asset Management and Tracking

Several sectors that own, manage, and maintain valuable assets are starting to realize that Blockchain features are worth looking into further because, with the use of traditional software, the records can be modified too easily.

Replacing Traditional Contracts

Contracts are another area where Blockchain could prove to be advantageous. Enforceability is automatic and requires the confirmation of all parties in the smart contract. Terms and conditions must be met, with the relevant proof, before a contract could be enacted. Failure to adhere to terms would mean payment can be withheld by the other party.

A smart contract, as opposed to traditional contracts, have numerous advantages, and the tech sector liaising with law firms, need to look into this more closely. Businesses everywhere would benefit from this.

Improving Security

Cyberattacks are increasing by the minute. Businesses of every size are at risk. Blockchain is considerably safer and more secure than traditional security systems. One significant advantage is that the data stored in the blockchain is decentralized with multiple computers and nodes, storing pieces of important information. Unlike traditional servers and data stores, where everything is in the same place. Once a cyber-attacker infiltrates a traditional data store, everything is a huge risk. This is not the case with Blockchain technology, hacking and destroying an entire network is nearly impossible, that means confidential data is safer in a distributed network.

Challenges on Blockchain Technology

Security issues:

As the blockchain ecosystem develops and new use-cases materialise, businesses across all industry sectors will encounter a complex and possibly divisive range of challenges as well as new dependencies. The architecture of various blockchain technology concepts, for instance, varies. Certain are safer than others. For instance, 51% assaults are more likely to succeed against decentralised blockchains than centralised ones. For crypto aficionados who like to store their money on decentralised chains, this has led to a few issues.

A closer look at 51% attacks reveals that they take use of a flaw in decentralised systems that lets users take control of a chain by controlling 51% of the computing power. On networks using the proof-of-work (PoW) protocol, this frequently occurs.

Interoperability and Low Scalability issues with Blockchain Technology:

As use-cases expand, blockchain technology has developed over time to become more scalable. Satoshi Nakamoto created the first blockchain network to support the Bitcoin network. The Ethereum network, established by Vitalik Buterin, was the second decentralised network.

Because programmable money existed on the Ethereum blockchain, it was a step ahead of the Bitcoin network. The network was designed to facilitate decentralised apps while also handling a significant volume of crypto transactions. However, both the Ethereum and Bitcoin networks are experiencing scalability problems. The Ethereum network currently enjoys greater popularity among blockchain developers.

Low job Availability

The blockchain industry has experienced an explosion in the number of non-repairable tokens and DeFi projects over the past year, which has created problems in the job market. According to the latest statistics, the demand for blockchain talent has increased by more than 300%, as both established companies and startups are looking for top talent.

Blockchain Challenges Energy Consumption

Bitcoin and Ethereum blockchain systems are the most popular. But these are energy-intensive proof-of-concept systems that rely on mining to confirm blocks and transactions. Considering the amount of power they consume, the concept is a bit weak. BTC mining alone is estimated to consume around 100 terawatt hours of electricity per year. This is more than the energy consumed in countries like Finland.

Conclusion

Distributed ledgers, called blockchains, can securely digitize many current economic functions and financial, legal and government services. Blockchain can be defined as a decentralized public ledger that records transactions between users in a permanent, secure and auditable manner. The most important thing is this Blockchain can be programmed to record not only financial transactions, but also anything of value. Growth is there understand that blockchain technology will bring a radical change especially regarding financial assets. There is no doubt about it. The financial sector is a pioneer in adopting blockchain technology. Blockchain is rapidly revolutionizing world economy The potential impact of blockchain technology - decentralized ledgers - on society and world economy are very important because they promise to always be optimistic. The benefits of blockchain are more than just financial, and the technical capability of blockchain already exists which certain groups have applied to solve real problems.

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DIGITAL PAYMENT AND FINANCIAL INCLUSION

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Abstract

The paper defines digital financial inclusion, and highlights the goal of digital financial inclusion, the components of digital financial inclusion, the providers of digital financial services, the instruments for digital financial inclusion, the benefits of digital financial inclusion, the risks of digital financial inclusion, and the regulatory issues associated with digital financial inclusion. It also suggests ways to make digital financial inclusion work for the good of all. The paper concludes by offering some implications for policy making and practice in the digital finance ecosystem.

Keywords: Financial inclusion, Revolution, Digital Payment.

Introduction

Digital financial inclusion involves the deployment of the cost-saving digital means to reach currently financially excluded and underserved populations with a range of formal financial services suited to their needs that are responsibly delivered at a cost affordable to customers and sustainable for providers.

While the years of experience with digital financial services often give providers significant advantages, the particular risks introduced by the new services result from, among other things:

- introduction of non-financial firms deploying new technologies;
- new contractual relationships between financial institutions and third parties, including the use of agent networks and other outsourcing arrangements;
- different regulatory treatment of deposit-like products (compared to deposits);
- unknown and as-yet unpredictable costs to inexperienced and vulnerable consumers

Access to Formal Financial Services

- Payments, transfers, savings, credit, insurance, securities, etc. Migration to account-based services typically expands over time as customers gain familiarity with and trust in a digital transactional platform. Government-to-person payments, such as conditional cash transfers, that can enable digital stored-value accounts may provide a path for the financially excluded into the financial system
- typically lower costs of digital transactional platforms both to the provider and thereby the customer allow customers to transact locally in irregular, tiny amounts, helping them to manage their characteristically uneven income and expenses

Using Digital Payments to Push Financial Inclusion

- Digital payment systems are emerging catalysts in the push for financial inclusion in Latin America and the Caribbean
- Access to digital transactions creates new financial linkages for the unbanked and underbanked. Additionally, connectivity to digital payment systems has an undeniable positive impact on the resilience and growth of small businesses and access to formal financial services by women.
- According to the World Bank's 2021 Global Findex Database, areas with access to digital payments and mobile money, women were 9% less likely to be in poverty and their consumption was 18.5% higher than those areas with limited access to digital payment services. Similarly, Micro, Small and Medium Sized Enterprises (MSMEs), which make up approximately 99% of businesses in LAC, that were connected to digital payment systems during the pandemic
- were more resilient to economic shocks and were even able to increase sales by 20-30%.
- A significant unbanked population exists throughout LAC as approximately 26% of adults did not have a bank account in 2021. This, compounded by the fact that cash transactions remain dominant in the region, has led to significant funding gaps and the deepening of financial vulnerabilities.
- In a region of socio-economic inequalities and significant levels of crime, the high prevalence of cash transactions lends to the passage of corruption, evasion of taxes and anonymity in criminal activities.

About NPCI Backbone of Digital Payment Revolution

- The domestic economy has been witnessing a rapid rise in digital payments that saw an influx of more users during demonetisation and the various lockdowns announced during the surge of the Covid-19 pandemic.
- The backbone of the digital payment revolution is the National Payments Corporation of India which operates retail payments and related settlement systems. It is responsible for the infrastructure to support digital payments.
- The NPCI was established in 2008 by the RBI along with the India banks association.
- It launched various digital payments products like UPI, BHIM, Bharat NACH, IMPS, NETC

Digital Payments Features and Benefits

- This payment mode offers convenience, is safe to use, and allows instant payments. Some of the features of the digital payment products are
- Person-to-person money transfers
- Person-to-business transactions such as local stores, petrol stations, e-commerce
- Business-to-business transfers
- Business-to-person transfers including salary, refund, reimbursement, claims
- Government to person for direct benefit transfers.

Digital Payment Ecosystem in India

- The promotion of digital payments has been accorded the highest priority by the Government of India to bring each and every segment of our country under the formal fold of digital payment services.
- The vision is to provide the facility of seamless digital payment to all citizens of India in a convenient, easy, affordable, quick and secured manner.
- During the last three years, digital payment transactions have registered unprecedented growth in India.
- All these facilities together have created a robust ecosystem for a digital finance economy.

Revolutionizing Digital Payments

- UPI has been termed a revolutionary product in the payment ecosystem.
- Launched in 2016 it has emerged as one of the most popular tools in the country for carrying out digital transactions. UPI is an instant payment system developed by the National Payments Corporation of India
- UPI has gone a long way in making digital payments a habit, and in firmly placing India on the track toward a cashless economy. In the month of August 2022 alone, 346 banks were live on the UPI interface, with **6.58 billion financial transactions** being carried out for a total **value of nearly 10.73 lakh crores**.

Revenue model of Payment Banks

- People from low-income households, migrant labor workforce, small businesses and other unorganized sector entities and other similar users travel distant places to get access for the basic banking services like deposits, fees, and transfer money.

- People should be encouraged to join the digital economy by migrating cash-based customers into digital networks by offering digital payment transactions for free or rock bottom digital charges; this will lead to rapid uptake and usage of payment banks.
- It will also enable high volume-low value transactions in deposit and payment/ remittance services in a technology driven atmosphere.
- This will help people to less depend on cash and encourage to use mobile wallet as a bank account soon enough.

Challenges

- Although Indian economic growth looks but the living standards of most citizens have not changed, with and digital payments still gaining ground in India; which is primarily still a cash based society, suffers from irregularity in digital infrastructure technology adaptation would be a key feature in this scheme for financial inclusion.
- The other challenge would also of customer acquisition as some of these customers who are using mobile banking services might not be willing to migrate to a new bank.
- As banks already have infrastructure for mobile

Conclusion

India is an emerging growing market where the usage of smartphone are rapidly catching up but largely a huge unbanked market where Payment Banks can play an important role in emphasizing the growth of financial inclusion and tapping all the corners of the country progressively. Here adaptation of the infrastructure and technology would definitely be the key features in this scheme for financial inclusion. It would be interesting to see how Payment Banks will change the living standards of people and boosting businesses of millions of MSME¹⁰ and the coming entrepreneurs in the near future.

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PERSPECTIVE OF ICT TOOLS IN EDUCATION- ICT TOOLS IN MODERN BUSINESS

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Abstract

Information and Communication Technology (ICT) has revolutionized the business landscape, reshaping the way organizations operate, communicate, and thrive in the digital age. This abstract provides an overview of the multifaceted role of ICT in modern businesses. It explores how ICT enables seamless communication, efficient data management, process automation, and enhanced customer engagement. Additionally, the abstract highlights the significance of e-commerce, marketing, and supply chain management through ICT adoption. Furthermore, it delves into the transformative potential of mobile technologies, virtual collaboration, and data analytics in driving business growth. Lastly, the abstract touches upon the importance of cyber security in safeguarding digital assets amidst the evolving technological landscape. In conclusion, this abstract sheds light on the pivotal role of ICT in empowering businesses to adapt, innovate, and flourish in an increasingly interconnected and fast-paced world.

Keywords: ICT - Information and Communication Technology, BT - Business Technology, DT - Digital Transformation, E-Com -E-Commerce, CC -Cloud Computing, BDA -Big Data Analytics , BI – Business Intelligence

Introduction about ICT

Information and Communication Technology (ICT) refers to the use of digital technologies to process, store, and exchange information. It includes tools and applications such as computers, smartphones, internet, social media, email, and software.

Some examples of ICTs are intranet, extranet, website, mobile apps, e-commerce websites, software robots, servers, cloud technologies, digital communication apps, and technology to facilitate work from home.

Types of ICT used in Business

Types of information and communication technology used in business:

1. **Intranet:** A network used by employees of a business to communicate privately is called an intranet. Intranet is used to share 'inside' information on the company that the company does not want to go public. This may include training videos, employee information, or plans of the company.
2. **Extranet:** Also a private network. Along with employees, other stakeholders like suppliers and wholesalers can also access the extranet of the company. Using the extranet, suppliers can communicate with employees about stocks or dealers can order the required quantity of goods.
3. **Website:** Websites are now the 'storefronts' of a business. A commonly repeated factoid is that there are as many websites as the number of people in the world. The website lets the business talk to its customers directly and receive feedback.

4. **E-commerce website:** Along with using a website for communication, businesses use their websites to sell their products. The buying or selling of goods using the internet is called e-commerce.
5. **Software robots:** Chatbots are the most widely used software robots. Do you remember surfing on a random website when a pop-up comes up asking you if you need any help finding particular information? If you go ahead and reply, you communicate with a 'software robot' that helps you navigate better. Software robots are special software created to work as a virtual workforce.
6. **Servers:** Servers are computers or programs that help client computers with the required information. Servers usually are ultrafast processing computers with a large storage capacity.
7. **Cloud technologies:** Cloud servers let businesses store their data on the server of another company. If a company is using cloud service, then they don't have to invest a huge amount of money in setting up their server.
8. **Digital communication apps:** Many businesses use mobile applications to communicate internally. There are some apps like Slack or Google Workspace that help communication while working remotely feasible.

Role of ICT in Business

ICT technologies impact businesses in recent times. The role of ICT in business is to provide tools and systems that enable efficient communication, data management, analysis, and decision-making processes, as well as to enhance productivity, customer engagement, and competitive advantage. ICT can support various aspects of businesses like the location of employees, collecting, storing, and analyzing information, e-commerce, and digital communication.

Advantages of ICT

1. **Fast communication:** Emails are quick, but chat on platforms like WhatsApp are quicker. ICT lets businesses communicate anywhere on the globe within a fraction of a second.
2. **Cost-effectiveness:** working from home simply saves money and time. Efficient technologies reduce the time required to complete the task. For example, a tractor will plow better and faster as compared to the old way of using various practical tools.
3. **Better information security:** private data can be better protected by ICT in comparison to paper files. Sensitive information can be protected using a high level of encryption. This tool can also save customers from fraudsters and identity thieves.
4. **Overcome cultural barriers:** Technology does not differentiate between users based on religion, race, or gender. Technology also helps people understand different views and opinions.

Disadvantages of ICT:

1. **Lack of security:** Even though IT provides better security than traditional ways, it is still susceptible to external attacks like hacking or software viruses.
2. **Unemployment:** Many information and communication technologies are replacing human employees. It is making many jobs such as customer support redundant. For instance, recent driverless car technology may replace all taxi drivers in the future.
3. **The initial cost of implementation and maintenance:** It may cost a lot to implement and maintain a secure and user-friendly website. Also, businesses have to comply with new laws and regulations that are introduced.
4. **No human touch:** Working from home has increased mental health concerns within individuals. Many businesses worry about their employees lacking human interaction. When it comes to chatbots, many customers wish to talk to a real person who can understand and solve problems faster rather than the software.

Models of Access to ICT :

There are various models of access to ICT:

1. Appropriateness of technology
2. Social-cultural factors
3. Local economic environment
4. Physical access to technology
5. Affordability of technology and technology use
6. Political will and public support
7. Locally relevant content, applications, and services
8. Human capacity and training

ICT and Business Intelligence

Business intelligence (BI) is a set of techniques that takes business data and creates information from those data so that managers can make decisions. In that way, organizations create business intelligence. We see many vendors offering BI solutions, which come in many varieties, including stand-alone solutions and solutions that are additions to larger suites of business applications. What is common across all BI solutions is that they utilize business data to support ad hoc and planned reporting and thus managerial decision making. Analyzing sales trends and customer buying patterns are just two examples of analysis that can be done using BI software. Another defining attribute of all BI software solutions is that they need ICT to enable them.

It is difficult for organizations to determine when and why ICT infrastructure should be design and built , and creating BI is just one reason to do so. The ICT value proposition is elusive, and, ironically, an organization needs to create business intelligence in order to understand when and why ICT infrastructure should be built. This book offers tools for organizations to use to determine ICT value to support the organizational value proposition. These tools include methods for creating BI.

Using ICT Improves Business Processes

ICT is one of the most critical investments in all business today. These technologies can bring many benefits, including helping to optimize services and operations. They allow to increase productivity and profits, improving customer experience, saving money and time. Automating various work processes makes life easier for employees and managers, allowing them to spend less time and energy on various daily tasks.

It's a great chance to improve the customer support system. In addition, ICT enables managers to improve planning and allocate resources more efficiently. ICT infrastructure can significantly improve and optimize the work of an enterprise. Companies should take advantage of today's innovations to stay competitive.

The introduction of technology allows businesses to become more mobile. Thanks to scanners, customers and companies can find out where their cargo is in real-time mode. Employees can work anywhere with the help of mobile internet. Mobile payments enable small businesses to accept credit cards digitally. It allows you to reduce the cost of additional equipment significantly.

Conclusion

The role of ICT in business is to provide tools and system that enable efficient communication, data management ,analysis and decision making process as well as to enhance productivity customer engagement and competitive advantages. From corporate data, managers and other employees receive valuable information to quickly make effective decisions and respond on time to various changes, opportunities, and threats to the business. In addition, communication networks play an essential role in joint decision-making, facilitating the work process. Information and communication technologies bring significant changes to services, products, and competitive conditions in various industries.

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AN ANALYSIS OF THE CONTRIBUTION OF THE CENTRAL COOPERATIVE BANK TOWARDS THE GROWTH AND EMPOWERMENT OF SELF-HELP GROUPS IN THE PERIYANAICKENPALAYAM BLOCK, COIMBATORE DISTRICT

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Abstract

This study aims to analyze the significant role played by the Central Cooperative Bank in promoting and developing Self-Help Groups (SHGs) with in the Periyanaickenpalayam Block of Coimbatore District. SHGs have emerged as vital entities in empowering individuals, particularly women, by fostering financial inclusion, skill development, and social cohesion. The Central Cooperative Bank's support of these SHGs is essential in nurturing their growth and enhancing their capabilities. The research investigates the various financial and non-financial services provided by the Central Cooperative Bank to the SHGs. It examines the impact of these services on the SHGs' economic sustainability, empowerment of members, and their ability to engage in entrepreneurial activities. Additionally, the study deals in to the challenges faced by the SHGs and the Bank's efforts to address these obstacles effectively. The primary data collected from the members of (SHGs) and Bank records have also been collected to make a mixed-method approach to insights from interviews with SHG members and bankofficials employed for comprehensive analysis. The findings highlight the crucial role of the Central Cooperative Bank in fostering a supportive ecosystem for SHGs, empowering local communities, and driving socio-economic development in the Periyanaickenpalayam Block. Self Help Groups (SHGs) form the basic constituent unit of the micro finance movement in India. SHGs play a crucial role in the social and economic empowerment of poor people in rural areas. SHGs provide enough opportunities for the overall development of women in rural areas. The study reveals that the SHG activities helped build self-confidence, self-independence, and social welfare among the group members. The Central Cooperative Bank has an important role for the developed SHG members, particularly in rural areas.

Keywords: Self-Help Groups, District Central Cooperative Bank, Business of SHGs, Empowerment.

Introduction

Self Help Groups (SHGs) are in formal and small associations comprised mainly of economically disadvantaged individuals who come together to utilize the economic benefits provided by the Government through cooperation and individual responsibility. India has a significant number of SHGs, with approximately 70 Lakhs of them across the country, and Tamil Nadu alone has 21454 SHGs, ranking second in the nation. The SHG-Bank Linkage Programme (SBLP), launched by NABARD in 1992, plays a crucial role in this regard. The involvement of SHGs with banks has proven beneficial in overcoming the challenge of high transaction costs associated with providing credit to the poor. By sharing some banking responsibilities, such as loan appraisal, follow-up, and recovery, with the

members, SHGs facilitate easier access to credit for the under privileged. Additionally, the voluntary nature of the association and the strong rapport among members allow them to bypass hurdles like collateral requirements, excessive documentation, and physical distance, which typically hinder formal financial institutions' ability to serve the poor. SHGs consist of like-minded individuals with a common objective of achieving socio-economic development. These groups have a membership ranging from 12 to 25 members, primarily composed of the impoverished population. The members are usually at least 18 years old and preferably married. To ensure broad representation, only one member of a family can enroll in the SHG, and they must be a resident. In summary, Self Help Groups are grassroots-level organizations that empower the disadvantaged and foster financial inclusion by working in collaboration with banks, offering available solution to the challenges faced by the formal financial system in serving the economically vulnerable sections of society.

The Significance of Self-Help Groups (SHGs)

Self-Help Groups (SHGs) play a vital role in instilling confidence among rural women who lack a regular source of income and heavily rely on their husbands to meet their basic needs. These SHGs act as a catalyst for mobilizing financial resources among their members, leading to collective socio-economic development. Moreover, they foster a culture of savings and thrift, enabling the efficient utilization of local resources. By harnessing the individual skills of its members for the greater good of the group, SHGs contribute to the overall socio-economic progress of the village. Additionally, participation in SHGs cultivates a sense of responsibility and leadership among its members.

SHGs in Coimbatore District

S.No	Location	Number of SHGs
1	Anaimalai	170
2	Annur	134
3	Karamadai	259
4	Kinathukadavu	123
5	Madukkarai	70
6	Periyanakeyanpalayam	159
7	Pollachi North	200
8	Pollachi South	52
9	S.S Kulam	35
10	Sultanpet	187
11	Sulur	113
12	Thondamuthur	67
13	Valparai	30
	Total	1599

Statement of problem

The present study is designed to delve into the personal profiles of women participants within Self Help Groups (SHGs) operating in the study area. This investigation aims to understand key demographic characteristics, such as age, educational background, occupation, and household composition, which can shed light on the diverse backgrounds and circumstances of the SHG members. Moreover, the research will focus on exploring the socio-economic benefits that these women derive from their participation in the selected SHGs. By analyzing changes in their income levels, livelihood opportunities, and overall well-being, the study seeks to gauge the extent to which SHGs have contributed to their socio-economic empowerment and enhanced quality of life. Furthermore, the study will closely examine the role played by cooperative banks in the promotion and support of SHGs. It will explore the mechanisms through which cooperative banks facilitate the formation and growth of SHGs, provide financial resources, and offer technical assistance. Additionally, the research will investigate how cooperative banks encourage and strengthen accountability among SHG members regarding financial transactions and decision-making processes.

Objectives of the study

- To examine the demographic characteristics and background of female participants engaged in Self Help Groups (SHGs) within the research region.
- To investigate the socio-economic advantages and positive outcomes experienced by members actively involved in the chosen Self Help Groups.
- To assess and detail the active contributions of cooperative banks in fostering the establishment and growth of SHGs, while also promoting transparency and responsibility among the SHG members.

Methodology

The current research is a combination of both primary and secondary data. To collect primary data, a comprehensive interview schedule was formulated, enabling the collection of essential information. The survey sampling technique was adopted, selecting ten SHGs operating under the control of the Cooperative Bank in Periyanaickenpalayam Block as the study sample. A total of 50 SHG members were interviewed to investigate the advantageous services provided by the Cooperative Bank in fostering the growth and development of the SHGs. In addition to the primary data, secondary data was obtained from the Periyanaickenpalayam Central Cooperative Bank Branch, which contains valuable information regarding the members of the SHG groups. This combined approach of using primary and secondary data aims to offer a comprehensive and in-depth understanding of the role played by the Cooperative Bank in supporting and empowering the SHGs in the study area.

Analysis of Data

The data analysis was conducted on a group of 10 self-help group members sponsored by Cooperative Bank in the Periyanaickenpalayam block of Coimbatore District. A total of 50SHG members were randomly selected and interviewed using a structured interview schedule. The study exclusively focused on female participants.

Analysis and Interpretation

Table - I
Personal Profile of Respondents

S. No	Characteristics	No. of Respondents	Percentage
1.	Age(in Years)		
1.	20-30Years	9	18
2.	30-40Years	12	24
3.	40-50Years	21	42
4.	Above50Years	8	16
2.	Community		
1.	BC	21	42
2.	MBC	14	28
3.	SC/ST	10	20
4.	Others	5	10
3.	Education Qualifications		
1.	None	3	6
2.	School	12	24
3.	Secondary	20	40
4.	College	15	30
4.	Marital Status		
1.	Married	44	88
2.	Unmarried	6	12

Source of Data: Data Collected from Self Help Group Members

The table presents the personal profile of respondents based on various characteristics. The data is collected from a sample of individuals who are part of Self Help Groups (SHGs) sponsored by Cooperative Bank in the Periyanaickenpalayam block of Coimbatore District.

Age (in Years): The majority of the respondents (42%) fall in the age group of 40-50 years, indicating that this age bracket is well-represented among the SHG members. However, the sample also includes a significant number of respondents in the age group of 30-40 years (24%) and above 50 years (16%).

Community: The majority of the respondents (42%) belong to the BC category, followed by MBC (28%) and SC/ST (20%) categories. This suggests that BCs are more actively involved in the SHGs compared to other communities.

Educational Qualifications: The data shows that a significant portion of the respondents (40%) have completed their secondary education, and 30% have attended college. This indicates that a considerable number of SHG members have received at least a basic level of formal education.

Marital Status: The vast majority of the respondents (88%) are married, while a smaller proportion (12%) are unmarried. This suggests that the SHGs primarily comprise married individuals.

Table-2
Socio and Economic Profile of the Respondents

S. No	Characteristics	No.of Respondents	Percentage
1.	Occupation		
1.	Self-Employed	14	28
2.	Employees	4	8
3.	Housewife	25	50
4.	Entrepreneur	7	14
2.	Monthly Income of the Family		
1.	Below 25,000	8	16
2.	25,000-50,000	24	48
3.	50,000-75,000	12	24
4.	Above 75,000	6	12
3.	Monthly Expenses of the Family		
1.	Below 20,000	6	12
2.	20,000-30,000	8	16
3.	30,000-40,000	15	30
4.	Above 40,000	21	42
4.	Monthly Savings of Family		
1.	Below 10,000	31	62
2.	10,000-20,000	8	16
3.	20,000-30,000	5	10
4.	Above 30,000	6	12
5.	Family Size		
1.	1-3 Members	10	20
2.	3-5 Members	26	52
3.	Above 5 members	14	28
6.	Type of Family		
1.	Nuclear	38	76
2.	Joint	12	24
7.	Social Participate		
1.	Panchayat	8	16
2.	Cooperatives	12	24
3.	Politics	9	18
4.	Nil	21	42

Source of Data: Data Collected from Self Help Group Members

The table provides the socio-economic profile of the respondents who are members of Self Help Groups (SHGs). The data is collected from a sample of individuals from the Periyanaickenpalayam block in Coimbatore District.

Occupation: The majority of the respondents (50%) are housewives, indicating that SHGs are significantly contributing to the empowerment and involvement of homemakers. A notable percentage of respondents are self-employed (28%), and a smaller proportion are entrepreneurs (14%).

Monthly Income of the Family: A significant portion of the families (48%) falls in the income bracket of 25,000 to 50,000, suggesting that a considerable number of SHG members belong to the middle-income category. There are also some families (12%) with a higher income above 75,000.

Monthly Expenses of the Family: A significant proportion of families (42%) have monthly expenses above 40,000, indicating that they may have higher financial commitments. On the other hand, there are also families (12%) with relatively lower expenses below 20,000.

Monthly Savings of Family: The majority of the families (62%) have relatively lower monthly savings, below 10,000. This could indicate financial challenges and limited disposable income. However, it's encouraging to see that some families (12%) manage to save higher amounts above 30,000 per month.

Family Size: Most families (52%) have a family size of 3-5 members, which is typical for an average-sized family. There are also families (28%) with more than 5 members, which might indicate larger extended families.

Type of Family: The majority of the families (76%) are nuclear families, while a smaller proportion (24%) are joint families. This suggests that the nuclear family system is more prevalent among the SHG members.

Social Participation: The data shows that a considerable number of respondents (42%) do not participate in any of the mentioned social activities. However, some respondents are actively engaged in Panchayat activities (16%), cooperatives (24%), and politics (18%), which indicates their involvement in community affairs.

Socio Empowerment of SHG members

Table-3
SHG's Group Activities

S. No	Characteristics	No. of Respondents	Percentage
1.	Garments Manufacturing	5	10
2.	Craft Works and Gift Items	21	42
3.	Goat Farm	4	8
4.	Canteen	9	18
5.	Beauty Parlor	11	22
Total		50	100

Source of Data: Data Collected from Self Help Group Members

The table illustrates the various group activities undertaken by the members of the Self-Help Group (SHG). It shows that 42 percent of the respondents engage in craftwork and gift items, while 22 percent of the respondents are involved in beauty parlor services. Only 8 percent of the respondents are engaged in the goat farming business.

Empowerment of Women through SHG's

Self Help Groups (SHGs) play a significant role in empowering women. One of the key benefits is the enhancement of members' confidence and self-esteem. Through SHGs, women gain valuable knowledge about banking and financial matters, enabling them to become more financially literate and independent. Moreover, these groups equip them to tackle new challenges that arise in their lives. All the 10 SHGs surveyed in this study reported that their members experienced increased confidence through their participation. The mutual financial support and camaraderie among the members foster the social and economic empowerment of women in the village.

Table-4
Social benefits derived by women SHG's

S. No	SocialBenefits	Yes	No
1.	Source of Income	50	0
2.	Social Belongingness	35	15
3.	Banking Knowledge	40	10
4.	Decision-Making Skills	35	15
5.	Self Confidence	45	5
6.	Self-dependence	40	10

Source of Data: Data Collected from Self Help Group Members

The table presents the responses of Self Help Group (SHG) members regarding the social benefits they have gained from their participation in the groups. The data is based on the number of respondents who answered "Yes" or "No" to each of the social benefits.

Source of Income: 100% of the respondents (50outof50) confirmed that SHGs have provided them with a source of income.

Social Belongingness: 70% of the respondents (35 out of 50) expressed that they feel a sense of social belongingness due to their involvement in SHGs. 30% of the respondents (15outof50) stated that they do not feel a sense of social belongingness through SHGs.

Banking Knowledge: 80% of the respondents (40 out of 50) reported that they have gained banking knowledge as a result of their participation in SHGs. 20% of the respondents (10 out of 50) stated that they have not gained banking knowledgethroughSHGs.

Decision-Making Skills: 70% of the respondents (35 out of 50) indicated that their decision-making skills have improved through their involvement in SHGs. 30% of the respondents (15outof50) mentioned that their decision-making skills have not improved through SHGs.

Self-Confidence: 90% of the respondents (45 out of 50) reported that their self-confidence has increased due to their participation in SHGs 10% of the respondents (5 out of 50) stated that their self-confidence has not improved through SHGs.

Self-Dependence: 80% of the respondents (40 out of 50) expressed that they have become more self-dependent through their involvement in SHGs. 20% of the respondents (10 out of 50) mentioned that their self-dependence has not improved through SHGs.

Role of Central Cooperative Bank in Developing SHGs.

The Central Cooperative Bank plays a crucial role in the development and promotion of SelfHelp Groups (SHGs). One of its primary functions is to encourage the formation of SHGs and instill a culture of saving among their members. Over time, the bank facilitates access to loans for these groups to support various entrepreneurial and business endeavors. The table below provides an overview of the loans offered by the Central Cooperative Bank to the members of Self Help Groups.

Table-5
Bank Linkage with SHG's

S. No	Characteristics	No.of Respondents	Percentage
1.	Savings amount paid by Members		
1.	100-200	22	44
2.	200-300	13	26
3.	300-400	5	10
4.	Above400	10	20
2.	Period of Amount Collected		
1.	WeeklyOnce	40	80
2.	15Days Once	7	14
3.	MonthlyOnce	3	6
3.	Amount Paid to Bank		
1.	Below5000	11	22
2.	5000-10000	26	52
3.	10000-15000	13	26
4.	Period of Amount Paid to Bank		
1.	MonthlyOnce	50	100
2.	2Months Once	-	-
5.	Bank Approach to Avail of Loan		
1.	PublicBank	4	8
2.	PrivateBank	2	4
3.	CooperativeBank	44	88
6.	Loan Availed from Central Cooperative Bank		
1.	Below1Lakhs	12	24
2.	1Lakhs-2Lakhs	23	46
3.	2Lakhs-3Lakhs	8	16
4.	Above3Lakhs	7	14

Source of Data: Data Collected from Self Help Group Members

Savings Amount Paid by Members:

Period of Amount Collected:

From the study, it was found that a significant majority of respondents, representing 80% of the total, respondent have deposited their savings every week. Additionally, 14% of the participants follow a bi-weekly savings routine, depositing money once every 15 days. Another 6% of respondents prefer a monthly approach, saving their money once a month. This data highlights the diverse saving habits of the participants, with a majority leaning towards more frequent and consistent contributions to their savings accounts, while others choose less frequent intervals for their financial planning.

Amount Paid to Bank:

The respondents, representing 22% of the total, make savings deposits below 5000 units, indicating a more conservative approach to saving. On the other hand, a majority of 52% participants fall within the range of paying an amount between 5000 and 10000 units, demonstrating a moderately sized group that maintains a balanced approach to their savings. Furthermore, 26% of the respondents contribute an amount ranging between 10000 and 15000 units, suggesting a relatively smaller yet substantial group of individuals who are more committed to saving higher sums. The data showcases a diverse range of saving habits among the respondents, reflecting varying financial priorities and strategies.

Period of Amount Paid to Bank:

100% of respondents pay the amount to the bank monthly once. No respondents reported paying the amount every 2 months.

Bank Approach to Avail of Loan:

The data revealed that a small portion of respondents, comprising 8% of the total, sought to avail of loans from Public Banks. Similarly, an even smaller percentage of 4% of participants opted for loans from Private Banks. On the contrary, a significant majority of 88% of respondents chose to approach Cooperative Banks to obtain their loans. This finding indicates

A prevalent preference among the surveyed individuals for Cooperative Banks, potentially due to factors such as better terms, personalized services, or community-based trust. The data underscores the diverse choices made by respondents when it comes to seeking financial assistance, with Cooperative Banks emerging as the most popular option for obtaining loans.

Loan Availed from Central Cooperative Bank:

The survey findings indicated that a considerable number of respondents, accounting for 24% of the total, opted for loans below 1 lakh, reflecting a significant portion of individuals seeking relatively smaller loan amounts. Additionally, a substantial majority of 46% of participants availed of loans ranging from 1 lakh to 2 lakhs, highlighting a prevalent trend of borrowing within this mid-range bracket. Furthermore, 16% of

respondents sought loans between 2 lakhs to 3lakhs, representing a smaller but notable segment of borrowers requiring slightly higher amounts. Lastly, 14% of the surveyed individuals availed of loans above 3 lakhs, indicating a relatively smaller yet noteworthy group of individuals pursuing larger loan sums. The data show cases the diverse loan requirements of the respondents, with different segments of the population availing of loans at various levels, contributing to a comprehensive overview of borrowing patterns in the survey.

Role of Cooperative Bank's Satisfaction level of respondents

Cooperative Banks play a crucial and active role in promoting Self Help Groups within the block. These banks provide essential guidance and supervision to the SHGs under their purview. The officials from cooperative banks regularly visit each group to monitor their activities, ensuring that the groups function effectively. Through this regular interaction and monitoring, the cooperative banks help instill a sense of responsibility among the members of the Self Help Groups. To assess the satisfaction level of group members regarding the services provided by cooperative banks, a study was conducted. The following table presents the satisfaction levels of the respondents.

Table-6

Level of Satisfaction of SHGs with service provided by Central Cooperative Banks

S. No	List of Services	Satisfied	%	Dissatisfied	%
1.	Approach of Members	46	92	4	8
2.	Service rent by bank officials	41	82	9	18
3.	Loan Formalities	45	90	5	10
4.	Sanctioning Amount of Loan	44	88	6	12
5.	Rate of Interest	47	94	3	6
6.	Repayment Installment	42	84	9	16
7.	Mode of Repayment	39	78	11	22
8.	Terms and Conditions	48	96	2	4
9.	Corruption	38	76	12	24
10.	Timely Available of Additional Loan	48	96	2	4
11.	Penalty for Overdue	43	86	7	14
12.	Government Official Support	40	80	10	20
13.	Attitude of Employees	42	84	8	16

Source of Data: Data Collected from Self Help Group Members

The table represents the satisfaction levels of Self Help Groups (SHGs) with the services provided by Central Cooperative Banks. Each row in the table corresponds to a specific service, and the columns show the number of respondents who are either satisfied or dissatisfied, along with the percentage for each category.

1. The approach of Members: The approach of members garnered a high level of satisfaction among 92% of the respondents, while 8% expressed their dissatisfaction with it.

2. Service Rendered by Bank Officials: The service rendered by bank officials

received favorable feedback from 82% of the respondents, indicating a significant level of satisfaction. However, 18% of the respondents expressed their dissatisfaction with the service provided by bank officials.

3. Loan Formalities: The loan formalities proved to be satisfactory for the majority of respondents, as 90% expressed their contentment with the process. Nevertheless, 10% of the respondents reported dissatisfaction with the loan formalities, suggesting that there is room for improvement in this aspect of the lending process.

4. Sanctioning Amount of Loan: The sanctioning amount of the loan received positive feedback from a significant portion of the respondents, with 88% expressing their satisfaction with the approved loan amount. However, 12% of the respondents expressed their dissatisfaction with the sanctioning amount, indicating that a portion of the borrowers may have expected or needed a higher loan amount. It may be worth exploring ways to address the concerns of the dissatisfied respondents and ensure that the loan amount meets the expectations and requirements of a broader customer base.

5. Rate of Interest: The rate of interest on the loans garnered a high level of satisfaction, with 94% of the respondents expressing contentment with the interest rates offered. However, a small proportion of the respondents, accounting for 6%, reported their dissatisfaction with the rate of interest. Addressing the concerns of the dissatisfied respondents and maintaining transparency in interest rate policies can be essential to ensure continued customer satisfaction and trust in the lending process.

6. Repayment Installment: The payment installment process received positive feedback from a significant majority of the respondents, with 84% expressing their satisfaction with the process. However, a notable 16% of the respondents reported their dissatisfaction with the repayment installment process. Addressing the concerns of these dissatisfied respondents and potentially identifying areas of improvement can be crucial in enhancing overall customer experience and ensuring smoother and more convenient loan repayment procedures for all borrowers.

7. Mode of Repayment: The mode of repayment garnered a satisfactory response from 78% of the respondents, indicating a significant majority expressed contentment with the available repayment options. However, a notable 22% of the respondents reported their dissatisfaction with the mode of repayment. It is essential for financial institutions to closely examine the reasons behind this dissatisfaction and explore ways to address their concerns. Offering a diverse range of flexible and user-friendly repayment methods can help improve customer satisfaction and ensure that borrowers have convenient options to meet their loan obligations efficiently. By continuously seeking feedback and adapting to the evolving needs of their customers, financial institutions can enhance the overall repayment experience and build stronger relationships with their borrowers.

8. Terms and Conditions: The terms and conditions of the loan received overwhelming positive feedback, with an impressive 96% of the respondents expressing satisfaction with the stated terms and conditions. However, a small but notable 4% of the respondents reported their dissatisfaction with the terms and conditions. It is crucial for the lending institution to carefully assess the concerns raised by these respondents and

consider whether any adjustments or clarifications are needed to address potential ambiguities or issues. Clear and transparent communication of terms and conditions is vital to ensuring that borrowers fully understand their obligations and rights. By actively listening to customer feedback and making necessary improvements, the institution can further enhance customer satisfaction and foster a trusting and fruitful relationship with its clientele.

9. Corruption: The absence of corruption received positive recognition from a majority of the respondents, with 76% expressing their satisfaction with the perceived lack of corrupt practices. However, a significant 24% of the respondents reported their dissatisfaction, expressing concerns about the presence of corruption. Addressing these concerns is crucial to fostering an environment of trust, fairness, and integrity. Efforts to combat corruption, promote transparency, and implement effective anti-corruption measures can help ensure that the institution or organization operates ethically and responsibly. By actively working to eliminate corruption and establishing a culture of accountability and transparency, the institution can strive to meet the expectations of its stakeholders and build a reputation as a reliable and ethical entity.

10. Timely Availability of Additional Loan: The timely availability of additional loans received overwhelming positive feedback, with an impressive 96% of the respondents expressing satisfaction with the prompt access to further financial assistance. However, a small but notable 4% of the respondents reported their dissatisfaction with the timely availability of additional loans. Addressing the concerns of these dissatisfied respondents and exploring ways to streamline and expedite the loan processing and approval process can be instrumental in enhancing the overall customer experience. By ensuring quick and efficient loan disbursement, the institution can better cater to the diverse financial needs of its customers and strengthen their trust and loyalty. Continuous efforts to improve loan accessibility and responsiveness to customer demands can lead to a more robust and customer-centric financial service experience.

11. Penalty for Overdue: The penalty for overdue payments garnered a favorable response from a significant majority of the respondents, with 86% expressing their satisfaction with the existing penalty system. However, a noteworthy 14% of the respondents reported their dissatisfaction with the penalty for overdue. Addressing the concerns raised by these respondents and reevaluating the penalty structure may be essential to strike a balance between incentivizing timely payments and understanding the challenges faced by borrowers. Implementing a penalty system that is fair, transparent, and takes into account individual circumstances can contribute to fostering a positive borrower-lender relationship. Engaging with customers to understand their concerns and working towards finding solutions that align with their needs can enhance overall satisfaction and compliance with the loan repayment process.

12. Government Official Support: The government official support received positive feedback from 80% of the respondents, indicating a significant majority expressed satisfaction with the assistance provided. However, a notable 20% of the respondents reported their dissatisfaction with the government's official support. Addressing the

concerns of these dissatisfied respondents is crucial to ensuring that government services are effective and responsive to the needs of the public. By actively seeking feedback, identifying areas for improvement, and implementing measures to enhance the quality and efficiency of support services, the government can work towards increasing overall satisfaction and trust among its citizens. Transparent and accountable governance, coupled with open channels of communication, can foster a constructive relationship between the government and its constituents, promoting a sense of collaboration and shared responsibility in achieving societal goals.

13. The attitude of Employees: The attitude of bank employees received positive feedback from a significant majority of the respondents, with 84% expressing their satisfaction with the demeanor and conduct of the bank staff. However, a notable 16% of the respondents reported their dissatisfaction with the attitude of bank employees. Addressing the concerns raised by these dissatisfied respondents and investing in employee training and development can play a crucial role in improving customer interactions and overall service quality. By fostering a culture of customer-centricity and emphasizing the importance of courteous and respect full behavior, the bank can enhance customer satisfaction and loyalty. Regular feedback mechanisms and performance evaluations can also help identify areas for improvement and motivate employees to deliver exceptional service. Striving to maintain a positive and friendly atmosphere within the bank can contribute to building lasting relationships with customers and enhancing the bank's reputation in the financial industry.

Findings

The following is the finding of the field survey on cooperative bank-sponsored SHGs at Periyanaickenpalayam Block in Coimbatore District

- The study reveals that, out of 50 members of SHG, a major proportion was female groups, 100 percent belongs to female groups.
- The majority 88 percent of the respondents were married, and only 12 percent of the respondents were unmarried.
- The occupation background of the SHG members reveals that major share it, 50 percent of respondents are occupied, housewives. Only 8 percent of the respondents are occupied employees in private companies.
- Out of 50 members majority income belongs to Rs.25,000 to Rs.50,000. Only 16 percent of the members' monthly income was below Rs.20,000.
- 42 percent of the respondents are doing business activities of craft work and gift items, and only 8 percent of the respondents were doing goat form.
- The study reveals that SHG activities are motivates banking knowledge and helped them being self confidence and self-dependence.
- Bank linkage with SHGs, Majority of the group members paid to the bank monthly once, and 46 percent of the respondents availed of loans from Rs.1Lakh to Rs.2Lakhs.
- Concerning the services of the cooperative bank towards the SHG members, the

study reveals that the majority of the members are satisfied with the services of the cooperative bank.

- The study shows that the cooperative bank-sponsored SHG is functioning successfully. It has helped to a great extent the empowerment of women in different ways like social, economic, and political.

Conclusion

Self Help Groups (SHGs) are the foundational building blocks of India's microfinance movement, playing a vital role in empowering impoverished communities in rural regions. These groups offer significant opportunities for the holistic development of women residing in these areas. The research highlights that engagement in SHG activities contributes to the enhancement of self-confidence, self-reliance, and societal well-being among the members. Particularly in rural settings, the Central Cooperative Bank assumes a crucial role in supporting the progress of these empowered SHG members

SHATTERING GLASS CEILING: A MODERN HURDLE IN THE ADVANCED ERA OF WOMEN EMPOWERMENT

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Abstract

The modern world has welcomed the women to succeed in various fields, women empowerment is the key instrument which has supported for the development of women. But the question arises on how far does women empowerment paves way for them to achieve the greatest heights in their career and profession. The principle of gender equality is enshrined in our constitution which guarantees equality to women, but in reality the society fails to uplift the women and the family sets its own boundary which makes women to stop herself from marching forward. Shattering the glass ceiling and practicing the true equality will add more meaning to the term Women Empowerment.

Introduction

In the last five decades, the concept of women empowerment has undergone a major shift from welfare oriented concept to equity concept. Women empowerment is the key to strengthen the woman's participation in the decision- making, socio- economic development and to raise voice against all inequalities and violence. From women being inside the kitchen, the era has developed into a phase where women can be seen in all possible fields, particularly in Asian countries, the trend is changing with fair representation of women in the economic workforce. Women are no longer employed in traditional occupations like nursing and teaching, but their representation in occupations associated with males. In the recent years, various constitutional and legal rights have been implemented by the government of Indian in order to eliminate ill practice and gender discrimination against women. All the physical and seen hurdles are eliminated with the help of law, but the question arises when it comes to hurdles which is unseen. With the help of the government women are getting greater employment opportunities at entry and mid-level positions, but numerous studies have found misrepresentation of women at upper echelon. This under-representation of women at the top position has been termed as "Glass Ceiling". Women comprise of less than 4% of the uppermost ranks of CEO, president, executive vice president, and COO; and less than 3% of top corporate earners. A modern hurdle in the advanced era.

Women Empowerment in 21st Century

According to Sen and Batliwala (2000), women empowerment leads to a growing intrinsic capability- greater self-confidence, and an inner transformation of one's consciousness that enables one to overcome external barrier. We call ourselves the people of modern era which has also made the barriers for women very modern. Indeed Women are provided with high standards of quality education but till date women are facing harassment in all fields. The recent incidents shows Women's are given higher positions in several fields but they are not recognized in their own family. Women are considered as 'Mothers' in our society they provide care, support, and nurturing to their families but they are not even appreciated for it.

Economic opportunities, social equality and personal rights these are the most common problems faced by women in 21st century. Accepting the perspective of women and their opinion in making decisions must be considered as same as men, only then the society is really empowered with women, and this is the main idea of women empowerment. Women also play a significant role in community building and often take on leadership roles in community.

Significance of Women Empowerment

In recent times, everyone is pointing on the empowerment of women. Its right to say that women's empowerment has become the necessity of the time. Women should possess liberty, faith, and self-worth to opt for their needs and demands. Discrimination based on gender is useless and is having zero worth by looking at the growth of women in the last few decades. Women are paid less and are treated as a cook and slave in families, and their real potential fails to get highlighted. Women empowerment in India is required to overcome situations of such types and to provide them with their independent role in Indian society. Empowering women is a necessary right of women. They should have proportional rights to contribute to society, economics, education, and politics. They are approved to gain higher education and receive a similar treatment as men are receiving.

- They can have equal rights to participate in education, society, economics and politics
- They are allowed to have higher education and treated in the way like men
- Diversity in workplaces
- Supporting women-run businesses
- Communicate and educate
- Decision making power
- Economic growth
- Sustainable development
- Enhance the overall development of society

Background of Glass Ceiling

The term was coined by Ann Morrison in the 1980s. Marilyn Loden first coined the phrase "glass ceiling" while speaking as a panellist at the 1978 Women's Exposition in New York. As a fill-in for her employer's only female executive, Loden was invited to discuss how women were to blame for the barriers preventing them from advancing in their careers. Instead, she spoke about deeper, ignored issues that historically kept women from occupying positions of authority: the glass ceiling. Her concept was later popularized in a 1986 Wall Street Journal article discussing the corporate hierarchy and how invisible barriers seemed to prevent women from advancing in their careers past a certain level. The U.S. Department of Labour launched the Glass Ceiling Commission in 1991 in response to the growing concern over barriers preventing women and minorities from advancing.

Glass Ceiling: The Modern Hurdle

According to Morrison (1980), glass ceiling refers to invisible barriers or blockages that create hurdles for women and other minorities from rising to the top leadership positions. Glass ceiling constitutes vertical discrimination within companies against women. Glass ceiling is an irony in the modern era of women empowerment. In all the fields women are given so called higher positions with a glass ceiling. Each time they try to initiate something new in their field women are not put behind the glass ceiling. Few examples of Glass Ceiling would include,

- Neglecting for a promotion to a higher management position because you're pregnant or looking to start a family
- Excluding from important, decision-making executive meetings
- Being reassigned to different projects so male co-workers have better opportunities
- Being subjected to degrading and disrespectful comments based on race, sexual orientation, gender, or class

Factors Involved in Glass Ceiling: the Invisible Barriers

Personal Factors:

- Women's lack of experience
- Women's lack of self-esteem and confidence
- women's little incentives to achieve victory
- Women tend to accept a post with less responsibility (for balance between work, home You work and responsibility)
- Women's physical inability to withstand low pressures of emergent managerial positions Lack of flexibility in women's working programs (because of housing difficulties)
- Women's inability in doing the kind of work that needs being away from family

Organizational Factors

- Lack of equal educational opportunities for women in organizations
- Lack of suitable strategies for women in organizations

- The existence of communication barriers (lack of communication between men and women)
- Lack of equal employment opportunities for women in organizations

Cultural Factors

Managers and supervisors do not believe in women Patriarchy system culture in organizations and society. The stereo typical attitude of the society doesn't allow women to move forward to a higher positions where men may work under the leadership of women, the society always thinks that men should hold all superior and higher positions. Women's managerial positions are seen as a direct threat to men's leadership and development opportunities. Men and women are not accepted as partners in working groups underestimating women's success and achievements in organization.

Social Factors

- Women's dual roles (agreement issues in managerial jobs and maternity life)
- Lack of coordinate groups to support women
- Family satisfaction problems in women's delegation to managerial positions the thinking that men are only the breadwinner of the family
- Women themselves accept the existence of such barriers. In this way, we can say the reason that women don't embrace managerial positions is due to heavy housing and maternity responsibilities
- Probably women think that it's better to spend time and energy for other kinds of jobs, or based on another supposition; women's capability to accept organizational positions is equal to that of men's or even sometimes better than men's capabilities. And the problem is with organizational environments that prevent women to achieve and make use of their capabilities. In other words, the reason of the creation of this invisible barrier mostly refers to gender, and cultural points of view rather than women's inability

Other Factors

- Different pay for comparable work.
- Sexual, ethnic, racial, religious discrimination or harassment in the workplace
- Exclusion from informal networks; Stereotyping and preconceptions of women's roles and abilities; Failure of senior leadership to assume accountability for women's advancement; Lack of role models; Lack of mentoring
- Requiring long hours for advancement, sometimes called the hour-glass ceiling

Shattering the Glass Ceiling

Breaking the glass ceiling means overcoming the barriers set to prevent access to advancement. Breaking the glass ceiling also includes removing barriers for others experiencing the same struggles. Why not women in the top position and what makes them to stay back and what prevents them to march forward in their profession and career.

The combined efforts of the society and family will make women to dream bigger and see herself in the seats of CEO and top positions.

When Hillary Clinton ran for president in 2008 and 2016, she repeatedly spoke of her goal of shattering the “highest, hardest glass ceiling” by becoming America’s first female president. Vice President Kamala Harris shattered the second-highest glass ceiling in the U.S. when she became the first female and first Black and South Asian Vice President on Jan. 20, 2021. She was also the first woman and first Black and South Asian attorney general of California, as well as the first Black woman to be elected district attorney of San Francisco.

- Training and development of women
- Advocate for yourself
- Channelling the frustration into purposeful action
- Take responsibility for your own development
- Stand up for oneself and be eligible to demand such higher positions
- Speak with your family members and make them understand the importance of your career and its development
- Develop awareness of the issue
- Build a better generation who truly see women equal and shatter all the stereo typical attitudes

Conclusion

The Empowerment of women has become one of the most important concerns of 21st century. Society must take initiative to create a climate in which there is no gender discrimination and Women have full opportunities of Self decision making and participating in the Social, Political and Economic life of the Country with a sense of equality. To conclude, there is an urgent need for a sustained, comprehensive effort at all levels to attack this problem of gender bias from all sides in a focused man and other family members towards women. An Empowerment in Women’s Empowerment has to be current concern.

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ICT TOOLS IN TEACHING AND LEARNING PROCESS

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Abstract

Technology is growing, in a fastest and well developed ways in every sectors, and it also creates various developments in the educational sectors also. In this article, we discussing about the "Information & Communication Technology" (ICT), which cause a great part in educational development in the way of introducing smart classes, online courses, web conferences etc., with the internet connection through the smart phones and computers. At the time of pandemic period, business, economy and educational sectors suffers a lot, at that time ICT technologies play a major role and help to tackle the pandemic situation.

Keywords : Technology, Information and Communication MEANING

ICT Stands for "INFORMATION & COMMUNICATION TECHNOLOGY".

That helps to enable modern computing system. It is an extensional term from IT. It plays one of the most important role in the *New educational policies and projects*. It covers all the devices and equipments that helps to connect and store data. It includes *antiquated technological devices like: landline telephones, television, and radio. And cutting edge technologies like: Artificial intelligence(AI), and Robotics* are the advancement in ICT.

Through these communication devices , the informations are passed and informed along with the technologically connected internet and wireless networks.

Objectives of ICT

- Establishment of *smart school*.
- Increase the *capacity of teachers*.
- *Update & Accurate* knowledge.
- Contribution in *extension & research*.
- Richness of learning experiences.
- Professional growth.

Benefits of Ict

- Improved *Learning efficiency*
- Reduce the *burden on teachers*.
- Simplified *information sharing*.

- Increased *student motivation*.
- Improve IT *literacy* of students.

Tools Using in ICT

- Google classroom & Meet.
- Trello.
- Online coding websites.
- Subject specific tools.
 - i. Teaching geography.
 - ii. Teaching Mathematics.
 - iii. Teaching History & Biology.
- Smart class
- E-Resources

Google Classroom and Meet

A virtual classroom that makes learning fun and easy and also entertain the students. Teaching educate their students by giving interacting assignments, by slideshow and also by YouTube videos and some of the online learning games like kahoot. It allows the class to go paperless. It can also conduct PTA meetings, take attendance and can maintain and conduct test and grade the students systematically.

Trello

It is also one of the tools in ICT learning. In this we can keep reminders and settasks for the students and also in working place. It prefer projects based learning for students. In this we can create different board for assignments, test papers, doubts, students attach images and videos. By this students can easily look their deadlines for projects, track their progress in online, etc..

Online coding websites

Some of the online coding websites are:

- Data camp
- Hacker rank
- Coder bytes
- Khan Academy
- Code school
- Code academy
- Edx

This learning sites helps the students in the fields of computer engineering and IT sectors. They can learn at any time by downloading videos and listen to that and sometests are also followed.

Subject Specific Tools

i. Teaching Geography:

Google maps, Google Earth helps the kids to learn the distance between two areas, helps to locate areas, can learn different regions, land masses and water bodies.

ii. Teaching mathematics:

Can figure out geometry, can think helps the students to solve math problems and can know about several theorems and proofs in maths.

iii. Teaching history and biology:

YouTube, Microsoft PowerPoint are many videos available in YouTube about a particular research both in history and biology fields. Slideshows in Microsoft PowerPoint makes the students to understand it easily.

Smart Classrooms

In most of the schools and colleges smart classrooms are available. In this, through the projector the screens are displayed according to their syllabus and this is also an easy and interesting way of learning.

E-Resources

E-books, E-Journals, PDFs, are available in the internet for each and every heading and research work. It is more helpful and makes the students to search in online and get download. It reduces the work of searching in libraries and to buy in shops and we can also tell it as a time management.

Components of Ict

- Software
- Cloud of computing
- Transaction
- Data
- Internet
- Communication technology
- Hardware

Hardware

It denotes physical and tangible electronic systems. It includes: smart phone, laptops, printer, supercomputer, projection system, cameras, telecommunication devices and networks.

Software

It includes computer programmes and application for hardware function. There are two types of software.

- System software
- Application software

Communication Technology

It refers to tools that send , receive and process information. It includes digital television, digital radio, e-mail, GPS, video conferencingplatforms.

Advantages

For Students:

- Improves concentration
- Makes to know to interact with digital gadgets
- Understands the concepts easily and quickly by displaying animationvideos
- Helps to learn more courses at one place
- Encourage critical thinking
- Motivates to study new concepts

For Teachers:

- Improves parent teachers interactions
- Improves creative skills
- Teachers keeps the students interact throughout the class
- Record keeping of students

Disadvantages

For Students

- Reduce human contact, So it reduce friends circle
- Theft of personal data
- May be consumption of false information (lot of true and false informations are available in internet)
- Reduces development of other skills such as writing, public speaking
- Distractions like chats, social networks and web pages and greateraddiction

For Teachers

- Lot of work load like assigning classes and preparing videos for classes
- Lack of network problems in rural areas
- Course material problems
- Teacher reluctant to new technology

Conclusion

- According to UNESCO, ICT in education is a great support for teachers and improve the quality of student learning.
- A report shows , that the students using digital learning tools at schoolis 89% and at outside school is 71%.

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A STUDY ON ROLE OF ICT IN EDUCATION

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Abstract

ICT stands for information and communication technology. ICT include the use of hardware and software for efficient management of information and it also includes communication devices like radio, television, cell phones, computer, satellite systems and many more. It refers to that technology which is used to transmit, store, share, create or exchange information. Innovations in technology and globalization have led to an enlarged the use of ICTs in all sectors. In modern era, the world is moving rapidly towards digitalisation such as e-governance, e- health, e- education etc. 21st century. In the present era, everyone can have access to teaching material at own level and consult many experts by video conferencing from all over the world. Currently, a teacher is been teaching his students through the use of ICT even though they are geographically scattered. We can't imagine a day without ICT. Today, world without ICT means we do not have any information about the events that are occurring around. It has become a part and parcel of life. Thus, present paper will highlight the role of ICT in Education.

Keywords–Technology enhanced learning, schemes, Teacher, Student, and ICT Initiatives.

Introduction

ICT will not only include hardware devices connected to computers, and software applications, but also interactive digital content, internet and other satellite communication devices, radio and television services, web based content repositories, interactive forums, learning management systems, and management information systems. These will also include processes for digitisation, deployment and management of content, development and deployment of platforms and processes for capacity development, and creation of forums for interaction and exchange.

The National Policy on Education 1986 , as modified in 1992, stressed the need to employ educational technology to improve the quality of education.

The policy statement led to two major centrally sponsored schemes, namely,

- a) Educational Technology (ET) and
- b) Computer Literacy and Studies in Schools (CLASS)

Thus, paving the way for a more comprehensive centrally sponsored scheme – Information and Communication Technology at Schools in 2004. The significant role ICT can play in school education has also been highlighted in the National Curriculum Framework 2005 (NCF) 2005.

The ICT Policy in School Education aims at preparing youth to participate creatively in the establishment, sustenance and growth of a knowledge society leading to all round socioeconomic development of the nation and global competitiveness.

Objectives

- To know the importance and role of ICT in Education.
- To study the Importance of Students Engaging with ICT

Review of Literature

Olivier (2014) found that theology took up the challenge to utilise the printing press and should do the same with the new technology. The impact of theology is directly related to the medium used throughout the ages, Tegos et al. (2016) research indicated that the effectiveness of flexible conversational agent in productive online peer dialogue, Barak (2017) from his study found that how teacher integrate web-based technologies and their perceptions of cloud pedagogy. He found that cloud pedagogy framework facilitates individual and collaborative, synchronous and asynchronous active learning, in class.

Methodology

The study has a descriptive nature. Secondary data have been collected in order to prepare this document in a comprehensive manner. Data are obtained through publications in various journals, periodicals, conference papers and websites.

Objectives of using ICT in Education

The objectives of ICT in education include:

- Providing accessibility through online medium of education.
- Improving the quality of teaching, especially in remote areas.
- To increase transparency in the education system.
- To strengthen the policies, rules, and laws in the education system.
- To analyze the learning and participation of the students and measure its effectiveness.
- Measuring and evaluating students' behavior, involvement, and retention in the learning process.
- To analyze students' performance, placement, and application of knowledge.

The Importance and Role of ICT in Education

Online Learning

ICT and its tools had led to the emergence of online learning. Through this, the teachers and the students are learning innovative ways in the education process. Online learning has gained popularity amidst the corona pandemic to ensure that the learning continues. ICTs have looked after that education reaches through it worldwide and even in remote areas. No matter where the students are, but it has ensured that every learner derives its benefits.

Accessible to all

ICT in education allows accessibility to all types of learners. All students can learn through the material provided. Even the special needs students can maximize the benefits through the usage of it. ICT has also covered issues like the “digital divide” and allows even less fortunate people to access the tools for their educational needs and enhance learning.

Higher-Order Thinking & Skill Developments

ICT promotes high order thinking and reasoning skills. These skills enabled the process of evaluation, planning, monitoring, controlling, reflecting, etc. To use ICT tools effectively, one must be able to explain and justify the solutions to the problems. For using ICTs, the students should be able to discuss, test, and evaluate the strategies and methods they use.

Develops ICT Literacy and Capability

Literacy and capability are the 21st-century skills that are needed. One of the best ways to develop these is to equip the subject-matter with purposeful activities.

Encourages Collaboration

ICT fosters collaboration as children work collectively. It also enhances communication skills as they discuss, talk, and learn together. All you need is a laptop, tablet, or desktop computer to understand it's working. ICT tools open up the doors for developing language through fostering communication.

Motivates Learning

ICT motivates children towards learning. Children learn better through the usage of technology. They get mesmerized with technology tools and get motivated to learn effectively in the classroom or at home.

Improves Engagement and Knowledge Retention

With the inclusion of ICT in education and its tools, children get more engaged and show greater participation in learning. It is all because of technology. It has made learning fun-filled with creativity and games. It enhances learning in multiple ways. Because of it, the students learn better, leading to knowledge retention.

A Key Part of the Curriculum

As per the latest curriculum, ICT plays an important part in the education system. So, many governments across the globe have started using ICT as a major part of education and the curriculum.

The rise of the Knowledge Economy

We live in an economy that is a thirst for the production and dissemination of information properly. ICT pervades at all levels and sectors like health, education, environment, or production. So, its use is needed everywhere at all levels.

Therefore, we cannot deny the fact that ICT is an important part of our lives. It fosters collaboration and connectivity around the world. Technology is ever-changing. It is likable due to certain features like growth, creativity, joy, fun, and consumption.

Importance of Students Engaging with ICT

ICT in Education

Students should engage with ICT in order to:

- To develop 21st-century skills like ICT Literacy and capability.
- To improve retention levels.
- Make them prepared for an integrated society that is taking advantage of the ICT developments.
- Adapt ICT tools as a lifelong partner.

Advantages of ICT in Education

Individualization of learning

It means that people learn as an individual and not as the same group. As learners are varied, ICTs provide flexibility so that learners learn according to their own pace.

Interactivity

Through this feature of ICT, learners can learn properly at any point. They do not need to follow a proper sequence. Learners can learn effectively through this feature.

More economical, the higher speed of delivery and wider reach

ICT tools are more economical, and the speed of delivering content is also high. Through ICTs, the number of learners increases, thereby reducing the overhead cost of investment.

Multiple teaching functions and diverse audiences

ICT involves multiple functions like diagnosing and solving problems for accessing information and knowledge about various contents. It can be useful in drills and practices also.

Uniform quality

ICTs act as a great equalizer by producing uniform quality content for the rich and the poor, the urban and rural people. It produces good quality content for all.

Facilitates cooperative learning

ICT facilitates cooperative learning by encouraging dialogue, discussions through a more participative classroom environment.

Act as a motivating tool

ICT tools act as a motivator and encourage children to enhance their learning. Children get fascinated with technology. Teachers should use their skills to arouse interest, fun, and creativity to learn in a better way.

Distance and climate insensitive

- Regardless of the distance and climatic conditions, ICT tools provide access to all.
- These were some advantages of ICT in the education sector.
- Now let's get an insight into certain disadvantages of ICT.

Current Situation of ICT:

1. Online education: Due to Covid-19, there is no option without online education. As lockdowns don't allow to open schools, colleges, so online education is only one option through which education can be continued.
2. Use of apps: Different apps nowadays are used for online education. These apps are helpful for students and teachers to reach. Such type of apps are also used for meetings, online teaching learning process. Ex. Zoom, Google meet, Webex etc.
3. Platforms for online education: There are different platforms available for online education. Through these platforms, online classes can be taken, videos can be uploaded, recorded videos can be send. So these platforms are helpful to the students as well as teachers. Ex. Swayam, Webex, Impartus etc.
4. Use of different e-content : Due to online education there is no time limit as well as place restriction for learning. Anyone can learn from any place and at any time. So many type of education any one can take. And different e-contents are also prepared for students. These are helpful for them to enrich their knowledge.
5. Tools for teachers[iii]: GeoGebra can construct almost every conceivable geometrical object, even in 3D, Object drawing is interactive and can be moved around, modified, measured. PhET Simulations are interactive computer programs which allow a user to change variables and see the effect of the changes on the system. These are very useful in helping students explore the subject, solve problems and can also become a useful self-assessment tool.

Conclusion

The intervention of information and communication technology is redefining the way students learn. It is making the process of learning more efficient and effective for students and teachers. ICT tools in education make it easier for teachers to use the best strategies to bring out the best in their students. ICT in education sector is beneficial for the students, in addition to this, it is making it possible for schools to impart education in the finest way. Moreover, the technology enables them to manage all the management and administration functions in a seamless manner. Hence, there is no doubt that it is a boon to the education industry.

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SIGNIFICANCE OF ICT TOOLS AND THEIR APPLICATIONS IN TEACHING LEARNING PROCESS

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Abstract

Information and Communications Technology (ICT) is the use of computing and telecommunication technologies, systems and tools to simplify the way information is created, collected, processed, transmitted and stored. It includes computing technologies like servers, laptop computers and software applications, as well as the wired and wireless communication technologies that support telephones, the Internet, the Internet of Things (IoT). The goal of ICT is to improve access to information and make human-to-human, human-to-machine and machine-to-machine (M2M) communication easier and more efficient. The importance of ICT for teaching and learning process has become significant as it facilitates teaching and learning process, create conducive learning environment, and help learners develop innovative thinking and self confidence. Teachers' well-equipped preparation with ICT tools and facilities is one of the main factors in the success of technology-based teaching and learning. This paper focuses on the use of ICT in schools and colleges by students and teachers to support the processes of learning and teaching.

Keywords: ICT, Technology, ICT tools, Teaching and Learning, Internet, Communication

Introduction

There are different technologies such as radio, television, computer, etc., used in the teaching-learning process. Different ICTs have potentiality to expand the access to education, strengthen the process of education and enhance the quality of education. It has also become essential to the teaching-learning interaction, through such approaches as replacing chalkboards with interactive digital whiteboards, using students' own Smartphone or other devices for learning during class time, and the "flipped classroom" model where students watch lectures at home on the computer and use classroom time for more interactive exercises. ICT in teaching-learning has tremendous potential to serve and help the people connected with the process and product of education in many ways. ICT will help in transitioning from a broadcast model of learning to interactive learning. Thus making the students active and participate in the teaching-learning process. ICT prepares teachers to meet challenges of the teaching-learning task of modern age. It helps teachers in proper execution of their multi-dimensional responsibilities in various areas of education.

Literature Review

Koc mentioned that using ICT enables students to communicate, share, and work collaboratively anywhere, any time. Bransford, J. D., Brown, A. L., & Cocking, R. R reported that, what is now known about learning provides important guidelines for uses of technology that can help students and teachers develop the competencies needed for the twenty-first century. Forcheri, P. & Molfino suggested that ICT can be used to

promote collaborative learning, including role playing, group problem solving activities and articulated projects. **Yusuf** said that the field of education has been affected by ICTs, which have undoubtedly affected teaching and learning. **Yelland, N** integrating of ICTs in education requires establishment of infrastructural facilities, acquisition of technologies and their periodic updating, management and professional support services.

ICT Tools for Teaching Learning Process

Following tools are used in the Teaching learning process in Online- Offline mode of instruction. These ICT tools proved to be a boon for making the teaching learning process easy and accessible to all students.

Learning Management System (MOODLE and Google classroom)

Moodle stands for Modular Object-Oriented Dynamic Learning Environment and statistics. Moodle is free software, a learning management system providing a platform for e-learning and it helps the various teachers considerably in conceptualizing the various courses, course structures and curriculum thus facilitating interaction with online students. RSCOPR has a self-customized MOODLE developed by Digital Content development team. It is a very useful platform to share all learning resources, videos, sharing webpage. It is able to provide automated assessment in the form of quiz, and give immediate detailed feedback to the students. The messaging system allows learners and teachers to communicate easily. Teachers can also communicate with groups of learners via course forums either to provide answers to learners' questions or to just get involved in discussions. The MOODLE mobile app makes students access even easier via smart phone or mobile device.

Google Classroom - Blended Learning Platform

Google Classroom is a free, blended learning platform that offers a variety of benefits for both students and teachers. Google Classroom enhances the productivity and takes workflow management to the next level. It keeps track of assignments coming in with a simple glance making it very easy to know everyone's status and to follow up with students who are missing work. Everything is time stamped, so late work is easily identifiable. Since Google apps are cloud based the work in Google Classroom saves automatically and is accessible from any device. With the app, both students and teachers can enjoy the full functionality of Google Classroom on a mobile device.

Google Forms

Google Forms allows conducting MCQ quizzes online. The information is stored as a spreadsheet automatically records the answers. The spreadsheet then populates the responses from the quiz or survey in real-time. Google forms can be used to give feedback to and receive feedback from students and parents.

Video Conferencing Platforms

During COVID pandemic when the world shifted to Online mode for teaching learning various free videoconferencing platforms like Google meet, Zoom and Cisco webex were used to conduct online classes. All these have varying needs and features. Zoom allows the facility of using its features using a browser also without the need to download the application, the app download is mandatory in case of the other two software. Google Meet allows the maximum on-screen chatting time with respect to the others.

Virtual Labs

The Virtual Labs provides remote-access to simulation-based Labs in various disciplines of science and engineering. This student-centric approach facilitates the absorption of basic and advanced concepts through simulation-based experimentation. Internet-based experimentation further permits use of additional web-resources, video-lectures, animated demonstrations and self-evaluation. Virtual labs are any place, any pace, any-time, any-type labs.

Educational Videos and animations (YouTube and Internet)

Various valuable educational videos of pharmacy subjects available on internet, YouTube provide additional help in better understanding of subject knowledge.

Smart Classroom

Classroom integrated with Smartboards and internet connections provides enhanced and interactive learning and teaching opportunities for students and teachers. The internet-connected to systems in smart classes is stored with abundant information. It is accessible anytime for their teaching and learning process. Teachers can access information from various educational sources for teaching purposes. Smart Classrooms helps in developing critical thinking and problem-solving skills in students.

e-Resources

E- journals from ProquestPharma and DELNET were available for students to access remotely in online mode and enhance their learning experience. e books were uploaded on MOODLE and Google Classroom.

Current Situation and Importance Of Ict Today

The importance of Information Communication Technology are as follows;

1. **Online Education:** Due to Covid-19, there is no option without online education. As lockdowns don't allow opening schools, colleges, and so online education is only one option through which education can be continued.
2. **Use of apps:** Different apps nowadays are used for online education. These apps are helpful for students and teachers to reach. Such type of apps is also used for meetings, online teaching learning process. Ex. Zoom, Google meet, Webex etc.
3. **Platforms for online education:** There are different platforms available for online education. Through these platforms, online classes can be taken, videos can be

uploaded, recorded videos can be send. So these platforms are helpful to the students as well as teachers. Ex. Swayam, Webex, Impartus etc.

4. **Use of different e-content:** Due to online education there is no time limit as well as place restriction for learning. Anyone can learn from any place and at any time. So many type of education any one can take. And different e-contents are also prepared for students. These are helpful for them to enrich their knowledge.
5. **Tools for teachers:** GeoGebra can construct almost every conceivable geometrical object, even in 3D! Object drawing is interactive and can be moved around, modified, and measured. PhET Simulations are interactive computer programs which allow a user to change variables and see the effect of the changes on the system.

The Various Ict Initiatives

Few important initiatives are as given below.

1. **e-pathshala :** The digital India campaign has promoted extensive use of ICTs in the teaching learning process. The ePathshala, a joint initiative of Ministry of Education, Govt. of India and National Council of Educational Research and Training (NCERT), has been developed for showcasing and disseminating all educational e-resources including textbooks, audio, video, periodicals, and a variety of other print and non-print materials for Students, Teachers, Parents, researchers and educators.
2. **NROER:** The National Repository of Open Educational Resources (NROER) is developed by CIET, NCERT. It was launched during the National Conference on ICT for School Education. NROER hosts large number educational resources in many subjects and in different Indian languages for Primary, Secondary and Senior Secondary classes.
3. **Swayam MOOCs:** SWAYAM (Study Webs of Active-Learning for Young Aspiring Minds) is a programme initiated by Government of India and designed to achieve the three cardinal principles of Education Policy viz., access, equity and quality. All the courses are interactive, prepared by the best teachers in the country and are available, free of cost to the residents in India.
4. **SwayamPrabha:** SWAYAM Prabha is an initiative of the Ministry of Human Resources Development to provide 32 High Quality Educational Channels through DTH (Direct to Home) across the length and breadth of the country on 24X7 basis.
5. **ICT in education curriculum:** The National Policy on ICT in School Education has set the goal of preparing youth to participate creatively in the establishment, sustenance and growth of knowledge. Teachers and Children must not be treated merely as consumers but also as active producers.
6. **Diksha:** In India, many teachers are creating & using innovative tech-based solutions in their classrooms. Some state governments have also initiated programs to support their teachers digitally. This inspired MHRD and NCTE to coordinate these efforts at a national level and build DIKSHA.

Application of Information and Communication Technology in Education

ICT is being utilized in every part of life. Due to the increasing importance of the computer, students cannot afford to keep themselves distant from this potential medium in education, use of ICT has become imperative to improve the efficiency and effectiveness at all levels and in both formal and non-formal settings. It can be used for the following purposes.

- To broadcast material, online facility or CD-ROM can be used as sources of information in different subjects.
- To facilitate communication for pupils with special needs;
- To use electronic toys to develop spatial awareness and psycho motor control;
- To use the online resource like, email, Chat, discussion forum to support collaborative writing and sharing of information.
- To facilitate video-conferencing or other form of Teleconferencing to involve wide range of students from distant Geographic areas.
- For blended learning by combining conventional classroom learning with E-learning systems
- To process administrative and assessment data.
- To exchange and share ideas -among teachers for the professional growth.
- To carry out internet-based research to enhance, educational process

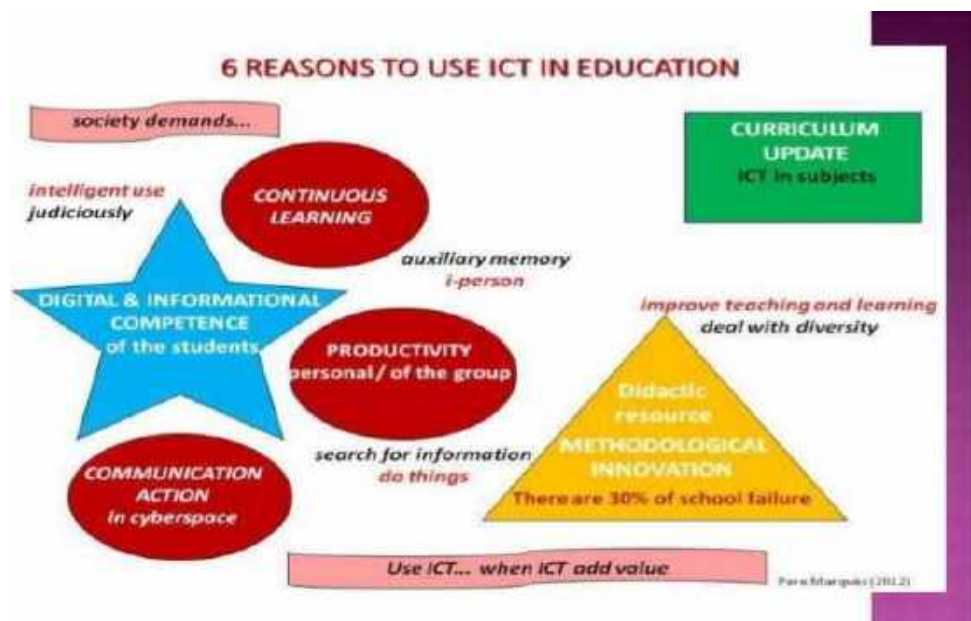


Figure 1: Six Reasons to use ICT in Education

Advantages of Ict in Education

Some of the advantages of ICT in education are as follows;

- Enhance Teaching Effectiveness
- Ensure Active Participation

- Foster Collaborative Learning
- Easy Student Evaluation
- Better Conceptual Understanding
- Assists Students in Research

Conclusion

The intervention of information and communication technology is redefining the way students learn. It is making the process of learning more efficient and effective for students and teachers. ICT tools in education make it easier for teachers to use the best strategies to bring out the best in their students. Moreover, the technology enables them to manage all the management and administration functions in a seamless manner. Hence, there is no doubt that it is a boon to the education industry. One of the objectives of this paper is to provide better understanding and appreciation of the importance of ICT in teaching and learning process. Several view points of importance of ICT in teaching and learning system has been discussed.

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UNDERSTANDING BLOOM'S TAXONOMY: A STUDENT'S GUIDE TO HIGHER-ORDER THINKING

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Abstract

Outcome-Based Education is an educational approach that focuses on defining specific learning outcomes or competencies that students should achieve by the end of a course or program. OBE emphasizes the development of competencies or skills rather than mere content memorization. It aims to equip students with practical and applicable knowledge. Taxonomies provide a systematic way to categorize and organize the different levels of learning that students are expected to achieve. Bloom's Taxonomy classifies learning objectives into different levels, each representing a progressively higher level of cognitive complexity. The six levels of Bloom's Taxonomy are Remembering, Understanding, Applying, Analyzing, Evaluating and Creating. Taxonomies like Bloom's also assist in creating assessment tools that accurately measure students' mastery of the learning outcomes at different levels, promoting a more comprehensive and effective educational experience.

Keywords: Outcome-Based Education, Students, Bloom's Taxonomy

Introduction

OBE stands for Outcome-Based Education, and it is an educational approach that focuses on defining specific learning outcomes or competencies that students should achieve by the end of a course or program. Instead of focusing solely on the content delivered or the amount of time spent in the classroom, OBE emphasizes the measurable knowledge, skills, and attitudes that students should acquire. Specific, measurable, achievable, relevant, and time-bound (SMART) learning outcomes are established for each course or program. These outcomes guide the design of the curriculum and assessment methods. OBE emphasizes the development of competencies or skills rather than mere content memorization. It aims to equip students with practical and applicable knowledge. Assessment methods are aligned with the defined learning outcomes and focus on measuring students' understanding and application of the knowledge and skills in real-world scenarios. OBE encourages a cyclical process of assessment, feedback, and improvement.

Educators continuously review and revise the curriculum and teaching methods based on assessment data to enhance student learning. OBE emphasizes catering to individual student needs and learning styles. It aims to foster active learning and engagement, allowing students to take responsibility for their own learning. OBE seeks to align

educational programs with the requirements of the job market or industry to ensure graduates are well-prepared for employment or further studies. OBE emphasizes clear communication of learning outcomes and assessment criteria to students. It holds educators accountable for ensuring students achieve the desired outcomes. Implementing OBE may involve the use of rubrics, portfolios, project-based learning, competency exams, and other methods to assess student performance and progression toward achieving the learning outcomes.

Taxonomy in OBE

In Outcome-Based Education (OBE), taxonomy refers to the hierarchical classification of educational objectives or learning outcomes. Taxonomies provide a systematic way to categorize and organize the different levels of learning that students are expected to achieve. The most commonly used taxonomy in OBE is Bloom's Taxonomy, which was originally proposed by Benjamin Bloom in 1956 and later revised by Anderson and Krathwohl in 2001.

Bloom's Taxonomy classifies learning objectives into different levels, each representing a progressively higher level of cognitive complexity. The six levels of Bloom's Taxonomy, in ascending order of complexity, are:

Remembering

It serves as the foundational level of learning. Remembering is the ability to recall facts, information, or concepts, and it lays the groundwork for higher-order thinking skills.

Reasons for including the "Remember" level in OBE:

- Remembering helps students build a strong knowledge base that serves as a prerequisite for more complex learning.
- The "Remember" level helps to establish the framework upon which other learning outcomes can be constructed. It provides students with the basic vocabulary and concepts necessary to engage with more advanced ideas and applications.
- Remembering encourages students to retain and recall information effectively. It ensures that students can access relevant information when needed and apply it to new situations or problem-solving.
- Develops the metacognitive skills, including awareness of their own learning process among students. They become more adept at recognizing gaps in their understanding and seek to fill those gaps through additional learning and study.
- Assessing the "Remember" level is often more straightforward and objective, making it easier to evaluate students' knowledge acquisition and retention. It provides a basis for assessing progress and identifying areas for improvement.

Understanding

Understanding involves making connections between facts and concepts, leading to a deeper level of learning. When students understand the underlying principles and relationships, they are better equipped to apply knowledge in various contexts.

Reasons for including the "Remember" level in OBE:

- The understanding level enables students to analyze information and apply it to solve problems. It provides them with a solid foundation for critical thinking and decision-making.
- Understanding helps students transfer knowledge from one situation to another. They can recognize similarities and apply their understanding in new and unfamiliar contexts.
- By encouraging students to understand concepts rather than just memorizing isolated facts, OBE promotes higher-order thinking and conceptual understanding. This helps them see the bigger picture and recognize the relevance of knowledge to real-world situations.
- It encourages active engagement with the material. Students are more likely to ask questions, seek clarifications, and engage in discussions to deepen their understanding.
- It is a crucial for building upon the foundational knowledge acquired in the "Remember" level. It lays the groundwork for more complex cognitive processes, such as analysis, evaluation, and creation.
- Understanding allows students to articulate their knowledge effectively. They can explain concepts in their own words and communicate their ideas with clarity.

Applying

Applying knowledge and skills in real-world situations helps students develop practical competencies. It prepares them to use their learning effectively in various contexts, including professional settings.

Reasons for including the "Remember" level in OBE:

- The Applying level encourages students to tackle complex problems using the knowledge they have acquired. This level fosters problem-solving skills and the ability to devise solutions to real challenges.
- By applying what they have learned, students can bridge the gap between theoretical knowledge and practical implementation. This integration enhances their understanding of the subject matter.
- Applying knowledge requires active engagement and participation. Students become more involved in the learning process, which can lead to increased motivation and deeper comprehension.

- When students apply their knowledge, they must think critically about how to use the information effectively. This level of thinking strengthens their analytical and evaluative abilities.
- Applying knowledge in one context helps students develop transferable skills that can be utilized in different situations. These skills are valuable for adaptation and flexibility in a rapidly changing world.
- By applying their learning to solve practical problems, students can make a positive impact on their communities and society at large. This level of learning instills a sense of purpose and responsibility.

Analyzing

This level of learning prepares students to approach problems thoughtfully, make well-informed decisions, and contribute to more complex tasks in their academic and professional lives. It is a critical step in nurturing students' abilities to think critically and develop a deeper comprehension of the world around them.

Reasons for including the "Remember" level in OBE:

- Analyzing promotes critical thinking skills as students must assess information, identify patterns, and draw conclusions based on evidence and reasoning.
- Analyzing information is a fundamental aspect of problem-solving. Students must deconstruct problems and data to identify potential solutions effectively.
- The "Analyzing" level encourages students to ask questions and seek deeper insights into the subject matter. It fosters curiosity and a desire to understand the underlying reasons and connections.
- Analyzing information helps students make informed decisions based on a thorough understanding of the factors involved.
- Analyzing is an essential skill for conducting research and inquiry-based learning. It enables students to evaluate sources, synthesize information, and draw meaningful conclusions.
- Analyzing helps students interpret data effectively. They can extract meaningful insights and draw valid conclusions from the information presented.

Evaluating

Using the "Evaluating" level of Bloom's Taxonomy in Outcome-Based Education (OBE) is vital because it focuses on critical assessment, judgment, and decision-making based on established criteria. This level goes beyond analysis and requires students to make informed judgments about the value, validity, and quality of information and ideas.

Reasons

- The "Evaluating" level encourages students to critically assess information, arguments, and evidence. It fosters the ability to differentiate between strong and weak arguments, valid and invalid claims, and reliable and biased sources.

- Students who engage in evaluating develop a reflective approach to their learning. They question assumptions, biases, and underlying assumptions, which leads to deeper understanding and continuous improvement.
- Evaluation requires students to form their judgments rather than accepting information at face value. This level of thinking promotes independent and analytical thinking.
- Evaluation is central to effective decision-making. Students learn to weigh evidence, consider alternatives, and make well-reasoned choices based on the available information.
- Students who can evaluate their own work and progress become self-regulated learners. They identify areas for improvement and actively seek feedback to enhance their performance.
- Encouraging Ethical Considerations: Evaluation involves considering ethical implications and consequences. Students learn to assess the ethical dimensions of various decisions and actions.
- Fostering a Culture of Continuous Improvement: Evaluation is essential for continuous improvement in both learning and professional contexts. It helps students recognize their strengths and weaknesses and identify areas for growth.

Creating

Using the "Creating" level of Bloom's Taxonomy in Outcome-Based Education (OBE) is essential because it focuses on students' ability to generate original ideas, designs, and solutions. This level represents the pinnacle of cognitive complexity and encourages students to apply their knowledge, skills, and understanding to create something new and innovative.

Reasons

- The "Creating" level fosters creativity and innovation. Students are challenged to think outside the box and come up with novel ideas and solutions to problems.
- Creating is a fundamental aspect of entrepreneurship. Students learn to identify opportunities and turn their ideas into tangible products, services, or initiatives.
- Creating often involves collaborative efforts, as students may work together to brainstorm and develop innovative projects. This level of learning fosters teamwork and cooperation.
- When students create something of their own, they take ownership of their learning. This sense of ownership can lead to increased motivation and engagement.
- Creating requires students to solve complex problems and overcome obstacles to bring their ideas to life. This level of thinking strengthens their problem-solving abilities.

Conclusion

Outcome-Based Education is intended to create a more focused, relevant, and learner-centric educational experience, preparing students for success in their chosen fields and addressing the needs of society. By using Bloom's Taxonomy in OBE, educators can design learning experiences and assessments that align with the desired cognitive levels of achievement. It helps ensure that students progress through a well-structured and logical sequence of learning, starting from basic knowledge acquisition and moving towards higher-order thinking skills and application. Taxonomies like Bloom's also assist in creating assessment tools that accurately measure students' mastery of the learning outcomes at different levels, promoting a more comprehensive and effective educational experience.

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“IMPACT OF MICROFINANCE ON WOMEN EMPOWERMENT THROUGH KUDUMBASREE UNITS”

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Abstract :

Kudumbashree with its core mission to wipe-out absolute poverty through women empowerment has indeed touched many lives through its integrated, comprehensive approach. Thousands of the poor and the marginalized population are building their lives, their families and their society through these neighbourhood groups. The financial empowerment of women in Kerala through the focused initiative of Kudumbashree has gone long way drawing even International recognition. Since inception Microfinance has been the basic thrust of Kudumbashree to address poverty. It has been proved without doubt that microfinance is the effective tool for development and contributed to the women and economic development of the society to a great extent. The various activities taken up by Kudumbashree under MF are Thrift and Credit, Bank Linkage, Financial literacy Campaign etc. Supporting funds for the community are Community Investment Fund, Revolving Fund, Vulnerability Reduction Fund, Interest Subsidy and Matching Grant. The study related to performance of Kudumbashree units in Poovachal Panchayath, role of Government for their improvement and level of problems in their units help to find out the key factor which enhance this field and give suggestions for betterment. This study was conducted in Kudumbashree unit in Trivandrum District; Kerala. The main aim of this study is to examine the impact of women empowerment through microfinance. The main intention of this study is to understand the level of empowerment achieved by women using microfinance.

Keywords:- Micro finance, income, schemes, savings etc.,

Introduction

“Microfinance” as a branch of economic development for those who lack access to resources has garnered considerably recognition over the last several years, much of it due to the 2006 awarding of the Nobel Peace Prize to Professor Mohammed Yunus, a US trained, Bangladeshi economist who serves as the global figurehead for the microfinance movement. The committee has recognized microfinance as “an important liberating force” and “ever more important instrument in the struggle against poverty”.

Microfinance is a financial service of small quantity provided by Financial Institutions to the poor. These financial services may include savings, credit, insurance, leasing, money transfer, etc. That is any type of financial services, provided to customers to meet their normal financial needs: life cycle, economic opportunity and emergency with the only qualification that transaction value is small and customers are poor. The microfinance was prompted in India to overcome poverty, increase income and enhance well being of the poor. But most of the Indian Microfinance Institutions only focus on microcredit and their high lending rate and loan shark type behaviour credited problems. An alternative to the commercial model of Microfinance is the Kudumbashree programme initiated in 1998 by the Government of Kerala. It focuses for overall development of the family.

Micro finance is that the extension of little loans to entrepreneurs, too poor to qualify for ancient bank loans. It may also be delineate as provision of little –scale monetary services to shoppers World Health Organization square measure economically active in numerous urban and rural areas. in keeping with the accepted definition, microfinance is that the provision of thrift, credit and different monetary services and product of terribly little amounts chiefly to the poor in rural, semi-urban and concrete areas for facultative them to boost their financial gain level and improve living standards. Of late, microfinance has become a key word with Governments, NGOs and international establishments just like the UN agency.

2. Objectives of the study

- To analyze the income earn after joining Kudumbashree.
- To study the kudumbashree microfinance help for uplift financial status.
- To identify problems and constraints of kudumbashree units.

3. Research Methodology

The study is designed on a descriptive study conducted in Poovachal Panchayath based on both secondary and primary data.

a) Source of data

There are two types of data

- Primary data
- Secondary data

Primary data

Primary data collected from members of the Kudumbashree units in Poovachal Panchayath.

Secondary data

Secondary data collected from published books, magazines, journals, websites, reports and periodicals of Kudumbashree units, etc.

b) Sampling Size

A simple random sampling method has been used for selecting the members of Kudumbashree unit as the respondent for purpose of study. The method of sampling used is random sampling. The units are respondent in each unit has been selected by drawing lot. 100 units were selected at random and one respondent from each 100unitswere selected to know the impact of microfinance.

c) Tools and Techniques

The required data for the study has been collected through questionnaire and structured interview schedule.

4. Scope of the Study

Women empowerment is considered as an important responsibility of every government. Till recently very little attention has been given to empowerment and sustainability issues. Women's access to savings and credit gives them greater economic role in decision making, thereby optimising their own and households welfare. It is available from past studies that; kudumbashree is an effective MFI to support economic development. So the poor people can become more empowered especially women by joining kudumbashree programme. It points out that the need of the kudumbashree units in the area where the poor people are reported lower.

5. Data Analysis and Interpretation of Microfinance through Kudumba Shree Units

This chapter deals with analysis and interpretation of data collected with the help of questionnaire and interview schedule. The present study is intended to analyze the impact of microfinance through kudumbashree and problems related with kudumbashree unit in Poovachalpanchayath. The data is analyzed and presented in the form of table with necessary interpretation along side.

1. Collection of savings within the unit per month

The sample units are studied on the basis of savings collected within the group per month. In this study savings collection are categorized as less than 2 times in a month, 2 -3 times in a month, and more than 3 times. The following table shows the classification in this regard.

Table: 1
Collections of savings within the units

Collection of Savings	Number of KDS Units	Percentage
Less than 2 times	10	10
2-3times	30	30
3 times	60	60
Total	100	100

Source: primary data

Interpretation: From the above table, 60% of units collect the savings more than 3 times in a month, 30% of units collect their savings 2-3 times in a month. The remaining 10% collect the savings less than 2 times. The same data shows as picture below.

2. Utilization of Savings Amount

Here, the study is based on the utilization of saving amount. The utilization of saving amount is categorized in the study as:- poor, partly, and fully. The table: 4.11 show the classification of units based on the utilization of saving amount

Table: 2
Utilization of savings in the unit

Utilization of Savings	Number of KDS Units	Percentage
Poor	25	25
Partly	60	60
Fully	15	15
Total	100	100

Source: primary data

Interpretation: From the above table, we can interpret 60% of units are partly utilize their savings, 25% of units are poor in the utilization of savings. Only 15% of units are fully utilizing their savings.

3. Status of loan Recovery

Here, the sample units are studied on the basis of status of loan recovery. The status of loan recovery categorized the study as:-Less than 25%, 25-50%, 50-70%, 70-90%, more than 90%. The following table shows the status of loan recovery in KDS unit.

Table: 3
Status of Loan Recovery

Status of loan recovery	Number of KDS units	Percentage
Less than 25%	3	3
25%-50%	2	2
50%-70%	10	10
70%-90%	25	25
More than 90%	60	60
Total	100	100

Source: primary data

Interpretation: From the above table, 55% of units are very good in status of loan recovery; they recovered more than 90% of loan. 30% of units are in good position, they recovered 70%- 90% loan amount. The remaining 15% of units are unsatisfactory. The figure: 4.1 show the data are graph.

4. Participation of Units in Government Offered Programmes

The participation level is categorized in the study as:-Very low, Low, Medium, High, Very high. The table: 4.13 show the classification of units on the basis of participation of government offered programmes.

Table:4
Participation of units in government offered programmes

Participation Level	Number of KDS Units	Percentage
Very Low	2	2
Low	10	10
Medium	13	13
High	25	25
Very High	50	50
Total	100	100

Source: primary data

Interpretation: From the above table, 50% of units are very high participation in government offered programmes. 25% of units are high participation in government offered programmes. The 10% units are low participation. The figure: 4.13 show the same data.

5. Kudumbashree Microfinance Uplift Financial Status

The sample units are studied on the basis of kudumbashree microfinance has helped me uplift financial status is categorized as:- Strongly disagree, disagree, Agree, Netural, Strongly agree. The following table shows the details.

Table:5
Kudumbashree Micro finance Uplift Financial Status

Option	Number of KDS units	Percentage
Strongly disagree	5	5
disagree	5	5
Neutral	10	10
Agree	60	60
Strongly agree	20	20
Total	100	100

Source :primary data

Interpretation: From the above table, we can interpret 60% of have Agree microfinance uplift financial status and very good position in this regards. 20% of units are good. Only 5% units are strongly disagree and disagree. The following figure shows the graphical presentation of the same data.

6. Income Earn After Joining Kudumbashree

The sample units are studied on the basis of earn income after joining kudumbashree is categorized as:- Strongly disagree, disagree, Agree, Neutral, Strongly agree. The following table shows the details.

Table: 6
Income earn after joining kudumba shree

Option	Number of KDS units	Percentage
Strongly disagree	10	10
disagree,	9	9
Neutral	12	12
Strongly agree	55	55
Agree	14	14
Total	100	100

Source: primary data

Interpretation: From the above table, we can interpret 55% of have Strongly Agree earn income after joining kudumbashree and very good position in this regards. 14% of units are good. Only 9% units are disagree. The following figure shows the graphical presentation of the same data.

7. Problems in Kudumbashree Units

The table: 7 shows the problems in kudumbashree with corresponding rank based on members responses.

Table: 7
Problems in kudumbashree units

Sl.No	Variables	Always (5)	Frequently (4)	Occasionally (3)	Rarely (2)	Never (1)	Score	Rank
1	Lack of capital	9	14	32	23	22	265	I
2	Non availability of loan	-	-	-	13	87	113	VII
3	Lack of basic book keeping and accounting skill	-	-	-	28	72	128	VI
4	Limited awareness	-	-	-	11	89	133	V
5	Time allocation of members	-	-	-	9	91	109	IX
6	Caste/ethic barriers	-	-	-	13	87	113	V
7	Poor management	-	-	-	7	93	107	VIII
8	Highly competition	-	-	-	13	87	113	VII
9	Insufficient government support/poor	-	-	9	32	59	150	II

	relation with local government							
10	Conflict between members of the unit	-	-	3	42	55	148	III
11	Miscellaneous problems	-	-	2	34	64	138	IV

Source: primary data

Interpretation: As per the above table majority of the units faces the problem of lack of capital (rank I). The least problem in the units is time allocation of members.

Conclusion:

This study was conducted statistically of 100 Units. The opinion and findings revealed that socio economic effectiveness and overall empowerment is achieved through Kudumbashree. In this study, it can be concluded that the working system of Neighbourhood Groups are satisfactory, but some initiatives can be taken to improve the performance of the unit. It was also admitted that the socio economic status of semi urban area has improved compared to urban area after joining the unit. In order to improve the socio economic status of urban area, training programmes, promotional activities, awareness programmes can be imparted. Participation in social programmes, meetings can be improved.

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EMERGENCE AND IMPORTANCE OF WOMEN EMPOWERMENT IN TAMIL NADU

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Abstract

This Paper deals with "Women Empowerment" a burning issue all over the world. "Women empowerment" and "women equality with men" is a universal issue. Women Empowerment refers to the creation of an environment for women where they can make decisions of their own for their personal benefits as well as for the society. Women Empowerment refers to increasing and improving the social, economic, political and legal strength of the women, to ensure equal- right to women, and to make them confident enough to claim their rights, such as: freely live their life with a sense of self-worth, respect and dignity, have complete control of their life, both within and outside of their home and workplace, to make their own choices and decisions, have equal rights to participate in social, religious and public activities, have equal social status in the society, have equal rights for social and economic justice, determine financial and economic choices, get equal opportunity for education, get equal employment opportunity without any gender bias, get safe and comfortable working environment Women have the rights to get their voices heard. Women population constitutes around 50% of the world population. A large number of women around the world are unemployed. The world economy suffers a lot because of the unequal opportunity for women at workplaces. Women are equally competent. Nowadays, women are even ahead of men in many socio-economic activities. Women Empowerment leads to decrease in domestic violence. Uneducated women are at higher risk for domestic violence than an educated woman.

Introduction

Empowerment of women has been recognized as a central issue in determining the status of women as well as development. The UNO has adopted Convention on Elimination of Discrimination Against Women (CEDAW) in 1979 and in India 1993. The concept "Empowerment" was introduced at the International Women's Conference at Nairobi in 1985. The conference defined empowerment as a redistribution of social power and control of resources in favour of women. Necessarily, emphasis on women empowerment has its origin in their subordinate position in patriarchy and associated ill treatments and non-recognition to their contributions. All over the world women have been suffering from discrimination, violence, exploitation, marginalization, exclusion and so on at various levels. Women have been relegated to a secondary status in the family and the society. So, their status has to be increased. The two aspects of empowerment, status improvement and contribution to development are interrelated. In this regard, development of women can be viewed from two angles, first one is the improvement of status and second one is their participation in development process.

Objectives of the Study

1. The objectives of the study are framed as below – 1.To understand the concept “Empowerment”.
2. To focus on different aspects of Women Empowerment. 3.To discuss about various dimension of Women Empowerment.

Review of Literature

The author **Susena Srivastava** in her book entitled “Women Empowerment” (2008) demonstrates the strategies and initiatives to empower women to overcome discriminations, achieve full equality, well being and participation in decision making that determine their lives and future of the society.

Neeta Tapan (1998) in her book entitled “Needs for Women Empowerment outlines the Schemes adopted by the Government and facilitated by NGO during implementation to improve women’s conditions.” Discuss various forms of gender discrimination in society which hinders the progress of women.

Zairab Rahman’s (2007) book, “Empowerment of Rural Indian Women, a study of Uttarakhand” finds that increasing rate of women’s exploitation in every sphere of life results from their powerlessness in patriarchal society. Hence as she argues, women need empowerment which would be measured in terms of women’s freedom to shape their lives. Their control over resources.

The paper includes in the edited volume entitled “Women Empowerment: Challenges and Strategies” by **M. Lakshmipathi Raju** (2007) discuss various perspectives of Women Empowerment including the issues and problems that confront them.

Some of the Challenges Facing by the Women in India

Discrimination: Women in India often face discrimination in many areas of life, including in the home and in the workplace. This can make it difficult for them to access education and employment opportunities, and can lead to unequal treatment and lower pay.

Lack of access to education and employment: Women in India face significant barriers when it comes to accessing education and employment. For example, data from the World Bank shows that only around 50% of women in India participate in the labour force, compared to around 80% of men. This is due in part to cultural and social barriers that prevent women from participating in the workforce, as well as lack of access to education and training. **Lack of access to education and employment:** Women in India face significant barriers when it comes to accessing education and employment. For example, data from the World Bank shows that only around 50% of women in India participate in the labour force, compared to around 80% of men. This is due in part to cultural and social barriers that prevent women from participating in the workforce, as well as lack of access to education and training. **Gender-based violence** is a major problem in India. The National Crime Records Bureau reports that in 2021, there were over 428,278 reported cases of violence against women in India. This included incidents of physical and sexual

assault, as well as dowry- related violence and female infanticide. The statistics are alarming, with 31,677 reported rapes against women in 2021 alone.

Poverty: Many women in India live in poverty, particularly in rural areas. Poverty can make it difficult for women to access education and employment, and can lead to other challenges such as poor health and malnutrition.

Disparities between urban and rural areas: Women in rural areas of India often face greater challenges when it comes to empowerment. For example, they may have less access to education and health care, and may be more isolated and vulnerable to gender- based violence.

Women in Industry and Startups in Tamilnadu

Women supportive policies are very much part of the social justice mission and cost Vs benefits metrics will not be applied even if these policies are designed for profit oriented industries/startups.

- Tamil Nadu to encourage women Startups, it shall ensure that at least one or more women investors be included in the investment group so that the diversity of gender in the decision-making group and that there is a likelihood that women seekers of funds will get a fairer hearing and possibly receive more favourable decisions.
- Task based work systems instead of time based wherever feasible. \
- Anganwadi attached Creche facility industrially dense areas and urban locales to help women working in small companies and shops - sustainable model to be worked out.
- Government can help setting up kid/women care modules if an establishment has 50 plus women working there. This will be helpful for msme.
- Compulsory off for 2 days per week for women.
- Women entrepreneurs find it difficult to get things done when it comes to every aspect of building a company. A women specific district wise help center/portal to be established preferably with an accountable call center.
- Establishing a women specific equity fund/debt fund by Government and deploying through private investors. Social welfare and Women Empowerment Department
- Subsidized costs in all company establishment services, coworking spaces, incubators etc
- One of the major difficulties women startups face is market access. Government should encourage potential buyers with possible benefits and also providing innovative market access platforms and free tech tools.
- There are very few women founders in high profile scalable businesses. A study to be done on this phenomenon and appropriate action items to be implemented.
- Women getting married with 3 plus years of proper work experience or startup establishment would be given with some additional encouragement incentives by the Government. This will help a decent percentage of women to think of getting into a work/venture mode before getting married.

- During pregnancy/child birth breaks innovative courses and practical learnings can be given to them with the objective of keeping them updated with their line of profession and bouncing back to jobs easily.
- Free / Subsidy in state/national/international exposure with a cap on maximum financial support.
- Women mentors also would be made available who would empathise and understand the challenges faced by women and provide directions and handholding support to the budding entrepreneurs.
- Women focused Think Tank conclaves with the objective of bringing out issues, ideas and connections to work in a collaborative manner would be set up.
- Social entrepreneurs who are working in women centric areas would be offered support.
- To celebrate entrepreneurship, women centric awards on yearly basis to support the women entrepreneurs, startups and the ecosystem would be launched.

Organisations Promoting Women Entrepreneurship in Tamil Nadu

The Integrated Women Development Institute

The institute was set up in 1989 to uplift women and girl children from the distressing situations they encounter, by setting up income generating programmes for deserving women to become self-employed.

The Tamil Nadu Corporation for Development of Women Ltd:

The Corporation was set up on 9th December 1983 under the Companies Act, 1956 to focus on empowerment of women to encourage entrepreneurship among women, to identify trade and industries suitable for women, to undertake marketing activities for products manufactured by women and encourage women to form SHGs through giving training and extending credit facilities.

Women Entrepreneurship Promotional Association (WEPA)

WEPA functioning in Chennai is an association of women entrepreneurs, providing training to women in various fields. The association also conducts exhibitions for the members and assists in marketing of the products of members.

Marketing Organisation of Women Entrepreneurs (Regd) MOOWES provides comprehensive support to women entrepreneurs to achieve success in the business. Its main aim is to ensure women in marketing their products through exhibitions and thus provide an opportunity to tour the country also.

Schemes for Women Entrepreneurship in Tamil Nadu

Indira Mahila Yojana (IMY) is a scheme aims at organizing women at grass root level to facilitate their participation in decision-making and their empowerment. The scheme was launched in 1995 on pilot basis in 200 blocks over a strategy to coordinate and integrated components of sectoral programmes and facilitates their convergence to empower women.

Vocational and Skill Development Programmes

The major focus of the Tamil Nadu Corporation for Development of Women has been to provide support to economically disadvantaged women. The Corporation is funding entrepreneurial programmes, which is opened to all potential women entrepreneurs, preferably first generation. The programme was commenced in 1998-99, which is conducted by the Industry and Commerce at Chennai and Madurai.

Mahalir Thittam a participatory, people centred and process oriented project, was started in which is directed towards empowerment of women and capacity building of poor women in rural areas through SHGs. It covers the entire state of Tamil Nadu. Currently the coverage extends to rural areas of all the 30 districts of Tamil Nadu. It is an unusual long term partnership between three agencies, the state government, non-governmental organizations and banks (including **NABARD**) and other financial institutions

Table No: 1 Commonly Used Dimensions of Women Empowerment

DIMENSIONS	HOUSEHOLD	COMMUNITY	BOARDER AREAS
Economic	Women's control over income, family resources etc.	Women's access to ownership of assets, representation in local association.	Women's representation in high placing jobs, women CEO's etc.
Socio-Cultural	Women's freedom of movement, lack of discrimination etc.	Women's visibility in and access to social space and social network etc.	Women's literacy and access to broad range of educational options etc.
Inter-Personal/Familial	Participation in domestic decision-making, control over sexual relations etc.	Self selection of Spouses, local campaigns against domestic violence.	Options for divorce, safe abortion, reproductive health service etc.
Legal	Knowledge of legal rights, domestic support for exercising rights.	Community modification for rights, Campaigns for rights awareness etc.	Advocacy for rights and legislations, Use of judicial system to redress rights violation etc
Political	Knowledge of political system, exercising right to vote.	Women's involvement in the local political system, representation in local Government etc.	Women's representation in regional and national Govt., Strength as a voting etc.
Psychological	Self esteem, Self-efficacy, Psychological well-being.	Collective awareness of injustice, Potential of mobilization.	Women's sense of inclusion and entitlement etc.

Source: Rowland (1995 & 1997)

In this type of categorization on the basis of aspects of life can consider six common dimensions of Women Empowerment –

- Economic Empowerment.
- Social Empowerment.
- Political Empowerment.
- Physical Empowerment.
- Legal Empowerment.

Psychological Empowerment: These aspects are very significant in conceptual perspective of women empowerment. All these define the scope and nature and at the same time indicate the need for women empowerment in different aspects of life. Such as economic, political, legal etc.

Economic Empowerment: Empowerment is the efficiency of a woman to earn control and manage economic resources. It is the prime factor of empowerment concept. Empowerment in economic field is the best route for achieving overall empowerment. Economic empowerment of women will create environment for reaching social change and provide a necessary weapon for them to challenge injustice and discrimination.

Social Empowerment: Empowerment of women depends upon the status of women inside and outside the home. But patriarchal values reinforced by tradition, customs, media and other socio-political institution play a major role in lowering down the status of women. It should be needed to change the perception of women regarding themselves.

Political Empowerment: Political Empowerment refers to the equitable representation of women in decision-making, both formal and informal and their voice in the formation of policies affecting their society. Political Empowerment of women for it gives women the capacity to influence the decision-making process.

Psychological Empowerment: Women are the foundation upon which the family and society are built. Several studies show that due to cultural views of the low position of women in many societies the women themselves often have a negative image of their potential and importance. The concept of strong determination, assertive nature, motivation etc. determines psychological empowerment of the individual which is very much necessary for the empowerment of women as a whole.

Physical Empowerment: According to the definition of World Health Organization (WHO), Health is a state of complete physical, mental and social well-being. Health is both an important factor in the achievement of status as well as an indicator of social status, particularly of women. Without good physical and mental health of women economic and political empowerment can't be achieved. Several women related studies have shown that women health is not only a manifestation of biology but also a reflection of socio-political, economic and religious context of women lives. There is need to empower the women by bringing changes in the reproductive health of women.

Legal Empowerment: Legal Empowerment is the provision of an effective legal structure which is supportive of women's empowerment. Protection is needed for the women in different issues like health harassment, superstition, cultural barriers,

dominance in patriarchy etc. So it is very much needed of exercising the legal rights whenever necessary to make women aware of civil and political rights. This empowerment has a concern of human rights of women's. The Slogan "Women's rights are human rights" are one which has now taken off worldwide. The concept women empowerment is multidimensional. It expresses at different levels and also in different aspects of life. Significantly the concept takes ideological commitments into its formation and based on gender equality and ability of self-assertion. Ability of self-assertion is not only a challenge to patriarchy power but also an effort for upward mobility or obtaining the psychological health of being powerful.

Conclusion

Primarily, Women Empowerment may be conceptualized as a process and viewed as opposed to a static situation that challenges existing assumptions about power, helping achieving and succeeding relation to women. Consequently, powerless or disempowered gain a greater share of control of resources and decision-making. This is because the most outstanding feature of the term empowerment is that it contains the word "power". Evidently, Empowerment speaks of power relations and their implications across multidimensional areas. It also emphasizes on applications in day to day life of women as an individual community member and national citizen. In other words women empowerment emphasizes theoretical perspective, practical utility and empirical groundings. In view of this empowerment as a theory and praxis has been entwined in development goals. The various dimensions of women empowerment economic, socio-cultural, legal, political, physical and psychological dimensions together present a comprehensive and holistic discourse on power relation in patriarchy, equal rights perspectives, participation and contribution to development process. Each dimension is significant by itself and very crucial for empowering a woman in the context and in a totality covering all functional needs of life. Needless to say, empowerment is more contextual than universal in understanding. Defining the concept is subject to debate. It is easy to define empowerment by its absence but difficult to define in action as it takes on different forms in different people and context.

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WOMEN EMPOWERMENT

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Abstract

Women empowerment is a crucial aspect of promoting gender equality and social progress worldwide. It involves providing women with the necessary tools, opportunities, and resources to participate fully in economic, social, political, and cultural spheres. One of the primary goals of women empowerment is to break down traditional gender roles and stereotypes that have historically limited women's potential. By challenging societal norms and discriminatory practices, women can achieve equal status with men and access equal opportunities for education, healthcare, and employment. When women are empowered, it leads to significant societal benefits. Studies have shown that empowering women can lead to improvements in maternal and child health, reduction in poverty, and overall economic growth. Women's increased participation in the workforce contributes to greater productivity and diversity, leading to better decision-making and innovation. Women empowerment is not solely about individual development; it also involves collective action. Women's organizations and networks play a vital role in advocating for women's rights, influencing policies, and addressing issues such as violence against women and girls, reproductive rights, and gender-based discrimination. However, achieving women empowerment is an ongoing process, and there are still significant challenges to overcome. These challenges include gender-based violence, limited access to education and healthcare, unequal pay, and underrepresentation in leadership roles. Governments, civil society, and the private sector must collaborate to create an enabling environment that promotes women empowerment. This includes implementing laws and policies that protect women's rights, providing access to quality education and healthcare, ensuring equal pay for equal work, and promoting women's representation in decision-making bodies.

Keywords: *Women Empowerment, Need, Importance, Factors Affecting Women's Empowerment, Holistic Development*

Introduction

Women empowerment refers to the process of empowering women and providing them with the tools, resources, and opportunities to participate fully in all aspects of life. It is about creating an environment where women can make their own choices, exercise their rights, and have access to education, healthcare, and economic opportunities on an equal basis with men. Historically, women have faced various forms of discrimination and inequality, limiting their potential and hindering their progress. Women empowerment seeks to break down these barriers and challenge the traditional gender norms and stereotypes that have held women back. Empowering women is not only a matter of individual rights and justice; it is also essential for achieving sustainable development and building inclusive societies. When women are empowered, they contribute significantly to

social and economic growth, improve family and community well-being, and drive positive change.

Efforts towards women empowerment encompass various areas, including women's political participation, economic empowerment, access to education and healthcare, and the elimination of gender-based violence. Governments, civil society organizations, and the private sector play crucial roles in promoting women empowerment through policy changes, awareness campaigns, and the implementation of programs that uplift women's status in society. While progress has been made in many regions, challenges persist, and there is still much work to be done to achieve true gender equality. Women empowerment remains a global priority and an ongoing journey towards creating a more just, equitable, and inclusive world for all. By empowering women, societies can unlock the full potential of half of their population, leading to more prosperous and harmonious communities. Women empowerment refers to the process of empowering women and providing them with the tools, resources, and opportunities to participate fully in all aspects of life. It is about creating an environment where women can make their own choices, exercise their rights, and have access to education, healthcare, and economic opportunities on an equal basis with men. Historically, women have faced various forms of discrimination and inequality, limiting their potential and hindering their progress.

Women empowerment seeks to break down these barriers and challenge the traditional gender norms and stereotypes that have held women back. Empowering women is not only a matter of individual rights and justice; it is also essential for achieving sustainable development and building inclusive societies. Studies have shown that when women are empowered, they contribute significantly to social and economic growth, improve family and community well-being, and drive positive change. Efforts towards women empowerment encompass various areas, including women's political participation, economic empowerment, access to education and healthcare, and the elimination of gender-based violence. Governments, civil society organizations, and the private sector play crucial roles in promoting women empowerment through policy changes, awareness campaigns, and the implementation of programs that uplift women's status in society. Empowering women is not a standalone effort but requires the collective commitment of Governments, civil society, private sectors, communities, and individuals. When women are empowered, they become agents of positive change, contributing to the progress and betterment of society as a whole.

Need to Women Empowerment

Empowering women is a vital step towards achieving gender equality and fostering a more just and inclusive society. Some key aspects and strategies for women empowerment:

- **Education:** Ensuring equal access to education for girls and women is crucial. Education empowers women with knowledge, skills, and the confidence to pursue their aspirations, contribute to society, and make informed decisions about their lives.

- **Economic Empowerment:** Promoting women's economic participation through fair wages, equal job opportunities, and entrepreneurship support can lead to greater financial independence and improved living standards for women and their families.
- **Healthcare:** Access to quality healthcare, including reproductive health services, is essential for women's well-being. Empowering women to make decisions about their health and family planning positively impacts their overall life choices.
- **Ending Gender-Based Violence:** Combating all forms of violence against women and girls is critical. Implementing laws and policies that protect women from abuse and ensuring access to support services are essential steps in empowering women to live free from fear and violence.
- **Leadership and Representation:** Encouraging and supporting women's representation in decision-making positions in politics, business, and other sectors is vital for challenging gender norms and promoting inclusive policies and practices.
- **Legal Rights and Equality:** Advocating for gender-sensitive laws and policies that protect women's rights and ensure equality in all spheres of life is fundamental to women empowerment.
- **Technology and Digital Inclusion:** Bridging the gender gap in access to technology and digital skills can open up new opportunities for women in education, business, and social connectivity.
- **Changing Attitudes and Cultural Norms:** Challenging harmful stereotypes and promoting gender equality in homes, schools, workplaces, and media is crucial to creating a more inclusive and empowering environment for women.
- **Supportive Networks and Mentorship:** Establishing networks and mentorship programs that empower and support women can help break barriers and provide guidance in personal and professional development.
- **Male Engagement:** Engaging men and boys in discussions about gender equality and women empowerment is essential for building alliances and addressing root causes of gender-based discrimination.

Importance of Women Empowerment

Women empowerment is of paramount importance for various reasons, as it has significant positive impacts on individuals, families, communities, and societies as a whole. Here are some key reasons highlighting the importance of women empowerment:

- **Gender Equality:** Women empowerment promotes gender equality, which is a fundamental human right. When women have equal access to opportunities, resources, and decision-making power, it helps create a fair and just society.
- **Economic Growth:** Empowering women economically leads to greater productivity and economic growth. Women's participation in the labor force can contribute significantly to a country's GDP and overall prosperity.

- **Education and Knowledge Sharing:** Educated and empowered women are more likely to invest in the education of their children, passing on knowledge and values that can break cycles of poverty and lead to generational progress.
- **Health and Well-being:** When women are empowered, they tend to have better access to healthcare and family planning resources. This leads to improved maternal and child health and reduces mortality rates.
- **Family Stability:** Empowered women are more likely to make informed decisions about family planning, leading to smaller, healthier families. This can contribute to family stability, better nutrition, and improved living conditions.
- **Social Development:** Women empowerment plays a crucial role in social development, fostering positive changes in attitudes, behaviors, and cultural practices that perpetuate gender-based discrimination.
- **Community Leadership:** Empowered women often become community leaders and catalysts for change. They can address local issues effectively and advocate for the needs and rights of their communities.
- **Political Representation:** Women's empowerment is essential for increased representation in political and decision-making roles. Women leaders bring diverse perspectives and priorities to the table, contributing to more inclusive governance.
- **Reducing Violence:** Empowered women are better equipped to stand up against violence and abuse. Addressing issues of gender-based violence becomes more effective when women are empowered to assert their rights and seek support.
- **Innovation and Creativity:** Women's empowerment fosters an environment of diversity and inclusivity, leading to more innovative solutions to societal challenges.
- **Global Development Goals:** Advancing women empowerment is crucial to achieving various Sustainable Development Goals, such as gender equality, poverty reduction, and quality education.
- **Human Rights and Dignity:** Women have the right to live with dignity and autonomy. Empowerment ensures that their rights are protected and that they can lead fulfilling lives without discrimination or oppression.

Women empowerment is not just a matter of gender equality; it is a key driver of societal progress and development. When women are empowered, they can contribute more effectively to their families, communities, and the nation, leading to a more equitable and prosperous society for everyone.

Factors Affecting Women's Empowerment in India

Women's empowerment in India is influenced by a complex interplay of social, cultural, economic, and political factors. Despite progress, there are still significant challenges that hinder gender equality and women's empowerment. Here are some key factors affecting women's empowerment in India:

- **Gender Norms and Patriarchy:** Deep-rooted patriarchal norms and traditional gender roles continue to shape societal attitudes, limiting women's access to

- education, decision-making roles, and economic opportunities. These norms perpetuate gender discrimination and restrict women's autonomy.
- **Education:** Lack of access to quality education, especially in rural areas, hampers women's ability to gain knowledge, skills, and self-confidence. Educated women are more likely to challenge social norms, participate in the labor force, and assert their rights.
- **Economic Empowerment:** Women in India often face limited opportunities for economic empowerment, with lower workforce participation rates and unequal pay. The lack of access to financial resources, assets, and credit also inhibits their economic independence.
- **Violence against Women:** Prevalent gender-based violence, including domestic violence, sexual harassment, and dowry-related crimes, deters women from pursuing their aspirations and limits their mobility and safety.
- **Health and Sanitation:** Poor access to healthcare facilities and sanitation disproportionately affect women, impacting their well-being and restricting their participation in economic and social activities.
- **Legal Rights and Implementation:** While legal provisions safeguard women's rights, the effective implementation and enforcement of these laws remain a challenge. Lack of awareness about legal rights and limited access to justice hinder women's empowerment.
- **Child Marriage and Early Pregnancy:** Child marriage is still prevalent in some parts of India, leading to early pregnancies and increased health risks for young girls. This practice curtails educational opportunities and perpetuates cycles of poverty.
- **Technology and Digital Divide:** Limited access to technology and the internet can further marginalize women, hindering their access to information, education, and economic opportunities in the digital age.
- **Caste and Ethnicity:** Intersectionality plays a significant role in women's empowerment, as those from marginalized caste and ethnic groups often face compounded discrimination and limited access to resources.
- **Political Representation:** Despite some progress, women remain underrepresented in political institutions, which affects their ability to influence policies and decisions that impact their lives.
- **Social and Cultural Stigma:** Stigma surrounding certain issues such as menstruation, mental health, and widowhood can have profound effects on women's empowerment and well-being.

Addressing these factors requires a multi-dimensional approach involving changes in social attitudes, policy interventions, legal reforms, and initiatives to promote women's education, health, and economic opportunities. Grassroots movements, government programs, and partnerships with civil society organizations are crucial in advancing women's empowerment in India.



Ensures Holistic Development of Society

Women empowerment is a critical catalyst for the holistic development of society. When women are empowered, they contribute to various aspects of society, fostering comprehensive growth and progress. Here's how women's empowerment ensures holistic development:

- **Education and Knowledge Transfer:** Empowered women are more likely to pursue education and knowledge acquisition. Educated women can then pass on their learning to their children and the community, leading to a more informed and educated society.
- **Health and Well-being:** Empowered women tend to prioritize health, not just for themselves but also for their families. They play a significant role in promoting healthcare awareness, disease prevention, and family planning, leading to healthier communities.
- **Economic Growth and Poverty Alleviation:** Women's economic empowerment has a direct impact on poverty reduction. When women are economically active, they can contribute to household incomes, thus lifting families out of poverty.
- **Sustainable Development:** Empowered women often prioritize sustainable practices, environmental conservation, and resource management. They play a vital role in promoting sustainable development and responsible consumption within their communities.
- **Social Cohesion and Inclusivity:** Women's empowerment fosters a more inclusive and cohesive society. When women are actively involved in decision-making and community leadership, diverse perspectives are considered, leading to better and fairer outcomes.
- **Entrepreneurship and Innovation:** Empowered women are more likely to start businesses and participate in entrepreneurial activities. This drives innovation, economic diversification, and job creation, benefiting society at large.
- **Gender Equality and Social Justice:** Empowerment of women challenges gender norms and stereotypes, promoting gender equality and social justice. A more equal society ensures that everyone's rights and opportunities are respected and upheld.

- **Reduced Gender-based Violence:** As women gain more agency and independence, the prevalence of gender-based violence tends to decrease. Empowered women are more likely to stand up against abuse and advocate for their rights.
- **Political Participation and Good Governance:** When women are empowered and politically active, it leads to better governance and more representative decision-making. Women leaders often prioritize social welfare and human development issues.
- **Cultural and Artistic Contributions:** Empowered women contribute significantly to cultural and artistic expressions in society. Their creativity and talents enrich the cultural fabric of the community.
- **Resilience and Crisis Management:** Women's empowerment enhances resilience within communities, making them better equipped to face challenges such as natural disasters or economic downturns.
- **Inter-generational Impact:** The empowerment of women has a positive ripple effect on future generations. Empowered mothers raise confident and educated children, laying the foundation for a better future.

In conclusion, women's empowerment is not just about advancing the status of women; it is about creating a more inclusive, equitable, and thriving society. When women are empowered, they actively contribute to various aspects of society, leading to its holistic development and progress. Investing in women's empowerment is, therefore, a strategic and essential step towards building a better future for all.

Conclusion

Women empowerment is a fundamental and transformative process that recognizes and upholds the rights, agency, and dignity of women. It involves providing women with equal access to opportunities, resources, and decision-making power, enabling them to participate fully in all aspects of life. The significance of women empowerment extends beyond gender equality; it has far-reaching impacts on the individual, family, community, and societal levels. Empowered women play a pivotal role in fostering holistic development and progress. They contribute to education, health, economic growth, sustainable development, social cohesion, and political representation. By challenging gender norms and stereotypes, women's empowerment paves the way for a more inclusive and just society, where the rights and opportunities of all individuals are respected and protected.

Investing in women's empowerment is not just a moral imperative but also an economic and social necessity. Countries that prioritize and promote women's empowerment tend to experience higher economic growth, improved health outcomes, and greater social cohesion. Empowered women serve as powerful agents of positive change, advocating for gender equality, human rights, and sustainable development. Despite significant progress in recent years, there are still challenges and barriers that hinder women's empowerment in various parts of the world. Addressing these challenges requires a collective effort from governments, civil society organizations, private sectors,

and individuals. By implementing policies, laws, and programs that promote gender equality, providing access to quality education and healthcare, and ensuring women's participation in decision-making processes, societies can foster an environment conducive to women's empowerment.

In summary, women empowerment is a journey towards building a more equitable, inclusive, and prosperous world. It is a journey that benefits not only women but also society as a whole. By empowering women, we unlock their full potential and unleash a force for positive change, leading to a brighter and more sustainable future for everyone.

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While progress has been made in many regions, challenges persist, and there is still much work to be done to achieve true gender equality. Women empowerment remains a global priority and an ongoing journey towards creating a more just, equitable, and inclusive world for all. By empowering women, societies can unlock the full potential of half of their population, leading to more prosperous and harmonious communities. Women empowerment refers to the process of empowering women and providing them with the tools, resources, and opportunities to participate fully in all aspects of life. It is about creating an environment where women can make their own choices, exercise their rights, and have access to education, healthcare, and economic opportunities on an equal basis with men.

Historically, women have faced various forms of discrimination and inequality, limiting their potential and hindering their progress. Women empowerment seeks to break down these barriers and challenge the traditional gender norms and stereotypes that have held women back.

Empowering women is not only a matter of individual rights and justice; it is also essential for achieving sustainable development and building inclusive societies. Studies have shown that when women are empowered, they contribute significantly to social and economic growth, improve family and community well-being, and drive positive change.

Efforts towards women empowerment encompass various areas, including women's political participation, economic empowerment, access to education and healthcare, and the elimination of gender-based violence. Governments, civil society organizations, and the private sector play crucial roles in promoting women empowerment through policy changes, awareness campaigns, and the implementation of programs that uplift women's status in society.

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In conclusion, women empowerment is essential for building inclusive and equitable societies. By empowering women, we unlock their potential to contribute fully to their communities and drive positive change at local, national, and global levels. It is a collective responsibility to work towards a world where women have equal opportunities and can participate without discrimination, ultimately benefiting society as a whole.

IMPACTS OF ICT AND IOT IN SMARTER EDUCATION PARADIGMS - A SPECIAL FOCUS ON STUDENTS WITH DISABILITIES

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Abstract

Recent years have seen a surge in the use of new technologies as well as its effects in many areas of life. IoT is playing a bigger and bigger role in special education and training over time. Collaboration between technology and educational specializations involved in the educational teaching of individuals is the key to students' holistic evolution and development. The Internet of Things (IoT) and AI-based techniques work together to create smart and intelligent paradigms, which is a major factor in their development. The treatment of student mental health issues, especially in the setting of physical education, can be advanced by using these strategies extremely effectively in a number of different fields. To calculate a student's stress or depression level and improve abilities and performance in the classroom, clever strategies might be applied. Innovative technologies make it possible to precisely analyze behavioral characteristics and spot any unfavorable patterns, allowing for the early detection of mental health issues. By reducing levels of worry and despair, AI can effectively assist students become more responsible citizens by enhancing their psychological health and mental performance. This article's major objective is to raise awareness of the impact of IoT based on ICT on special education students' education and health promotion, as well as on young people with physical and mental disabilities.

Keywords: Internet of Things; IoT applications; smart devices; Internet of Things (IoT); Education, Educational Technologies; Online Learning; Students with Disabilities.

Introduction

There is a significant impact of mobile technology and the IoT both within and outside of the classroom. Popular IoT education use cases have been highlighted by Insider Intelligence, including remote learning, the future of the internet in education, and IoT applications in higher education. The Internet of Things (IoT), which is the connecting of items to the Internet that are not mainstream products like computers and smartphones, is in the process of changing many aspects of our daily life. Education is included in that list, despite the fact that it may not seem like an obvious use of the IoT. E-learning is now a standard practice in the American school system as a result of the internet's pervasive influence on our classrooms. But the Internet of Things has many educational uses, and this disruption has huge ramifications. Schools may increase the security of their campuses, monitor important resources, and improve information access in the learning environment thanks to the growth of mobile technology and the Internet of Things (IoT). In addition, teachers can use this technology to develop "smart lesson plans" as opposed to the stolid plans of the past.

The combination of IoT and AI-based grounded operations is crucial for the creation of smart and intelligent paradigms. These techniques can be utilized very successfully to improve a number of disciplines, including the treatment of mental health issues affecting students, especially in higher education. The goal of special education is to help the child become an active, autonomous member of society. Everything that is provided to the kid as part of special education is something that should be provided in the setting of the classroom and throughout the course of the child's academic career. ICTs are one tool for managing a person's unique educational requirements. The diagnosis and support of the educational needs of the disabled can be done using ICTs and IoT technologies [1,5] IoT in general and special education can leverage mobile applications in a variety of ways [2,3,4,14].

Impact of IoT & Technology on Special Education

By keeping track on each student's internet usage, ICT-based IoT applications in special education increase user navigation security. Teachers are able to design clever lesson plans. They gain knowledge in data collection and processing, data monitoring, and decision-making on the best study and teaching approach. Teacher and student contact is made possible through the use of technology and IoT devices. Students, for instance, are trained using mobile IPAD / Tablet devices equipped with interactive apps with integrated visuals and simulations, allowing them to escape from books.

Applications for AI and knowledge management can be used in conjunction with IoT and integrated into the IoT design to improve the overall services provided [6,7,8,9, 19], as well as to advance cognitive function, consciousness, and emotional intelligence [12,14-16,18,19]. IoT can also help with neurodevelopment and brain remodeling [17,18]. Additionally, there are numerous ways that serious games can be applied to improve IoT ecosystems [27,28,30,39,44]. The future educational system will be more diverse as a result of the new ideas that this digital transition will bring, which have the potential to alter how students and teachers think and study. According to an eMarketer estimate, 83.2% of all 12- to 17-year-olds have a smartphone. Additionally, 73.0% of parents said their kids had a smartphone between ages 11 to 13, and 31.0% said their kids had one between ages 6 and 10. Students who use these mobile IoT devices in the classroom can automate tasks that they already do now, such as note-taking, schedule checking, and research. As for the schools, the greatest benefits would be increased energy efficiency and reduced operating costs.

Ict Based IOT in Higher Education

The IoT can begin interfering with education as early as kindergarten and can do so until grade 12, although its effects are probably most noticeable in higher education. Particularly at colleges, students are gradually moving away from paper books and toward tablets and laptops. Since they have access to all the necessary materials, students may now learn at their own pace and enjoy a learning experience that is almost identical in the classroom and at home. Students find learning to be more convenient thanks to this

propensity, while professors find teaching to be more successful as a result. Teachers are no longer necessary to hand-grade exams on paper or perform other customary tasks due to the advent of connected technology.

Professors can instead concentrate on the customized instruction that will benefit their students the best. Professors can gather data on their pupils using devices that are cloud-connected, then decide which ones require the most individualized care and attention. These data support teachers in enhancing student engagement and modifying their lecture plans for upcoming classes. Universities may monitor their students, staff, resources, and equipment outside of the classroom using linked devices at a lower operational cost, which saves money for everyone. Additionally, safer campuses should result from these tracking capabilities. Students, for instance, would be able to monitor connected buses and modify their itineraries accordingly, preventing them from wasting time in potentially hazardous regions.

Role of ICT and IOT in Our Intelligent Educational System

It incorporates numerous digital devices into the classroom and uses various technologies to provide an intelligent learning environment and enhance the learning process. Such a concept is applicable in both a virtual and a physical context, which meets the challenges arising during global crises and requirements of the digital generation, the IES provides a smart environment where the learning process is more engaging, adaptive, personalized, and efficient. It is achieved by utilizing a full range of contemporary educational technologies. They include networked interactive devices (e.g., notebooks, smartphones, computers, and tablets), IoT (sensors, actuators, cameras, RFID tags, RFID readers, and wearables), and other innovative technology tools. Furthermore, specialized software is used for monitoring, gathering, processing, analyzing, and managing all educational and environmental data. Also, smart decision making based on intelligent technologies such as learning analytics, artificial intelligence, semantics, ontologies, neural networks, and data mining provides smart resource control and smart management of the educational process.

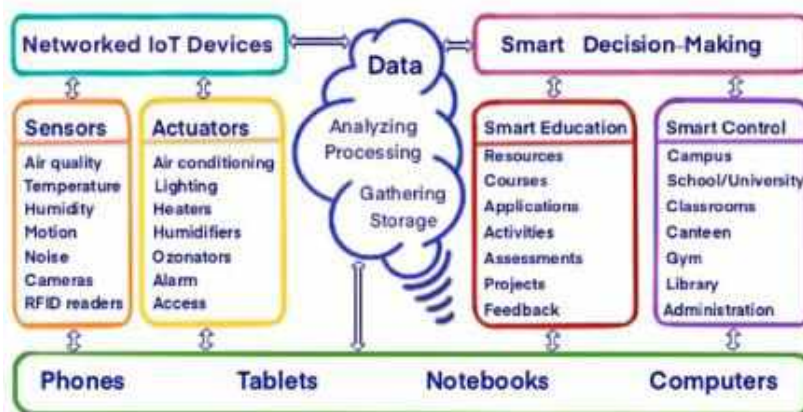


Figure 1: Block diagram of Intelligent education system

In the context of our IES, IoT has a twofold role – to intelligently control and manage classroom environmental parameters and to enable innovative teaching approaches that make the learning process efficient. It involves the integration of IoT devices within IES – sensors, actuators, wearable devices, cameras, etc. to allow the educational system to remotely monitor and control the physical parameters of the environment and the parameters related to the learning process (students’ behavior, engagement, and concentration).

Table 1 describes in detail the role of IoT in our IES, indicating the location in the smart school, purpose, and educational objectives of every device. Security and safety are a challenge in every public building. In our concept of a smart school, IoT devices (intelligent cameras, temperature, smoke and noise detectors, motion sensors, etc.) help monitor students, teachers, objects, and equipment in smart classrooms and the school as a whole. In such a case, alarms are triggered, and notifications are sent based on rules and events. Thus, the staff quickly can identify potential incidents and accidents, instantly make a proper decision and take the corresponding actions for prevention.

Table 1: List of IOT devices and its objectives

IOT	Purpose	objectives	Users	Place of IoT
Air quality analyzer	Optimal air quality conditions	Providing optimal environment for learning	Students, staffs, teachers, administrators	School classrooms, students work place, libraries, laboratories, Gyms
Temperature sensors, humidity sensors, motion sensors, noise sensors	Energy saving, lighthing, security supporting the educational process	Providing optimal environment for learning and supervising students	Students, teachers and staffs	
cameras	Security enhancing safety	Monitoring students mood and health	Students, teachers and staffs	
RFID tags, RFID Readers	Security access control and enhancing safety supporting students	Checking students presence, tracking tools and belongings locations	Administrators and teachers	
Wearables	Access control enabling security	Checking students presence and checking students mood	Staffs, teachers and administrators	

Automatic checking of students' presence is performed by facial recognition with cameras and wearables with RFID readers. Monitoring students' presence enables teachers and school authorities to check and track the students' attendance. It allows the system to notify the parents or guardians of any absence in a timely manner. IoT wearables can integrate the students' location information, interaction with IES, etc. Wide-angle cameras, noise sensors, and passive infrared sensors on students' desks can measure students' presence, movements, attention, and emotional state. Dedicated software can identify students' moods and monitor their health. These sensors also facilitate teachers to pay individual attention to the learners with special needs when necessary. IoT sensors help keep an appropriate learning atmosphere in classrooms. When an excessive level of noise or fidgeting is identified, an event is registered. Then a notification to the teacher is sent, which means that students' engagement and concentration are low and corresponding intervention is necessary. The appropriate actions involve changing the teaching approach, presentation mode, inclusion of interactive learning materials, simulations and multimedia demonstrations, and playing educational games. IoT devices enable customized learning environments according to the different activities performed (physical education, laboratory work, knowledge delivery, assessment, music). IoT devices gather continuous data about the parameters of a classroom environment and automatically adjust their values to optimal levels for the most efficient learning process. Some environmental parameters can be changed automatically in predefined mode if their value is in appropriate considering recommendations for optimal conditions. Actuators control ventilation, heating, air conditioning, humidifiers, lighting, and other systems to achieve target environmental parameters.

Innovative technologies play a significant role in our concept of smart schools, but privacy and ethical concerns are also considered. There should be strict predefined rules for the usage of applications based on IoT. Further, the IoT applications utilized in an educational context should be secure and reliable. Students and teachers should be aware of protocols for confidentiality and authenticity when using technology tools and devices. They must be familiar with the safe use of these technologies and protect themselves from many potential cyber threats. It is the responsibility of school authorities before employing new technology to inform the school staff and students about the functionalities and how to benefit from those technologies safely. Management of all users' rights and compliance with data protection and other legal regulations have to be taken into consideration.

IoT for Students with Sensory Difficulties

Students with sensory difficulties benefit from IoT applications from a large number of effective assistive technologies. For example, students who have hearing disabilities face challenges every day. The biggest challenge faced by them is communication. Deaf people can use an IoT Application to solve this problem. An App has been created on a system with two ends, at one end there is a normal person and at another end, there is a deaf person. The normal person will speak into the system through speech to the text

module, a deaf person will get the text via Wi-Fi, Bluetooth, or Cloud Server according to the situation.

On the other hand, Deaf and people with hearing impairment face everyday challenges in identifying the occurrence of household sounds like door bell, child crying or phone ringing, simple things but very important. For that reason when the visitor presses the doorbell, captured image is transferred to the wearable device which helps to know the right person at the door or intruder. After transferring the image, the wearable device vibrates to notify. Those simple ways can help deaf people to gain independence and flexibility in different areas. Also, IoT apps have helped blind people and people with optic nerve disorder as a doctor. The eyeglasses can transmit the signals of the eye blood flow sensor and lens color and see the bleeding in the eyes; sending messages to the patient, physician, and the emergency contacts as well as informing the hospital emergency GPS and friends/families of a patient to be aware of the exact location of the patient.

Discussion

Using IoT Cognitive and meta cognitive functions such as memory, attention, self regulation, self-observation were tested and improved. New technologies and in particular IoT applications came to provide solutions in a demanding field with many users and many needs, special education. Internet connects all the people together, whereas the Internet of Things (IoT) connects all the tools together [46, 58]. The Internet of Things can offer people with special needs more independence, a more manageable home environment with only some smart devices that will help them to stay safe and secure. The Internet of Things (IoT) can mean different things to different people, but it undeniably involves many devices and a lot of data. A forecast by International Data Corporation (IDC) estimates that there will be 41.6 billion IoT devices in 2025, capable of generating 79.4 zettabytes (ZB) of data.

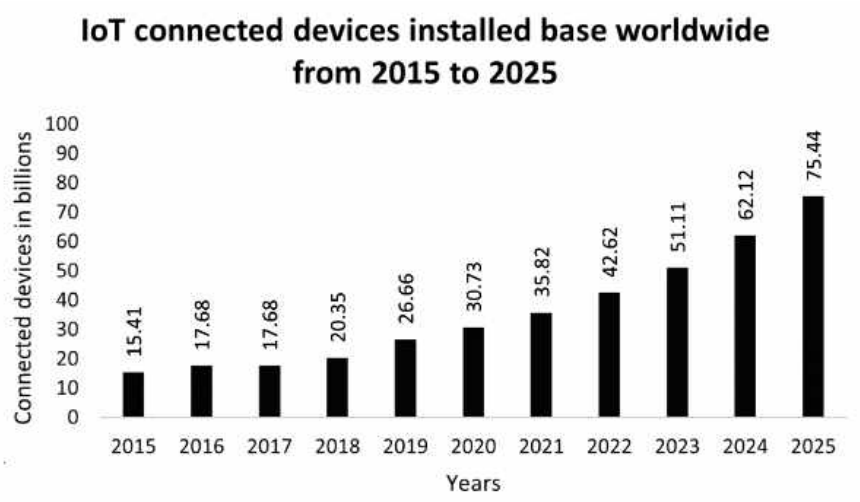


Figure 2: chart showing the growth of ICT based IOT in education sector

Wireless technology, the Internet of Things, and internet connectivity are some of the tools that can be used to increase the participation of students with disabilities in education and address problems that arise both within and outside of the classroom. To make sure that the adoption of IoT and other technologies in education takes into account the needs of students with disabilities, it is crucial for disability activists, educational technology developers, academicians, and practitioners to collaborate. According to the findings of this study, IoT in the education of students with disabilities benefits both the individual student and society as a whole.

Conclusion

With the development of technology, including the Internet of Things, colleges may overcome a number of difficulties, including managing vital resources, enhancing information access, developing better planning, and creating safer campuses. IoT systems have the potential to significantly improve higher education by energizing the faculty and staff, encouraging the students, and accelerating the learning process. This study's goal was to determine the potential of IoT in higher education and how to make the most of its advantages while addressing its problems and lowering its risks.

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WOMEN EMPOWERMENT IN INDIA

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Abstract

Women empowerment is the process of strengthening women's capacity to fully engage in society, exercise their rights, as well as access opportunities on an equal basis with men. It entails confronting and altering the social norms, cultural practices, and power structures that support gender inequality and discrimination. This paper is an attempt to examine women's empowerment in India, their legal rights in India as well as highlights the issues and Challenges of Women Empowerment. This paper is descriptive in nature and is based on secondary data collected from journals, internet, previous conducted research. It is concluded that Government initiatives alone would not be sufficient to achieve this goal. Society must take initiative to create a climate in which there is no gender discrimination and women have full opportunities of self decision-making and participating in social, political and economic life of the country with a sense of equality.

Keywords : Women Empowerment, Legal rights, Progress ,Achievement, Challenges

Introduction to Women Empowerment

“When women prosper, the world Prospers”

- The Prime Minister, Shri Narendra Modi addressed the G20 Ministerial Conference on Women Empowerment held in Gandhinagar, Gujarat .

Women's empowerment is the process of giving them more autonomy and control over their life. This can involve giving women the freedom to make decisions about their own health and well-being, as well as the ability to fully engage in the political and economic processes. Women's empowerment is crucial because it can result in a variety of advantageous outcomes, such as higher economic growth and development, enhanced health and well-being, and more gender equality.

Objectives of the Study

1. To understand women empowerment and its types
2. To examine the position of women in India
3. To identify the legal rights for women in India
4. To be familiar with government schemes for women empowerment
5. To know the challenges facing women in India

Women Empowerment and Gender-based Violence Statistics

Indicators	NFHS-5 (2019-21)		NFHS-4 (2015-16)	
Women's Empowerment (women age 15-49 years)				
119. Currently married women who usually participate in three household decisions ²⁵ (%)	91.0	87.7	88.7	84.0
120. Women who worked in the last 12 months and were paid in cash (%)	25.0	25.6	25.4	24.6
121. Women owning a house and/or land (alone or jointly with others) (%)	38.3	45.7	43.3	38.4
122. Women having a bank or savings account that they themselves use (%)	80.9	77.4	78.6	53.0
123. Women having a mobile phone that they themselves use (%)	69.4	46.6	54.0	45.9
124. Women age 15-24 years who use hygienic methods of protection during their menstrual period ²⁶ (%)	89.4	72.3	77.3	57.6
Gender Based Violence (age 18-49 years)				
125. Ever-married women age 18-49 years who have ever experienced spousal violence ²⁷ (%)	24.2	31.6	29.3	31.2
126. Ever-married women age 18-49 years who have experienced physical violence during any pregnancy (%)	2.5	3.4	3.1	3.9
127. Young women age 18-29 years who experienced sexual violence by age 18 (%)	1.1	1.6	1.5	1.5

Source: National family health survey (NFHS- 5) 2019-21

Despite some progress in recent decades, gender equality for women in India still has a long way to go. These difficulties include gender-based violence, discrimination, and restricted access to jobs and education. About 50% of the people in the country are women, and the majority of them continue to be economically dependent on one another even in the absence of employment. Women are still not allowed to receive a basic education in the majority of Indian villages and semi-urban areas, despite gaining the necessary knowledge. They are also never allowed to pursue higher education. Women are regarded as the foundation of every society since they can perform a variety of duties with ease throughout the course of a single day. Women in communities where men predominate fulfil a variety of roles, including attentive moms, devoted daughters, and competent coworkers.

Types of Women's Empowerment

- **Economic Empowerment of women:** This refers to women's ability to participate in economic activities on an equal basis with men. It includes Poverty Eradication, Micro Credit, Women and Economy, Globalization, Women and Agriculture and Support Services.
- **Social Empowerment of Women :** This type of empowerment refers to women's ability to participate fully in social and cultural life, free from discrimination and violence. It includes access to Education, Health, Nutrition, Drinking Water and Sanitation, Housing and Shelter, Environment, Science and Technology, Women in Difficult Circumstances, Rights of the Girl Child, Violence against women and Mass Media.
- **Political Empowerment:** This sort of empowerment refers to women's participation and equality with males in political life and decision-making. It entails the capacity to cast a ballot and run for office, as well as entry into positions of authority and involvement in the formulation of public policy.

Position of Women in India

In the later Vedic civilisation, the status of women fell from what it was in the Rig-Vedic era. Both education and widow remarriage were forbidden to women. Inheritance and property ownership were forbidden to them. Numerous societal ills emerged and began to affect women, such as child marriage and the dowry system. The condition of women significantly declined during the Gupta era. Sati Pratha rose to prominence while dowry established itself as a social norm. A number of social reformers, including Raja Rammohun Roy, Ishwar Chandra Vidyasagar, and Jyotirao Phule, began agitations for the empowerment of women during the British Raj. The Widow Remarriage Act was created as a result of their efforts, which also saw the elimination of Sati.

Women's rights were later promoted by leaders like Mahatma Gandhi and Pandit Nehru. The status of women in social, economic, and political life started to improve in Indian society as a result of their dedicated efforts. Numerous social, economic, and political measures were integrated into the Indian Constitution on the basis of the theories of women's empowerment backed by our founding fathers. Today, women in India participate in a variety of fields including education, sports, politics, journalism, the arts and culture, the service industry, and science and technology. But women continue to be victimised, humiliated, tortured, and exploited. Women still face discrimination in the social, economic, and educational spheres, some seven decades after the country gained its independence.

Progress and Achievement

India's attempts to empower women have made a lot of progress in recent years. To enhance the health, education, and economic possibilities for women, the government has put in place a number of programmes and initiatives. Women have attained high positions in a variety of professions, including politics, business, and entertainment, and there has been a noticeable increase in the number of women engaged in the workforce.

Legal Rights for Women In India

In India, women have received a number of legislative protections over the years to advance gender equality and advance their own interests. The following are some of the most significant legal rights that Indian women can enjoy:

Right to equality: Article 14 of the Indian Constitution guarantees the right to equality to all citizens, regardless of their gender.

Right to education: The Right of Children to Free and Compulsory Education Act, 2009, makes it mandatory for all children, including girls, between the ages of 6 and 14 to receive education.

Right to work: The Equal Remuneration Act, 1976, ensures that men and women receive equal pay for the same work.

Right against sexual harassment: The Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013, provides a framework for addressing complaints of sexual harassment at the workplace.

Right to property: The Hindu Succession Act, 1956, was amended in 2005 to give equal inheritance rights to daughters in Hindu families.

Right to marriage and divorce: The Hindu Marriage Act, 1955, gives women the right to seek divorce on various grounds, including cruelty and adultery.

Right to health: The Maternity Benefit Act, 1961, provides women with paid maternity leave and other benefits during pregnancy and childbirth.

Right against domestic violence: The Protection of Women from Domestic Violence Act, 2005, provides legal protection to women from physical, emotional, and verbal abuse by their spouses or relatives.

Government Schemes Related to Women Empowerment

The Government has launched various schemes to empower women which include Beti Bachao Beti Padhao Scheme, Ujjawala Yojna, Swadhar Greh, Pradhan Mantri Matru Vandana Yojana, Pradhan Mantri Mahila Shakti Kendra Scheme and One Stop Centre

Challenges Facing Women Empowerment in India

In a survey conducted in 2022, around 88% of working women said they had to forgo a portion of their pay in order to have more job flexibility in India. Furthermore, about 27 percent of the respondents struggled to convince their bosses. The biggest problems still involve gender discrimination, violence against women, and unequal remuneration. Female foeticide and infanticide continue to be major issues, especially in rural regions. Due to the high number of sexual assault and harassment cases that are recorded each year, women's safety and security is also a major concern. The problems and difficulties are described below:

- **Discrimination:** In India, discrimination against women is a common occurrence in a variety of settings, including the workplace and the family. Because of this, it may be challenging for individuals to take advantage of educational and job possibilities, which may result in unfair treatment and lower compensation.
- **Lack of access to education and employment:** Women in India encounter major obstacles to employment and education. For instance, according to data from the World Bank, only around 50% of women in India are employed, compared to almost 80% of men. This is caused in part by societal and cultural restrictions that keep women from working, as well as a lack of access to education and training.
- **Gender-based violence :** India suffers greatly from gender-based violence. According to the National Crime Records Bureau, India has approximately 428,278 incidences of violence against women that were registered in 2021. Along with dowry-related violence and female infanticide, this also includes instances of physical and sexual assault. 31 677 female rapes were reported in 2021 alone, which is a worrying statistic.
- **Poverty:** Many Indian women, especially those who live in rural regions, are poor. Women who are poor may find it difficult to obtain an education and a job, as well as face additional difficulties like poor health and malnutrition.

- **Disparities between urban and rural areas:** In India, rural women frequently face more obstacles to empowerment. They might be more socially isolated and more susceptible to gender-based violence, for instance, and they might have fewer access to health care and education.
- **Limited Mobility:** Women's empowerment in India may be hampered by a lack of mobility, which includes limitations on their freedom of movement and access to transportation restricted.
- **Lack of Legal and Political Support:** • Women in India also have limited access to legal protections and services, as well as limited political and legal support, including little representation in the government.

Conclusion

Women's empowerment be genuine and effective only when Women are given access to property and money, allowing them to stand on their own two feet and establish their identities in society. Women have been facing lot many hardships to prove their existence and facing uncountable challenges and hardships to overcome inequalities. At both the national and international levels, the empowerment of women has emerged as one of the most pressing issues. Governmental measures by themselves wouldn't be adequate to accomplish this. In order to eliminate gender discrimination and give women equal opportunity to participate in the social, political, and economic life of the nation, society must take the initiative to make these changes.

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WOMEN EMPOWERMENT A STUDY

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Abstract

Women empowerment is a critical aspect of achieving gender equality and sustainable development. It refers to the creation of an enabling environment where women can exercise their rights, access equal opportunities, and actively participate in social, economic, and political spheres. This abstract explores the concept of women empowerment, highlighting its importance and the challenges that hinder its progress. It emphasizes the need to address issues such as gender-based discrimination, violence against women, limited access to education and healthcare, and unequal economic opportunities. The abstract also discusses various strategies and initiatives that can contribute to women empowerment, including education and skill development, financial inclusion, gender-responsive policies, and the promotion of women's leadership and decision-making roles. By empowering women, societies can unlock their full potential, promote inclusive development, and foster a more equitable and just world.

Keywords: Women empowerment, Gender equality, Sustainable development, Rights, Equal opportunities

Introduction

Women empowerment is a global movement that seeks to create equal opportunities and rights for women in all aspects of life. It is a crucial step towards achieving gender equality and fostering inclusive societies. Women empowerment encompasses various dimensions, including social, economic, and political empowerment, aiming to dismantle barriers that hinder women's progress and enable them to reach their full potential.

Throughout history, women have faced numerous challenges and systemic discrimination that have limited their opportunities for growth and development. However, in recent years, there has been a growing recognition of the importance of women empowerment as a catalyst for social transformation and sustainable development.

Empowering women goes beyond simply addressing gender disparities; it involves transforming societal norms, attitudes, and structures that perpetuate inequality. It requires creating an enabling environment where women can exercise their rights, make choices freely, and actively participate in decision-making processes that affect their lives.

The benefits of women empowerment are far-reaching. When women are empowered, they become agents of change, driving progress in their communities, and contributing to economic growth. Studies have shown that investing in women's education, healthcare, and economic opportunities leads to improved outcomes for individuals, families, and societies as a whole.

However, achieving women empowerment is not without its challenges. Deep-rooted cultural norms, gender stereotypes, and discriminatory practices continue to hinder

progress. Women still face barriers in accessing education, healthcare, and economic opportunities. Gender-based violence remains a pervasive issue that undermines women's safety and well-being.

To address these challenges, concerted efforts are needed at individual, community, national, and international levels. It requires collaboration among governments, civil society organizations, and the private sector to implement policies and programs that promote gender equality and empower women. It also involves raising awareness, challenging societal norms, and fostering a supportive environment that values and respects women's rights and contributions.

An Overview

Women empowerment is a multifaceted concept that aims to create equal opportunities, rights, and access to resources for women. It encompasses social, economic, and political dimensions, seeking to address the systemic barriers that hinder women's progress and limit their potential. At its core, women empowerment seeks to challenge and transform societal norms, attitudes, and structures that perpetuate gender inequality. It recognizes that gender disparities not only affect women but also hinder overall social and economic development. Social empowerment focuses on promoting gender equality, challenging gender stereotypes, and eliminating discrimination and violence against women. It aims to create a society where women can exercise their rights, make choices freely, and live free from fear and violence. Economic empowerment focuses on providing women with equal access to economic resources, opportunities, and decision-making power. It involves addressing gender-based discrimination in the workplace, promoting entrepreneurship, and ensuring fair wages and working conditions for women. Political empowerment aims to increase women's participation and representation in decision-making processes. It involves advocating for equal political rights, encouraging women's leadership, and creating an enabling environment for women to participate in politics and governance. Women empowerment is not only a matter of justice and human rights but also a key driver of sustainable development. Numerous studies have shown that empowering women has significant positive impacts on poverty reduction, economic growth, health outcomes, and social well-being. To achieve women empowerment, it requires concerted efforts from governments, civil society organizations, the private sector, and individuals. This includes implementing gender-responsive policies, investing in education and skills development for women, promoting women's leadership, and challenging societal norms and stereotypes. While progress has been made in advancing women empowerment, significant challenges still exist. Gender-based violence, limited access to education and healthcare, unequal economic opportunities, and cultural barriers continue to hinder women's empowerment in many societies.

In conclusion, women empowerment is a vital movement that strives for gender equality and the full realization of women's rights. By empowering women, we can create a more inclusive, equitable, and prosperous world for all. It requires collective action, policy reforms, and a shift in societal attitudes to dismantle barriers and create an enabling environment where women can thrive and contribute to society's progress.

Challenges Faced by Women Empowerment

Despite significant progress, women still face numerous challenges that hinder their empowerment. Gender-based discrimination, violence against women, limited access to education and healthcare, and unequal economic opportunities continue to persist in many societies. These barriers not only deny women their basic rights but also impede social progress and economic growth.

1. Education and Skill Development

Education is a powerful tool for empowering women. It provides them with knowledge, skills, and confidence to challenge societal norms and stereotypes. Access to quality education and skill development programs equips women with the necessary tools to participate actively in the workforce, pursue higher education, and become agents of change in their communities.

2. Financial Inclusion

Financial inclusion plays a vital role in empowering women economically. By providing access to financial services, such as banking and microfinance, women can gain control over their finances, start businesses, and become financially independent. Empowered women contribute to poverty reduction, economic growth, and the overall well-being of their families and communities.

3. Gender-Responsive Policies

To support women empowerment, governments and institutions must adopt gender-responsive policies. These policies aim to address gender disparities, promote equal opportunities, and eliminate discrimination. They can include measures such as promoting gender equality in the workplace, implementing laws to prevent violence against women, and ensuring equal representation of women in decision-making roles.

4. Promoting Women's Leadership

Empowering women also involves promoting their leadership and decision-making roles in various spheres of society. Encouraging women to take up leadership positions in politics, business, and community organizations leads to more diverse and inclusive decision-making processes. Women's perspectives and experiences bring new insights and solutions, ultimately benefiting society as a whole.

Problems Faced by Women Empowerment

- 1. Gender-based violence:** Women continue to face various forms of violence, including domestic violence, sexual harassment, and human trafficking. These acts not only violate their basic human rights but also hinder their ability to fully participate in society and pursue their goals.
- 2. Limited access to education:** In many parts of the world, girls still face barriers to accessing quality education. Factors such as poverty, cultural norms, and early

marriage contribute to high dropout rates and limited educational opportunities for girls, preventing them from acquiring the necessary skills and knowledge for empowerment.

3. **Unequal economic opportunities:** Women often face discrimination in the labor market, including lower wages, limited job opportunities, and unequal access to resources and credit. This economic disadvantage hampers their ability to achieve financial independence and contribute to economic growth.
4. **Lack of representation in decision-making:** Women are significantly underrepresented in political and decision-making positions globally. The lack of female representation diminishes their voices, perspectives, and influence in shaping policies and initiatives that affect their lives and rights.
5. **Cultural and societal norms:** Deep-rooted gender norms and stereotypes perpetuate discrimination against women and limit their opportunities. Traditional gender roles, expectations, and biases reinforce inequalities and hinder progress towards women empowerment.
6. **Limited access to healthcare:** Women often face barriers to accessing quality healthcare, including reproductive and maternal health services. Lack of access to healthcare facilities and information can negatively impact their overall well-being and limit their ability to actively participate in society.
7. **Technology and digital divide:** Women face challenges in accessing and utilizing technology, including limited internet access, lower digital literacy rates, and online harassment. The digital divide further exacerbates existing gender inequalities and hampers women's ability to engage in the digital economy and access information and resources.
8. **Intersectionality and multiple forms of discrimination:** Women from marginalized and disadvantaged groups, such as women with disabilities, indigenous women, and LGBTQ+ women, face compounded discrimination. Intersectionality recognizes that women's experiences of discrimination are shaped by multiple factors, and addressing these intersecting forms of discrimination is crucial for comprehensive women empowerment.
5. Addressing these challenges requires a holistic approach that involves legal reforms, policy changes, awareness campaigns, and targeted interventions to dismantle systemic barriers and promote gender equality. By addressing the problems faced by women empowerment, societies can create an inclusive and equitable environment that allows women to thrive, contribute to their communities, and shape a better future for all.

Conclusion

In conclusion, women empowerment is a critical imperative for achieving a more just, equitable, and sustainable world. By empowering women, we unlock their potential, create opportunities for growth and development, and build stronger and more inclusive societies. It is a collective responsibility to work towards dismantling barriers, promoting

gender equality, and ensuring that every woman has the opportunity to thrive and contribute to the betterment of society.

Women empowerment is not just a matter of equality but also a pathway to progress and sustainable development. It requires addressing the challenges faced by women, including discrimination, violence, limited access to education and healthcare, and unequal economic opportunities. By providing quality education, ensuring financial inclusion, implementing gender-responsive policies, and promoting women's leadership, societies can empower women to contribute fully and create a more equitable and prosperous future for all.

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EFFECTIVENESS OF ICT TOOLS IN EDUCATION

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Abstract

Information and Communication Technology (ICT) have developed in the common tool for all aspect of life and its impact on Education is a very high in recent days. Students are exposed modern technical gadgets and use various types of ICT and visual culture media outside the classroom. he learning takes place when there is a interaction between to knowledgeable persons. The impact of learning is powerfully imbibed in students when the flow of information is in innovative. The contribution of ICT for the improvement of teaching learning process is higher in school those who have integrated ICT as an innovative factor. This paper is an attempt to disclose the ICT tools used in schools for students and to know the effectiveness of ICT tools used in education.

Introduction

Information and Communication Technologies (ICT) is used in all spheres of life. It has changed the way everything functions, be it learning, solving problems, or working. The tools of ICT such as communications, networked computers, and media have become crucial for the efficient working of all professions. Today, it is almost impossible to imagine the functioning of organizations without these tools. ICT tools have changed the time and space of learning and working, which has been beneficial for the students as well as the working professionals.

The monitoring and measurement of physical ICT system performances are crucial to assess the computer processing unit (CPU) load, the available memory, the used bandwidth, and so on to guarantee the ICT-based services correctly work regarding their expected use. The famous Moore's law states that the number of transistors on a chip tends to double every 18 months; this enabled a rapid growth of digital system performances. However, these technical performances do not provide direct information about the level of quality of the offered services.

The satisfaction of users is then the key of ICT business and must be specified in a service-level agreement (SLA) signed by ICT experts and their customers. By definition, SLA is not a technical document and must be understandable by all stakeholders who are not necessarily aware of ICT terms. Two major issues should be analyzed during the SLA specification: the identification of relationships between the performance indicators defined by the user's application and ICT technical performances and one related to the monitoring of these indicators to be sure that the contract is fulfilled. The purpose of

translation between ICT and the user's application performances covers many types of problems. The translation can be direct such as having the application response time correspond to the time for ICT experts to process and transport the applicative request.

Review of Literature

Simin Ghavifekr et.al, made a study on "Teaching and Learning with ICT Tools: Issues and Challenges from Teachers perception" concludes that that teachers do combine different resources in their teaching, as well as utilizing various modes of ICT with almost two thirds claiming to use technologies (63%) and website (62%). Important technologies for learning such as computers (98%) and educational software (93%) were ranked as the top technologies .

Becta (2004), made a study on "What the research says about using ICT in Geography" found that , ICT resources is not always merely due to the non- availability of the hardware and software or other ICT materials within the school. It may be the result of one of a number of factors such as poor resource organization, poor quality hardware, inappropriate software, or lack of personal access for teachers.

Pelgrum's (2001), in his study "Obstacles to the integration of ICT in education: results from a worldwide educational assessment " have stated that there were not enough training opportunities for teachers in using ICTs in a classroom environment.

Beggs (2000) in his study, "Influences and barriers to the adoption of instructional technology" have found that one of the top three barriers to teachers' use of ICT in teaching was the lack of training and the main problem with implementing new ICT in education was the insufficient amount of in- service training for teachers .

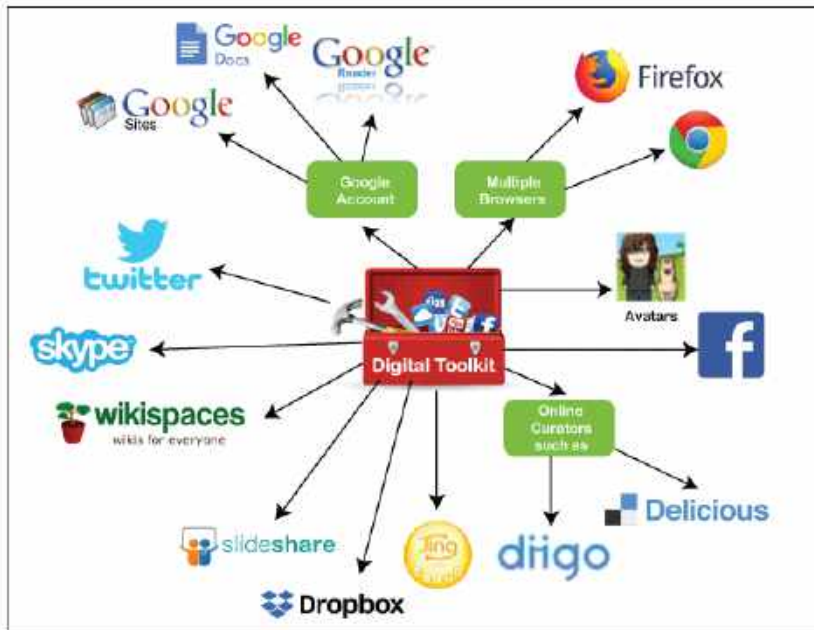
Objectives

- To analyse the ICT tools used in schools
- To know the effectiveness of ICT tools used in education
- To list out the barriers of ICT tools

Research Methodology

The nature of the study is descriptive in nature. The data us based on secondary data that are collected through journals and websites.

ICT Tools Used in Education System



- **Desktop/Laptops** are commonly ICT tools used in education. The teachers used this to present their lessons. Using this devices it is easy to discuss and explain to the students. It is useful because the teachers can get students attention using this. It can be use to show some photos and video clips about their lessons. It is a powerful tool used in education. There are many other uses of this tool such as use for communication, computation, record keeping and other related stuff.
- **Projector** is a tool used to display the photos or images in bigger size. Using computer alone its not easy to see the images or video clips because it is small but because of the projector, you can see and understand the easily. This tool and the desktop/laptop will work together when cables are connected. This is very useful tool in teaching and also when there are meetings held at the school.
- **Digital Camera** is also used in education. It is used for documentation of important events like school elections, contest, meetings and other related stuff.
- **Printer** is also a useful ict tool in education. This is used to print some important documents in the school or printing those activities or projects. Students can use this tool and teachers. You can make more copy of the document in a few minutes.
- **Scanners** are used to scan documents or photos. This is helpful tool because it is easy to make a copy and less hassle.
- **TV** is also used in teaching. Sometimes teachers play movie which are related to their lesson and it is very entertainment ot watch. Also the tv is very useful device to improve the teaching at the class.

Effectiveness of ICT in Education

This dependent variable uncovers that how the understudies can utilize the ICT in their course educational programs to fortify the procedure of advanced education framework in India.

1. Due to ICT, the occupants can upgrade their learning abilities.
2. ICT gives huge online learning storehouse to officeholders by means of computerized library and web.
3. Use of sight and sound frameworks helps the understudies for better learning.
4. Use of video-conferencing system for monitoring the student-teacher activities in the class and generate feedback at personal level.
5. ICT can be utilized to upgrade instructive productivity at the nearby, territorial.



Barriers of ICT Tools

- **Lack of trained teachers-** A major obstacle in the use of ICT in rural education is the lack of knowledge and skills. There is dearth of dynamic teachers formally trained in ICT. Moreover, there is hardly any quality training imparted on a regular basis to teachers involved in ICT education.
- **Unfavourable organizational culture and poor attitude and beliefs-** Often in developing nations, the educational organizations and school management fail to perceive the importance and seriousness of the role of ICT in education enhancement. Also, the teachers attitudes and beliefs are outdated and orthodox.
- **Shortage of time-** In schools, teachers are usually burdened with multiple tasks other than teaching. Moreover, they have to teach all types of subjects along with ICT. They do not have time to design, develop and incorporate technology into teaching and learning.
- **Insufficient funds-** Appropriate and latest hardware and software facility availability determines the effective and efficient usage of technology. In developing countries, technology implementation into education systems is a difficult task as it requires a magnum of funds, infrastructure and support facilities.
- **Lack of technical support-** Rural schools face issues related to technical know-how, absence of ICT service centers, shortage of trained technical personnel. Whether

provided by in-school staff or external service providers, or both, technical support specialists are essential to the continued viability of ICT use in a given school.

- **Resource related issues and internet-** Rural schools usually face trouble with respect to the availability of ICT related resources such as supporting infrastructure, uninterrupted electricity, supplementary resources like multimedia, projectors, scanners, smart boards, and so on. Despite being an integral component of the ICT, internet is lacking in most rural schools.

Advantages of ICT

- ICT is the best tool for increasing the retention, attention and concentration of the Students.
- ICT helps in motivating Students and Teachers which increases their level of confidence,
- ICT helps in enhancing the knowledge of the Students and Teachers
- It also develops the personality of the Students and Teachers.
- It reduces the stress among the Students and Teachers.
- It enhances the Quality Education. 7. It helps in making difficult concepts easier.

Limitations of ICT

- It is limited to the area where the facilities are still lacking.
- It is limited to the teachers and students who lack behind in using the technology.
- Unawareness of upcoming technologies in the techno track world.
- Unavailability of infrastructure Facilities of the school.
- Undeveloped rural areas. 6. Lack of knowledge about the technology.

Conclusion

The intervention of information and communication technology is redefining the way students learn. It is making the process of learning more efficient and effective for students and teachers. ICT tools in education make it easier for teachers to use the best strategies to bring out the best in their students. ICT in education sector is beneficial for the students, in addition to this, it is making it possible for schools to impart education in the finest way. Moreover, the technology enables them to manage all the management and administration functions in a seamless manner.

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THE ROLE OF ICT IN CURRICULUM TRANSACTIONS

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Abstract

An information and communication technology (ICT) has turn out to be regular entities in all aspects of human activities. In recent times the use of ICT has primarily changed the practices and procedures of nearly all forms of endeavor within educational institution, industry, research, media and governance. In the field of education sector, ICT has begun to have a presence but the impact has not been as extensive as in other fields. The use of ICT in education lends itself to more student centered learning settings and often this creates some tensions for some teachers and students. The objective of the article is to look at the role of ICT in higher education in Nagaland. It emphasizes computer technology and media because of their availability in educational institutional and their great impact on teaching and learning processes and highlight some changes ICT might have on the role of the teacher in the classroom. The present paper focuses on incorporation of ICTs in educational system in Nagaland and highlights on present educational scenario. The results show that 74.5 per cent of teaching faculties emphasize the need to expand educational opportunities for students in terms of contented interaction and satisfaction in the process of educational activity. This paper is an attempt to draw attention on policies implementation regarding ICT integration and effectiveness of teaching-learning environment. Keywords: Information and communication technology, e-learning and motives

Keywords: Curriculum transaction, Information and communication technology, manipulation, transmission

Introduction

Information and communication technologies (ICT) are an umbrella term that includes all technologies for the management and communication of information (Basargekar and Singhavi, 2015; Mou, 2016; Pulkkinen, 2007; Wood, 1995; Koehler and Mishra, 2009; Hathaway, 1995; Kumar, 1996). ICT considers all the uses of digital technology that already exists to help government, research institute, education, individuals, business and organization. ICT is concern with the storage, repossession, manipulation, broadcast or receipt of digital data (Balanskat et.al, 2006; Owston, 2006; Richardson, 2011). The addition of ICT issues in the curriculum and provision of these telematics in colleges have raised many issues of concern to educators, parents, researchers, policy makers and politicians. Some of the most noteworthy issues are the function of the information technology in the curriculum, and how these issues should be addressed in the curriculum, and most importantly how they impact teaching and learning (Dagdilelis, Satratzemi, and

Evangelidis, 2004; Narula, 2008; McConnell, 2001). The other issue of concern is the repercussions of these technologies in terms of increasing access to high quality education. If one was to compare such fields as medicine, tourism, business, law, banking, insurance etc., the impact of ICT across the past two or three decades has been vast (Rastogi and Malhotra, 2013; Tomei, 2007; Pelgrum, 2001; Williams, 2006; Barak, 2006). A number of people have attempted to discover this lack of action and influence. These have included such determinants as a lack of financial support to purchase ICT technology, require training among the teachers, a lack of motivation among teachers to adopt ICT as teaching tools in class room teaching and demonstration (Collis, 2002). But in recent times, factors have emerged which have strengthened and positive moves to adopt ICTs into classrooms and learning settings.

ICT in Learning - Once a Choice, Now a Necessity

The usage of ICT in the teaching process was a recommendation and an opportunity to innovate and actualize it until only a few months ago. The inevitable change caused by the unexpected circumstances triggered by Covid-19 brought all teachers into a situation where there was no room for consideration and no option to avoid the use of modern technology for learning and teaching purposes. Taking into account current situation that indicates the need for integration ICT into the teaching process, the aim of this paper was to analyze the relevant research, to point out the inevitability of providing additional support to teachers for the use of ICT in teaching. Accordingly, the research objectives was: pedagogical significance and contribution of ICT integration in the teaching process, the importance of the role of teachers in the process of ICT integration in teaching, as well as potential obstacles and difficulties that teachers may face in using ICT in teaching process. The obtained results can contribute to a more comprehensive view of the problems that teachers could face in the implementation of ICT in teaching, which would allow the determination of directions that would affect changes in their opinion related to acceptance and promotion of learning in ICT environment, as well as advantages to innovate teaching process by using ICT in teaching.

The Importance of ICT in Learning

One of the most critical questions asked by educators is: What is the long term impact of the introduction of ICT in the curriculum? Computers, in particular, have positive effects on learning and are motivating for learners (Reeves, 1998). They are accepted by more teachers than other technologies and are widely supported by administrators, parents, politicians, and the public in general. Reeves argue that computers increase equity of access, and reduce the time needed to accomplish a given set of objectives. One of the goals of the Ministry of Education is equity of access to quality education for all; hence this technology is essential if we are to achieve this goal. According to Reeves (1998) computer-based cognitive tools such as databases, spreadsheets, communication software, etc., have been intellectually developed to function as intellectual partners to enable and facilitate critical thinking and higher order learning when using these tools learners are able to

represent and express what they know. They function as designers using the tools for analyzing the world, accessing and interpreting information, organizing their personal knowledge, and representing what they know to others. Hunt (2004) argues that because of the phenomenal rate at which the volume of available information increases, and access to an increasing range of sources, it is becoming clearer than ever that the ability to find appropriate information and use it effectively is of greater value than being able to remember facts. The skills of locating, evaluating and using information effectively from a range of sources constitute the Information Skills which are needed for people to become Information Literate, enabling them to engage in effective decision making, problem-solving and research. Therefore the importance of ICT cannot be over emphasized as it offers the education process one of the most potentially powerful learning tools available. Not only can computers support learning across the whole curriculum, but communication networks also provide the learner with fast and searchable access to vast amounts of information. It also supports a wide range of broader educational objectives including independent learning, collaboration with others and communication skills (Hunt, 2004). It is thus of vital importance that all children in schools have adequate access to ICT and that they develop the necessary skills, taking advantage of the learning capabilities that ICT offers. Primary schools on the other hand are ill-equipped with computers and other important technologies. Computers that are found in some schools were donations and are only used for administrative purposes. The Ministry of Communications, Science and Technology together with the Ministry of Education are embarking on a project of refurbishing obsolete and donating these to primary schools. Although this is a positive move towards providing quality education to pupils at this level, there are challenges in this endeavor. These are:

Physical barriers such as remoteness and lack of : electricity supply: Some primary schools are in very remote areas far away from the power lines. Computers, photocopiers, fax machines, etc. need electricity. The Ministry would have to find ways of providing these with power. One way is equipping such schools with generators. Generators which can supply enough power for these technologies are very expensive! Therefore a lot money running into a couple of millions would be needed.

Lack of funds: Especially for maintenance

Lack of ICT skills for staff: Primary school teachers have no skills whatsoever in ICT, let alone having basic training in computers. The challenge facing the Ministry if it were to include ICT issues in the primary school curriculum is to address lack of ICT skills by teachers. Insufficient and inappropriate software: Suitable software will have to be acquired if desired skills which are in line with curriculum needs are to be developed.

Effective Pedagogical Practices

It is one thing to provide schools with ICTs, and yet another to implement these, that is, uses them effectively in teaching and learning to realize their impact. Teachers require more knowledge of, and confidence with ICT, and a better understanding of its potential to help pupils' learn. This suggests that further substantial support for continuing

professional development is necessary in order that teachers integrate these technologies and infuse ICT issues in the teaching to improve pupil's attainment (Cox et al., 2003).

The pedagogical practices of teachers using ICT can range from only small enhancements of practices using what are essentially traditional methods, to more fundamental changes in their approach to teaching. According to Cox et al (2003) the most effective uses of ICT are those in which the teacher and the software can challenge pupils' understanding and thinking, either through whole-class discussions using an interactive whiteboard or through individual or paired work on a computer. If the teacher has the skills to organize and stimulate the ICT-based activity, then both whole-class and individual work can be equally effective. To effectively infuse and integrate ICT into teaching and learning teachers need to use a range of practices that are essential pedagogical frameworks (Cox et al., 2003). These are: Understanding the relationship between a range of ICT resources and the concepts, processes and skills in their subject using their subject expertise to select appropriate ICT resources which will help them meet the specific learning objectives; this includes subject-specific software as well as more generic resources being aware of the potential of ICT resources both in terms of their contribution to pupils' presentation skills, and their role in challenging pupils' thinking and extending their learning in a subject developing confidence in using a range of ICT resources, via frequent practice and use beyond one or two familiar applications appreciating that some uses of ICT will change the ways in which knowledge is represented, and the way the subject is presented to and engages pupils knowing how to prepare and plan lessons where ICT is used in ways which will challenge pupils' understanding and promote greater thinking and reflection Recognizing which kinds of class organization will be most effective for particular learning tasks with ICT, for example, when pupils should work on their own, how working in pairs and groups should be organized, and when to use ICT for whole-class teaching.

Use of ICT in Teaching

Teaching at School as well as Higher Education, mostly, concentrates on giving information which is not the sole objective of Teaching. Along with giving information, the other objectives are: developing understanding and application of the concepts developing expression power developing reasoning and thinking power development of judgment and decision making ability improving comprehension, speed and vocabulary developing self-concept and value clarification developing proper study habits Developing tolerance and ambiguity, risk taking capacity, scientific temper, etc.

With the present infrastructure, class size, availability of teachers, quality of teachers, training of teachers, etc., it is difficult to achieve all the objectives. Further, most of the teachers use Lecture Method which does not have potentiality of achieving majority of above mentioned objectives. The objectives are multi-dimensional in nature, so for their achievement multiple methods should be used in an integrated fashion. At present ICT may be of some use. It is a well-known fact that not a single teacher is capable of giving up to date and complete information in his own subject. The ICT can fill this gap because it

can provide access to different sources of information. It will provide correct information as comprehensive as possible in different formats with different examples. ICT provides online interaction facility. Students and teachers can exchange their ideas and views, and get clarification on any topic from different experts, practitioners, etc. It helps learners to broaden the information base. ICT provides variety in the presentation of content which helps learners in concentration, better understanding, and long retention of information which is not possible otherwise. The learners can get opportunity to work on any live project with learners and experts from other countries. The super highway and cyber space also help in qualitative improvement of Teaching – Learning Process. ICT provides flexibility to learners which are denied by the traditional process and method. Flexibility is a must for mastery learning and quality learning. On INTERNET many websites are available freely which may be utilized by teachers and students for understanding different concepts, improving vocabulary, developing Reasoning & Thinking, etc. ICT can help in preparing students for SAT, GRE, TOEFL, etc.

Curriculum Transaction

Curriculum transaction is effective implementation of lesson plans in classrooms. A lot of thought goes in planning and preparing the lesson plans. Children will benefit only if the implementation is strong, whether it be circle time, project work, subject time or music time; a teacher's effort should be to reach out effectively to each child in the group. Lesson plans are prepared much in advance and usually there is a gap between preparation and implementation. Children listen to some teachers and are receptive, while the same group of children could respond differently to another teacher. This is also to do with meaningfully engaging children and stimulating their thought processes.

Amongst the information technology computers are the most favored because they have positive effects on learning and are motivating to learners. It also supports a wide range of broader educational objectives including independent learning, collaboration with others and communication skills. The government policy says ICT should be incorporated across the curriculum so as to develop learners ICT capability and provide them with a range of knowledge, skills and attitudes applicable across the curriculum (Pegu, 2014). This paper argues that in order for teacher to effectively integrate ICT into teaching and learning they need to understand the relationship between a range of ICT resources and the concepts, processes and skills in their subject; use their subject expertise to select appropriate ICT resources; develop confidence in using arrange of ICT resources; and know how to prepare and plan lessons where ICT is used in ways which will challenge pupils understanding and promote greater thinking and reflection. It has been found that one of the worst hit by the COVID-19 pandemic has been the education sector. The closure of schools, colleges and universities around the world has affected over 87% of the students globally, according to a UNESCO report. In the meantime, ICT/digital education has emerged as a clear winner during this pandemic around the world (Emami, 2020; Wootton et.al, 2020).

ICT in Evaluation

The introduction of Information and Communication Technologies (ICTs) in mainstream societies affects the way in which the societies interact, communicate, produce, assess, adapt and access vast amount of information at reduced costs. ICTs are not just about technologies, they are more about information transfer and communication. While poor countries grapple with the problem of high investment costs, it is widely acknowledged that convergence of 'old' and 'new' ICTs is still relevant to poor communities, which lack basic infrastructure such as road, water, electricity and telephones. However, there are arguments that with the rapid expansion of these technologies in the western world, the gap between the poor and the rich is widening. It is also recognized that even within the 'information poor' countries, the poor are further marginalized. Despite these arguments, attempts are being made at a global level to empower poor people with access to ICTs and enable them to cope up with the new challenges posed by the increasing competition through globalization. Small and medium enterprises (SMEs) have demonstrated their capabilities to use ICTs to advance their businesses in the recent years. Since the experience of the SMEs is relatively new, it becomes very difficult for them to distance themselves from the ICTs and to study their impact in their day-to-day lives. Impact studies are often based on a simplistic comparison between the pre- and the post- situations of any intervention. The 'before-after' approach can be effective only when impact assessment methodologies are set with correct objectives. The approach otherwise will simply tell us the changes that occurred due to the introduction of the ICTs, but will not tell us how they have occurred and why. These reasons are very important if the impact assessment exercise is to inform policy formulation and decision making processes surrounding new projects involving ICTs. Thorough impact studies will help in devising new strategies for enhancing the role of ICTs in reducing poverty.

Conclusions

It has been found that ICT has a significant role to play in improving the standards in higher education hence its enclosure in the curriculum is a step in the right direction. Both teachers and students in college should acquire ICT knowledge, skills, and awareness if they are to be successful in their futures (Karasavvidis, 2009). As discussed in this paper telematics tools has the potential of promoting employment and entrepreneurship, reducing gender gaps, and raising the standard of living of the state as a whole (Jamir, 2020; Jamir and Ezung, 2017b; Jamir and Ezung 2017a). Therefore, the policy suggest that successful implementation of ICT is more important in influencing and empowering teachers and supporting them in their commitment with students in learning rather than acquiring computer skills and obtaining software and equipment (Jhurree, 2005).

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PERSPECTIVE OF ICT TOOLS IN EDUCATION - ICT TOOLS FOR TEACHING AND LEARNING PROCESS

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Abstract

The 21st century is also called the digital age. Various information and communication technological tools are available to increase the efficacy of teaching and learning process. A review study has been conducted to review the modern information and communication technological (ICT) tools and application of these ICT tools in teaching-learning process. ICT tools significantly improves the teaching-learning process. So, it is essential to apply the ICT tools in teaching- learning process to achieve the desired goals.

Keywords : ICT - Information and Communication Technology , IT - Information Technology , e- Resources – electronic Resources

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- ICT Tools for Teaching Learning and Assessment
- Educational Applications of ICT
- ICT and Teacher Professional Development
- Ensuring benefits of ICT investments
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- ICT Enabled Tools for Effective Teaching Learning Process
- Conclusion

Introduction

Information and Communications Technology (ICT) can impact student learning when teachers are digitally literate and understand how to integrate it into curriculum. Schools use a diverse set of ICT tools to communicate, create, disseminate, store, and manage information.

To make ICT teaching and learning more interactive, various platforms and tools have been created and updated over the period of time. Innovative ICT tools used in classroom teaching which helps teachers to integrate in their subject, for teaching-learning and assessment. There are numerous subject specific free/ no cost ICT tools available on online and offline platforms which can be used for teaching, learning and assessment.

Schools use a diverse set of ICT tools to communicate, create, disseminate, store, and manage information. In some contexts, ICT has also become integral to the teaching-learning interaction, through such approaches as replacing chalkboards with interactive digital whiteboards, using students' own smartphones or other devices for learning during class time, and the "flipped classroom" model where students watch lectures at home on the computer and use classroom time for more interactive exercises.

When teachers are digitally literate and trained to use ICT, these approaches can lead to higher order thinking skills, provide creative and individualized options for students to express their understandings, and leave students better prepared to deal with ongoing technological change in society and the workplace.

ICT issues planners must consider include: considering the total cost-benefit equation, supplying and maintaining the requisite infrastructure, and ensuring investments are matched with teacher support and other policies aimed at effective ICT use.

ICT Tools for Teaching Learning and Assessment

1. **Avogadro** is Free and Open Source software, which helps to construct, edit and view the molecules in 3D. Through the Avogadro database, one can explore numerous molecules and see the bond length, bond angle and dihedral angle in a molecule. By using the tool, the learners can benefit from energy minimization to obtain stable conformations.
2. **Vascak** is a Science-based ICT tool. A simulation is the re-creation of a real world process in a controlled environment. The tool is in the form of experiential learning. The tool connects the learner and content in an interactive way, like a role play or in the forms of games.
3. **Kalzium** is an application which will show information about the periodic system of the elements. Kalzium is an open source Chemistry Application for school and college students. This software contains information about chemical elements-mass, charge, picture, discovery information, chemical and energy data and model of the atoms.
4. **Google Earth** formerly known as Keyhole Earth Viewer, provides a 3D representation of Earth based primarily on satellite imagery. This program maps the Earth by superimposing satellite images, aerial photography and GIS data onto a 3D globe, allowing users to see cities and landscapes from various angles. Users can explore the globe by entering addresses and coordinates of the places of their interest.
5. **Google Maps** is a web mapping platform and consumer application offered by Google. It offers satellite imagery, aerial photography, street maps, 360° interactive panoramic views of streets, real-time traffic conditions, and route planning for traveling by foot, car, air and public transportation.
6. **QGIS** earlier known as Quantum GIS, is a free and open source cross platform, Geographic application system application that supports viewing, editing, and analysis of geospatial data. QGIS functions as GIS software, allowing users to analyze and edit spatial information, in addition to composing and exporting graphical maps.
7. **KmPlot** is a mathematical function plotter for the KDE-Desktop. You can plot different functions simultaneously and combine their functions to build new functions. KmPlot supports functions with parameters in polar coordinates. Plots may be printed with high precision in the correct scale. All teachers, students from

higher and senior secondary or graduate, research scholars or anybody who are related to

8. sciences and mathematics or statistics anywhere in the world. It's very close to the Geogebra applet or Graph monkey to trace graphs for different functions.
9. **ANATOMY 3D** It is an online tool used to study human anatomy in an easy and interactive way. Through a simple and intuitive interface it is possible to observe every anatomical structure from any angle. It has detailed 3D models of human body systems such as Musculoskeletal, Cardiovascular, Nervous, Respiratory, Digestive, Urogenital (male and female), Endocrine, Lymphatic, Eye and ear.
10. **Marble** is a virtual globe application which permits the client to pick among the Earth, the Moon, Venus, Mars and different planets to show as a 3-D model. It is free programming under the details of the GNU LGPL, created by KDE for use on PCs and Mobile phones. It is written in C++ and utilizes Qt. Marble is expected to be entirely adaptable; past its cross-stage plan, the center parts can undoubtedly be coordinated into different projects. It is intended to run without the requirement for equipment speed increase, yet it tends to be stretched out to utilize OpenGL.
11. **Socrative** is a formative assessment tool that helps teachers and learners to assess understanding and progress in real time in class through the use of quizzes, questions and reflection questions. It helps in creating personalized activities. Socrative apps are available for download on all major digital devices and platforms. It can be used on smartphones, tablets, laptops, and computers.

Educational Applications of ICT

In many countries, digital literacy is being built through the incorporation of information and communication technology (ICT) into schools. Some common educational applications of ICT include:

- **One laptop per child** : Less expensive laptops have been designed for use in school on a 1:1 basis with features like lower power consumption, a low cost operating system, and special re-programming and mesh network functions. Despite efforts to reduce costs, however, providing one laptop per child may be too costly for some developing countries.
- **Tablets** : Tablets are small personal computers with a touch screen, allowing input without a keyboard or mouse. Inexpensive learning software ("apps") can be downloaded onto tablets, making them a versatile tool for learning. The most effective apps develop higher order thinking skills and provide creative and individualized options for students to express their understandings.
- **Interactive White Boards or Smart Boards** : Interactive white boards allow projected computer images to be displayed, manipulated, dragged, clicked, or copied. Simultaneously, handwritten notes can be taken on the board and saved for later use. Interactive white boards are associated with whole-class instruction rather than student-centred activities. Student engagement is generally higher when ICT is available for student use throughout the classroom.

- **E-readers** : E-readers are electronic devices that can hold hundreds of books in digital form, and they are increasingly utilized in the delivery of reading material. Students both skilled readers and reluctant readers have had positive responses to the use of e-readers for independent reading. Features of e-readers that can contribute to positive use include their portability and long battery life, response to text, and the ability to define unknown words. Additionally, many classic book titles are available free in e-book form.
- **Flipped Classrooms** : The flipped classroom model, involving lecture and practice at home via computer-guided instruction and interactive learning activities in class, can allow for an expanded curriculum. There is little investigation on the student learning outcomes of flipped classrooms. Student perceptions about flipped classrooms are mixed, but generally positive, as they prefer the cooperative learning activities in class over lecture.

ICT and Teacher Professional Development

Teachers need specific professional development opportunities in order to increase their ability to use ICT for formative learning assessments, individualized instruction, accessing online resources, and for fostering student interaction and collaboration. Such training in ICT should positively impact teachers' general attitudes towards ICT in the classroom, but it should also provide specific guidance on ICT teaching and learning within each discipline. Without this support, teachers tend to use ICT for skill-based applications, limiting student academic thinking.

To support teachers as they change their teaching, it is also essential for education managers, supervisors, teacher educators, and decision makers to be trained in ICT use.

Ensuring benefits of ICT investments

To ensure the investments made in ICT benefit students, additional conditions must be met. School policies need to provide schools with the minimum acceptable infrastructure for ICT, including stable and affordable internet connectivity and security measures such as filters and site blockers. Teacher policies need to target basic ICT literacy skills, ICT use in pedagogical settings, and discipline-specific uses. Successful implementation of ICT requires integration of ICT in the curriculum. Finally, digital content needs to be developed in local languages and reflect local culture. Ongoing technical, human, and organizational supports on all of these issues are needed to ensure access and effective use of ICT.

Resource Constrained Contexts

The total cost of ICT ownership is considerable: training of teachers and administrators, connectivity, technical support, and software, amongst others. When bringing ICT into classrooms, policies should use an incremental pathway, establishing infrastructure and bringing in sustainable and easily upgradable ICT. Schools in some countries have begun allowing students to bring their own mobile technology (such as laptop, tablet, or smartphone) into class rather than providing such tools to all students an approach called

Bring Your Own Device. However, not all families can afford devices or service plans for their children. Schools must ensure all students have equitable access to ICT devices for learning.

ICT Enabled Tools for Effective Teaching Learning Process

Following tools are used in the Teaching learning process in Online- Offline mode of instruction. During lockdown these ICT tools proved to be a boon for making the teaching learning process easy and accessible to all students.

1. **Learning management system (MOODLE and Google classroom) :** Moodle stands for Modular Object-Oriented Dynamic Learning Environment and statistics. Moodle is free software, a learning management system providing a platform for e-learning and it helps the various teachers considerably in conceptualizing the various courses, course structures and curriculum thus facilitating interaction with online students. It is configurable, highly-flexible, and feature-rich. RSCOPR has a self-customized MOODLE developed by Digital Content development team. It is a very useful platform to share all learning resources, videos, sharing webpage. Moodle supports a range of media to present or link to learning materials, support the students and to assess their learning. It is able to provide automated assessment in the form of quiz, and give immediate detailed feedback to the students. The messaging system allows learners and teachers to communicate easily. Teachers can also communicate with groups of learners via course forums either to provide answers to learners' questions or to just get involved in discussions. The uploaded learning resources are available to the students whenever they want them. The MOODLE mobile app makes students access even easier via smartphone or mobile device.
2. **Google Classroom - Blended Learning Platform :** Google Classroom is a free, blended learning platform that offers a variety of benefits for both students and teachers. Google Classroom enhances the productivity and take workflow management to the next level. It keeps track of assignments coming in with a simple glance making it very easy to know everyone's status and to follow up with students who are missing work. Everything is time stamped, so late work is easily identifiable. Since Google apps are cloud based the work in Google Classroom saves automatically and is accessible from any device. With the app, both students and teachers can enjoy the full functionality of Google Classroom on a mobile device. Students receive notifications on their phone when assignments and announcements are posted, making it easy for students to stay on top of classroom happenings. As a teacher, the app enables to post from the phone either right from the app or using share-sheet support.
3. **Google Forms:** Google Forms allows to conduct **MCQ quizzes online**. The information is stored as a spreadsheet automatically record the answers. The spreadsheet then populates the responses from the quiz or survey in real-time. Google forms can be used to give feedback to and receive feedback from students and parents.

4. **Videoconferencing Platforms** : During COVID pandemic when the world shifted to Online mode for teaching learning various free videoconferencing platforms like Google meet, Zoom and Cisco webex were used to conduct online classes. All these have varying needs and features. Zoom allows the facility of using its features using a browser also without the need to download the application, the app download is mandatory in case of the other two software. Zoom allows face touch up facility as well which is not present in the other two competing software. Google Meet allows the maximum on-screen chatting time with respect to the others. It has over 60 minute long conferences whereas the time cap of others is only 40 minutes. Zoom has the highest, that is, 49 people that can be viewed on the screen at once.
5. **Virtual Labs** : The Virtual Labs provides remote-access to simulation-based Labs in various disciplines of science and engineering. This student-centric approach facilitates the absorption of basic and advanced concepts through simulation-based experimentation. Internet-based experimentation further permits use of additional web-resources, video-lectures, animated demonstrations and self-evaluation. Virtual labs are any place, any pace, any-time, any-type labs. It is a paradigm shift in student-centric, online education. Virtual labs sessions available on *Virtual labs an MOE Government of India Initiative* for Physical Pharmaceutics, Organic Chemistry and Inorganic chemistry subjects as well as Virtual labs sessions from *Amrita Vlab* portals for Microbiology, Organic chemistry and Inorganic chemistry practical provide helpful tool to teacher during online teaching learning process.
6. **Educational Videos and animations (YouTube and Internet)** : Various valuable educational videos of pharmacy subjects available on internet, YouTube provide additional help in better understanding of subject knowledge.
7. **Smart Classroom**: Classroom integrated with Smartboards and internet connections provides enhanced and interactive learning and teaching opportunities for students and teachers. The internet-connected to systems in smart classes is stored with abundant information. It is accessible anytime for their teaching and learning process. Teachers can access information from various educational sources for teaching purposes. It helps in easy access to online
8. resources. Smart Classrooms helps in developing critical thinking and problem-solving skills in students.
9. **e-Resources** : e- journals from ProQuest Pharma and DELNET were available for students to access remotely in online mode and enhance their learning experience. e books were uploaded on MOODLE and Google Classroom.

Conclusion

ICT tools are important to classroom because it improves learning, make the discussion engaging and fun, use for keeping record, create amazing presentations and make the class happy. Those are some of the ICT tools in education that are very helpful for the students and teachers. Those devices, software's are important to improve the learning and teaching at the classroom.

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DISRUPTIVE MODERN EDUCATIONAL TECHNOLOGY IN THE ERA

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Abstract

Ineducations disruptive technologies plays a vital role to transform the way we teach and learn. AI can personalize learning for individual students, while VR and AR can provide immersive learning experiences. Gamification can make learning more engaging and fun by incorporating game-design elements, and Blockchain can create secure and tamper-proof records of student achievements and credentials. IoT devices can monitor student activity and provide real-time feedback on their progress. By leveraging these technologies, education can become more personalized, effective, and engaging for students. The technologies are Artificial Intelligence (AI), Virtual Reality (VR) and Augmented Reality (AR), Gamification, Blockchain, and Internet of Things (IoT). Personalized learning using AI - Research is being conducted to better understands how AI can be used to personalize learning for individual students. This includes exploring how to develop AI algorithms that can accurately analyze student data and provide personalized recommendations, as well as how to ensure that these recommendations are effective in improving student outcomes.

Keywords: Artificial Intelligence, Block chain, Virtual Reality, Augmented Reality, and Internet of Things

Introduction

Disruptive technology is any innovation that dramatically changes the way consumers, businesses and industries operate. When they're first developed, disruptive technologies often create a new market. They establish their own value network and are often seen as risky outliers when they're introduced. In other cases, disruptive technologies enter an established market but radically change the way business is handled and needs are met. These technologies completely replace their predecessors by offering revolutionary benefits that are notably superior. When a disruptive technology enters an existing market, it can make current items or processes obsolete. To be considered disruptive, technology must be easily accessed by a majority of the population. Revolutionary inventions are often not disruptive because they're too expensive for the common consumer. In many cases, it's not until the technology is refined enough to become affordable that it's considered disruptive to the market. A disruptive technology is one that enters the mainstream and changes the way most people think or behave.

Embracing Digital Transformation in Education

The Rise of Digital Content Delivery

In the digital world, traditional textbooks are giving way to digital content delivery platforms. Publishers in India must adapt to this shift by embracing digital transformation. By investing in digital publishing capabilities, they can produce and distribute content in various digital formats, such as e-books, online courses, and multimedia resources. This will make educational content more accessible, portable, and interactive for learners.

Open Educational Resources (OER) for All

Open Educational Resources (OER) are freely accessible educational materials available online. Indian publishers need to consider the integration of OER into their offerings. They can collaborate with OER providers or develop their own open content. By embracing OER, publishers can cater to the changing needs of educators and learners, ensuring that quality educational resources are available to all, regardless of economic barriers.

Most technology is considered sustaining rather than disruptive. Sustaining technology evolves slowly and steadily over time. Established businesses typically work with sustaining technologies that allow them to refine their production methods and corner a known market. However, over time a disruptive technology can become a sustaining technology as it becomes firmly established. We will explore the future of education in India, focusing on the implications of disruptive technology for Indian publishers

Personalized Learning	Collaboration and Interactive Learning
1. Artificial intelligence to create adaptive learning platforms and tools.	1. Gamification techniques can make learning more enjoyable and interactive.
2. These platforms can provide personalized recommendations, adaptive assessments, and interactive content, allowing students to learn at their own pace and in a style that suits them best.	2. These features can enable students to connect, collaborate, and share knowledge.
3. potential to transform education by creating immersive and interactive learning.	3. Gamification fosters a sense of achievement, making education fun and increasing student involvement

1. Disruptive technology in research fields

Immersive learning experiences using VR and AR - Research are being conducted to better understand the effectiveness of VR and AR in providing immersive learning experiences. This includes exploring how to design virtual environments and scenarios that are engaging and effective in teaching specific concepts, as well as how to ensure that students are able to transfer what they learn in virtual environments to real-world situations.

Gamification and motivation - Research is being conducted to better understand how to effectively use gamification to motivate students and improve learning outcomes. This

includes exploring how to design game elements that are engaging and effective, as well as how to ensure that these elements do not distract from the core learning objectives.

Blockchain and credentialing - Research is being conducted to better understand how blockchain can be used to create secure and tamper-proof records of student achievements and credentials. This includes exploring how to ensure that blockchain-based credentials are widely recognized and accepted by employers and other institutions.

IoT and learning analytics - Research is being conducted to better understand how IoT devices can be used to monitor student activity and provide real-time feedback on their progress. This includes exploring how to design IoT devices and sensors that are unobtrusive and do not interfere with the learning experience, as well as how to ensure that the data collected is accurate and useful for teachers and students.

2. Portals of disruptive technology

Several government agencies provide online portals and resources related to emerging disruptive technologies in education. Here are a few examples:

1. Department of Education's Office of Educational Technology (EdTech)
2. National Science Foundation's Directorate for Education and Human Resources(EHR)
3. National Center for Education Research (NCER)
4. Federal Communications Commission's Education and Digital Learning page (FCC)
5. White House's Office of Science and Technology Policy (OSTP)

Department of Education's Office of Educational Technology: This office provides resources on how to effectively integrate technology into teaching and learning. Their website offers guidance on topics such as personalized learning, edtech procurement, and data privacy.

National Science Foundation's Directorate for Education and Human Resources: This directorate provides funding and support for research on emerging technologies in education. Their website offers information on funding opportunities, as well as resources on topics such as STEM education, teacher professional development, and education research.

National Center for Education Research: This center is part of the Institute of Education Sciences and provides funding and support for education research. Their website offers resources on topics such as early childhood education, literacy, and school leadership.

Federal Communications Commission's Education and Digital Learning page: This page provides information on the FCC's efforts to promote digital learning and broadband access in schools. Their website offers resources on topics such as the E-Rate program, digital equity, and the FCC's broadband deployment initiatives.

White House's Office of Science and Technology Policy: This office provides guidance and support for government initiatives related to science and technology. Their website offers resources on topics such as AI, cybersecurity, and STEM education.

These government portals and agencies can be a valuable resource for educators, school administrators, and policymakers looking to stay up-to-date on emerging disruptive technologies in education and to access resources and support for their use.

3. Different areas of disruptive technologies

Artificial intelligence

Artificial intelligence is a technology that allows computers to problem solve and reason in the same ways that humans do.

- Robots
- Self-driving cars
- Home assistants
- Chatbots found on retail sites
- Digital travel agents

3D Printing

3D printing is used in several industries—primarily the medical and aeronautical fields—and is the process of creating three-dimensional objects from a non-three dimension source, such as a digital source. Objects are created layer by layer in this process and this allows people to print unusual shapes with fewer materials.

Blockchain

Bitcoin and cryptocurrency are examples of currency that are exchanged in digital ledger transactions through what is called a blockchain service. While this process is still evolving and hasn't quite reached the masses yet, it's considered a disruptive technology that is changing the e-commerce industry. It's important because it involves a cashless system that will change how we exchange money.

Smartphones

Smartphones have replaced landlines, traditional cell phones and even computers for many people. As new apps become available, smartphones increase their functionality, disrupting other industries as well. A smartphone can act as a GPS, radio, television, e-reader (which itself replaced printed materials), camera, remote control and more.

E-commerce

E-commerce makes nearly any product accessible via the internet. Shoppers no longer have to leave their homes and shop at brick and mortar stores and startup companies don't need physical retail locations to sell their products. E-commerce disrupted the retail industry by making it possible to shop online and receive anything from shoes to produce in a matter of days or even hours.

Ride-sharing Apps

The advent of ride-sharing apps, customers can now order transportation from individuals rather than a taxi cab company. Customers use an app to arrange where and

when they'd like to be picked up. Ride-sharing changed the industry, both for the consumer and the driver, who can now work independently for ride-sharing companies, setting their own hours and choosing jobs.

GPS Systems

Global Positioning Systems (GPS) have replaced paper maps. Drivers once had to consult paper maps to find their location if they were lost. Modern GPS technology can find users instantaneously by satellite and provide route choices for their destinations. With convenient, turn-by-turn directions, and rerouting options for traffic and road obstacles, the driver is able to focus on driving.

Social Media Networks

Social media networking disrupted traditional social interactions in numerous ways. It made it possible for people to see what friends were doing, without having to call, email or text them. With the ability to check in on friends so quickly via social media channels, some chances for deeper connections were lost. Social media networking has influenced not only personal interactions but also those that take place within businesses.

Streaming Entertainment

The invention of streaming entertainment, cable networks and local programming are no longer necessary for viewers to watch their favorite television series. Consumers don't need to purchase or rent DVDs or Blu-rays to see the latest movies at home. Some films are even available to stream while still in the theater, so customers can stay home and stream them.

Conclusion

The future of education in India is closely intertwined with disruptive technologies. Indian publishers must embrace this transformation to stay relevant and thrive in the evolving educational landscape. By leveraging digital content delivery, open educational resources, personalized learning, augmented and virtual reality, collaboration, and gamification, publishers can create engaging and effective educational experiences. With these advancements, we can look forward to a future where education in India becomes more accessible, inclusive, and impactful for learners of all backgrounds.

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EMPOWERING WOMEN THROUGH EDUCATION

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Abstract

Education has been identified as a crucial factor in women empowerment, motivating them to participate fully in social, economic, and political spheres. However, women still face significant barriers in accessing education, particularly in developing countries. This paper provides a comprehensive review of the literature on women's access to education and its impact on their empowerment. It examines the various factors that affect women's access to education, including cultural norms, poverty, discrimination, and lack of resources. The paper also highlights the optimistic impacts of education on women's empowerment, such as improved health outcomes, increased economic opportunities, and greater political participation. Finally, the paper discusses the challenges that remain in ensuring women's access to education and the policies and programs that can help overcome these challenges.

Keywords: Education, Social, Economic, Poverty, Discrimination, Opportunities.

Introduction

Educated girls know their rights and are confident to claim them. Educated girls are likely to marry at a mature age and to have smaller and healthier families and are less likely to have mistimed or unintended births. Educated mothers influence their children's educational attainment and the mother's education is usually more influential than the father's in this regard.

However, women's literacy rates are significantly lower than men's in most developing countries including India. Indian government provides low cost education up to high school (12th grade) but college education even though highly subsidized but still beyond the affordability of many families. If the families have to choose between the college education of sons and daughters, usually the sons get the priority. Many girls drop out of the college due to these socio economic reasons.

Objectives of the Study

- To study the socio democratic details of the respondents.
- To study the empowerment of women through education.
- To study the need of education among women.

Significance of the Study

Education is one of the most important means of empowering women with the knowledge, skills and self confidence necessary to participate fully in the development process.

Education is important for everyone, but educating girls and women is especially important because the women education can have ripple effects within the family and across generations. Investing in girls' education is one of the most effective ways to not only women empowerment but overall development of the society as a whole. Hence this study was made to know how education empowers women.

Research Methodology

Research methodology is the blueprint of the research study. Redman and Morry defines research as a 'systematized efforts to gain new knowledge.

Method and Tools of Data Collection

The data was obtained from two sources the primary data and the secondary data. The tool of data collection used for the study was Questionnaire Method. The Questionnaire consists of data of women education and employment.

Sampling Method

The total of 50 respondents were selected from the universe using snowball Sampling Method.

Review of Literature

1, How education empowers women in developing countries Kien Le, My Nguyen

The BE Journal of Economic Analysis & Policy 21 (2), 511-536, 2020

This paper evaluates the impacts of education on women's relational empowerment, within a context of 70 developing countries across the world. Exploiting the variation in educational attainment between biological sisters, we find that education is positively associated with women's intra-household decision making authority in both financial and non-financial domains. Moreover, education reduces relational friction, especially women's exposure to psychological abuse. Our mechanism analyses provide suggestive evidence that these improvements could be attributed to increased access to information, assortative matching, and better labor market outcome.

2, Does education empower women? Evidence from Indonesia Shanika Samarakoon, Rasyad A Parinduri World Development 66, 428-442, 2015

This paper examines whether education empowers women. We exploit an exogenous variation in education induced by a longer school year in Indonesia in 1978, which fits a fuzzy regression discontinuity design. We find education reduces the number of live births, increases contraceptive use, and promotes reproductive health practices. However, except for a few outcome measures, we do not find evidence that education improves women's decision- making authority within households, asset ownership, or community participation. These results suggest that, to some extent, education does empower women in middle-income countries like Indonesia.

3, Women's emancipation through education: A macroeconomic analysisFatih Guvenen, Michelle Rendall

Review of Economic Dynamics 18 (4), 931-956, 2015

We study the role of education as insurance against a bad marriage in light of changing divorce laws during the 1970s. We build and estimate an equilibrium search model with education, marriage/divorce/remarriage, and household labor supply decisions. A key feature of the model is that women bear a larger share of the divorce burden, mainly because they are more closely tied to their children relative to men. Our focus on education is motivated by the fact that divorce laws typically allow spouses to keep the future returns from their human capital

Analysis of the Data

After collecting the data according to the purpose and objectives of the study, the data collected were organized, classified, coded, tabulated and analyzed and interpreted.

Distribution of respondents based on their Age

Age	No. of Respondents	Percentage
20-24	10	20%
25-30	20	40%
30 & above	20	40%
Total	50	100%

The above table indicates that 20% of the respondents belong to the age group of 20-24, 40% of the respondents belong to the age group of 25-30, and 40% of the respondents belong to the age of 30 and above.

Distribution of Respondents Based on Education

Qualification	No. of Respondents	Percentage
UG	20	40%
PG	14	28%
Others(diploma, ITI)	16	32%
Total	50	100%

The above table shows that 40% of the respondents have done UG, 28% of the respondents have done PG and the remaining 32% of the respondents have either diploma or ITI respectively.

Distribution of Respondents Based on Family Support

Family	No: of respondents	Percentage
Parents	12	24%
Spouse	32	64%
Relatives	6	12%
Total	50	100%

From the above table, it shows that 24% of the respondents have support from their parents, 64% of the respondents gets support from spouse, 12% of the respondents gets support from their relatives respectively.

Women's Education in India

In India there are about 200 million of illiterate women even in this modern era. Studies had proved that illiteracy in women causes high rate of ill influence on fertility and infants' health issues which even leads to death at times.

Bihar has the lowest literacy rate in the country at 63.82 percent, followed by Arunachal Pradesh (66.95percent) and Rajasthan (66.95 percent) (67.06 percent).

Girls are less likely to attend school and are more likely to drop out than boys. Women's rights are essential to the advancement of the country. The nation's economic prosperity in the twenty-first century depends on both men and women. The government placed a strong emphasis on education and expanding employment opportunities in order to support women's responsibilities in society. To that end, the Indian government has developed a plethora of plans and programs to aid in their integration into the development process. These actions have improved the economical circumstances of women. After India got independence, women's nationalists were highly regarded.

In modern India our women has placed their feet in almost all the fields. There are so many professional colleges that has a mass number of female students and they achieve great levels in their fields. The professional colleges in India keeps thirty percent of seats reserved for female students. Girls from urbanareas usually gets more educational opportunities than the girls from rural parts of India. This state of low access to education should change in rural areas for the development of the country as well as for the better of their families.

How to Promote Women Education

Following are a few potential motivators for women to pursue higher education:

1. Through distributing parental motivational programs.
2. Parental organizations should be established to promote and support the education of females.
3. State as well as union governments should establish a number of programs and plans to supportgirls' education and should organize programs to raise community awareness.
4. Encourage gender sensitivity in the classroom. Encourage activity-based education.
5. Give the right counselling at the right moment.
6. Appoint school counsellors.

Challenges

In India, there are a number of obstacles preventing women from being fully empowered. In underdeveloped nations like India, social conventions and family structures show and maintain women's inferior status. One of the standards is that practically all societies and communities continue to prefer the birth of sons over the birth of a girl. When it comes to possibilities for education, nutrition, and other factors, society is more prejudiced in favour of male children. The idea that male children inherit the clan in India, with the exception of Meghalaya, is the primary reason of this mind-set. Women frequently absorb the idea of their conventional position as natural, which does them an injustice. Living in poverty is a fact of life for the vast majority of people in India, poverty is a fact of life. It is just another element that makes achieving women's emancipation difficult. The problems with women's rights in India are caused by a number of factors. The empowerment of women in India will immediately benefit from addressing these concerns.

- Gender Discrimination
- Domestic duties are a young girl's child's occupation
- Financial exploitation
- Less interested in academics
- Marriage at a young age
- Working on their family assets (farms, cottage business)

Suggestions and Recommendations

1. Women should be given awareness about the need of education.
2. Marriage approval should be given only if a woman holds at least an UG degree.
3. Basic awareness should be given about the bad influence of social media on women.
4. Women should be conscious about the latest laws that are in favour to them.
5. They should know to defend themselves at their precarious hours.

Conclusion

In the world of computer era acquiring knowledge for women is not restricted. They have to take the initiative to understand the process of acquiring knowledge. Throughout the history we could find women had struggled to get education but being in computer era it could be easier than olden days. There are great personalities like Dr. Ida Sophia Scudder, founder of CMS, Vellore who had started one of the most reputed hospitals in Asia. Women empowerment not just learning the books but it is stepping out of the threshold of the house and leading and guiding the world with their infinitive knowledge. Education is a milestone of women empowerment because it enables them to respond to the challenges, to confront their traditional role and change their life. It assists in bringing equality and works as a means to improve their status within family, society and politico-economic system. Moreover women are considered as Goddess and mother in our country. Let us support our mothers and Goddesses to be more empowered through education.

Hence this study covered the importance of emotional maturity of the survivors in the society where the women of our society are much suppressed.

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CHALLENGES AND PROBLEMS OF WOMEN EMPOWERMENT

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Abstract

Women empowerment refers to the process of empowering women and promoting gender equality to ensure that women have equal rights, opportunities and participation in various aspects of life. It involves empowering women economically, socially, politically and emotionally. so they can make their own choices, have control over their lives, and actively contribute to society. The perception of women empowerment recognizes that women, like men, are entitled to equal rights and opportunities and should not face discrimination based on their gender. women empowerment is essential for creating a more inclusive and equitable society. When women are empowered, they can contribute to economic growth, poverty reduction, improved education and enhanced overall well-being for communities and nations. it's not just about empowering women but also about transforming systems and structures to ensure gender equality and social justice.

Keywords: Education, Economic empowerment, Health and Reproductive rights, Political participation, Legal rights, Social and Cultural change.

Introduction

Women empowerment is a critical and transformative movement that aims to bring about gender equality and equal opportunities for women in all aspects of life. It acknowledges the historical and systemic discrimination and challenges that women have faced and advocates for their rights, agency and participation in decision-making processes. By empowering women economically, socially and politically, societies can benefit from the full potential and contributions of half of their population.

The benefits of women empowerment extend far beyond individual women. When women are empowered, they become agents of positive change in their families, communities and nations. They contribute to economic growth, poverty reduction and social development. Studies show that when women are given an equal say in decision making, communities are more likely to experience improved governance, peace and sustainable development.

However, challenges persist and the fight for women empowerment is an ongoing journey. Gender-based violence, unequal pay, and limited representation in leadership roles are just some of the issues that still need to be addressed. To achieve true women

empowerment, it requires collective efforts from governments, civil society, businesses, and individuals.

Empowering women is not just a matter of justice; it is an investment in a better, more equal and prosperous future for all. By standing together and promoting women empowerment we can create a world where every woman has the opportunity to shine and make a positive impact on society.

Problems Faced by Women Cadets

Women face various challenges and issues in different parts of the world. It's important to note that the experiences and problems faced by women can vary depending on cultural, social, economic, and political contexts. Here are some of the problems faced by women globally.

- **Gender Inequality:** Women often face discrimination and inequality in various spheres on life including education, employment and political representation. Gender pay gaps and limited access to leadership positions are examples of this inequality.
- **Limited Access to Education:** In certain regions, girls and women may have restricted access to education due to cultural norms, poverty or lack of educational opportunities.
- **Violence Against Women:** Domestic violence, sexual harassment, human trafficking and other forms of violence disproportionately affect women. Such violence not only causes physical harm but also affects women's mental health and well-being.
- **Health Disparities:** Women's health needs may be overlooked or underfunded, leading to disparities in access to healthcare, maternal mortality rates and limited access to family planning and reproductive health service.
- **Works-Life Balance:** Balancing work, family responsibilities and personal life can be particularly challenging for women, leading to issues like burnout and the "motherhood penalty" in career advancement.
- **Forced Marriage and Child Marriage :** Forced marriage and child marriages continue to be issues in some parts of the world, affecting girl's education and well-being.
- **Online Harassment:** Women may face online harassment and abuse, including cyberbullying and threats which can have severe emotional and psychological consequences.
- **Intersectional Discrimination:** Women belonging to marginalized communities may face compounded discrimination due to their gender, race, ethnicity, religion or other identify factors.

Objectives

The objectives of this study is based on the

- To find out the socio – economic profile of women cadets
- To determine the challenges and problems of women empowerment.

Methodology

- The primary details are collected from the 75 women from Coimbatore district.
- Questionnaire method is used to collect data
- The statistical tools used in the study are
 - Simple percentage analysis
 - Chi – Square test

Table No.1: Age of The Respondence

AGE OF THE RESPONDENCE	CHALLENGES AND PROBLEM OF WOMEN EMPOWERMENT			Total
	LOW	MEDIUM	HIGH	
Below 25 Years	3	11	1	15
26-30 Years	4	29	8	41
31-40 Years	2	4	4	10
Above 41 Years	3	5	1	9
Total	12	49	14	75

	Value	df	Asymp.Sig.(2-sided)
Pearson Chi-Square	1.823 ^a	2	.080
Likelihood Ratio	1.866	2	.077
Linear-by-Linear Association	1.636	1	.035
No of Valid Cases	75		

a.0 cells(.0%) have expected count less than 5. The minimum expected count is 5.83.

Table No.2: Challenges and Problem of Women Empowerment

MARITAL STATUS	CHALLENGES AND PROBLEM OF WOMEN EMPOWERMENT			Total
	LOW	MEDIUM	HIGH	
Married	6	24	5	35
Unmarried	6	25	9	40
Total	12	49	14	75

	Value	df	Asymp.Sig.(2-sided)
Pearson Chi-Square	12.700 ^a	4	.013
Likelihood Ratio	15.832	4	.003
Linear-by-Linear Association	10.656	1	.001
No of Valid Cases	75		

a.2 cells(22.2%) have expected count less than 5. The minimum expected count is 2.08.

Table No.3: Area of Residence

AREA OF RESIDENCE	CHALLENGES AND PROBLEM OF WOMEN EMPOWERMENT			Total
	LOW	MEDIUM	HIGH	
Rural	3	11	5	19
Urban	5	32	7	44
SemiUrban	4	6	2	12
Total	12	49	14	75

	<i>Value</i>	<i>df</i>	<i>Asymp.Sig.(2-sided)</i>
<i>Pearson Chi-Square</i>	13.111a	10	.218
<i>Likelihood Ratio</i>	16.288	10	.092
<i>Linear-by-Linear Association</i>	4.744	1	.029
<i>N of Valid Cases</i>	75		

a. 5 cells (27.8%) have expected count less than 5. The minimum expected count is 0.33

Table No.4: Monthly Income

MONTHLY INCOME	CHALLENGES AND PROBLEM OF WOMEN EMPOWERMENT			TOTAL
	LOW	MEDIUM	HIGH	
Below Rs.20000	1	6	2	9
Rs.20,001-Rs.30,000	2	4	1	7
Rs.30,001-Rs.40,000	3	5	1	9
Above Rs.40,000	3	32	8	43
None of the Above	3	2	2	7
Total	12	49	14	75

	<i>Value</i>	<i>df</i>	<i>Asymp.Sig.(2-sided)</i>
<i>Pearson Chi-Square</i>	7.481a	6	.279
<i>Likelihood Ratio</i>	10.993	6	.089
<i>Linear-by-Linear Association</i>	1.349	1	.245
<i>N of Valid Cases</i>	75		

a. 8 cells (53.3%) have expected count less than 5. The minimum expected count is 2.17.

Table No.5: Occupation

OCCUPATION	CHALLENGES AND PROBLEM OF WOMEN EMPOWERMENT			TOTAL
	LOW	MEDIUM	HIGH	
Student	3	19	5	27
Business	3	18	5	26
Government	1	3	1	5
Private Sector	2	5	1	8
House Wife	2	2	1	5
Others Specify	1	2	1	4
Total	12	49	14	75

	<i>Value</i>	<i>df</i>	<i>Asymp.Sig.(2-sided)</i>
Pearson Chi-Square	6.521 ^a	10	.109
Likelihood Ratio	8.144	10	.092
Linear-by-Linear Association	2.372	1	.029
N of Valid Cases	75		

a.10 cells (55.6%) have expected count less than 5. The minimum expected count is .33.

Table No.6: Educational Qualification

EDUCATIONAL QUALIFICATION	CHALLENGES AND PROBLEM OF WOMEN EMPOWERMENT			TOTAL
	LOW	MEDIUM	HIGH	
HSC(+2)	1	4	2	7
UnderGraduate	1	13	1	15
PostGraduate	2	20	2	24
OthersSpecify	8	12	9	29
Total	12	49	14	75

	<i>Value</i>	<i>df</i>	<i>Asymp.Sig.(2-sided)</i>
Pearson Chi-Square	3.740 ^a	6	.139
Likelihood Ratio	5.496	6	.044
Linear-by-Linear Association	0.674	1	.122
N of Valid Cases	75		

a.4 cells (33.3%) have expected count less than 5. The minimum expected count is 1.50.

Table No.7: Nature of Family

NATURE OF FAMILY	CHALLENGES AND PROBLEM OF WOMEN EMPOWERMENT			Total
	LOW	MEDIUM	HIGH	
Nuclear	6	32	7	45
Joint	6	17	7	30
Total	12	49	14	75

	Value	df	Asymp.Sig.(2-sided)
<i>PearsonChi-Square</i>	0.996 ^a	2	.184
<i>LikelihoodRatio</i>	1.028	2	.179
<i>Linear-by-LinearAssociation</i>	0.858	1	.095
<i>NofValidCases</i>	75		

a.0 cells(.0%)haveexpectedcountlessthan5. The minimumexpectedcountis 10.00.

Table No.8: Size of Family

SIZE OF FAMILY	CHALLENGES AND PROBLEM OF WOMEN EMPOWERMENT			TOTAL
	LOW	MEDIUM	HIGH	
Upto 3 Members	3	10	10	23
4 to 5 Members	3	27	2	32
More than 5	6	12	2	20
Total	12	49	14	75

Chi-SquareTests

	Value	df	Asymp.Sig.(2-sided)
<i>PearsonChi-Square</i>	12.765 ^a	4	.000
<i>LikelihoodRatio</i>	11.251	4	.000
<i>Linear-by-LinearAssociation</i>	8.121	1	.000
<i>NofValidCases</i>	75		

a.0cells (.0%) have expected countless than .5. The minimum expected countis 3.00.

Review of Literature

1. Rashmi Rani Agnihotri H.R and Malipatil, K.S.(2017)- in their paper entitled,, A Study On Women Empowerment Schemes In India" express that "Women"s' empowerment has become a significant topic of discussion in development and economics. It can also point to approaches regarding other trivialized genders in a particular political or social context. Empowering women to participate fully in economic life across all sectors is essential to build stronger economies, achieve

internationally agreed goals for development and sustainability, and improve the quality of life for women, men, families and communities.

2. Esther Duflo(2012)-in their paper entitled „Women’s Empowerment and Economic Development” opined that “Women’s empowerment and economic development are closely related: in one direction, development alone can play a major role in driving down inequality between men and women; in the other direction, empowering women may benefit development.
3. Rama Devi(2017)found that, “Gender equality is a human right which entitles all persons irrespective of their gender to live with dignity and with freedom. Gender equality is also a precondition for all round development and reducing poverty. Empowered women make invaluable contribution to the improvement of health conditions and educational status and productivity of whole families and communities, which in turn improve prospects for the next generation. Keeping the status of women empowerment and its determinants in India, an attempt is made in this paper to present some of the key determinants of inequalities that exist in our country so as to have an idea about to what extent the women are empowered”.
4. Ahmad Reshi, & Dr.T.Sudha.(2022). in their paper entitled Women Empowerment A Literature Review Women empowerment is a critical issue in today's world, as it aims to increase women's economic, social, and political power. This literature review provides an overview of the concept of women's empowerment, its historical evolution, and its importance in achieving sustainable development goals. The review highlights the various factors that hinder women's empowerment and identifies successful strategies for empowering women, such as education, access to resources, and political participation. Finally, the review concludes with recommendations for policymakers, civil society organizations, and researchers to advance the cause of women empowerment.
5. F. HasinUniversiti, A. K. M. B. Hasan & H.Musa (2018) entitled their study "Women Empowerment model: Strategies to overcome challenges". The purpose of this study is to explore the vital points of women empowerment challenges through exploring previous research literatures and survey reports and to develop a hypothetical strategic women empowerment model. Women Empowerment is the most challenging step and surmounting the hindrance in a woman’s life may enhances her quality to contour her life and society. The proposed strategic women empowerment model is a multidimensional process, which will enable women to enhance their confidence, personality and power in all spheres of life. The methodology of this study is a systematic literature review of qualitative literatures. This study will demonstrate women’s vital role in socio-economic development to materialize the positive effects on sustainable global development

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ICT FOR PROFESSIONAL DEVELOPMENT

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Abstract

In society, teaching has a prestigious place. ICT enables teachers to keep up with new information and techniques for utilizing cutting-edge digital tools and resources. Teachers will become successful teachers by using and learning about ICT. ICT is one of the key elements causing our society to develop so quickly. It may alter the nature of education and the roles that students and teachers play in the transmission of knowledge. Technology is now being used in the classroom by teachers. Common media includes laptops, LCD projectors, desktop computers, EDUCOM, Smart classrooms, and memory sticks. Since teachers are currently the only ones who can create a bright future, teaching community must

Keywords: *ICT, Professional Development, Effects, Higher Education.*

The dramatic developments brought about by information and communication technology (ICT) have improved teacher professional development. Computers, smart phones, laptops, tablets, LCD screens, multimedia players, and projectors are just a few of the ICT-related educational tools that are being employed in classrooms to make teaching and learning more engaging and effective. Information and communication technology (ICT) is a key component of teacher preparation programs that teach educators how to improve both their subject and pedagogical skills. ICT expertise helps teachers create effective lesson plans for both teaching and learning.

ICT contributes to our information and communication processes and the results in the same way that other technologies do in enhancing our quality of life. ICT in education has a great deal of potential to benefit and assist those involved in the process and outcome of education in a variety of ways.

- ICT use has the potential to transform conventional ideas and approaches to the teaching-learning process. Here are a few of the changes:
- It will aid in the changeover to an interactive learning approach from a broadcast model. Thus, the teaching-learning process involves the pupils actively.
- Aids in the process of changing instruction from being teacher-centered to being learner-centered. Students develop self-reliance and self-direction in their knowledge and skill acquisition and application.
- Changes the focus from teaching to learning, making the learning process more dynamic and interesting for both teachers and students.

- Helps teachers transition from being merely knowledge transmitters to being learning facilitators, knowledge navigators, and active co-learners alongside their students.
- ICT has the power to integrate the current educational system with the knowledge-based, information-rich society by giving it access to high-end tools, approaches, and methodologies

Information and communication technology (ICT) is a field that includes cutting-edge computer software used in education and training to improve teachers' professional competence and students' capacity for learning. The retrieval, processing, creation, and transfer of instructional technological information fall under this category of information technology. At the moment, all teaching, administrative, and supporting staff members, as well as students, use ICT resources to successfully accomplish educational goals and carry out their daily tasks more effectively. Teachers employ a variety of ICT-related educational tools in the classroom, such as computers, LCDs, projectors, laptops, multimedia, smart phones, etc., to enhance students' learning.

All these expectations may be met only through need-based, goal-oriented and meaningful in-house discussion, conferences, symposia, workshops, refresher and orientation courses, crash courses, capsule courses and subject-based courses, interdisciplinary and holistic approaches to education and quality research and by enriching the existing libraries and making use of the user-friendly ICT with contextually appropriate and firm pedagogical scaffolding. The teacher educators and individual teacher ought to sincerely and persistently work hard toward this goal. By the latest developments in the information and communication technology the role of teacher in the process of teaching and learning has increased many fold and has become more complex as such teachers are to equip themselves with latest technology then only they cope up the new challenges in the field.

ICT is extremely useful for professional development of teachers and helps the teacher in the following ways:

- The use of ICTs as presentation tools (through overhead and LCD projectors, television, electronic whiteboards, guided “web-tours”, where students simultaneously view the same resources on computer screens) is seen to be of mixed effectiveness. While it may promote class understanding of and discussion about difficult concepts (especially through the display of simulations), such uses of ICTs can re-enforce traditional pedagogical practices and divert focus from the content of what is being discussed or displayed to the tool being utilized.
- In OECD experience, the use of technology in everyday teaching and learning activities appears to be more important than specific instruction in “computer classes”. While the development of technology skills is seen to have a role in the teaching and learning process, it is more important as an enabler of other teaching and learning practices, and not too important in and of itself. Schools that report the highest levels of student ICT-related skills and experience are often not those with heavy computer course requirements, but rather ones that made use of ICTs on a

routine basis throughout the teacher professional development and the teaching and learning process.

- Effective ICT use in education increases teachers' training and professional development needs. However, ICTs can be important tools to help meet such increased needs, by helping to provide access to more and better educational content, aid in routine administrative tasks, provide models and simulations of effective teaching practices, and enable learner support networks, both in face to face and distance learning environments, and in real time or asynchronously.
- Effective teacher professional development should approximate the classroom environment as much as possible. "Hands-on" instruction on ICT use is necessary where ICTs are deemed to be vital components of the teaching and learning process. In addition, professional development activities should model effective practices and behaviors and encourage and support collaboration between teachers. On-going professional development at the school level, using available ICT facilities, is seen as a key driver for success, especially when focused on the resources and skills directly relevant to teacher's everyday needs and practices.
- ICT enriches teaching by enhancing the initial preparation by providing good teaching and training materials, simulators, recording and feedback mechanisms.
- ICT has removed the barriers of space, time and place between teacher and learner.
- It has established a healthy and interactive relationship between teachers, schools, institutions, and universities and enabled teachers to expertise rich resources in cyber space.
- Pedagogical practices of teachers using ICTs can range from only small enhancements of teaching practices, using what are essentially traditional methods, to more fundamental changes in their approach to teaching. ICTs can be used to reinforce existing pedagogical practices as well as to change the way teachers and students interact.
- The cost of teacher training has been reduced by the didactic software and intelligent tutoring systems.
- ICT provides lifelong professional development by providing courses in a virtual situation, training in demand, orientation and refresher courses through video conferencing and online.
- By the exchange of materials through virtual communities, sharing of ideas and experiences and collaborating on projects the ICT can revolutionize the whole teaching profession.

Role of ICT in Curriculum and Teacher Development

Technological development and the changing competencies required in the present scenario for both students and their teachers, it is necessary to design a state-of-the-art curriculum and appropriate teacher development. Teachers need to be adequately prepared to implement a state-of-the-art ICT curriculum. Indeed, introducing any new curriculum calls for careful preparation, management, resourcing, and continuing support.

In the case of an ICT curriculum, even more concerns have to be considered. Educational research studies show that programmes of professional development for teachers are most effective if directed to the stage of ICT development reached by professional students. The implications of these research findings are that teacher development is best conceived as an ongoing process, with many professional development activities conducted in professional colleges. In any educational system, the level of available resources places a restriction on the degree to which any new subject can be introduced into the college curriculum, especially where only the most basic facilities have so far been provided. But ICT is of such importance to the future industrial and commercial health of a country that investment in the equipment, teacher education, and support services necessary for the effective delivery of an ICT-based curriculum should rank high in any set of government priorities. The curriculum proposed takes account of these resource issues and specifies minimum requirements for effective delivery in different circumstances. Information and communication technology, or ICT, is defined as the combination of informatics technology with other, related technologies, specifically communication technology.

Recent Trends in Teacher Education

Based on various changing needs of our society now emphasis is also given to the various educational theory and educational practices. According to these theories and practices changes are also undergo in teacher education also. It is natural that teacher education must include new technology. Teachers should also know the right attitudes and values, besides being proficient in skills related to teaching. As we know the minimum requirement of any training programme is that it should help the trainee to acquire the basic skills and competencies of a good teacher. Now-a-days new trends in teacher education are Inter-disciplinary Approach, Correspondence courses, orientation courses etc. Simulated Teaching, Micro Teaching, Programmed Instruction, Team Teaching are also used in teacher education. Now-a-day Action Research also implemented in Teacher Education. ICT acts as the gateway to the world of information and helps teachers to be updated. It creates awareness of innovative trends in instructional methodologies, evaluation mechanism etc. for professional development.

The Various ICT Initiatives

- **E-pathshala:** The digital India campaign has promoted extensive use of ICTs in the teaching learning process. The **E-pathshala**, a joint initiative of Ministry of Education, Govt. of India and National Council of Educational Research and Training (NCERT), has been developed for showcasing and disseminating all educational e-resources including textbooks, audio, video, periodicals, and a variety of other print and non-print materials for Students, Teachers, Parents, researchers and educators. It provides access to digital textbooks for all classes, graded learning materials and enables participation in exhibitions, contests, festivals, workshops, etc.
- **NROER:** The National Repository of Open Educational Resources (NROER) is developed by CIET, NCERT. It was launched during the National Conference

on ICT for School Education. NROER hosts large number educational resources in many subjects and in different Indian languages for Primary, Secondary and Senior Secondary classes. Resources are available in different formats like Video, Image, Audio, Document and Interactive. Apart from this all NCERT books are available in Flip book format. NROER is an collaborative platform, intend to reached the un-reached and institutions like SCERT, SIERT, SIE, Vigyan Prasar, CCERT, Gujarat Institute of Educational Technology (GIET),

- **Swayam MOOCs:** SWAYAM (Study Webs of Active-Learning for Young Aspiring Minds) is a programme initiated by Government of India and designed to achieve the three cardinal principles of Education Policy viz., access, equity and quality. SWAYAM seeks to bridge the digital divide for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy. This is done through an indigenous developed IT platform that facilitates hosting of all the courses taught in classrooms to be accessed by anyone, anywhere at any time. All the courses are interactive, prepared by the best teachers in the country and are available, free of cost to the residents in India.
- SWAYAM platform is developed by Ministry of Human Resource Development (MHRD) and NPTEL, IIT Madras with the help of Google Inc. and Persistent Systems Ltd. It would be ultimately capable of hosting 2000 courses and 80000 hours of learning: covering school, under-graduate, post-graduate, engineering, law and other professional courses.
- **Swayam Prabha:** SWAYAM Prabha is an initiative of the Ministry of Human Resources Development to provide 32 High Quality Educational Channels through DTH (Direct to Home) across the length and breadth of the country on 24X7 basis. It has curriculum-based course content covering diverse disciplines. This is primarily aimed at making quality learning resources accessible to remote areas where internet availability is still a challenge. The DTH channels are using the GSAT-15 satellite for programme telecasts.
- **ICT in education curriculum:** The National Policy on ICT in School Education has set the goal of preparing youth to participate creatively in the establishment, sustenance and growth of knowledge. Teachers and Children must not be treated merely as consumers but also as active producers.

Conclusion

The intervention of information and communication technology is redefining the way students learn. It is making the process of learning more efficient and effective for students and teachers. ICT tools in education make it easier for teachers to use the best strategies to bring out the best in their students. ICT in education sector is beneficial for the students, in addition to this, it is making it possible for schools to impart education in the finest way. Moreover, the technology enables them to manage all the management and administration functions in a seamless manner. Hence, there is no doubt that it is a boon to the education industry.

Teachers are the national builders responsible to train future generation to be able for facing challenges of present era, but this is not possible without having full command in utilization of ICT instructional devices properly. It is a fact that knowledge of ICT helps teachers to keep knowledge updated to use modern instructional technology in classrooms. Recently, ICT has become a basic need of human life across the world and no field can work effectively without its support. In education and training, it plays vital role to uplift teaching and learning process. The use of ICT facilities in teacher training programs has become necessary in classrooms and teachers are considering it most important pillar for better students' learning.

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INFORMATION COMMUNICATION TECHNOLOGY TOOLS IN EDUCATION

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Abstract

Information and Communication Technology (ICT) is an extensional term for Information Technology (IT) that emphasizes role of unified communications and the integration of telecommunications (telephone lines and wireless signals) and computers, as well as necessary enterprise software, middleware, storage and audiovisual, that enables users to access, store, transmit, understand and make uses of the information. ICT is an umbrella term that includes any communication device, encompassing radio, television, cell phones, computer and network hardware, satellite system and so on, as well as various services and appliances with them such as video conferencing and distance learning. ICT is a broad subject and the concept is still evolving. It covers any product that will store, retrieve, manipulate, transmit or receive information electronically in digital form (e.g., personal computers, smart phones, digital television, e-mails, and robots). Use of ICT Tools is all pervasive in our everyday life, and use of ICT tools has almost revolutionized the way teachers impart knowledge to students and students receive knowledge from their teachers, Not only that, by making accessible entire bookshelf and whole of library to students and teachers on a click of their smart phones and laptops have made education simple, much more efficient and have enhanced their productivity enormously.

Keywords: ICT tool, Technology in Education, Teaching and Learning.

Introduction

Information and Communication Technology (ICT) includes computers, the Internet, and electronic delivery systems such as radios, televisions, and projectors among others, and is widely used in today's education field. Kent and Facer (2004) indicated that school is an important environment in which students participate in a wide range of computer activities, while the home serves as a complementary site for regular engagement in a narrower set of computer activities. Increasingly, ICT is being applied successfully in instruction, learning, and assessment. ICT is considered a powerful tool for educational change and reform. A number of previous studies have shown that an appropriate use of ICT can raise educational quality and connect learning to real-life situations. Learning is an ongoing lifelong activity where learners change their expectations by seeking knowledge, which departs from traditional approaches. As time goes by, they will have to expect and be willing to seek out new sources of knowledge. Skills in using ICT will be an indispensable prerequisite for these learners.

What is ICT?

- ICT stands for Information and Communication Technology.
- ICT are basically information handling tools, a varied set of equipment, applications and services that are used to produce, store, and process, distribute and exchange information.
- Old ICT include radio, television, telephone, tapes, cassettes etc.
- New ICT include computers, satellite, wireless technology and internet.
- Definition of ICT.
- As per IBM Glossary, "ICT is the use of computer based information systems and communication systems to transmit and store data and information".

Importance of ICT in Education

- No nation can develop without ICT based education. It is regarded as fuel for development.
- ICT based education is the essential ingredient in developing new ideas, in course content and curriculum and in creation of materials and methods of learning and teaching.
- Students need ICT for pursuing academic studies whereas teachers need ICT based information for teaching.
- ICT has made it easier to process and disseminate knowledge. It has increased the efficiency of the knowledge professionals in organizing and managing knowledge.
- It has saved the space of library by creating library on digital platforms and further by uploading them onto the servers or clouds. And thus making retrieval of information much easier for everyone.
- ICT Tools prevalent in colleges for imparting education to students.
- Nowadays teachers use well equipped classrooms with permanently installed and operational projectors. Teachers utilize these for purpose of teaching through presentations, videos and other relevant materials.
- Students are also encouraged to put up presentations and explain the topics to the teachers, while students are continuously evaluated during the process.
- During present pandemic time, teachers make extensive uses of ICT tools for teaching their students online thru Zoom and Google Meet. This could be possible only with such ICT tools, that includes smart phones, laptops, relevant software etc. During this pandemic scenario students and teaching faculties remained continuously in touch over whatsapp and Google Classroom (yet another example of ICT Tools).

ICT Tools in Vogue in Colleges

- Desktop
- Wifi
- Email
- MS Powerpoint

- Laptop
- Scanner
- Smart Board
- MS Office
- Printer
- Google Classroom
- Interactive Whiteboard
- Pen Drive
- Zoom
- MS Word
- USB
- WhatsApp
- MS Excel

Classification of ICT Tools

ICT could be classified in three categories:

1. Physical ICT hardware or Gadgets:

It include audio-visuals, telephone and computers

- Television
- Cell phones
- Modems: A modem is a device that translates signals to and from between two computer devices in a network.
- Computers: There is numerous things that computers can do as far as device connectivity, task processing, data management and storage is concerned. The computer connects us to the internet and helps us share information in a network. Other physical communication technologies (ICT gadgets or hardware) in digital devices include remote controls, keyless entry devices, walkie-talkies, Bluetooth earpieces, GPS Satellites, CD's DVD's, flash drives, tape, compact memory chips.

2. Non-Physical ICT Software (Virtual Communication Technology):

Software and Wireless Network represent ICT Software: Software is a program that direct smooth running of a computer system. It can be system software (such as Microsoft operating system) or application software (such as MS Internet Explorer, MS Word, MS Exceletc.).

3. Communication Technology Services (ICT Services):

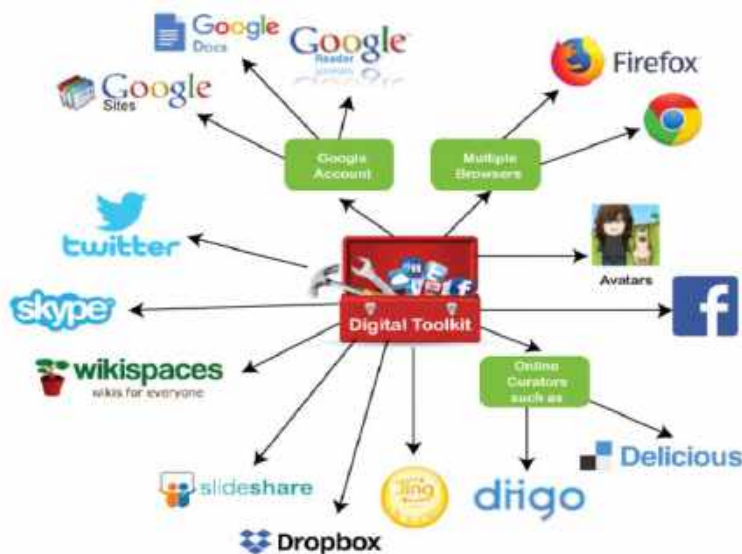
Internet and Email services are examples of ICT services.

ICT Equipment for Every Classroom:

Ideally, following 10 ICT items, should be features of every classrooms in our educational institutions. While majority of university colleges do possess majority of them but some of them are still just pipedream for many!

1. A social media output channel to connect with students, parents and fellow classrooms.
2. A desktop computer to access online resources.
3. USB or Wifi access for document sharing and device connectivity.
4. A projector with interactive whiteboard functionality or television screen connectivity.
5. A presentation clicker for classroom mobility. The best one I've found is Logitech which i use for keynotes.
6. A visualiser or document camera for displaying student work, or presenting live feedback.
7. Tablet devices for teacher and student e.g. iPad.
8. Recording hardware/software for podcasting e.g. microphone, headphone and speakers.
9. A digital camera for showcasing work in film or photographs.
10. A few show-off gizmos; e.g. data-logging; remote control vehicles/robots/buzzers and lights.

ICT Tools being used normally by academicians



Applications of ICT in Education

- Enablement of employment of innovative educational resources
- Continuous renewal of methods of learning
- Sets up more active collaboration from students
- Makes possible simultaneous acquisition of technological knowledge
- It facilitates refinement in educational processes

Major applications of ICT

- Internet the miraculous all pervading medium
- Intranet
- E-mail
- E-group
- Mobile phone
- Fax
- Video conference
- Telecommunications and digital telephone exchanges

Everyday applications of ICT:

Banking, Education, Transport, Medicine, Agriculture, E-commerce, E-governance.

ICT is playing a pivotal role in today's world:

- ICT has made the whole world a global village.
- It is accelerating the information explosion.
- This has led to better information management and bibliographical control for digital content.

The job of library and information professionals is becoming tougher day by day and ICT comes to the aid by providing even ways to deal with scattered and unorganized information and avoid information pollution or misleading information some examples of ICT tools,

- Digital library.
- Greenstone.
- Dspace.
- UGC-Infonet: E-Journals Consortium Greenstone and DSpace are open source software for content creation to maintain an institutional repository UGC-Infonet is a country wide network for improving the education system with state-of-the-art technology.

Advantages of using ICT

Communication :

Speed / time – money can be saved because it's much quicker to move information around. With the help of ICT it has become quicker and more efficient.

Globalization :

Video conferencing saves money on flights and accommodation. ICT has brought the countries and people closer together.

Cost effectiveness :

It feels free to send an email which is definitely cheaper than phone calls.

Bridging the cultural gap :

Greater access to technology has helped to bridge the cultural gap by helping people from different cultures to communicate with one another, and allow for the exchange of views and ideas, thus increasing awareness and reducing prejudice.

Education

Computer's along with their programs and the Internet have created educational opportunities not available to previous generations. Through ICT, images can easily be used in teaching and improving the retentive memory of student.

Disadvantages of using ICT

Lack of job security

Experts in a wide variety of fields believe that ICT has made job security a big issue, since technology keeps on changing nearly every day. This means that individuals need to be constantly studying or at least keeping up with changes in their profession, if they want to feel secure in their jobs to be secure.

Overriding Cultures

While ICT may have made the world a global village, it has also contributed to one culture consuming another weaker one. For example, it is now argued that teenagers in the US influence how most young teenagers all over the world now act, dress, and behave.

Privacy

Though information technology may have made communication quicker, easier, and more convenient, it has also brought along privacy issues. From cell phone signal interceptions to e-mail hacking, people are now worried about their once private information becoming public knowledge.

Reliance on Technology

Professor Ian Robertson, a neuropsychology expert based at Trinity College Dublin who carried out the study, said: "People have more to remember these days, and they are relying on technology for their memory but the less you use your memory, the poorer it becomes. People don't bother learning to spell because they use spell-checker, or need a calculator do perform minor addition or subtraction.

Reliability of Information

Anyone with access to a computer and an internet connection internet can start a blog or post something up on a website, so just because something's on the web doesn't mean it's reliable. A prime example of this is the open source encyclopedia, Wikipedia, although considered a good source of information it is not recognized by academic institutions as a trustworthy reference.

Computer Viruses

Computer viruses, worms, Trojans, malware, spam, phishing- any or all can cause chaos and disrupt our daily lives.

Expensive:

Too expensive to afford.

Conclusion

It is true that with advent of numerous ICT tools our lives have changed drastically and it has revolutionized our education methodology, communication ways, as well as our business processes. Overall, we cannot imagine our world without ICT tools & gadgets. We cannot survive for even an hour without our smart phones, laptops, digital devices etc. etc. ICT has enabled revolutionary changes in creation, processing, handling, storage and dissemination of digital information through communication network. Millions and millions of digital information products are coming up day by day. There is an information explosion and bibliographical control is a tough nut to crack. Library and information professionals need training, orientation and awareness to face the big challenges of future.

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CHALLENGES OF WOMEN ENTREPRENEURS

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Abstract

Entrepreneurship is the core of economic development. In present time women are an emerging economic force. Women constitute the family, which leads to society and family. Social and economic development of women is necessary for development of any country. Though they are facing problems range from mobilizing various resources including problem of capital, marketing, raw material, sales, labor, technical, competition, new technology, problem of land/ Shed/ water/ power/ taxes, lack of family support as well as lack of government support. This paper focuses on the challenges of Women entrepreneur. To overcome these challenges, women entrepreneurs often create their own support systems, overcome their insecurities, and reach out to other women entrepreneurs. In India, various Initiatives have been taken by the government from time to time for entrepreneurship development in the country.

Keywords: Women Entrepreneur, Challenges, family, society, Development, problems

Introduction to Women Entrepreneur

Entrepreneurship plays a significant role in the economic development of any country. Entrepreneurship acts as a pillar for the economic Prosperity of a nation as it leads to generation of Employment, contribution in national income, rural Development, industrialization, technological Development, export promotion etc. Entrepreneurship refers to setting a new business to take Advantages from new opportunities. Entrepreneur is the Key factor of entrepreneurship and now women are Successful in this as they have qualities desirable for Entrepreneurship development. Entrepreneurship is a Suitable profession for women than regular employment. Women are taking interest in the Entrepreneurship in Present years than past. The women have achieved immense development in their mind. With increasing Dependency on services sectors, many opportunities are there for women. Women Entrepreneur is a person who accepts challenging role to meet her personal needs and become economically independent. Many women have this quality but they never got a platform to showcase their talents and hence they don't know their real abilities. Women entrepreneurs are those women who think of a business enterprise, initiate it, organize and combine factors of production, operate the enterprise and undertake risks and handle economic uncertainty involved in running it. According to Government of India, "A Woman enterprise is the one owned and controlled by a woman having minimum financial interest of 51% of the capital and giving at least minimum 51% of generated employment to women.

Challenges of Women Entrepreneurs

Even though female entrepreneurship and the formation of female-owned business networks is steadily rising, there are a number of challenges and obstacles that female

entrepreneurs face. One major challenge for female entrepreneurs faces traditional gender roles that are structurally internalized by society. Entrepreneurship is still considered as a male-dominated field, and it may be difficult to surpass these conventional views. Other than dealing with the dominant stereotype, female entrepreneurs are facing several obstacles related to their businesses.

- Tough competition against male counterparts:
- For a long time, entrepreneurship has been a field dominated by men. And while the scenarios are changing, there is still a long way to go. Limited funding:

Funding is crucial in order to start a business. However, a large number of Indian women do not have property or assets to their name. Hence, they encounter a problem while applying for loans due to lack of collateral. This isn't just a problem in India but across the world. A report by Bloomberg showed that women who own and run businesses receive a lot less funding as compared to what men get.

Work-life balance

Women, across the world, are expected to play a larger part in handling a household and taking care of their family. Owning and running a business means long hours and thus, for women work-life balance can become a problem. In the case of working mothers, taking care of their children takes up a lot of time and energy, thereby often forcing them to give less priority to their business. Men, on the other hand, generally play a secondary role when it comes to household responsibilities. However, this situation seems to be changing now as more men are stepping forward to contribute to the household responsibilities.

Lack of education:

Women form 68% of the country's illiterate population, says UNESCO's education report. Female entrepreneurs without formal education can face numerous problems when it comes to issues such as business development, maintaining accounts, understanding money matters or even day-to-day running of the company. Lack of skills, information and the necessary resources to run a business can reduce their chances of turning their business into a success.

Minimal support:

In many cases, women find themselves on their own with no one to guide them. In this day and age, it is almost necessary to have experienced mentors and role models. For women, managing their business becomes even more difficult if their family and friends don't step up to take some household and family responsibilities. As a result, it can be tough to make a mark in an arena that is already dominated by men.

Fewer sectors are Women friendly:

Despite the policies and measures to promote gender equality, men still dominate India's entrepreneurial ecosystem. According to a recent report, most women-owned businesses in the country operate in low-revenue sectors, while men control the more

profitable sectors like manufacturing, construction, and the like. The male-centric nature of many industries also forces women entrepreneurs to operate in sectors that are historically called “women-friendly”, such as education, apparel, and beauty care, among others. It limits their experience, opportunities, and capabilities to a significant extent.

Lack of Social and Institutional Support:

Most women business owners don't get the social support they require to kick start their business from families, peers, and immediate ecosystems. Lack of mentorship from the business community is also one of the main challenges faced by women entrepreneurs in the country. The case is no different when it comes to institutional support. Though there are schemes for promoting female entrepreneurship, many women don't receive timely guidance or help from authorities. The absence of a proper support network adversely impacts their confidence and ability to take risks.

Poor Funding Prospects:

As unfair as it might sound, the funding scene in India has massive gender biases. Women-led businesses in the country lack access to capital due to the prejudices of investors and other factors. According to a report by Innoven Capital, of all the companies that received funding in 2019, only 12% had at least one female founder. Many VC firms and angel investors are reluctant to invest in women-led businesses, while banks and financial institutions consider women less credit-worthy. Moreover, many Indian women don't have property or assets in their name, which comes up as a problem while applying for collateral loans or private financing.

Lack of Access to Professional Networks:

Limited access to professional networks is another one of the basic problems of women entrepreneurs in India. According to the Google-Bain survey, female business owners are less integrated with formal and informal networks. The survey further indicates that over 45% of urban small business owners suffer due to insufficient avenues of network development. Studies also show that most of the existing professional networks are dominated by men, making it difficult for women to access or navigate such spaces. Consequently, they miss out on opportunities to grow their business, find collaborators and vendors, and build social capital.

Pressure to Stick to Traditional Gender Roles:

Patriarchy conditions both men and women to play certain defined gender roles. Women are expected to cook, do domestic chores, raise kids, care for the elderly, and the like. Juggling familial and professional responsibilities is a challenge in itself, and even more so when you set out to build a brand. The pressure to stick to traditional gender roles is among the main challenges faced by women entrepreneurs. Often, they are asked to give up entrepreneurship and take up an “easy” profession that helps them focus more on family and kids.

Conclusion

Women entrepreneurs often face challenges in accessing funding, feeling respected as business owners, and building a support system. To overcome these challenges, women entrepreneurs often create their own support systems, overcome their insecurities, and reach out to other women entrepreneurs. Women today are the proud owners of giant business chains which they are managing extremely well moving abreast with their male counterparts and, undoubtedly outshining them. Women entrepreneurs make significant contributions to economic growth and to poverty reduction around the world.

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ICT APPARATUSES FOR CREATIVITY IN TEACHING LEARNING PROCESS

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Abstract

ICT is a wide term represents Data Correspondence Innovation. ICT instruments for instructing and gaining cover everything from computerized frameworks like printers, Computers, workstations, tablets, and so on, to programming devices, for example, Google Meet, Google Bookkeeping sheets, and so on. In conventional study halls, an educator's fundamental educational devices for showing data are blackboards, multipurpose sheets, notice sheets and diagrams. In any case, in the present current situation, apparatuses of numerous callings are changing at a fantastic rate and that schooling is no exemption. The effect of innovation has prompted the expanded utilization of PCs for detesting data in large numbers of the present study halls. To make ICT instructing and learning more intuitive, different stages and apparatuses have been made and refreshed over the timeframe.

Keywords: Information Communication Technology, Teaching-Learning, Visual Information, Online Platforms.

Introduction

In the present globalized world the Data and Correspondence Advancements (ICTs) have become well established in instructive settings. Imaginative ICT devices utilized in homeroom training which assists educators with coordinating in their subject, for instructing learning and evaluation. There are various subjects explicit liberated from cost ICT apparatuses accessible on the web and disconnected stages which can be utilized for instructing, learning and appraisal. They are utilized by educators to energize cooperation and connect with learning in their study halls. ICT can likewise be utilized by instructors to advance cooperative work and imagination across a great many subjects. This study targets featuring the predominance of ICT instruments for working with understudy learning, maintenance and mentalities. Their utilization has encouraged subjective changes in how educating is drawn closer, particularly as far as introducing the items sound outwardly. Despite the fact that there has been a lot of conversation over various techniques to show understudies, addresses are not prone to quit being utilized. To underscore specific focuses, many talks utilize composed material introduced on a blackboard, whiteboard, or by transparencies on an above projector. However, over the

most recent 10 years, one more technique for giving visual data addresses has acquired conspicuousness which is projecting data straightforwardly from a PC onto a screen for example PowerPoint introductions. As a matter of fact, numerous schools and colleges have rooms outfitted with innovation vital for any educator to show data thusly. Moreover, a few organizations are pushing the educators to involve different innovations for imaginative instructing and learning.

1. **Information Communication Technology:** The ICT devices means to computerized foundations like PCs, PCs, printers, scanners, programming programs, information projectors, and intuitive educating box.
2. **Teaching-Learning:** Teaching can be characterized as commitment with students to empower their comprehension and use of information, ideas and cycles while learning is the obtaining of information or abilities through study, insight, or being instructed.
3. **Visual Information:** It is utilization of at least one of the different visual media regardless of sound. By and large, visual data incorporates still photography, film photography, video or sound recording, realistic expressions, visual guides, models, show, visual show administrations, and the help processes.
4. **Online Platforms:** A web-based stage is a computerized administration that utilizes the Web to work with communications between at least two separate yet reliant clients.

Literature Review

Simin Ghavifekr, Thanusha Kunjappan, Logeswary Ramasamy and Annreetha Anthony, in their examination paper, "Educating and Learning with ICT Devices: Issues and Difficulties from Educators' Discernments (2020)", uncovered that their review is more connected with recognizing the insights in carrying out ICT apparatuses in instructing and learning in the homeroom among teachers. It looks at the difficulties of utilizing ICT devices in educating and learning in the study hall among teachers and perceives the viability of the degree of ICT apparatuses in supporting homeroom instructing and learning.

D. Sakthivel, Dr. B. Radha, in their review "ICT Devices for Current Training (2021)", thought that Innovation can be a very significant apparatus, however it is just an instrument and innovation "can't supplant an educator" and isn't planned to supplant the educator. A decent instructor should carefully be in a real sense and should know the powerful method for coordinating innovation into the educational program with the goal that educators can keep the understudies committed.

Marta Ferragut Martorell, in her review, "Utilization of ICT apparatuses in the EFL homeroom and their effect on understudies' inspiration", expressed that, ICT has transformed into one of the underpinnings of our cutting edge society. Accordingly, the comprehension and dominance of ICT have turned into a fundamental piece of the present instruction, close by numeracy, composing and perusing and it is normal to change the manner in which understudies learn.

Objectives & Limitations

This study means to examine whether utilizing ICT apparatuses would be more useful for understanding the Blackboard instructing. It likewise expects to evaluate the adequacy of ICT apparatuses in aiding the understudies in understanding and holding the data. One of the significant impediments of the review was that absolutely subject to optional information may not be completely confirmed. Likewise the time used for the review was extremely restricted which confined the extent of the review.

Research Methodology

The review depends on auxiliary information. Important information are benefited from different wellsprings of data like Books and Different sites.

ICT Enabled Tools for Effective Teaching Learning Process: Most educators feel good in utilizing address technique, which isn't equipped for accomplishing different targets of homeroom guidance. ICT might be of extraordinary use in accomplishing different targets of educating - growing experience. It gives right data in an extensive way with various models. It assists students with widening their data base. ICT gives assortment in the introduction of content, which assists students with picking up as per their own speed. It helps in better comprehension, and long maintenance of data. Following apparatuses are utilized in the Showing educational experience in Online-Disconnected method of guidance.

Learning Management System (MOODLE): Moodle represents Particular Article Arranged Unique Learning Climate and insights. Moodle is free programming, a learning the board framework giving a stage to e-learning and it helps the different instructors significantly in conceptualizing the different courses, course designs and educational plan in this way working with collaboration with online understudies. Moodle upholds a scope of media to present or connection to learning materials, support the understudies and to evaluate their learning. It can give robotized evaluation as test, and give quick point by point criticism to the understudies.



Google Classroom: Google Homeroom is a free, mixed learning stage that offers various advantages for the two understudies and instructors. Google Study hall improves the efficiency and take work process the board to a higher level. It monitors tasks coming in with a straightforward look making it extremely simple to know everybody's status and to circle back to understudies who are missing work. Everything is time stepped, so late work is effectively recognizable. Since Google applications are cloud based the work in Google Study hall saves consequently and is available from any gadget. With the application, the two understudies and educators can partake in the full usefulness of Google Homeroom on a cell phone.



Google Forms: Google Forms allows directing MCQ tests on the web. The data is put away as a calculation sheet consequently records the responses. The calculation sheet then, at that point, populates the reactions from the test or review progressively. Google structures can be utilized to give input to and get criticism from understudies and guardians.



Video conferencing Platforms: During Corona virus pandemic when the world moved to Online mode for showing learning different free videoconferencing stages like Google meet, Zoom and Cisco WebEx and so on, were utilized to direct web-based classes. Every one of these has fluctuating requirements and highlights for working with intuitive educating and learning.



Virtual Labs: The Virtual Labs gives remote-admittance to recreation based Labs in different disciplines of science and designing. This understudy driven approach works with the assimilation of fundamental and high level ideas through recreation based trial and error. Web based trial and error further allows utilization of extra web-assets, video-addresses, energized exhibitions and self-assessment. Virtual labs are any spot, any speed, any-time, and any sort labs. It is a change in outlook in understudy's driven, online training.



Educational Videos and animations (YouTube and Internet): Different significant instructive recordings of different subjects accessible on web likewise have an incredible effect. YouTube give extra assistance in better comprehension of subject information.



Smart Classroom: Classroom incorporated with Smart board and web connections gives upgraded and intuitive learning and showing open doors for understudies and educators. The web connection with frameworks in brilliant classes is put away with plentiful data. It is open whenever for their instructing and educational experience. Educators can get to data from different instructive hotspots for the end goal of educating. It helps in simple admittance to online assets. Brilliant Homerooms helps in creating decisive reasoning and critical thinking abilities in understudies. There are a lot more ICT instruments that work with imaginative showing educational experience.

Advantages of Using ICT tools Inteaching learning Process

1. **Teaching Makes Easier:** Educators are individuals with one of profoundly benefited of having ICT in schooling. Using it, it makes the instructing more straightforward. At the point when an instructor shows the understudy on another example it makes for them simple to illuminate and to assess what they maintain that they should be aware. Making records documents, pdf records or power point show using PC or PC for them to show the subjects that they will going to handle is an extraordinary way for instructing.
2. **Lesson can be seen and heard:** The advantage of data correspondence innovation is the illustrations should be visible and be hear. Dissimilar to on the books you can simply see it, seeing those pages with sections and brimming with text and at some point we can see the photos. Sound coming from the recordings or music that being utilized will be played again and again that makes it to recall well.
3. **Easier to Understand:** At the point when the understudies see pictures showing up on the white screen utilizing a projector they comprehend it effectively what it truly implies.
4. **Improves Communication:** Having an innovation in the school conversation further develops correspondence. Since through that medium the educators as well as the understudy find out increasingly more jargon words. The legitimate approach to saying a word or words, the right punctuation and the significance of the words gets to the next level.
5. **Enjoying While Learning:** Images, music and recordings are one of the wellsprings of diversion. At the point when individuals see that they are cheerful and appreciate. Dissimilar to from the articles that simply make out of loaded with text

it is exhausting. Through the bright pictures, understudies appreciate paying attention to the music and envision what it truly implies.

6. **Students Perform Better:** What is great and significance of ICT in educating and learning is the understudies perform better. At the point when an educator train before the class and begin to have a visual guide like projector, the understudies are drawing in. Pictures project on the screen and the understudy will see what that is. The understudies perform better when it is alluring.
7. **Know More Information:** The web is one of the quickest approaches to getting data on the grounds that only one touch can get what is required. In training the more we search and read the more data we will get. The educator and the understudies both get more data by the manner in which they use it.
8. **Improves Visual Skill:** At the point when understudies are learning with the utilization of pictures, or recordings their visual ability gets to the next level. A few educators use questions utilizing photographs that will further develop their reasoning expertise and mental ability. What's more, in view of that understudies are partaking in the lesson.

Conclusion

ICT tools are exceptionally strong in educating and learning. ICT instruments enable the two educators and students. They change the educating and educational experiences from being exceptionally educator ruled to becoming understudy driven and this change brings about expanded learning gains for understudies, setting out and considering open doors for students. Also, they are cost-productive and take out the utilization of paper. Close by limiting expense, they additionally save time during class addresses empowering quick and dynamic transmission of content. They give admittance to dynamic instructing and learning strategies and work with simple understudy the executives. ICT is an incredible asset for instructive change and change. Fitting utilization of ICT has assisted the school with raising the interest levels among the understudies and has associated figuring out how to genuine circumstances. Understudies appreciate while learning and perform better.

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WOMEN EMPOWERMENT

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Abstract

This Paper deals with "Women Empowerment" a burning issue all over the world. "Women empowerment" and "women equality with men" is a universal issue. Women Empowerment refers to the creation of an environment for women where they can make decisions of their own for their personal benefits as well as for the society. Women Empowerment refers to increasing and improving the social, economic, political and legal strength of the women, to ensure equal-right to women, and to make them confident enough to claim their rights, such as: freely live their life with a sense of self-worth, respect and dignity, have complete control of their life, both within and outside of their home and workplace, to make their own choices and decisions, have equal rights to participate in social, religious and public activities, have equal social status in the society, have equal rights for social and economic justice, determine financial and economic choices, get equal opportunity for education, get equal employment opportunity without any gender bias, get safe and comfortable working environment Women have the rights to get their voices heard.

India with a current female population of 48.4% (with men at 51.6%) is on the threshold of growth and women have a big role to play when it comes to the economy. Indian women are still fighting patriarchy and gender inequality.

The need for inclusivity of women is also of paramount importance when it comes to the job market in India.

If it is top positions and decision making power that the urban women is fighting for in the corporate world, the rural women still have to battle for their freedom, basic amenities and equal opportunities. The literacy rate of the adult male population in India is 80.95% whereas that of the female population is a disappointing low of 62.84%.

Women in rural India lack basic formal education and are mostly dependent on their husbands for financial support and lack financial independence for the majority of their lifespan. Apart from that women in rural India are prone to more domestic abuse and violence than their urban counterparts.



Types of Women's Empowerment

There are different ways to categorize women's empowerment, but here are five common types:

- **Economic Empowerment:** This refers to women's ability to participate in economic activities on an equal basis with men. It includes access to education, training, employment, and entrepreneurship opportunities, as well as fair wages, equal pay, and access to credit and financial services.
- **Social Empowerment:** This type of empowerment refers to women's ability to participate fully in social and cultural life, free from discrimination and violence. It includes access to education, healthcare, and legal services, as well as the ability to exercise their rights and freedoms.
- **Political Empowerment:** This type of empowerment refers to women's ability to participate in political life and decision-making on an equal basis with men. It includes the ability to vote and run for office, as well as access to leadership positions and participation in policy-making processes.
- **Educational Empowerment:** This refers to women's ability to access education and develop skills and knowledge that enable them to make informed decisions, pursue their goals, and contribute to society. It includes access to quality education at all levels and opportunities for lifelong learning.
- **Health Empowerment:** This refers to women's ability to access healthcare and make decisions about their health and well-being. It includes access to information, services, and resources that promote reproductive health, maternal health, and overall well-being.

Barriers of Women Empowerment

Women's economic empowerment is not a "women's issue" – it affects everyone. Evidence indicates that when women are excluded from the formal economies of low-income countries, rates of poverty reduction and economic growth suffer. With over 50 years of work supporting women's economic empowerment around the world, here are four substantial barriers that TechnoServe has determined limit women's economic

advancement. A group of women who are a part of TechnoServe's kitchen garden program, gather for a training in a house in Bamanwali village, Bikaner, Rajasthan, India on October 24th, 2016.

Lack of access to resources

Around the world, women are significantly less likely than men to have access to productiveresources such as land, finance, and information. For instance:

- **Only 68% of women in low-income countries have access to a formal bank account**, compared to 74% of men
- Globally, women are paid less than men, with an estimated wage gap of about 23%
- **Women make up only about 12.8% of agricultural landholders worldwide**, leavingthe majority of women lacking access to an immensely important economic asset

In Peru, for instance, where many rural women in particular struggle to access finance, Techno Serve **helped women coffee farmers find new solutions**. This expanded financing helped them double their monthly coffee production and improve their incomes.

"[We] are happy and are working together towards the shared goal of being able to save, invest, access low-interest loans, obtain capital and bring our earnings home to improve the quality of life of our families," said Karen Guevara Sánchez, one of the farmers.



Women work in Ethiopia, District: Limu Kossa, Village: Wolensu, Zone: Jimma, Cooperative: Wolensu, 10 January 2010:

Discriminatory Societal Norms

Gender-based discrimination presents an entrenched barrier to women's economic empowerment. Deeply held beliefs about what women should and should not do exist in many different contexts—in their homes, their communities, and their workplaces, restrictive social norms can affect every aspect of women's lives. Gender-based discrimination and prohibitive societal norms both limit women's access to decent

employment and directly affect their experiences in the workplace. For instance, gender-based harassment at work costs the globaleconomy an **estimated \$12 trillion** every year. In many developing economies, women are specifically prohibited from holding certain jobs, or from working in roles where they must mix with men. Globally, **2.7 billion women are restricted from having the same employment choices as men.**

Unequal Domestic Responsibilities

Women are more likely to be unemployed than men, and the COVID-19 pandemic has only exacerbated this gap—as of **February 2022**, the global labor force participation rate amongmen was 72%. For women, it was only 47%. What’s more, many women around the world, employed and unemployed, bear heavy, unequal domestic workloads.

Around the world, women shoulder disproportionate responsibility for domestic work and unpaidcare-tasks essential to the functioning of the economy. It has been estimated that if women’s unpaid domestic labor were assigned a monetary value, it would make up **between 10 and 39%** of the GDP. This unequal divide in domestic labor is perpetuated by laws restricting what work women can do outside of the home, as well as by social expectations. For example, **recent qualitative studies** from East Africa found that, while attitudes towards “women’s work” were changing somewhat, criticism of the perceived quality of working women’s domestic skills persisted, and the idea that undertaking domestic responsibilities made men “unmanly” remained common

Gender-Based Violence

According to Human Rights Watch, **millions of women workers** around the world are subjected to intimidating, hostile, or humiliating work environments where they experience manydifferent forms of unwelcome sexual conduct. Though sexual harassment at work is a widespread and relatively well-known issue, many women are unable to report this behavior due to fear of social or professional retaliation, civil or criminal consequences or backlash, loss of immigration status, and fear of being disbelieved or blamed for their own experiences. Fear of experiencing gender-based violence in the workplace is yet another factor constraining women’s economic opportunities and contributing to gendered job segregation. In collaboration with the

Ford Foundation, TechnoServe is leading a study to gain a clearer understanding of the relationship between gender based violence (GBV) and women’s economic empowerment in Ghana, Nigeria, and Senegal and provide recommendations to create safer working conditionsfor women entrepreneurs and workers.

Conclusion

Despite progress toward women's empowerment, there is still a long way to go. Making women aware of their potential has now become a need of the times, and the government should implement measures such as health, education, employment,women's awareness, and so on. It is vital to raise societal awareness and establish public attitudes encouraging women's empowerment. Many women have even absorbed patriarchal

conventions to assert their authority over other women, such as the mother-in-power law's over her daughter-in-law

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WOMEN EMPOWERMENT

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Abstract

The purpose of this essay is to examine the value of women's empowerment in a collegiate environment and the steps that can be taken to advance gender equality, create opportunities, and support female leadership. The empowerment of women is a crucial component of societal advancement, and educational institutions are crucial in establishing a more just future. In order to foster an inclusive and empowering atmosphere, this presentation explores a range of issues that affect women's empowerment, the difficulties they confront, and the efforts colleges can put in place.

Keywords: gender equality, societal advancement, adaptive.

Introduction

The idea of women's empowerment has come to be seen as a strong force for change in the effort to create a more equal and just society. Women's empowerment is the process of giving them the power to take charge of their life, reach their full potential, and actively engage in all facets of society. It attempts to question and eliminate the obstacles and gender-based discrimination that have historically restricted the opportunities and contributions of women.

Women have experienced numerous difficulties throughout history, including social, economic, and political exclusion as well as limited access to healthcare and education. However, as civilizations advance, there has been a rising appreciation of the need of empowering women, not only for their own gain but also for the development and prosperity of communities generally.

Comprehending Women's Empowerment

The process of giving women the authority to take charge of their life, actively engage in decision-making, and get equal opportunities in leadership, education, and work is referred to as "women's empowerment." It entails removing gender-based restrictions, dispelling conventional preconceptions, and promoting an environment where women can thrive.

The Results of Women's Empowerment:

Economic Growth and Poverty Alleviation:

The empowerment of women and their equitable access to educational and professional opportunities have a favourable impact on economic growth. In both industrialized and developing nations, the presence of women in the workforce and in entrepreneurship fosters creativity, boosts productivity, and lowers levels of poverty.

Health and Well-Being:

Women who are empowered are more likely to be able to make valuable contributions to society. Women who receive an education are more likely to effect change, end poverty cycles, and have a beneficial influence on future generations.

Social and Political Involvement:

Women's active participation in politics and decision-making procedures encourages the development of more inclusive laws and systems of government. It makes sure that many viewpoints are taken into account, which produces better results and a more solid democratic foundation.

Obstacles to women's empowerment:

Access to Education and work Women are prevented from reaching their full potential and making a positive impact on the economy by a lack of access to high-quality education and work opportunities.

Violence and Abuse:

Gender-based violence and abuse continue to be widespread problems that impede women's advancement and threaten their wellbeing.

Women's Empowerment Strategies:

In order to end the cycle of poverty and ensure long-term empowerment, it is crucial to invest in the education and skill development of girls.

Economic Empowerment:

Women's economic empowerment depends on encouraging female entrepreneurship, granting them access to resources and financing, and fostering a positive business climate.

Legal and Policy Reforms:

It is crucial to pass and enforce laws that safeguard women's rights, such as those that prohibit discrimination and gender-based violence.

Women's empowerment is a concept that seeks to create an environment in which women can access the same opportunities, resources and rights as men, allowing them to make their own decisions, participate in society and take control of their lives. This concept seeks to break down the barriers of gender identity, stereotypes and culture that impede women's progress. Key components of women's empowerment include education,

economic participation, health and well-being, political participation, and legal rights. Education is essential for women's empowerment, as it provides them with the knowledge and skills they need to find employment, become financially independent and gain greater self-assurance. Economic participation and entrepreneurship are also essential, as they provide women with the opportunity to participate in the workforce. Health and well-being is also essential, as it provides access to quality healthcare and reproductive rights. Finally, political participation is essential, as it allows women to be better represented in government and to be protected from discrimination, violence and abuse.

Importance of Women Empowerment

Throughout history, women have faced a multitude of challenges, from limited access to education and health care to social, economic and political marginalization. However, as societies develop, there is increasing recognition of the importance of women's empowerment, not only for the benefit of women themselves but also for the advancement and common prosperity of the community. Women's empowerment is multidimensional, encompassing economic, social, political and cultural dimensions. Women who are economically empowered are more likely to become financially independent, lift their families out of poverty and contribute to economic growth. Socially empowered women can challenge harmful norms and stereotypes, promoting a more inclusive and tolerant society. Politically empowered women can support policies that promote gender equality and drive transformative change at all levels of governance. Culturally empowered women can preserve and honour their heritage while challenging traditional practices that perpetuate discrimination. It is important to note that women's empowerment does not seek to uplift women at the expense of men; instead, it recognizes that achieving gender equality benefits everyone. It calls for creating enabling environments where men and women can thrive, while respecting each person's rights and choices.

In recent years, significant progress has been made in advancing women's empowerment, with numerous global initiatives, grassroots movements and legal reforms promoting gender equality. However, challenges remain and much work remains to be done.

Essay (or discussion) will explore the importance of women's empowerment, the barriers women face, the benefits of gender equality, and the different strategies and measures that can promote it. promote a more inclusive and empowered society. That way, we can continue to drive momentum towards a world where every woman is free to reach her full potential and contribute meaningfully to a better and more prosperous future. for everyone.

There are five elements to women's empowerment:

- The worthiness of women their freedom to make decisions and exercise choice;
To their right to access resources and opportunities;

- Their right to possess authority over both have personal autonomy both within and without the home;
- And their capacity to sway social change in order to build a more equitable social and economic system on a global scale.

Brief Principles of Women's Empowerment

- Create a strong business leadership structure for gender equality.
- Treat all employees equally at work; uphold and respect nondiscrimination and human rights.
- Ensure the health, safety, and welfare of both male and female employees.
- Encourage women to pursue careers in education, training, and development.
- Introduce supply chain, marketing, and company growth strategies that support women's entrepreneurship.
- Advocate for equality in your community by starting new projects.
- Track and publicly report on the development of gender equality.
- First principle: Gender equality is promoted by leadership
- Confirm high-level support for gender equality and human rights and guide top-level policies in these areas.
- Establish company-wide objectives and benchmarks for gender equality, and take progress into account when evaluating managers' performance.
- Involve both internal and external stakeholders in the creation of organizational policies, initiatives, and implementation strategies that promote equality.
- Ensure that company culture promotes equality and inclusion and that all policies are gender-sensitive, identifying elements that have distinct effects on men and women.

Second guiding principle: nondiscrimination, inclusion, and equal opportunity

- Strive to pay both men and women a living wage and offer equal pay, benefits included, for labor of equal worth.
- Make sure there is no discrimination against women in workplace policies and procedures.
- Actively seek out and appoint women to managerial, executive, and corporate board of director roles.
- 4. Implement gender-sensitive hiring and retention procedures.
- 5. Make sure there are enough women participating in governance and decision-making at all levels and in all business areas, ideally 30% or more.
- Provide opportunities for leave and re-entry from positions with equal pay and status, as well as flexible work arrangements.
- Support equal access to services for caring for children and dependents by assisting both men and women with services, resources, and knowledge.

Principle 3: Safety, health, and absence of violence

- Provide safe working conditions, shield employees from hazardous materials exposure, and disclose potential dangers, including those to reproductive health, while taking into account the varied effects on men and women.
- Create a policy of complete non-acceptance for any type of workplace violence, including verbal and/or physical abuse, and stop sexual harassment.
- Make an effort to provide health insurance or other necessary services, especially for survivors of domestic abuse, and to provide equal access for all staff members.
- Respect both men and women employees' access to time off for personal and family counseling and medical care.
- Identify security issues and deal with them, including the security of women traveling to and from work and while conducting business on behalf of the company, in consultation with the staff.



Conclusion

Thus, while being engaged in historical and local lore work and finding ways to solve problem situations during research and research, mastering the skills of creative search, young people study their own creative potential, and at the same time personal growth and development. It must be taken into consideration the fact that the development of creative potential of the individual in the process of historical and local lore work requires pedagogically purposeful activity of both teachers and parents.

EMERGING DISRUPTIVE TECHNOLOGIES IN EDUCATION: TRANSFORMING LEARNING FOR THE FUTURE

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Abstract

This publication explores the rapid advancements in technology that have disrupted traditional educational practices, revolutionizing the way we teach and learn. Emerging disruptive technologies are reshaping classrooms and learning environments, fostering personalized education, enhancing collaboration, and bridging the gap between learners and educators. This paper discusses the key technologies driving this transformation, their impact on education, potential challenges, and the implications for the future of learning.

Introduction

The digital revolution has led to an explosion of innovative technologies that are reshaping every aspect of our lives, including education. In this paper, we delve into the realm of emerging disruptive technologies that have the potential to redefine education, making it more engaging, accessible, and effective.

Augmented Reality(AR) And Virtual Reality(VR)

AR and VR are transforming the educational landscape by creating immersive learning experiences. Virtual simulations enable students to interact with complex concepts, visit historical sites, explore distant planets, and conduct experiments in virtual labs. These technologies enhance comprehension, retention, and motivation in learners.

Artificial Intelligence(AI) and Machine Learning(ML)

AI and ML are revolutionizing the way educators analyze student data, personalize learning paths, and provide timely feedback. Smart tutoring systems, powered by AI, can adapt to individual learning styles and pace, ensuring a more tailored learning experience for every student.

Internet of Things(IOT) in Education

The IoT enables a connected educational ecosystem where smart devices and sensors track student progress, monitor classroom environments, and optimize resource allocation. Real-time data can be utilized to improve learning outcomes and streamline administrative processes.

Gamification in Education

Gamification incorporates game elements and mechanics into educational activities to enhance motivation, engagement, and learning outcomes. By transforming mundane tasks into interactive challenges, students become active participants in their learning journey.

Blockchain Technology and Credentials

Blockchain technology provides a secure and transparent way to verify credentials, certificates, and academic achievements. This decentralized system ensures the authenticity of educational records, making it easier for employers and institutions to trust the qualifications of potential candidates.

Robotics and Automation in Education

Robotics introduces students to coding, engineering, and problem-solving skills in a fun and interactive manner. Educational robots enhance the learning experience, especially in STEM (Science, Technology, Engineering, and Mathematics) subjects.

Cloud Computing in Education

Cloud-based platforms facilitate seamless collaboration, data storage, and accessibility of educational resources. Educators and students can access materials from anywhere, fostering a flexible and inclusive learning environment.

Big Data Analytics for Educational Insights

Big data analytics helps educators gain valuable insights into student performance and learning patterns. These data-driven insights aid in identifying areas for improvement and developing targeted interventions.

Challenges and Consideration

While disruptive technologies offer immense potential, they also bring challenges such as data privacy concerns, digital inequality, and the need for effective teacher training. Addressing these challenges is crucial to harnessing the full potential of these technologies in education.

The Future of Learning

The publication concludes with a look into the future, exploring how the integration of these disruptive technologies may shape the education landscape. It emphasizes the importance of a balanced approach, combining technological innovations with effective pedagogical practices.

Conclusion

Emerging disruptive technologies are paving the way for a more inclusive, interactive, and dynamic educational experience. As we embrace these advancements, it is vital to navigate the challenges responsibly, ensuring that education remains a powerful force in shaping a brighter future for generations to come.

In conclusion, the rapid emergence of disruptive technologies in education marks a transformative phase in the way we teach and learn. From augmented and virtual reality creating immersive educational experiences to artificial intelligence personalizing learning paths, these technologies hold immense promise for enhancing student engagement, knowledge retention, and overall educational outcomes.

The incorporation of Internet of Things, gamification, blockchain, robotics, cloud computing, and big data analytics further broadens the horizons of education, fostering interconnected and data-driven learning environments. However, we must acknowledge the challenges that accompany these advancements, including data privacy concerns, digital inequality, and the need for comprehensive teacher training.

To fully realize the potential of these disruptive technologies, it is essential for educational institutions, policymakers, and stakeholders to collaborate and develop robust frameworks that prioritize student well-being, equity, and academic achievement. An inclusive approach to technology integration, combined with effective pedagogical practices, can ensure that education continues to be a powerful catalyst for societal progress.

As we look to the future, we must remain open to embracing innovation responsibly, leveraging these technologies to empower learners, educators, and communities alike. By embracing emerging disruptive technologies in education, we embark on a journey to create a more dynamic, adaptive, and inclusive learning ecosystem that prepares individuals to thrive in an ever-evolving world. Let us embrace this transformative potential and collectively shape a brighter and more equitable future for generations to come.

WOMEN SENSE OF SELF WORTH IN WOMEN EMPOWERMENT

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Abstract

In the present scenario women empowerment is a concept that give fragrance to the life of women who having variables of problems. Social life of a women is dealing with several critical situations and per day by day its increasing. This concept undertaking several measures and it equips, allows women to make life determining decisions in their own way. For full filling all the goals of women empowerment, every women want to sense themselves that they are worth and they can achieve the harder things. Financial issues of the family leads to the illiteracy, unemployment, low paying, poverty...etc. By sensing their self-worth each women can eradicate problems that occupied in every sector. Government of India providing so many opportunities for women to become independent and overcome all the challenges in our societies from the national, state and local levels.

Introduction

Women empowerment as a concept was introduced at the UN's third world conference on women in Nairobi in 1985, which defined it as redistribution of social and economic powers and control of resources in favor of women. The history of women empowerment does not starts from exact date, it is a cumulative process. However, there are certain movements, protests, revolutions that furthered the cause of women empowerment much more speedily. Women empowerment mainly refer to the practice of making women independent. So that they can make their own decisions as well as handle their live without any formal or societal restrictions. Almost all countries, regardless of progressive, have a history of mistreating women.

There is a wide range of approaches and methods to empower women. Individuals and government must work together to achieve this. Empower women means promoting women sense of self- worth. This means promoting and helping them to decide their ability to identify their weaknesses and overcome them. Empowering women leads them to take a step for themselves in society. Women empowerment is used to give the power of equal opportunity in all caste, creeds and color. Day by day crimes against the women is furtherly increasing in our nation. In this present condition of the society women empowerment is considered to make them powerful so that they can decide what is right and wrong for them. A women self-worth is valued more than her sex appeal. Government of India has taken various step to assure empowerment of women through this social, educational, economic and political uplifting through various interventions. No matter where the women is born either in rural or urban areas, they should be given basic

education and then the liberty to choose her life decisions. It is not necessary for oneself, but also for the society.

Women Empowerment in India

The concept of empowerment of women has become a burning issue all over the world including India since last few decades. Inequalities between men and women discrimination against women have also been age-old issues all over the world. The women quest for equality with man is a universal phenomenon. Globally renowned for its culture and heritage, India is a country filled with diverse cultures. But the Indian society has always been a patriarchal one which is why women have been continuously denied basic such as education and equality. For a country like India, women empowerment will be a greater role in its growth and development.

Need For Women Empowerment in India

Women from all over the world have been defiant to achieve their current standing. While western nations continue to make progress, third world countries such as India continue to lag behind in terms of women empowerment. Women empowerment is more important than ever in India. India is one of the countries where women are not safe due to various factors. Not only that but horrific crimes against women such as rape, acid attacks, the dowry system, honor killings, domestic violence and other form of violence against women continues to occur through out India. The education and freedom scenario extremely regressive in this situation women are not permitted to continue their education and are married off at a young age. That's why they can't full fill their goals in their life. Due to all these problems, they become dependent for the whole life. Women empowerment equip these women with the tools they need to stand up for themselves and never be victims of injustice.

Status of Women in India

Women have been an integral part of India's culture and society since ancient times. Women should account for 50% of the entire popularity. In present situation still prevailing in rural and underprivileged sections of the Indian societies practicing female feticide. But they are the backbone of the families and are crucial to the growth and development of communities. Yet for centuries women have been relegated to the sideling subjected to discrimination and marginalization. In recent years however, there has been growing awareness of the important of women in society.

Importance of Women in the Society

The important of women in society

1) Contribution to the economy

Women are essential contribution to the economy. They play a significant role in the labour force and contribute to the growth and development of business. Women have also been proven to be successful entrepreneur and are starting their own business at higher rate than men.

2) Education

Education is a crucial factor in the development of society. Women's education is particularly important because it is to improved health outcomes, increased economic growth and poverty reduction, educate women are also livelier to invest in their families and communities, resulting in a ripple effect that benefits overgone.

3) Empowerment

Empowering women is crucial to creating a more just and equitable society. When women are empowered, they are livelier to take leadership roles and contribute to decision making process that impact their lives and the lines of those around them women empowerment also leads to improved health outcomes increased economic growth and poverty reduction.

4) Political participation

Women participants in politics is essential for the development of democratic societies. When women are represented to political leadership, they bring diverse perspective and experience to the table, resulting in more informed decision-making women's political participation also leads to policies that are more inclusive and address the needs of the entire population

5) Family and community

Women are the backbone of families and communities. They provide care, support and nurturing to their families and are essential to the development of children. Women also play a significant role in community building and often take on leadership role in community organization.

Importance of Women Sense of Self Worth:

In today's society, women are constantly being subjected to expectations about beauty relationships, career and more. It's hard to find and maintain self-worth when we live in fear of whether were meeting social standards of what it means to be a woman. Self-worth will set rules that tell other how to treat you. It will show other what you seen in yourself and what you except from them with self -worth comes confidence, esteem and personal growth.

A woman is not dependent upon anyone else to make her feel good about herself, because she already knows. She is confident and aware of her strengths and abilities. She wants to share them with others. This does not mean she is conceited.

- Know yourself
- Care for yourself
- Respect yourself
- Accept yourself
- Love yourself
- Know yourself

Challenges Faced by Woman

Empowering women means promoting women sense of self-worth. But there were lot of challenges that hinder their ability to contribute fully. Some of the challenges are

- Gender discriminations
- Violence against women
- Lack of access to education
- Lack of access of health care

In recent years there have been many positive developments in India efforts to empower women. The government has implemented several programs and policies aimed at improving women health, education and economic opportunities. There has been a significant increase in the number of women participating in the workforce have achieved high positions in various fields, including politics, business and entertainment. Despite these achievements, women in India still face significant challenges. Gender discrimination, violence against women, unequal pay continues to be major issues female feticides and infanticides, particularly in rural areas, remains a significant concern. Women safety and security are also a significant issue, with many incidents of sexual harassment and assaults reported each year.

Factors Affecting the Confidence of Women

Self-esteem comes from the inside out. It means that a woman is not depend upon anyone else to make her good about herself. Because she already knows shine fine just the way she is. She is confident and & aware of her strength and abilities. She wants to share them with others. This does not mean she is conceited. She is also aware of area needing work and growth. By self we want to understand our strength and weakness & improve ourselves.

Self-esteem is a core identity issues essential to personal validation and our ability to experience joy. Once achieved it comes from the inside out. But it can be assaulted or stunted does not feel good from the outside in. A woman with low esteem does not feel good about herself because she has absorbed negative challenge about women from culture &or relationship. Appearance is a factor that everyone considers as the medium of confidence starting with the youth period beauty and thinness on our society doom every woman to eventual failure. Beauty is not a matter to become confident. Magazines, models, are air brushed to perfection and anorectic. "Beautiful" Movie stars are whipped in to perfect shape by personal trainer and use surgery. Body shaming is becoming as a more sensitive issues in our societies and it affect teenager and matured people also in great manner. Our beauty is inside of us not between the colors of the skin. The mother is modeling what women is she also she also modeling, for her son, what a wife is that's why the future our generation will follows some ethics & respect each other. By knowing our self- worth, we should like ourselves, feel positive about yourself & respect your own worth. Feeling positive about your self can determine how you perform "Wollstonecraft was basically saying that should be working towards goals that will showcase abilities dream they worthy of intellect so that stand beside their made that they have at least the equal amount of it.

Just avoiding the body shaming and go with your own goals help to achieve the header things. Female teenagers may feel ashamed of their maturing and with that their development would speed up. This feeling loss of self-confidence and it affect the education, career future also.

Importance of Women Education

Women have demanded equality with men in matters of education, employment, inheritance, marriage, politics and recently in the field of religion also to serve as cleric. A long struggle going back over a century has brought women the property rights, voting right, equality in civil rights before the law in matter of marriage and employment. We all know that girls are now doing better at school than boys. The annual results of secondary and higher secondary board exam reveal this fact more women are getting degrees than men and are filling men jobs in every field. There was a time when women's education was not a priority over among the elite. Since the last quarter of the 20th century and more so after the opening up of die economy post 1991 a growing number of women have been entering into the economical field, seeing paid work outside family.

Educated women now feel that there is more to life than marriage. They can get most of the things they went without marriage, where they find it harder to find a suitable accomplished mate. This is why their marriage is delayed. With increasing literacy among women in India their entry in too many types of work through they're the paternalistic attitude of the male has not undergone much change. For well educate women provides the skills knowledge and self-assurance necessary to be a better mom, worker, and citizen. A well-educated women will also be more predicative and well paid at work. Indeed, the return on investment in education is often higher for women than for males.

Legal Rights of Women in India

Here are some of the most important legal rights that women in India have

- Right to equality [article 14]
- Right to education-The right children to free and compulsory education[act,2009]
- Right to work – The equal remuneration [act 1976]
- Right against sexual harassment [act 2013]
- Right to property – The Hindu succession [act 1956]was amended in[2005]
- Right to marriage and divorce – The Hindu marriage [act 1955]
- Right to health – The maternity benefit [act 1961]
- Right against domestic violence [act 2005]

Conclusion

Women empowerment and the promotion of gender equality are essential for the development of a just equitable society. Empowering women leads to improve health outcome, increased economic growth and poverty reduction. However women continue to face numerous challenges hinder their ability to contribute fully to society.

Female teenagers may feel ashamed of their maturing bodies and wish that their development would speed up. The perceptions has been that female have a underlying lack of trust in their own merit and this gender based diminished self- esteem has restraint female success. Government of India providing several schemes, development programmes, job opportunities, financial support and our constitution includes several legal rights to protect us.

Body shaming is one of the sensitive issues all over the world. It destroys the self-confidence of the young people. So don't depend on the beauty which having in the external part just know your self-worth and by ourselves provide some self- love, self- care, self- motivation in our life. While providing all these things we can able to use some resources and utilities the available facilities to grown up and full fill the goals of women empowerment by sensing our self -worth. Black or white is not a matter, know yourself , be yourself, do yourself and respect others value also.

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IMPACT OF ICT TOOLS IN ENHANCEMENT OF TEACHING AND LEARNING IN RURAL AREAS USING VIRTUAL REALITY

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Abstract

The usage of ICT tools has contributed significantly to improving the quality of educational programs offered by institutions rural areas. In this increasingly varying technologically advanced world, educators must cope with the inventions and advancements to provide to the students of this generation. With the help of ICT, one can generate awareness amongst students apart from augmenting their knowledge level in different aspects. Education is one of the notable sectors that is affected by the pandemic. The world is after ICT tools like remote meeting applications, online exams, Virtual Reality, Augmented Reality, etc., to improve the quality of education. Information communications technology has become an integral part of our life, and it is one of the necessities of the modern education system. However, teachers have a mixed opinion to adopt ICT or integrate Virtual Reality or Augmented reality in their routine. Several pieces of research have been carried out to highlight the significance of the use of ICT, VR, or AR tools in education. At the same time, it is difficult for the students in rural areas to acquaint themselves with the technology. So, it is necessary to enhance the usage of advanced tools to increase the outcome the teachers must agree and welcome the integration of Virtual Reality and Augmented reality to enhance the quality of education. A key benefit of using VR in education is that you learn through experience. VR allows us to bring 2D objects to life and makes visualization a reality, enabling us to experience real scenarios or fabricated experiences over and over, and learn in an immersive way.

Keywords: ICT, ICT Tools, Educational inequality, Rural Children, Virtual Reality (VR), VR for education.

Introduction

Although education is a fundamental human right for global citizens, educational inequality still exists within and among countries. Still today, many students struggle to access and receive quality education. Therefore, the value of using immersive technology to increase social competence and perceived social support for children who live in remote areas of the world, reduce inequality, and improve the quality of education requires much attention to address the lacuna between urban and rural education systems. Based on three representative pedagogies (Pedagogy of Technology, Play-based Learning, and Traditional Pedagogy), we designed three social competence educational approaches – virtual reality (VR) assisted social competence education, Lego social competence education, and traditional classroom learning – and applied them to interventions in two rural schools in Southwest China. Our results showed that VR and Lego social competence education prompted children's social competence and perceived social support with elementary school children [1]. Furthermore, VR social competence education resulted in substantially greater social competencies and subjective sense of social support than

traditional classroom learning with middle school children. The results suggest that VR-assisted social competence education could be a potential tool to reduce educational inequalities in underdeveloped countries and regions.

The Concept of Social Competence

The concept of *social competence* refers to an individual's ability to appropriately engage in social occasions and develop meaningful interactions with others. It usually incorporates additional components, such as social communication, social interaction, and social inference. Social competence manifests in a child's emotions, behaviors, and ability to interact with others. The development of social competence is essential for future functioning in society, emotional adjustment, and behavioral management. For example, children who get along with others are more likely to rate themselves as happier and have better academic performance [2]. Socially competent children are also more likely to grow into adults with better health and adults with appropriate social skills gain more prosperous reciprocal interpersonal relationships and function better in society.

A. Current Status of Rural Children and the Importance of Social Competence Education

The global rural population is now close to 3.4 billion. Therefore, rural children's educational development is vital for global human sustainability. Growing evidence suggests that a higher quality of education positively influences children's social competence development. For instance, research has indicated that children from disadvantaged rural regions who experience higher levels of classroom learning have better social skills and fewer behavior problems than children who have not been provided with the same. Thus, it is essential to ensure that as many children as possible can obtain quality social competence education, which can boost their chances for future success and reduce inequality in underdeveloped rural regions [3].

Social Competence Education (SCE) is the concept of teaching particular social skills for students' development, future success, and social well-being. It has also been used in various pedagogies to train rural children's social skills at school. Here we review the most popular and widely used SCE pedagogies from previous and ongoing studies, categorizing them into three categories: the traditional pedagogy - traditional classroom learning; the student-centered pedagogy - play-based learning and a novel pedagogy - the pedagogy of technology (i.e., virtual reality).

B. SCE-related pedagogies

1. Traditional Classroom Learning

It is a highly teacher-centered activity. The classroom usually consists of rows of desks and chairs, allowing students to easily observe and listen to the teacher and watch PowerPoint slides or transparencies. Many schools in rural areas are small and geographically isolated, with inadequate infrastructure, limited educational offerings, and continuous student absence. Therefore, over the past decades, traditional classroom

learning has been employed as the primary approach in many rural schools. It can be effective despite being seen as rigorous and unprogressive. For example, research has demonstrated that students learning in a conventional setting may have higher social skills scores than those in an online environment [4].

2. Play-based Learning

It is a student-centered pedagogy that highlights learning through play as a valuable method for a child's development of social and emotional skills. As a representative of play-based learning, Lego playing has provided a practical approach to encouraging children's genuine interest in strategic play and motivating their socio-behavioral improvement by embedding social interactions through its construction activities. Research has illustrated that Lego may have a powerful potential to engage children and young adults in interactive and collaborative activities. Also, Lego has been harnessed globally to support many rural regions' educational sustainability and to help children's social skills education. However, although many practitioners have endorsed that play-based learning is a practical pedagogy that benefits children's learning, students might be distracted by it more than what they can gain from its learning activities [4].

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C. Deepening Understanding through Experiential Learning

For years, teachers have provided students field trip opportunities to deepen the learning experience. Moreover, field trips tend to be limited to the local area of the school. Experiential learning through AR/VR serves as an extension to curriculum and encourages students to connect learning with real-world situations and natural phenomena [5]. At Taylorville High School, where AR/VR lessons for Social Studies are being implemented, a survey showed 87% of 9th, 10th, and 11th graders using zSpace confidently felt that AR/VR created a positive learning experience, with 89% of them reporting excellent quality and flow of AR/VR lesson content. Schools in rural communities often face obstacles to providing equitable learning experiences for their students as a result of underfunding in rural schools and districts, poor infrastructure (e.g., slow or no Internet),

and/or less access to technology and professional development to integrate technology for teachers [7]. Barriers to equitable learning across the country - AR/VR helps level that playing field. Using AR/VR, students far away from bodies of water can still study the causes and effects of beach and river erosion, global water distribution and the water cycle, as well as fish structure and function. With content ranging from microscopic (e.g., atoms and cells) to macroscopic (e.g., planets and stars), the possibilities with AR/VR are virtually endless and bring great value to rural students.

Impacts of VR System in Education

A. VR - Assisted Social Competence Education

The main benefit of using VR as a social competence education tool is the possibility of displaying real-life social situations while maintaining control over what is happening. VR can provide simulated scenarios with the exact physical and behavioral mechanism as users' real-life environment, supporting increased standardizations of procedures. When conducting an intervention in a VR scenario, it is possible to create interactive social situations and manipulate all the presented variables simultaneously. Sophisticated VR technology offers a high level of interactivity with stimulating environments, which can motivate children to learn and practice social skills. For example, VR interventions can combine delivering social knowledge, emotional regulation, social interaction, and attention practice, while allowing students to practice social skills in a multi-sensorial, safe, realistic simulated, controllable, and interactive setting.

With the rapid development of VR education, VR-assisted SCE has emerged with related social support programs that may have the potential to help students develop social competence traits for today's world [6]. Research also indicates that VR-based social competence training is as effective for the general population as for special education samples, and most studies related to VR-assisted SCE have focused on special education and clinical interventions. Investigating VR-assisted SCE in mainstream education used VR as an educational training tool to enhance learners' competence in behavioral health and motivational interviewing skills.

B. VR in Rural Areas

The Indian Institute of Technology-Madras (IIT Madras) researchers are developing an AR/VR-enabled (Augmented reality/Virtual Reality) learning for schools in rural areas. The researchers are using digital technologies to develop teaching-learning models for the secondary-school subjects. The initiative's goal is to develop VR-enabled immersive and experiential environments where students get opportunities to learn social science, history, sciences and languages. Through AR/VR, the world-building, digital storytelling and games, the learning process becomes efficient helping students prepare even better [7]. By developing pedagogic tools using AR/VR technology, the project could potentially revolutionize education in rural areas by enabling virtual access and mobility through portable platforms.

C. VR system as a substitute for school laboratories

Rather than building biology, chemical, and physics laboratories, a computer laboratory equipped with VR system can replace them all. This is because VR system can generate various environments virtually, including all school laboratories [8]. Besides replacing standard functionality of those school laboratories, VR system can also add a new functionality to each laboratory. For example in standard biology laboratory, a student observes cells using a microscope, with this method a student can only observe the cells in flat visual or 2D visual. However, using VR system a student can virtually becomes smaller as little as a cell and walk through the observed cells, observing cells from the inside in full 3D visual. The use of VR system to replace school laboratories can also cut school expenditures. Besides cutting the initial cost of building all those laboratories, annual expenses can also be reduced because there will be no cost for disposable lab items such as chemical substances used in chemical laboratory – all experiments are done in virtual environment with virtual items.

D. VR system supports active learning method

Active learning is a method where a student performs certain actions according to what he/she is currently learning. It is totally different with passive traditional classes where students come to class, sit down, listen to their teacher, watch slides, or read their book. VR system can reach the 90% level by allowing the students to simulate the real experience by themselves[9]. Using VR system, students can interact with their learning subject and make their own conclusions based on actions they do in the overall learning process.



Fig 1: VR Device for Prototype Implementation

It is also possible to design VR system where future learning conditions are made from students' past conclusions, this will allow each student to have his/her own current learning condition based on what he/she has learned before, thus generating a specific personal experience for each of them. To maintain an adequate immersion level, minimum devices required are a head-mounted display (HMD), a data glove, a head tracker and a hand tracker. We use eMagin Z800 [1] for the HMD, which uses a separate OLED displays and comes with an integrated head tracker, and P5 [8] for the data glove, which is also

comes with an integrated hand tracker. It is a good thing that both the HMD and the data glove have trackers integrated into them, this will save us some money since most trackers are available with high prices. Unfortunately, the minus point of P5 is its tracker which uses an infrared system so the precision level is not so good. As addition, we will also use a joystick to move our character around. All the devices used in this prototype implementation can be seen in Fig 3[10].

Conclusion

VR system delivers positive impacts for education where it can deliver a fun yet informative edutainment, substitute school equipments and facilities, substitute destructive experiments, support active learning and support constructivism. Those positive impacts also support the fact that VR system is very suitable for education in rural areas where schools there are lack of equipments and facilities needed by their students. By bringing VR system for education in rural areas, students there can have equal education level with students in big cities. It is also possible to make a low cost VR system without sacrificing much of its immersion level[10]. Using various sub-engines available in the internet and low cost VR devices we can develop and run VR system suitable for education.

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WOMEN EMPOWERMENT IN INDIA AND ITS IMPORTANCE

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Abstract

Entrepreneurs play a crucial role in any economy. The economic progress of any country or society will be impossible unless female population is encouraged to engage in entrepreneurship. Entrepreneurs are those who come out with innovative ideas which play a significant role in the growth of a business. Women empowerment refers to the practice of making women independent, so that they can make their own decisions as well as handle their lives without any familial or societal restrictions. Women are known for delivering multiple roles effortlessly. Women are empowered when they have an unrestricted access to education, training, profession to help them improve their position. In a male chauvinistic society, they were confined to four walls. In the present scenario, due to changing trends in industrial sector because of globalisation, rural women empowerment is given more attention to flourish rural entrepreneurship. Rural women entrepreneurs are not only participating in the upliftment of rural economy but also generating rural employment. It reveals that the major challenges faced by the rural women entrepreneurs are competition from urban markets, lack of family support, difficulty in availing Government grants, marketing issue, shortage of resources, lack of transportation, lack of entrepreneurship skill, and lack of training. Despite of all these difficulties, there is a gradual increase in the recognition of rural women entrepreneurs in India. A proper analysis of rural locations and determining the strengths favouring rural women entrepreneurs would encourage more young people to shop in rural areas. Women entrepreneurship must be moulded properly with entrepreneurial traits and skills to meet the changes in trends, challenges in global markets and also be competent enough to continue and struggle for excellence in the entrepreneurial arena. This paper brings out the role played by women entrepreneurs in rural area and their importance in India.

Keywords: Entrepreneurship, Empowerment, Rural women entrepreneurs, Male chauvinism, Economic progress.

Introduction

An entrepreneur is a person who is motivated to satisfy a high need for achievement in innovative and creative activities. This creative behaviour and innovative spirit forms a process of an endless chain and is termed as entrepreneurship. Entrepreneurship acts as a crucial pillar for the economic prosperity of a nation, as it leads to generation of employment, contribution to national income, rural development, industrialisation, technological development, export promotion, etc. For, decades, we have been witnessing changes that have been taken place in terms of roles and statuses among human beings. There have been an enormous evolution in the status of women in past two decades. For centuries, women haven't been provided with proper education from

the initial stage and empowerment of women has been just limited to mere participation in the formal system. Women's development has been considered the key to the overall sustainable development of a nation. A female who plays an intriguing role by frequently interacting and actively adjusting herself with socio-economic, financial and support spheres in society has been defined as woman entrepreneur. Women plays a holistic role in rural empowerment. Rural empowerment can be achieved through rural women entrepreneurs to eliminate social illness like poverty, unemployment and food – insecurity.

As of 2022, in the Indian MSME sector, women-led businesses are about 20.37% and contribute around 23.3% of the labour force. There are 13.5 to 15.7 million businesses owned by women that provide employment to 22-27 million people. According to statistics women in India 2010, proportion of female main workers to total population in percentage is 16.65 in rural areas and 9.42 in urban areas this shows overall less contribution of women in work but more percentage of women workers in rural areas.

Objectives of the Study:

- To depict the current status of rural women entrepreneurship in India.
- To discuss the development of women through entrepreneurship.
- To study the government initiatives to boost women entrepreneurship.

Need for Women Empowerment in India

The need for women's empowerment has been felt because of the status women have in society since the beginning. There is a need to redefine the status of women in the society. A change can be brought through the constitution and supportive legislations. The Constitution of India gives women status equal to men. There have been attempts to reserve seats for women in political bodies. Women have the ability to judge for themselves and take right decisions. However, merely allowing for reservation of women in Panchayat and legislative bodies without empowering women individually falls short of actual emancipation. Women have been excluded from centers of power as a result of systematic conspiracy by patriarchal thought most common in Indian Khap Panchayat that has relegated women to an allotted and confined space. A reorientation of our attitudes towards women has to be carefully guided for their real liberation from the patriarchal domination

The impoverished and illiterate status of most women in society is due to their inability to attain sufficient levels of economic power. To sustain any level of empowerment women have to be educated so that they are aware of their rights and privileges in the modern society. It is only when they become aware of their status in society that they will be able to take full advantage of the concessions offered to them as a corrective measure. Another factor which stresses women empowerment in India is pay disparity. Women in India have not been paid equivalent to their male counterparts in various sectors. According to a study, women in India with same years of experience and qualification are paid 20% less than their male counterparts having same credentials.

Women empowerment has to begin with women's active participation in both urban and rural areas. Unless women throw off the shackles that ignore their talent, skill and spirit women through education and economic self-reliance, women cannot be empowered. Unless they are empowered to take a decisive part in the social, political and economic life of the country, the very development of the country will be lopsided.

Importance of Women Empowerment in India:

Women are generally recognized as home makers with little to do with economy or commerce. In Modern India, more and more women are taking up entrepreneurial activity especially in medium and small scale enterprises. Even women are receiving education, they face the prospect of unemployment. In this background, self-employment has been regarded as a cure to generate income. The Planning commission as well as the Indian government recognizes the need for women to be part of the mainstream of economic development. Rural Women empowerment through entrepreneurship has been seen as an effective strategy to solve the problems of rural poverty.

Women are successful not only in the fields of law, science, medical, aeronautics and space exploration and even in the defence sector, but now they have been showing their potential even in business and industry. Women entrepreneurs are performing excellently and exceeding market expectations. They have proved that they are no less than men in the efficiency, hard work and intelligence. The importance of women entrepreneurs may be ascertained from the study of the functions they perform. These functions are,

- Exploring aspects for starting new business ventures.
- Undertaking risks and handling economic uncertainties.
- Introduction of innovations.
- Function of co-ordination in administration and control.
- Routine supervision.

Empowering women in India through equal opportunities would allow them to contribute to the economy as productive citizens. With higher literacy rates and equal pay for equal work, women will be able to thrive economically and rise out of poverty. In this era of digitalization, globalization, and start-up booms, India has bright prospects in women's entrepreneurship. Women give much importance to communicational, networking and organizational skills in their journey of entrepreneurship. Furthermore, they are good at maintaining a work balance in life. An ideal woman entrepreneur can create a livelihood for at least 10 more women. In the last two decades, Indian women are becoming more and more economically independent in a gradual manner.

Statistics on Women Entrepreneurship in India:

- In India, 58.5 million entrepreneurs, nearly 14% are women.
- The businesses that are women-owned in India provide employment for 45 million.
- Only 2% of the start-up funding went to a woman founder in the year 2017.
- According to a recent report, there are currently about 13.5 to 15.7 million women-owned enterprises in India. Although this number is huge, it only represents 20% of all enterprises.
- Women-owned enterprises are increasing. Over the past decade, women-owned enterprises increased from **14 to 20%**, as per government sources.
- 8% of the women are the operators of small rural non-farm local businesses.
- 38% of the women are involved in rural entrepreneurship solely.
- 16% of the women are rural entrepreneurs (agripreneurship).

Evolution of Women Entrepreneur in India:

Ancient period to Modern period 1950s

In this period, women entrepreneurs fall into two categories. One set to create and manage entrepreneurial activity where there was no income creating male in the family. The women gave up her education and other aspirations and became the income generating member of the family. The second category was the one who lived by social rules and took charge of business in where husband had left. However, in both category, emergence of women entrepreneurs are few. Either the business is taken away by relatives or they become dependent on others.

1970s

This was the decade where women started entering into work force as professionals. They were prepared to maintain balance between their professional and personal life, taking up household responsibilities and managing their occupation well. The decade of 1970s saw the emergence of second wave of feminism and feminist voices against problems of gender disparity, sexual assault, divorce laws, dowry, unequal political representation of women and domestic violence faced by women. This time period witnessed women demanding for their rights and the concept of women entrepreneurship came into being. One of the remarkable events happened with the setting up of Biocon, which is Indian biopharmaceutical company headed by Kiran Mazumdar Shaw. There was significant rise in women workforce, women entrepreneurs during this decade. Crime rate against women increased and this time period witnessed working women, balancing their personal and professional spheres well.

1980s

This decade witnessed new age technology and emphasis on professional education training. One of the most remarkable events of this decade was work done by Mary Roy, a women activist who championed a lawsuit demanding equal rights to

a girl child in her parent's property as a male counterpart. Despite competition in marketplace, Vandana Luthra Curls and Curves (VLCC), which is one of the largest wellness enterprises headed by Vandana Luthra, currently spread across fifteen countries.

1990s

Women in this decade has gain confidence and became more goal driven. Women in this era were capable, competent, confident, assertive. They knew what choices to make as they were clear to what they wanted to do. Women entered as entrepreneurs to expand their family business while others wanted to do something on their own, to create their own niche, and some started to finish their family debts. Ela Bhatt, founder of SEWA, played a major role in empowering employment among rural women in Bihar. Recognising her excellent work in the field of microfinance and labour, she has been awarded with the Padmashri, the Padmabhushan as well as the Ramon Magsaysay Award.

2000s

This is the era of telecom, IT and financial institutions. Women expertise in all these industries. Women have broken through barriers by finding success with start-ups or beginning on a road to become independent consultants. With the spread of education and awareness, women shifted to non-traditional higher level professional activities. Even the government has laid some emphasis on the need for conducting special entrepreneurial training programs for women to start their new ventures.

Obstacles Faced by Rural Women Entrepreneurs:

- To be women and to do something on their own becomes quite difficult because of lack of access to funds as women do not process any tangibles securities.
- Self-motivation attitude to take up risk and behaviour towards the business society, family support, financial assistance from public and private institutions and also environmental not suitable for women to establish business unit.
- The family structure is generally male dominated in India; hence the male members think it a big risk financing the ventures run by women. Greatest demerit to women entrepreneurs is that they are women.
- The financial institutions are doubtful about the abilities of women entrepreneur. They thought funding to women as higher risk comparison to funding to men. That's why bankers put unreasonable securities to get loan to women entrepreneurs.
- Family obligations also the biggest barrier for women entrepreneurs from becoming successful entrepreneurs. They have lots of work like children care, daily home duties, old family member's work etc. Some women entrepreneurs can handle both of duties.

- In current scenario, there is male-female competition in every field and this is also a hurdle for women entrepreneur. Women want to prove themselves and they have ability but also lack support and organizational skill compared to male.
- In India, illiteracy is the root cause of socio-economic barriers. Due to lack of qualitative education, women are not aware of business, technology and market knowledge.
- Women mobility in India is highly limited and has become a problem due to traditional values and inability to drive vehicles. Moving alone and asking for a room to stay out in the night for business purposes are still looked upon with suspicious eyes.

Women Entrepreneur Associations in India:

- FIWE- Federation of Indian Women Entrepreneurs
- CWEI- Consortium of Women Entrepreneurs
- ALEA- Association of Lady Entrepreneurs of Andhra Pradesh
- AWEK Association of Women Entrepreneurs of Karnataka
- SEWA- Self-Employed Women's Association
- WEPA- Women Entrepreneurs Promotion Association
- MOOWE- The Marketing Organization of Women Enterprises
- BMUS- Bihar Mahila Udyog Sangh
- SAARC Chamber Women Entrepreneurship Council
- WEAT- Women Entrepreneurs Association of Tamil Nadu
- TSS- Tie Stree Shakti
- WEC- Women Empowerment Corporation
- MAWE-Mahakaushal Association of Woman Entrepreneurs

Policies and Schemes for Women Entrepreneurs in India:

Overnment of India has implemented many programs for the empowerment of women.

Many of these programs are for providing employment, education, health accessible to the masses. These programs have been especially incorporated keeping in mind the needs and conditions of Indian women, to ensure their participation. Some of these programs are – MNREGA (Mahatma Gandhi National Rural Employment Guarantee Scheme), Sarva Siksha Abhiyaan, janani surakshyojana (reduce maternal mortality) etc. The Ministry of Women and Child Development, Government of India has implemented various new schemes specifically aimed at the empowerment of Indian women. Some of those significant schemes are given below

1) Beti Bachao Beti Padhao Scheme

The scheme focuses on eradicating female infanticide and also on the education of girl child.

It aims for changing the mindset of people towards a girl, by providing financial support and also by strict enforcement of laws and acts.

2) Women Helpline Scheme

This scheme aims for providing 24 hours emergency support help line for women who are subjected to any kind of violence or crime. The scheme provides a universal emergency number -181 across the country for women in distress. The number also provides information on women related schemes in the country.

3) Ujjawala Scheme

A scheme aiming at the rescue of women affected by trafficking and commercial sexual exploitation and their rehabilitation and welfare.

4) Support to Training and Employment Programme for Women (STEP)

The STEP scheme aims at imparting skills to women, making them employable as well as to become self employed. Various sectors like agriculture, horticulture, handloom, tailoring and fisheries etc are covered under the scheme.

5) Mahila Shakti Kendras

The scheme focuses on empowering rural women through community participation.

Community volunteers like students, professional etc will teach the rural women about their rights and welfare schemes.

6) Reservation for Women in Panchayati Raj Institutions

In 2009 the Union Cabinet of the Government of India instituted 50% reservation for the women in Panchayati Raj Institutions. It is aimed mainly at improving the social status of women in rural India. The states of Bihar, Jharkhand, Orissa, and Andhra Pradesh among various others have majority of women as elected head of gram panchayats overnment of India has implemented many programs for the empowerment of women. Many of these programs are for providing employment, education, health accessible to the masses. These programs have been especially incorporated keeping in mind the needs and conditions of Indian women, to ensure their participation. Some of these programs are – MNREGA (Mahatma Gandhi National Rural Employment Guarantee Scheme), Sarva Siksha Abhiyaan, janani suraksh yojana (reduce maternal mortality) etc. The Ministry of Women and Child Development, Government of India has implemented various new schemes specifically aimed at the empowerment of Indian women. Some of those significant schemes are given below

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The Government of India has implemented many programs for the empowerment of women. Many of these programs are for providing employment, education, health accessible to the masses. These programs have been especially incorporated keeping in mind the needs and conditions of Indian women to ensure their participation in economic activities. Some of these programs are – MNREGA (Mahatma Gandhi National Rural Employment Guarantee Scheme), Sarva Siksha Abhiyaan, Janani Suraksh Yojana (reduce maternal mortality) etc. The Ministry of Women and Child Development, Government of India has implemented various new schemes specifically aimed at the empowerment of Indian women.

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Conclusion

Women play an imperative role in making a nation progressive and guide it towards development. The education of women is the most powerful tool for uplifting a woman and it brings reduction in inequality in gender. For rural women empowerment through entrepreneurship, there is a need for multi-dimensional approach in business. Present situation is much better than past situation in India. In present India, due to globalisation, women play numerous roles and manage those roles efficiently in both personal and professional life. Despite progress toward women empowerment, there is still a long way to go. Making women aware of their potential has now become a need of the hour and government plays a crucial role in promoting women empowerment. Women have the potential and determination to setup, uphold and supervise their own enterprise in a systematic manner, appropriate support and encouragement from society, family, government can make these women entrepreneurs a part of mainstream of national economy and they can contribute to the economic progress of India.

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INFLUENCE OF ICT TOOLS IN E-LEARNING

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Abstract

Learning occurs when people communicate their expertise to one another. The impact of learning is effective in students when the information flow is in a interesting way. ICT tools can also help in making students attentive and interested .These factors urge the educational system to integrate information and communication technologies into the classroom. Due to the influence of technology, more classrooms today are using computers to present content. Over time, a number of platforms and technologies have been developed and upgraded to make ICT teaching and learning more engaging. Innovative ICT tools that support instructors' integration of their subject matter for teaching-learning and assessment are employed in the classroom. On both online and offline platforms, there are many subject-specific free ICT tools that can be utilised for teaching, learning, and assessment. Teachers utilises them to promote engagement and include students in the learning process in their classes. Teachers can utilises ICT to encourage group projects and creativity in a variety of topic areas. The purpose of this study is to demonstrate how effective ICT tools are at enhancing student learning, retention, and attitudes. As a result, this review paper addresses the functions of ICTs as well as their promises, constraints, and major integration issues with educational systems.

Keywords: Classroom, Assessment, Instructor, Learning Process, Innovative ICT Tools, Creativity.

Introduction:

Information and communication technologies (ICTs) have a stronghold in educational settings in today's globalised society. Their use has encouraged qualitative changes in the way that education is done, particularly when it comes to audio-visual presentation of the material. Even though there has been significant discussion about alternative teaching strategies for college students, lectures are probably not going anywhere. Many lectures use written content that is shown on a chalkboard, whiteboard, or through transparencies on an overhead projector to highlight key topics. But in the last ten years, a different approach to integrating visual content into lectures—namely, projecting data straight from a computer onto a screen—has become more popular. Actually, a lot of colleges and institutions have classrooms that are outfitted with the equipment required for any teacher to present knowledge in this way. Additionally, certain administrative bodies are pressuring the adoption of additional technologies by the instructors for innovative teaching and learning.

Information Communication Technology (ICT) tools include digital tools like computers, laptops, printers, scanners, software, data projectors, and interactive teaching boxes.

Teaching and learning are two different processes. Teaching involves interacting with students to help them understand and put concepts and procedures into practise, whereas learning is the process of acquiring knowledge or skills through reading, doing, or being taught.

Visual information is any information conveyed through one or more visual medium, either with or without sound. Visual information is typically defined as still photography, motion picture photography, video or audio recording, graphic arts, visual aids, models, display, visual presentation services, and support procedures.

Online platforms are digital services that make use of the Internet to enable communication between two or more distinct but related users.

E learning is a learning program that makes use of an information network- such as the internet, an intranet (LAN) or extranet (WAN) whether wholly or in part, for course delivery, interaction and/or facilitation. Web-based learning is a subset of e learning and refers to learning using a internet browser such as the moodle, blackboard or internet explorer.

Blended Learning refers to learning models that combines the face-to-face classroom practice with e-learning solutions. For example, a teacher may facilitate student learning in class contact and uses the moodle (modular oriented dynamic learning environment) to facilitate out of class learning.

Constructivism is a paradigm of learning that assumes learning as a process individuals "construct" meaning or new knowledge based on their prior knowledge and experience (Johassen, 1991). Educators also call it the emerging pedagogy in contrast to the long existing behaviourism view of learning.

Learner- centred learning environment is a learning environment that pays attention to knowledge, skills, attitudes, and beliefs that learners bring with them to the learning process where its impetus is derived from a paradigm of learning called constructivism. In the context of this article, it means students personal engagement to the learning task using the computer and or the internet connection.

ICT Education Benefits

The utilization of Information and Communication Technology (ICT) is leading to significant transformations in both student learning and teaching approaches. Over the past two decades, schools in the Western World have made substantial investments in ICT infrastructures, enabling students to use computers more frequently and for a broader spectrum of applications. Various studies have demonstrated that students who make use of ICT facilities tend to exhibit higher learning gains compared to their counterparts who do not use them.

The integration of Information and Communication Technologies (ICTs) in education has brought about a shift in learning approaches. There is a widespread belief that incorporating ICTs in education fosters a more constructivist learning environment, encouraging increased activity and greater responsibility among students. Consequently, the role of the teacher shifts from being a mere transmitter of knowledge to a supporter, advisor, and coach for students.

The gradual progression of using computers in education evolves from learning about computers to learning how to use computers, and eventually to learning with computers.

ICTs impact on education

Firstly, we should examine student outcomes, which include improved scores in school subjects and the acquisition of new skills crucial for a developing economy. Secondly, it is essential to take into account teacher and classroom outcomes, such as the enhancement of teachers' technology skills, knowledge of innovative pedagogic approaches, and improved attitudes towards teaching. Lastly, other outcomes worth considering involve an increase in innovativeness within schools and improved access to adult education and literacy for community members. The table below provides a comparison between traditional pedagogy and the emerging pedagogy of constructivism, specifically tailored to leverage ICT (especially computers and the internet) to enhance student engagement in learning. The term "emerging pedagogy" refers to the fresh perspective of constructivist learning when contrasted with the long-standing behaviorist view of learning.

Active learning: ICT-enhanced learning harnesses tools for information examination, calculation, and analysis, providing a platform for students to inquire, analyze, and construct new knowledge. Learners are encouraged to engage with real-life problems in-depth, making the learning process more relevant and less abstract, compared to traditional pedagogy focused on memorization and rote learning. As a result, ICT-enhanced learning fosters increased learner engagement and allows for 'just-in-time' learning, where students choose what to learn when they need it.

Collaborative learning: ICT-supported learning facilitates interaction and cooperation among students, teachers, and experts, regardless of their location. It not only models real-world interactions but also offers opportunities to collaborate with students from diverse cultures, thereby enhancing learners' teaming, communication skills, and global awareness. This approach mirrors lifelong learning by expanding the learning network to include not only peers but also mentors and experts from various fields.

Creative learning: ICT-supported learning encourages students to manipulate existing information and create real-world products instead of simply duplicating received information.

Integrative learning: ICT-enhanced learning fosters a thematic integrative approach to teaching and learning. This method eliminates artificial barriers between different disciplines and between theory and practice, which are often characteristic of traditional approaches.

Evaluative learning: - ICT-enhanced learning is student-directed and diagnostic. Unlike static, text or print-based education, ICT-enhanced learning recognizes the presence of different learning pathways to explore and discover rather than merely listen and remember.

In building a new society, the increasing presence of ICTs in all aspects of life - work, learning, leisure, and health - necessitates the acquisition of new skills. The upcoming generation must become proficient in utilizing ICTs as they offer exceptional tools for

information processing. Access to computers and networks while in school becomes crucial for developing these competencies

Given that schools are information and knowledge repositories, incorporating ICT as a fundamental information management tool should be a priority at all levels of the educational system, from classrooms to ministries.

To achieve quality learning outcomes, schools must undertake a profound revision of current teaching practices and resources. This is essential to create effective learning environments that foster lifelong learning skills and habits in students. Embracing ICTs as versatile and powerful tools can greatly contribute to this goal, making their presence in every classroom, library, and teacher room necessary. However, despite the promises and potential, so far, ICTs have not yet led to significant large-scale improvements in learning outcomes. Nonetheless, the prospects for such advancements remain promising.

ICT in Indian Classroom Teaching

The integration of technology in the classroom entails utilizing various technological resources such as computers, smartphones, tablets, digital cameras, social media platforms, software applications, and the internet to foster a deeper understanding of the subject matter among students. With the increasing availability of mobile devices, internet connectivity, and digital infrastructure throughout the country, Indian teachers are becoming more adept at incorporating technology into their teaching practices. They are moving beyond traditional linear, text-based learning methods and adopting more interactive and meaningful approaches to engage their students.

A study conducted by the Central Square Foundation on the adoption of EdTech by Indian teachers revealed a high willingness to use technology regardless of the school type. Computers and mobile phones were the most commonly used digital devices, with adoption rates of 94% and 86%, respectively. The role of technology has evolved from mere computer setups in classrooms to a more integrated approach, where technology is incorporated into the teaching and assessment of concepts. EdTech provides educators with effective tools to cater to different learning styles and assess students' understanding through various methods. This shift also encourages students to explore technology-related platforms and collaborate with one another, thereby making the learning process more student-driven.

Lesson Plan

Teachers are increasingly leveraging a variety of technological tools and platforms to create tailored lessons that cater to the diverse learning levels of students in their classrooms. The availability of numerous app and web-based resources, both from public and private sources, has empowered teachers to design lessons enriched with multimedia content.

National platforms like DIKSHA offer a vast array of multimedia resources, such as images, audio, and videos, enabling teachers to access a pool of content that aligns with the syllabus. Moreover, some platforms provide teachers with pre-designed, syllabus-aligned

lesson plans that are ready for immediate use. These plans often include resources like videos, worksheets, and quizzes.

Additionally, teachers are finding support through platforms that facilitate collaboration with others to co-create lesson plans. This collaboration allows them to receive real-time feedback on their ideas and plans, thereby making the teacher's life a little easier in terms of lesson preparation and execution. Teachers are also exploring platforms providing them with differential lesson plans that are automatically created according to student's progress data and learning levels.

Lesson Delivery

For lesson delivery, the availability of platforms like SWAYAM Prabha is empowering teachers to utilize pre-set content and act as instructors in the classroom. WhatsApp has emerged as a potential platform for delivering lessons to students through text-based services. Google Classroom and Zoom are widely used platforms that enable teachers to deliver content through live tutoring and virtual classrooms. These free web services designed for schools aid in creating, distributing, and grading assignments on a large scale. Moreover, students can ask questions and receive answers on the same platforms, making them highly popular for remote learning.

Such platforms have proven instrumental in helping teachers personalize the content and take on the role of coaches and guides for students. This process has facilitated teachers in simplifying and organizing their lessons while delivering them in a multimedia-rich manner.

Assessment

Technology is playing a crucial role in customizing assessments for the classroom as needed. With the presence of various platforms that check students' responses and provide performance summaries and feedback, teachers are finding it easier to create engaging assessments. They are utilizing multiple platforms that facilitate the assignment and correction of both objective and text-based assessments.

For instance, platforms like Mindspark12, a computer-based adaptive learning program, are proving beneficial in enhancing students' skills in Maths and English. Additionally, the DIKSHA platform offers valuable resources for assessments, including worksheets and question banks.

To make assessments more appealing and less overwhelming for students, teachers are turning to gamified versions. Kahoot13, one such platform, is a game-based learning platform that aids in formative assessment and provides insights into the class's progress.

These platforms are significantly assisting teachers in creating both subjective and objective assessments in interactive formats. Moreover, they provide real-time student performance data at a deeper level, including identifying instances when students are guessing and uncovering key misconceptions.

Conclusion

Indian teachers are embracing various EdTech integrations in their classroom teaching to explore the potential for improving students' learning outcomes. In the present time, technology is considered a vital tool that enables teachers to deliver effective classroom instruction. These technological advancements are empowering teachers to enhance existing pedagogical practices in innovative ways, enabling the creation and dissemination of high-quality lesson plans. As a result, the role of teachers is shifting from being mere instructors to becoming guides that support their students' learning journeys. However, certain challenges hinder teachers from fully harnessing the potential of technology, including infrastructural limitations, lack of digital content, time constraints, non-teaching responsibilities, and the need for contextualized resources. To address these challenges, the Indian government must tackle issues like poor connectivity and inadequate infrastructure. Encouraging blended forms of training that combine online and offline resources would pave the way for sustainable models of continuous teacher development. Furthermore, the availability of mobile-based applications offering resources for teachers would enhance easy access to these tools. A strong foundation for investment in educational technology lies in providing teachers with sustained technical and pedagogical support through comprehensive training programs. To achieve this, collaboration among teachers, policymakers, administrators, and other stakeholders is crucial in the decision-making, design, and implementation of professional development programs. By fostering a positive perception of technology among teachers and encouraging its optimization in the classroom, education can be enriched and further empowered by these advancements.

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PERSPECTIVE OF ICT TOOLS IN EDUCATION: ICT TOOLS FOR MODERN EDUCATION

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Abstract

The present era is the era of technology, with information and communication technology (ICT) being the most important of the technologies. The influence of ICT on the teaching and learning process has become very important as it facilitates the teaching process, creates a favorable learning environment and helps learners to develop creative thinking and self-confidence. It is a force that plays a vital role in all aspects of human life. It integrates the world and changes the entire global economic, social, political and educational landscape. Global growth and development as a whole depend to a large extent on the skilled workforce achieved through quality education. ICT is an educational product, but it is mainly used by business subjects. It gradually transformed education from traditional to higher education, influencing teaching methods, learning methods, scientific research and information gathering. Therefore, this article suggests that the effective introduction of ICT into the teaching process and modern tools for blended learning and teaching are indispensable means to improve it, to develop students, teachers and end-users and to explore potential for future growth and development.

Keywords: *ICT, Teaching, Learning, Education, Tools*

Introduction

IT and ICTs are very often interchangeably used in the context of modern technology infrastructure. ICT is a broad and comprehensive term, which comprises information technology and communication technology. Information technology includes radio, television, computer and internet, teleconferencing and mobile technology. All these information technologies are powered by mainly two types of communication technologies. These are satellite based communication and terrestrial based communication. Satellite based communication is the communication, which takes place between sender and receiver through a communication satellite whereas terrestrial based communication is the communication, which takes place through a network of transmitters spread across a geographical area, a country, or a state. This type of communication is used in the transmission of radio and television in India. However, with the launch of a series of satellites by Indian Space Research Organization (ISRO), satellite based communication is being used for telecommunication.

Ict for Teaching and Learning

The ICTs are needed at school and college level for the following activities :

- Teaching-learning
- Diagnostic Testing and Remedial teaching
- Evaluation activities
- Psychological analysis of learners
- Development of reasoning and thinking abilities among students
- Instructional material development

1. ICT in Teaching-Learning Process

Most teachers feel comfortable in using lecture method, which is not capable of achieving various objectives of classroom instruction. **ICT** may be of great use in achieving various objectives of teaching –learning process. It provides correct information in a comprehensive manner with different examples. It helps learners to broaden their information base. **ICT** provides variety in the presentation of content, which helps learners to learn according to their own pace. It helps in better understanding, and long retention of information.

2. ICT for Diagnostic Testing and Remedial Teaching

Being a teacher, you must have experienced that there are some students who fail to understand certain concepts or retain certain information for a long time. Due to large class size, non-availability of diagnostic tests in different subjects, lack of training, resources and desire on the part of teacher, etc. teachers do not conduct diagnostic tests and provide remedial teaching. Here **ICT** can help the teachers as well as students in identifying the problem area. Tests can be made available on the website of the school and students can access them from home also. These practices can be monitored by parents also. It is not easy to organize remedial programme for individual students as problems identified may be of varied nature. For this, **ICT** can be used for developing, preparing and delivering individual Remedial Programme. These programmes may be online or off-line. The instructional materials, if designed specifically for meeting the individual needs of students, and are uploaded on the School website, would definitely benefit students. In this way, **ICT** can be used for providing remedial teaching to students.

3. ICT in Evaluation

The objective of school examination system is to assess the academic performance of students. **ICT** can be used in educational evaluation. Online tests can be used by individual student to evaluate his/ her learning. Students can instantaneously get the feedback about the status of his/ her understanding. If the answer is wrong, he/ she even can get the correct answer. Not only students, even teachers, can also use it to assess their own understanding of the subject.

4. ICT in Psychological Testing

There are individual differences. Schools do not have a trained psychologist who can assess students on some of the correlates of academic achievement. It is easy to digitalize all the psychological tests including the scoring process and evaluation. The same may be available on the website and students and teachers can use them, whenever required. Even student can use it individually and can share the results with the teacher who can help him/ her to improve his/ her academic performance. Thus ICT can be used in psychological testing also.

5. ICT for Developing Reasoning and Thinking Abilities among Students

ICT can be used in many subjects. ICT provides students a variety of instructional materials and they can choose those that suit them the best. ICT can be used for developing reasoning and thinking abilities among students belonging to different age groups. This is important in the present context as most educational institutions do not pay attention to development of reasoning and thinking abilities among students.

6. ICT for Developing Instructional Materials

At present there is a shortage of qualified and competent teachers in almost all subjects at all levels. Sometimes, instructional materials available in the print form are not of quality and updated. The text book reading is very often not enjoyable and does not help students in understanding the concepts and retaining the information. There are many teachers who are well known in different subject areas. Their lectures should be recorded in CD-ROM, or should be made available to all the users through broadcast on radio and television. It enhances the quality of instruction in the classrooms. The teacher can also use them to organize discussion after their presentation or broadcast. Teachers can even directly download those lectures. It makes teaching effective, participatory and enjoyable. Digitalized lectures can be uploaded on websites and student teachers can access them as per their needs.

Modern Tools for ICT

Information and Communications Technology plays a prominent role in student learning when only the teachers are efficient at incorporating them into curriculum . ICT has also become integral to the teaching-learning interaction, through such approaches as replacing chalkboards with interactive digital whiteboards, using students' own smartphones or other devices for learning during class time. When teachers are digitally literate and trained to use ICT, these approaches can lead to higher order thinking skills, provide creative and individualized options for students to express their understandings, and leave students better prepared to deal with ongoing technological change in society and the workplace. Survey was also conducted to identify the list of ICT Tools used by teachers frequently for Classroom Teaching-Learning . Lot of ICT tools are available for Building courses, creating exams, preparing MCQs, getting feedback from students and making assessments. Maximum of the ICT Tools are very user friendly and provide

numerous options to make it as personalized as possible, enabling the teacher to create our own contents. Students can listen to / follow the lessons once prepared by teachers and do their homework also. When ICT Tools are used by the teacher properly, they can understand, what are the struggles faced by the students, which kind of students struggle the most.

ICT Tools used for Presentations

- **Buncee** - Make Learning Fun Your creation and presentation tool.
- **Google Slides** - Work on the same presentation at the same time
- **Lesson Up** - Create fun and engaging digital lessons
- **Mentimeter** - Create graphics at an instant using students' input
- **Nearpod** - Create interactive slideshows, using questions, quizzes, images & text.
- **Peardeck** - Create beautiful interactive lessons, presentations, and assessments to engage every student .
- **Prezi** - Create an online slideshow.
- **Prowise** - Together we can create a learning environment which is more engaging and inspiring and elevate collaboration in your schools.
- **SlideShare** - Share what you know and love through presentations, info graphics, documents and more
- **Sutori** - Presentations for the classroom in a unique timeline format
- **Wooclap** -Rather than fighting smartphones, Wooclap turns them into an exceptional learning tool.

ICT Tools Used for Online Collaboration

- **Asana** - Asana is the easiest way for teams to track their work –and get results.
- **Edmodo** - The safest and easiest way for educators to connect and collaborate with students, parents, and each other.
- **Google Docs** - Work on the same document at the same time
- **Google Slides** - Work on the same presentation at the same time
- **Google Spreadsheets** - Work on the same spreadsheet at the same time
- **MeisterTask** - MeisterTask is the most intuitive task management tool on the web. Combine it with MindMeister for a complete workflow from first idea to finished project.
- **Seesaw** - Seesaw is a student-driven digital portfolio. We make it simple to get student work in one place and share with parents.

Learning Management System

LMS is a software that enables teachers to create, manage and deliver eLearning Courses. **LMS** provides an eLearning Environment and it consists of two parts. A server component which provides main functionality for creating, managing and delivering courses, sending notifications, authentication and more. A Users interface which is inside the browser used by students, teachers and administrators.

Moodle

Moodle is a most popular, flexible, free and open Source Learning Management System. This software is written in PHP and used for flipped classrooms and distance education in universities and schools. Moodle is a user friendly eLearning platform and distributed under GNU General Public License, anyone can create their online learning sites in minutes. Moodle was developed by Martin Dougiamas in the 1970s. Nowadays Moodle is used by maximum of the organizations outside of the education community such as online training, business, corporations, hospitals etc. Moodle is the World's Best LMS, because the users of Moodle grow every day, it is highly flexible, well supported, user-friendly, customizable and featurerich. Moodle enables schools and universities to offer options for flexible learning to their course from their location without any interruption. Using Moodle LMS, teachers can Build their site easily, select various activities and educational tools, include assessments, communicate with their students with video conference tools, add custom certificates and students can learn lessons from their mobile phones.

Google Classroom

Google Classroom is a free LMS tool frequently used by maximum of the teachers. Using Google Classroom, teachers can create an online classroom by submitting the Course Class details and invite students to join by sharing the class id. Using Google classroom, teachers can share the Course Plan, Course Material, eContent, videos for the lesson topic and assignment link so that students can listen to the videos shared by teachers, read the course materials, and submit the assignments. Teachers can also track the student progress and conversation between students.

Conclusion

Class technology allows teachers to experiment more in pedagogy and get frequent feedback, educate students with more fun and efficiency. Improved student learning participation, makes many boring work of teachers simple. When a teacher uses technology in class, students can have immediate access to lessons / tutorials / video assignments. Although technology in teaching and in class learning offers many advantages, there are some disadvantages of using technology. Technology allows students to disconnect from social interactions, encourage the trap in class and tasks. All students may not have equal access to online resources. But the benefits of using technology in teaching and learning prevail over the counter. The incorporation of technology in learning of teaching and class will certainly improve the student report, which is the fundamental cause of good education. Technology can be an extremely valuable tool, but it is only a tool and technology "cannot replace a teacher" and is not intended to replace the teacher. A good teacher must digitally be literally and must know the effective way to integrate technology into the curriculum so that teachers can keep the students committed. The use of technology in teaching can be frustrating and opinion, but at the end of the day, the use of technology in education can create new doors, provide new experiences, lead to new discoveries and, finally, new ways to learn and Collaborate.

WOMEN EMPOWERMENT

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Abstract

Women's empowerment is the process of enabling women to act independently for both their own interests and those of society as a whole. Women's empowerment is the process of enhancing and strengthening the social, economic, political, and legal power of women in order to ensure their equality and give them the self-assurance to assert their rights, including the freedom to live their lives with a sense of self-worth, respect, and dignity, full control over their lives both inside and outside of the home and workplace, the ability to make their own decisions, and the same rights to participate in social, religious and public activities. This Paper deals with "Women Empowerment" a burning issue all over the world. "Women empowerment" and "women equality with men" is a universal issue. Women Empowerment refers to the creation of an environment for women where they can make decisions of their own for their personal benefits as well as for the society. The ability to speak up is a right for women. Around 50% of the world's population is made up of women. Worldwide, there are a lot of unemployed women. Due to the unequal opportunities for women at work, the global economy suffers greatly. workplaces. Equally capable are men and women. In several fields today, women even outpace males socioeconomic pursuits. Domestic violence decreases as a result of the empowerment of women. Domestic violence is more likely to occur to uneducated women than to educated women. Women's empowerment and participation are important women's rights that allow women to have control over their life and exert influence in society. Women are frequently subjected to discrimination and gender inequality, with some women facing numerous forms of discrimination and exclusion due to factors such as their ethnicity or caste.

Introduction

Approximately 48% of all people in the nation are women. According to the constitution of India, women are recognized as full citizens with the same rights as men. The unacceptability of the male-dominated society causes Indian women immense suffering. Women give birth, yet they are unhealthy and undernourished. In addition to being busy at home, women are also overworked in the fields. Indian women are largely uneducated. Women's empowerment is defined by several guiding ideas, one of which is that in order to be empowered, one must first be disempowered. Instead of having it granted to them by a third party, they must obtain empowerment. According to other studies, people are seen to be empowered when they are capable of making significant decisions about their lives and being able to follow through on those decisions. At one point in time, empowerment and disempowerment were related to one another; empowerment is a process rather than a finished good. Women's empowerment has grown in importance as a conversation issue in economics and development. Women can control their resources, possessions, and income when they are economically empowered. Additionally, it enhances women's wellbeing and helps them manage risk. In a specific political or social context, it may lead to efforts to support genders that have been

devalued. Although the terms are frequently used interchangeably, gender empowerment emphasizes the distinction between biological and gender as a role and is more inclusive of all people. Through literacy, education, training, and awareness raising, women's empowerment raises the status of women. Additionally, the term "women's empowerment" alludes to women's newfound freedom to make deliberate life decisions. Programs and policies that adopt the idea of female empowerment may be beneficial for nations, businesses, communities, and other groups. Empowering women raises the standard and quantity of human resources that are available for development. When discussing human rights and development, empowerment is one of the primary procedural issues.

Objectives

Changing the public's negative attitudes, actions, and perceptions that they are the main hurdles to women's peace, women's role and contribution in the political process, decision making, development, and women's engagement in peace building. Increase public knowledge and education on women's peace, the peace building process, women's rights, women's roles, and women's contributions to peace building. Sharing of experience, exchange of best practices, and mutual learning among local and international actors, public officials' representatives, activist women, and women's union executives. Promoting anti-discrimination and gender equality concepts in the actions of governments and organizations. Strengthen women's groups and organizations through capacity building and leadership development to provide excellent governance, services, and justice for the exploited, ethnic minorities, and severely poor people. Increase rural people's capacity to protect their cultural heritage and customs, including ethnic minorities and women. Foster women's groups' accommodating capability, democratic practices, principles, and development framework to ensure the long-term viability of their activities, programs, and management. Building professional women's awareness-raising and advocacy campaign capacities by enhancing their theoretical backgrounds, educating them on the relevant legal framework, assessing instances of effective practices, and encouraging them to take action. Improve the livelihoods and small-scale income-generating activities of disadvantaged women, particularly women with disabilities, women who lead families, IDPs, and refugee women, to secure their participation in family and community life. Creating synergies of collaboration across women's institutions for networking, knowledge exchange, and best practices. Advocate for women's groups to participate in many activities related to rights-based livelihood development and the sustainability of natural ecological issues (Socioeconomic, culture, food and nutrition, health, education). Researching and mapping cases of multiple discrimination, as well as developing qualitative and research-based knowledge for advocacy actions. Organize a community-based campaign against discrimination and violence against women in order to establish women's rights and dignity in the family and society.

Principles of Women Empowerment

The Women's Empowerment Principles, developed in partnership between the UN Global Compact and UN Women, are used to empower women in the community, the workplace, and the market.

- Establish high-level corporate leadership for gender equality.
- Respect and uphold non-discrimination and human rights, and treat everyone equitably at work.
- Ensure the health, happiness, and safety of all employees, male or female.
- Encourage women to pursue careers in education, training, and other fields.
- Implement supply chain, marketing, and business growth strategies that support the emancipation of women.
- Promote equality through grassroots campaigns and campaigning.
- Track and publicly report on gender equality development.

Concept of Women Empowerment

Empowerment is the process of increasing an individual's or a group's ability to make choices and translate those choices into desired actions and outcomes. Women's empowerment entails raising them to be more conscious persons who are politically active, economically productive, and self-sufficient, and who can hold educated discussions about issues that impact them. Women empowerment was defined as the redistribution of social power and control over resources in favor of women. The United Nations Development Fund for Women (UNDFW) defines women empowerment as acquiring knowledge and understanding of gender relations and how these relations can be changed and developing a sense of self worth, a belief in one's ability to succeed.

Women Empowerment in India

The Indian Constitution not only grants women equality, but also authorizes the state to implement measures of positive discrimination in favor of women in order for women to enhance their living. Our laws, development strategies, plans, and programs have all attempted to advance women in many fields within the context of a democratic democracy. From the Fifth Five Year Plan (1974-78), there was a notable shift in the approach to women's issues from welfare to development, and from the Eighth Five Year Plan, the emphasis was shifted from development to empowerment. Declaring 2001 as the Year of Women's Empowerment (Swashakti), the Government of India (GOI) enacted the National Policy for Women's Empowerment, with the purpose of bringing about the growth, development, and empowerment of women. The Government of India launched the National Mission for Empowerment of Women (NMEW) with the goal of strengthening broad processes that enhance women's overall development. Its goal is to improve inter-sector convergence and to facilitate the process of coordinating all women's welfare and socioeconomic development programs across ministries and agencies. One of NMEW's primary objectives is investing in skill and entrepreneurial development, microcredit, vocational training, and SHG development for women's economic

empowerment. This effectively indicates that simply teaching reading is insufficient; women also require occupational training or skills to be able to stand on their own and be earning members of the family. In recent years, women have shown a rising interest in income-generating activities such as self-employment.

Need for Women Empowerment

Women's equality is not just a current trend; it is crucial to modern society. Women still face several challenges and issues that impede them from fully participating to society and realizing their potential despite significant gains in women's rights and gender equality. Strong justifications for empowering women include the following:

- **Gender Equality:** Achieving gender equality requires the empowerment of women. The root causes of gender inequality are social norms, cultural practices, and discriminatory attitudes that limit women's opportunities and undermine their rights. By empowering women, we challenge these norms and aim to build a society in which men and women have equal access to opportunities, rights, and duties.
- **Economic Development:** There is a close link between economic expansion and women's emancipation. Women make about half of the world's population, and they must actively participate in the economy for it to be sustainable. When women have equal access to education, employment, and entrepreneurship, they significantly increase economic output, contribute to the eradication of poverty, and advance society as a whole.
- **Knowledge and Education:** Empowering women via education is a powerful technique for transforming civilizations. Education helps women to challenge gender stereotypes and actively participate in social, economic, and political spheres because it increases their knowledge, competence, and confidence. A woman's tendency to invest in her family's welfare especially in the health and education of her children increases with education, which benefits future generations and breaks the cycle of poverty.
- **Health and Well-Being:** The physical and mental well-being of women is closely linked to their economic and political suffrage. Access to quality medical treatment, the freedom to get an abortion, and ownership of one's own body are necessary for women to be empowered. Women who are empowered are better equipped to take good care of their health, get medical help when necessary, and make choices that will enhance their wellbeing.
- **Leadership and decision-making:** Women's voices and perspectives are essential in the development of successful policies, strategies, and decision-making procedures. Gender parity in leadership positions must be accomplished in both the public and private sectors in order to support inclusive governance and fulfill the many expectations and goals of society. By empowering women, we can ensure that they participate equally in decisions that affect their communities and way of life.

- **Social and Cultural Change:** It is critical to empower women in order to confront cultural and societal norms that sustain gender inequality. By empowering women, we combat discrimination, remove barriers, and develop a culture that values and respects the contributions made by women outside of the boundaries of traditional gender roles. A more hospitable and diverse society is created as a result, which is to everyone's advantage.

Constraints of Women Empowerment

In order for women's empowerment to become a reality, structures in the home or in governance must be set up in a way that enables women to make decisions that affect them, to promote gender equality, parity, and social justice, and to contribute to the sustainable development of the country. The situation is made worse by the fact that women frequently accept the treatment as usual due to their upbringing and societal expectations. Culture and religion are the two main factors that influence women's empowerment. These two fundamental problems that underlie how things are done hinder women. The society is based on ideals that have their origins in culture and religion, particularly Christianity, which holds that the male is the woman's superior and that she should obey him as a result. Although it is claimed that women are taking increasingly active roles in politics, government, and leadership, what they are actually permitted to accomplish is an extension of their gender roles. Women automatically get the welfare secretary post in an association rather than the chairperson. They typically focus on women's issues in their capacities as state leaders. This prevents progress and establishes barriers for women, such as glass ceilings. Education has been proven to be a useful instrument for the emancipation and empowerment of women since it may raise women's status in any society by enabling them to explore their abilities, talents, and efforts to make a difference and build a society that is balanced and conducive to good policy. Women can learn more about the world through education, and it also gives them the status, self-assurance, and conviction in their own skills that they need to face life's challenges with courage and inner fortitude.

Act for Women Empowerment

The Parliament passed a number of particular laws to carry out the Constitution's mandate for women's empowerment, including

- The Equal Remuneration Act, 1976.
- The Dowry Prohibition Act, 1961.
- The Immoral Traffic (Prevention) Act, 1956.
- The Maternity Benefit Act, 1961.
- The Medical termination of Pregnancy Act, 1971.
- The Commission of Sati (Prevention) Act, 1987.
- The Prohibition of Child Marriage Act, 2006.
- The Pre-Conception & Pre-Natal Diagnostic Techniques (Regulation and Prevention of Misuse) Act, 1994.

- The Sexual Harassment of Women at Work Place (Prevention, Protection and) Act, 2013.

Fundamental Rights

- Article 14 ensures to women the right to equality.
- Article 15(1) specifically prohibits discrimination on the basis of sex.
- Article 15(3) empowers the State to take affirmative actions in favour of women.
- Article 16 provides for equality of opportunity for all citizens in matters relating to employment or appointment to any office.

Fundamental Duties

Article 51 (A) (e) expects from the citizen of the country to promote harmony and the spirit of common brotherhood amongst all the people of India and to renounce practices derogatory to the dignity of women.

Conclusion

Despite advancements, there is still more work to be done in the area of women's empowerment. The government should put policies in place related to women's awareness, employment, health, education, and other areas since it is now crucial to help women realize their full potential. Creating public attitudes that support women's empowerment and increasing society understanding are essential. Many women have even adopted patriarchal norms in order to dominate other women, such the mother-in-law's dominance over her daughter-in-law. To fulfill their aspirations for emancipation, women must finally take the initiative. Women's empowerment is the best tool available for their progress. Even while we have made progress toward women's emancipation, there is still a long way to go. Today, it is necessary for the government to take action in the areas of health, education, employment, and understanding of women's potential. In order to foster women's empowerment, society needs to be made aware of the issue and public values must be established. Many women even internalized patriarchal conventions to assert their authority over other women, such as the mother-in-law's dominance over her daughter-in-law. It is necessary to study this kind of culture. As prominent sociologist Andre Bettel puts it, "The law only determines the direction that society should adopt, its culture determines the actual direction of society." In the end, women must take the lead. Finally, for women to achieve their goals for empowerment, they must take action. Kofi Annan asserts that the empowerment of women is the best tool available for their advancement. According to Manusmriti, "Yatra Naryastu Pujyante Ramante Tatra Deity," gods reside in places where women are honored. Even after performing all forms of worship, God does not exist in any of the homes where women are degraded.

THE SIGNIFICANCE OF ICT IN HIGHER EDUCATION TO ENHANCE TEACHING AND LEARNING PROCESS

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Abstract

Information and Communication Technology (ICT) is the mode of education that uses information and communication technology to support, enhance and optimize the knowledge of students on global level. Increasing the use of ICT in higher education with integrative technology has found positive impact on student achievements.

The implementation of various ICT related tools has made the overall teaching and learning process more efficient. The rate of interaction between the students and the teachers are also enhanced with the help of this process. The secondary mode of data collection has been used in this study to understand the main concept and related information. The implementation of various ICT tools also ensures that the students are able to learn on their own. With the rise in technology and internet, it can be stated that the implementation of various ICT tools will be beneficial for the overall teaching and learning process.

Technologies in ICT include:

- *Access of course material.*
- *Online digital repositories for lecture, course material and digital library.*
- *Flipped classroom.*
- *Audio-Video devices, projector, online presentations are useful in enhancing students understanding level.*

Keywords: *ICT, ICT tools, Teaching and Learning Process, E-learning*

Introduction

The teaching and learning environment is embracing a number of innovations and some of these involve the use of technology through ICT integration in education. This innovative pedagogical approach has been embraced rapidly though it goes through a process. In higher education, with the rise of the internet and usage of various technologies towards the learning process, usage of ICT will be beneficial. ICT also has the potential to increase the level of interaction between the teacher and the student, which will increase efficiency of the entire process of learning. The interest of the student also increases as there are multiple audio and visual methods of learning associated with the ICT process. In the past few years, the world has witnessed a phenomenal growth in communication technology, computer network and information technology. The growth of these communication systems, their ease of use, the power and diversity of information transfer allow teachers and students to have access to a world beyond the classroom. It has the potential to transform the nature and process of teaching and learning environment and envision a new learning culture.

Literature Review

A research of (2012) asserted that ICT is reducing the cost per students and expanding the enrolments and makes the provisions for students and supports enduring learners. Lalitbhushan S. Waghmare, et-al (2014) studied “Role of Information and communication technology in Higher education: learners perspective in rural medical schools”. They concluded that there is a need to foresee the role of technology in education which helps in encouraging students towards learning .Information and communication technology in higher education in India: challenges and opportunities (2014). The study revealed that ICT enabled education will ultimately lead to the democratization of education and it has the potential for transforming higher education in India. Mahisa, Anju studied “The role of ICT in higher education in India” (2014) .The study revealed that ICT play vital role as a strong agent for change among many educational practices.

The role of science and technology in the overall process of education has significantly increased over the past two decades. According to the statement of Agarwal and Mittal (2018), education in the 21st century is going through drastic changes and information and communications technology can be used as an alternative for this purpose. ICT can be defined as a set of resources or various technological tools. These tools are used for the purpose of sharing or exchanging information along with creating new segments of resources (Unesco, 2021). These tools can consist of a number of different equipment such as the internet or various broadcasting technologies.

The learning technology that ICT provides can be defined as a self paced learning process. As mentioned earlier, there are various segments associated with the overall process. With the effective use of these segments, the process of teaching or learning can be done in a more productive method. From the perspective of the learning process, the interaction between the teachers and the students can also be enhanced. As stated by Zia et al. (2018), the students are being updated, the capacity of teachers are also enhanced. The implementation of the process in this segment ensures that an open and interactive channel of communication is being established between the teacher and the student.

It is a known fact that education nowadays is no longer confined into books or other reading materials. The learning of new technologies is also essential with the presence of new literacy's into the segment. As per the views of Park (2018), the rate of digital literacy should also be considered as a part of the learning process, which can be significantly improved. These new set of technologies can be used towards the traditional ways of learning so that things can be done in a more engaging way. This can also present itself as a challenge for the teachers as they need to integrate these technological advancements in their teaching processes. By doing so, it can be ensured that student engagement is increased towards the technological literacy.

Incorporation of ICT tools into the teaching segment also points out the fact that the teaching style of the teachers will also change. The overall learning process is transforming and with that, the roles of the teacher will also change (Rodriguez et al. 2018). However, implementing the technological advancements into the learning process is a complex process. If the ICT based teaching methods are compared to the traditional ways of teaching, the enhanced learning process is way ahead in terms of efficiency.

Implementation of ICT can bring various advantages towards the way of teaching and learning. In the overall education segment, the presence of ICT opens up new ways of providing knowledge towards the students. The teachers are also positively impacted by these scenarios as they are able to provide new guidelines or teaching methods towards the students. As stated by Asabere et al. (2017), implementing the ICT model will also be beneficial for the overall process of integrated teaching. Online learning or online education is starting to become an essential part of our lives.

Especially after the pandemic, it can be mentioned that ICT opens up a new horizon of opportunities for the schools. Furthermore, the students will have more options available to gather knowledge from. As compared to previous methods of teaching and learning, studying and gathering knowledge are not only restricted to the classrooms anymore. With the help of the ICT tools, students can continue the process of learning and gathering knowledge as per his wish. This will ensure that the learning process is a lot more fluid.

Curriculum materials, which are a common part of classroom education, can also be benefited from ICT inclusion. Along with that, the students that are displaying a comparatively slower rate of learning and growth can also be targeted with this process. As stated by Zimic and Gadzo (2017), advanced technologies can be used in an innovative way so that more innovative approaches can be created and utilized. However, it can be stated on a contradictory note that the students from the backward class of economy may not get the entire ICT benefits. It is important for the schools and educational institutions to look for strategies that can mitigate these scenarios. Otherwise, there are chances of a digital divide, restricting students from getting the full advantage.

More knowledge is always beneficial for the student base. As per the views of Popkova (2019), it is absolutely essential to gain the ability for effective usage of the information. The recent times can be stated as a platform for pervasive use of ICT so that more effective outputs can be produced. It is important to mention that the implementation of ICT is not restricted to the educational sector only. It impacts all the other segments of society as well. This is why digital technologies should be considered as an integral part of the overall national curriculum as it is already a trend among various economies.

With the implementation of the ICT in the educational scenarios, there are often questions with the acceptability of the entire process. However, it can be mentioned that students or younger adults are often attracted towards the technological advancements. These characteristics should be emphasized so that collaboration can be encouraged. This will also ensure the increase in the rate of subject learning. From the perspective of the teacher, there are also multiple benefits associated.

Method

Various initiatives in the recent past portrayed the significant role that ICT plays in the realm of higher education development. Several projects have reduced the costs, and it also has increased transparency. India has taken up major initiatives in terms of content delivery and furthering education through Information and Communication technology. For example Gyan Darshan was launched in 2000 in broadcast educational programs for

school kids, university students and adults. Similarly Gyan Vani was another such important step with broadcast programs contributed by institution such as IGNOU and IITs. Under the UGC country wise classroom initiative, education programs are broadcast on Gyan Darshan and Doordarshan national channel every day. E-Gyankosh which aims at preserving digital learning resources is a knowledge repository launched by IGNOU in 2005. Almost 95% of IGNOU's printed material has been digitized by uploaded on the repository.

The national programme for technology enhanced learning (NPTEL) launched in 2001 is another joint initiative of IITS and IISC which education through technology. Sristi, the society for research and initiatives for sustainable technologies and institutions is facilitating the use of ICT for strengthening the capacity of grass roots inventors, innovations and entrepreneurs engaged in conserving bio diversity and developing eco-friendly solutions to local problems.

Result and Discussion

Use of ICT in education presents a unique opportunity to solve multitude of challenges quickly as well as at low rate. Here is an overview of advantages of an ICT

Motivating Factor

The internet can act as a motivating tool for many students. Young people are very captivated with technology. Educators must capitalize on this interest excitement and enthusiasm about the Internet for the purpose enhancing learning. For already enthusiastic learners, the internet provides them with additional learning activities not readily available in the classroom.

Fast Communication

The internet promotes fast communication across geographical barriers. Students can join collaborative projects that involve students from different states, countries or continents.

Co-operative Learning

The internet facilitates co-operative learning, encourages dialogue and creates a more engaging classroom. For example, a LISTER V for our class will allow students to get involved in class discussions through e-mails in a way not possible within four walls of classroom.

Locating Research Materials

Apart from communication, research is what takes many people to the internet. There are many resources on the internet than the school library can provide.

Acquiring Varied Writing Skills

If students are required to publish their work on the internet, they have to develop hypertext skills. These skills help students gain experience in non sequential writings.

Recommendations

The quality of programs as measured by fitness for purpose should continue to grow, if the stakeholders perceive the various educational programs as meeting their needs and expectations. ICTs serve to provide the means for activities to realize the potential in human resources. Furthermore, adequate funds must be provided to initiate, develop, promote, review and implement ICT policies in the educational sector to bring about an improvement on ICT utilization, through computer apprentices courses taught in vigerian tertiary institutions. In this period after covid-19 the price of ICT equipment and materials will continue to the astronomical. It becomes highly imperative for all stakeholders of education to entice industrial establishments, politicians, big businessman and entrepreneurs, non-governmental organizations and the community at large to assist the institutions in the provision of ICT equipment and materials and well finished computer laboratories

Conclusion

With the rise in technology and the growth of the internet, various technological tools are being implemented towards the teaching and learning process. It can be mentioned that ICT tools can be used as a viable tool towards providing effective higher education for the students. ICT also ensures that the interaction and feedback process increases, so that more student centric approaches can be incorporated into the process of teaching and learning.

ICT play vital role as a strong agent for change among many educational practices ,conducting online exam, pay online fees, accessing online books and journals. Thus ICT in Higher education improves teaching learning process, provides the facility of online learning to thousands to thousands of learners who cannot avail the benefits of higher education due to several checks, such a time, cost, geographical location etc.

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PERSPECTIVE OF ICT TOOLS IN EDUCATION- BRAINSTORMING IN ICT

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Abstract

Abstract Innovation is the key to initiate writing. Learners in classrooms have very little time to think and come up with new ideas for the writing process. Blank page syndrome is a common problem teacher's face in writing classes. Technological brainstorming will facilitate the thinking process and provide sufficient content for the learners. Above all teachers need to familiarize themselves with technological tools available for brainstorming, and enable the learners achieve the learning objectives.

Keywords : ICT- Information Communication Technology, IT- Information Technology, BS – Brainstorming, VR – Virtual Reality, AI – Artificial Intelligence

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- Introduction
- Uses in brainstorming
- Tools and Techniques for Brainstorming
- Idea generation tool
- Mind mapping tool
- Problem-solving
- Conclusion

Introduction

ICT tools have opened up new possibilities for brainstorming, enabling enhanced creativity, efficiency, and inclusivity in the idea generation process. With a wide array of applications and platforms designed explicitly for brainstorming, teams can now leverage technology to harness the collective intelligence of their members effectively.

In this era of virtual collaboration, ICT tools provide diverse functionalities, such as real-time collaboration, multimedia integration, data visualization, and artificial intelligence-powered assistance. These tools empower participants to contribute, share insights, and build upon each other's ideas, fostering a dynamic and iterative brainstorming process.

Uses in Brainstorming

1. **Virtual Brainstorming Sessions:** ICT tools enable geographically dispersed authors, reviewers, and editorial teams to come together for virtual brainstorming sessions. Video conferencing platforms like Zoom or Microsoft Teams facilitate real-time discussions and idea sharing, replicating the in-person brainstorming experience.

2. **Online Collaborative Whiteboards:** Platforms like Miro and MURAL provide virtual whiteboards where participants can simultaneously add, organize, and categorize ideas. This digital alternative to traditional sticky notes encourages interactive brainstorming in a visually engaging manner.
3. **Online Idea Management Platforms:** Idea management tools like Ideanote or IdeaScale allow journal teams to collect, evaluate, and prioritize ideas submitted by various stakeholders. It ensures that valuable suggestions are not lost and can be revisited for future consideration.
4. **Collaborative Document Editing:** ICT tools like Google Docs or Microsoft 365 facilitate real-time collaborative writing and editing of manuscripts, enabling multiple authors to work together seamlessly on journal articles.
5. **Reference Management Software:** Tools like Zotero, Mendeley, or EndNote assist in managing references and citations during brainstorming sessions, ensuring that ideas are appropriately supported by relevant literature.
6. **Mind Mapping Software:** Applications such as Mind Meister or XMind allow teams to create interactive mind maps to visualize and connect ideas. Mind maps help in exploring relationships between concepts and provide a structured framework for journal content.
7. **AI-Based Content Analysis:** AI-powered tools like Word Clouds or Text Analytics help in analyzing and visualizing the frequency of specific keywords or themes within brainstorming notes, aiding in identifying key areas of focus.
8. **Online Surveys and Polls:** ICT tools like Survey Monkey or Type form enable journals to collect feedback and ideas from a broader audience, including authors, reviewers, and readers
9. **Version Control and Revision Tracking:** Version control systems like GitHub or GitLab assist in tracking changes and revisions during brainstorming and writing processes, ensuring transparency and accountability.
10. **Automated Idea Evaluation:** Utilizing AI algorithms, journals can implement tools that assess the feasibility, novelty, and impact of generated ideas, guiding the selection of the most promising ones for further development.
11. **Data Visualization Tools:** Platforms like Tableau or Datawrapper help in presenting complex data and research findings in a visually appealing manner during brainstorming sessions.
12. **Digital Workspace Platforms:** Tools like Trello or Asana provide a digital workspace for managing brainstorming tasks, setting deadlines, and assigning responsibilities to team members.

Tools and Techinques for Brainstorming

- Brainwriting Techniques
- Virtual Reality (VR) Brainstorming
- Idea Management Platforms
- Mind Mapping Software

- Data Analytics and Visualization
- AI-Powered Idea Generation

1. *Brainwriting Techniques*

Online brainwriting tools and platforms, such as GroupMap or Stormboard, support collaborative idea generation without the need for verbal communication. Participants can contribute ideas in written form, promoting inclusivity and reducing dominant personalities' influence.

2. *Virtual Reality (VR) Brainstorming*

Video conferencing tools such as Zoom, Microsoft Teams, or Google Meet enable virtual meetings where participants can brainstorm face-to-face in real-time, regardless of geographic constraints.

3. *Idea Management Platforms*

Idea management software like Ideanote, IdeaScale, or Aha! allow organizations to collect and evaluate ideas from employees, customers, or stakeholders. These platforms facilitate the review, rating, and tracking of ideas throughout the brainstorming process.

4. *Mind Mapping Software*

Tools like MindMeister, XMind, and Coggle assist in creating visual representations of ideas and concepts. Mind maps provide a structured overview of interconnected ideas, aiding in idea generation and organization.

5. *Data Analytics and Visualization*

Analytical tools like Excel, Tableau, or Power BI help extract insights from data, aiding decision-making and idea generation based on data-driven approaches.

6. *AI-Powered Idea Generation*

AI-driven tools, such as IdeaGlow or IdeaFlip, can suggest ideas based on existing data, trends, and user preferences. These algorithms provide creative prompts and inspire out-of-the-box thinking.

Six Thinking Hats

Idea Generation Tool

- The six thinking hats model was developed by Edward de Bono.
- It helps you approach the problem from six different perspectives, allowing you to reduce bias in your brainstorming

The six hats include:

- The factual hat (white hat) – at this stage, you are thinking about what you already know or need to find out;
- The creative hat (green hat) – at this stage, you are thinking about alternatives,

ideas, possibilities that can help you generate solutions to your challenge in focus

- The optimist's hat (yellow hat) – at this stage, you are thinking about the solutions or issues from the most positive perspective; try to identify benefits and value added;
- The judge's hat (black hat) – at this stage, you are exploring the risks and critically appraising any concerns you may have;
- The hat for the heart (red hat) – at this stage, you consider the feelings you have about the solution or the challenge you're trying to solve; think about fears and likes;
- The conductor's hat (blue hat) – at this stage, you're controlling the decision-making process and you organise the entire process to make sure you followed the six thinking hats guidelines.

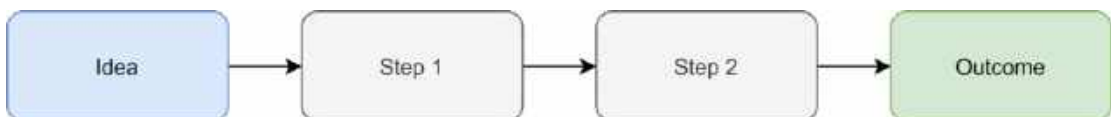
Mind Mapping Tool

1. Flow map

- This is particularly useful at the design of the experiment stage of your research or general planning stage.
- A flow map is one of the most useful mind maps that you can use as a brainstorming technique. You can see this mind map as a flow chart that lets you visualize your concept as a logical flow of information or steps.

Here are 3 steps that you can follow to create a flow map for your research:

- break down the entire process into small steps
- order these steps in a logical order
- connect the small steps with arrows

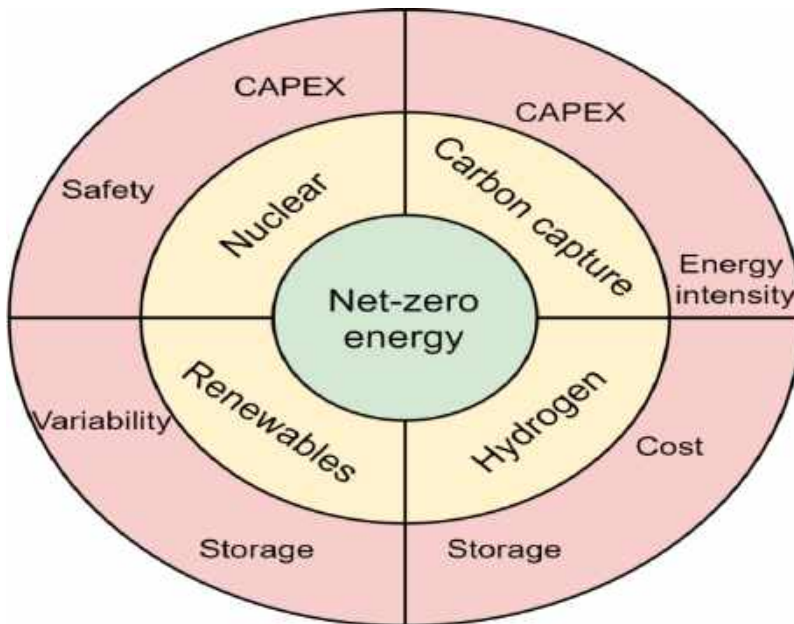


2. Circle map

- It often evaluate the relationships between the core concepts and the wider environment.
- This is particularly useful for exploring how related ideas are connected to the core idea we're investigating.
- A circle map is a useful mind map. It clearly shows how each additional layer of understanding connects to the main idea. And these are really simple to create too.

Here are the 4 steps that you can follow to create a circle map:

- Draw a circle in the middle of the page and write the core idea or concept in the middle;
- Draw another circle the core circle and fill it with categories that you want to evaluate a category can be a specific challenge to investigate;
- Draw another circle around the previous one and for each category defined previously determine viable solutions
- Continue drawing circles and gain more insight into specific aspects the research area

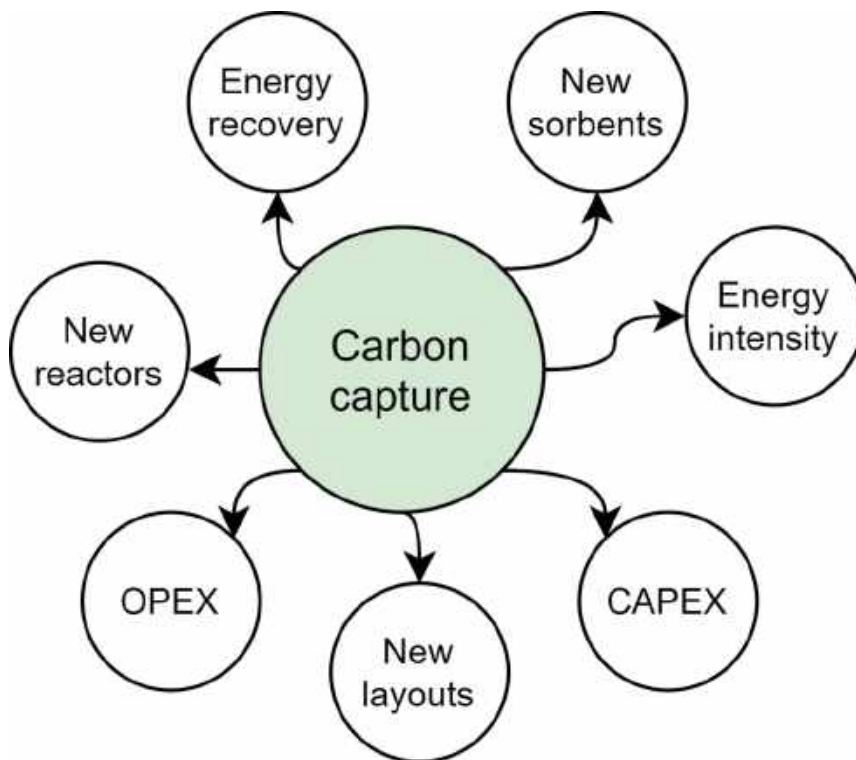


3. Bubble maps

- In foreign language, a teacher wrote a word in the middle of the blackboard and then drew small bubbles around it that would describe that word.
- A bubble map is a great brainstorming tool that can help to explain a specific theme or topic with descriptions.

Here is a simple 2-step process you can use to prepare a bubble map

- Define the theme and write it down in the middle of the page
- Write down any idea/challenge/solution in the bubbles around the word

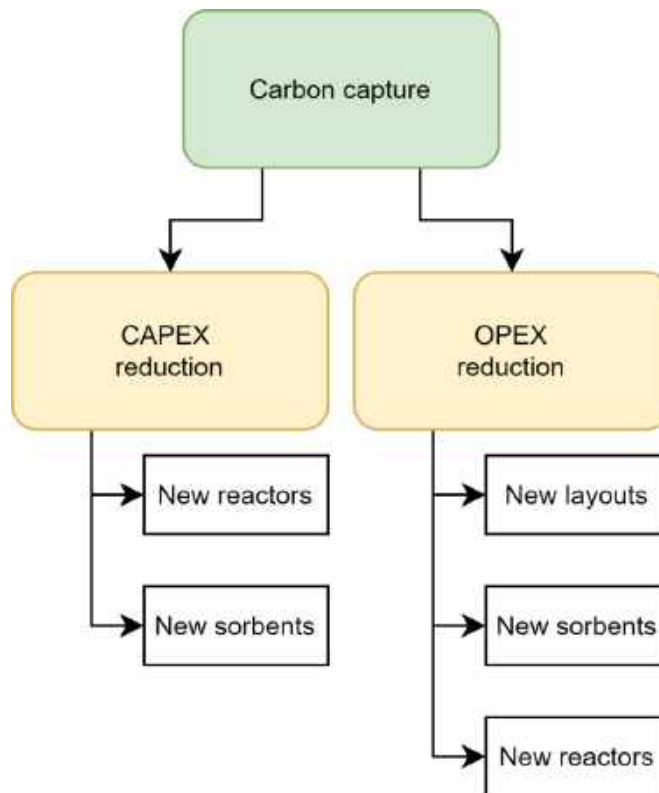


4. Tree map

A tree map is a kind of mind map that breaks down the subject into categories, sub-categories and so on. It can help you understand the fine detail of the research area and represent them in a graphical way for easier brainstorming.

To use this mind mapping tool, follow this process

- Write down the research area or challenge to investigate
- Determine key trends or categories in your research area
- Break categories into sub-categories
- Determine key challenges in each sub-category
- Define potential solutions for each challenge
- Identify the most viable route for your research



5. Multi-flow map

- A multi-flow map can help to graphically represent the problem for investigation and help to determine its causes and effects.
- Simply write down the event in the middle of the page and then write down the potential causes on the left-hand side and the effects on the right-hand side.

Problem Solving

- Blind writing
- Starbursting method
- Trigger statements
- Fill-in-the-gaps method
- What-if method

Conclusion

Hyland remarks, "Technology will only accommodate and not dictate our teaching desires" (2002). Through this study, it is concluded that, technology should be balanced judiciously in the pre-writing stages. Conventional methods cannot be totally ignored as it has its own advantages. A good teacher should balance and blend the methods. In the contemporary scenario, it is necessary to have access to a variety of technological assistance to foster an interactive classroom atmosphere and achieve our educational goals.

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WOMEN EMPOWERMENT

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Abstract

Women's empowerment can be defined as promoting women's sense of self-worth, their ability to determine their own choices, and their right to influence social change for themselves and others. Women empowerment refers to the empowerment of women to take all decisions of their choice. So that she can take all of the decisions for her social and economic development. Empowerment of women will surely encourage all women to stand for their education and the life of their own choice.

Keywords: Empower women -components-bitter facts-benefits.

Introduction

Women empowerment refers to increasing the spiritual, social, educational, gender, or economic strength of individuals and communities of women. Empowerment is the process of increasing the authority and responsibility of individuals or groups to make choices and to transfer those choices into desired actions and outcomes. Women's empowerment and safety are two closely related and very important issues. Women have the right to feel safe and secure in their daily lives. Unfortunately, many women face harassment and violence regularly. This can make it difficult for them to feel empowered and confident.

The Main Problems Faced by the Women:

- Low confidence.
- Lack of unity.
- Traditional barriers.
- Poverty and ignorance.
- Female infanticide.
- Dowry.
- Gender discrimination.
- Marriage in the same caste.
- Child marriage.
- Harassment etc.,

Importance of Women's Safety

- Women have the right to be free from violence, harassment, and discrimination, and removing the barriers of an unsafe environment can help women their potential as individuals and as contributors to work, communities, and economies.
- Raising awareness around the causes of poor health and well-being that are related to gender. Empowering women and girls through water, sanitation, and hygiene; health and nutrition; livelihoods training; and education programs to increase their opportunities and ability to reach their full potential.

Ways to Empower Women

- Changes in women's mobility and social interaction.
- Changes in women's access and control over resources.
- Changes in women's control over decision-making.
- Providing education
- Self-employment and self-help group.
- Other than society should change the mentality towards the word "Women".
- Encouraging women to develop in the fields they are good at and make a carrier.

Women empowerment has Five Components

- Women's sense of self-worth.
- Their rights to have & to determine choices.
- Their rights to have access to opportunities & resources.
- Their rights to have the power to control their own lives, both within & outside the home.
- And Their ability to influence the direction of social change to create a more social and economic order.

Facts:

- A woman is raped once every 20 min and 10% of all crimes are reported to be of.
- According to the 2021, United Nations Development Programme (UNDP) report on Human Development Index (HDI),

Censes:

- According to the Census which was taken on 22nd of Mar 2022.
- Total population: 1405.2 million.
- Women population: 682 million (48.04%).
- Literacy rate of India in 2021 is 74.04%. The male literacy rate is 82.14% and the Female literacy rate is 65.46% according to the census.
- Total empowerment 36.6 million.
- Male 19.2 million.
- Female 17.4 million. Asian countries except Afghanistan were better for women than India.

Benefits of Women's Empowerment

- Women empowerment adds to the confidence of women in their ability to lead meaningful and purposeful lives. It removes their dependence on others and makes them individuals in their own right.
- They are able to lead their lives with dignity and freedom
- It adds to their self-esteem
- It gives them a distinct identity
- They are able to gain positions of respect in society
- As they are financially independent they are able to spend on all their needs and desires
- They are able to make meaningful contributions to the well-being of society
- They act as capable citizens to make the country achieve enhanced Gross Domestic Product (GDP) growth
- They get fair and equitable access to resources of the country.

Means of Women's Empowerment:

- **Education:** Without proper and adequate education, women cannot become empowered individuals. They need to be encouraged to go for higher studies so that they can contribute significantly to the creation of a knowledge society
- **Communication Skills:** Without developing skills for effective communication, women cannot make their voices heard. It is essential for them to communicate effectively to become successful. As leaders, they need to put across their points to the people so that a family, team, or company can be effectively managed.
- **Disposable Income:** Women need to earn well to have their say in important financial decisions governing their lives. Being financially independent gives women power over their lives and also contributes to the growth of businesses.
- **Power of the Internet:** Access to the Internet has opened the floodgates of knowledge and awareness and increased social interaction reach and influence of women. The liberalizing influence of the World Wide Web has broken all taboos, myths, and misconceptions regarding women.

Conclusion

Women's Empowerment helps to make the society and world a better place to live in and march forward on the way to inclusive participation. It means increase happiness for the family and the organizations where women make a difference. The most significant insight that has come out of this inquiry is that gender-responsive e-government constitutes a normative shift in the idea of governance. E-government can bring women new citizenship rights and opportunities. Its gender transformative potential hinges on measures to translate the vision of gender equality through rules and practices that make governance and democracy work for women.

WOMEN'S EMPOWERMENT IN INDIA : ISSUES AND CHALLENGES

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Abstract

The ultimate goal of women's empowerment is to establish a society in which women are empowered and free to conduct their lives without facing prejudice or restrictions because of their gender. Women who are empowered are better equipped to support initiatives to address environmental issues, combat poverty, and advance social justice. Promoting gender equality and empowering women to fully participate in society can be accomplished by providing equal opportunities for women in all spheres of society, including leadership roles, employment, and education. women are financially secure and able to stand on their own two feet and establish their identities in society will there be true and lasting female empowerment.

Keywords: Women's empowerment, education, training, employment, and entrepreneurship.

Introduction

Women's empowerment is the process of giving women the ability to take charge of their own life, make decisions for themselves, and have equal access to opportunities and resources. It requires establishing a setting where women can engage in society and the economy on an equal basis with men, where their views are heard and their rights are upheld. Empowering women can take many different aspects, including social, political, economic, and educational. The ultimate goal of women's empowerment is to establish a society in which women are empowered and free to conduct their lives without facing prejudice or restrictions because of their gender.

Types of Women's Empowerment

There are different ways to categorize women's empowerment, but here are five common types:



- **Economic empowerment** is the ability of women to engage in economic activity on an equal footing with men. Fair salaries, equal pay, and access to credit and financial services are all included, as are chances for education, training, employment, and entrepreneurship.
- **Social empowerment** is the ability of women to actively engage in social and cultural life without facing violence or prejudice. It encompasses the ability to exercise one's rights and freedoms as well as access to legal, medical, and educational resources.
- **Political Empowerment:** This kind of empowerment entails women having the same access to political participation and decision-making as males. Access to leadership roles, voting, and running for office are all part of it, and participation in policy-making processes.
- **Educational Empowerment:** This refers to women's access to education and the acquisition of knowledge and skills that allow them to pursue their goals, make informed decisions, and contribute to society. It provides chances for lifelong learning and access to high-quality education at all levels.
- **Health Empowerment:** Women's ability to obtain healthcare and make decisions about their health and wellbeing is referred to as "health empowerment." It entails having access to data, services, and tools that support maternal health, reproductive health, and general wellbeing.

Importance of Women's Empowerment

Women's empowerment is important for several reasons, including

- **Gender Equality:** Achieving gender equality, a fundamental human right, depends on the empowerment of women. Gender equality refers to the idea that men and

women are entitled to the same opportunities, resources, and participation in all spheres of life.

- **Economic Development:** Women's Empowerment is Vital for Economic Development and Growth. Women are better equipped to contribute to the economy and society as a whole when they have equal access to education, work, and other opportunities.
- **Social Justice:** Achieving social justice also requires women's empowerment. Because of their gender, women and girls are frequently the targets of discrimination, assault, and other types of oppression. Women's empowerment contributes to the development of a society that is more fair and just for everybody.
- **Wellness:** Women's empowerment is crucial for fostering both health and wellbeing. Women who have access to healthcare and education are better able to look after their children and themselves.
- **Sustainable Development:** Achieving sustainable development depends on the empowerment of women. Women who are empowered are better equipped to support initiatives to address environmental issues, combat poverty, and advance social justice.

Factors that Encourage Women's Empowerment



- **Education** is a key component in empowering women because education gives them the information, abilities, and resources they need to make wise decisions, participate in society, and accomplish their objectives.
- **Opportunities for employment and business** can also economically enfranchise women, enabling them to take charge of their lives and make a positive impact on their communities.
- **Participation in Politics, Defence, Sports, and Games:** Women's involvement in a variety of fields, such as politics, defence, sports, and games, can help dispel gender

stereotypes, give women the confidence to assume leadership roles, and combat prejudice on the basis of gender.

- **Equal Opportunities in Society:** Promoting gender equality and empowering women to fully participate in society can be accomplished by providing equal opportunities for women in all spheres of society, including leadership roles, employment, and education.
- **Exposure to the media:** Women who have access to the media and information can use it to advocate for their rights, stay informed about pressing topics, and take part in decision-making processes.
- **Freedom of Expression:** Women's empowerment and involvement in society depend on their being able to express themselves freely and without worrying about prejudice or retaliation.
- **Freedom of Movement:** Women's engagement in society and empowerment depend on their ability to move freely, including the freedom to work, travel, and take part in activities in their communities.
- **Access to good nutrition and sanitation:** Women's health and well-being depend on having access to proper nutrition and sanitation, which enables them to fully engage in society and pursue their goals.
- **Decision-Making Power:** Women's empowerment and involvement in society depend on their ability to make decisions for themselves, including decisions regarding their health, education, and careers.
- **Introduction of Self-Help Groups:** The establishment of self-help groups can give women a network of support and tools to help them fight gender-based discrimination.
- **Changes in women's labour patterns,** such as the acknowledgment and support of women's unpaid care work, can help advance gender equality and economically empower women.

Factors that Prohibit Women's Empowerment

Unfortunately, there are several factors that inhibit women's empowerment in India, including

- **Patriarchal ideas:** Many aspects of Indian society continue to be firmly engrained with patriarchal ideas that place males above women. Women may therefore face prejudice in settings like school, employment, and political engagement as a result of this.
- **Due to poverty, cultural norms, and a lack of infrastructure,** many girls and women in India still have limited access to education, despite the fact that it is a crucial component of women's empowerment.
- **Economic Disparity:** Women in India frequently experience economic disadvantage due to lower pay, fewer work options, and unequal access to resources and financial services.

- **Violence and Discrimination:** In India, gender-based discrimination, sexual harassment, and other forms of violence against women continue to be important roadblocks to women's empowerment.
- **Traditional Gender Roles:** The options and choices available to women, notably in relation to marriage, families, and careers, might be constrained by traditional gender roles and expectations.
- **Lack of Legal and Political Support:** Women in India also experience restricted access to legal services and safeguards, as well as little representation in government.
- **Limited Mobility:** Women's empowerment in India may be hampered by limited mobility, which includes limitations on women's freedom of movement and access to transportation.

Objectives of the Study

1. To know the concepts of women empowerment.
2. To study the violence against women in India.
3. To identify the challenges in the path of women empowerment.

Research Methodology

The purpose of this study is to examine the many forms of women's empowerment. The study is analytical and descriptive in nature. According to the needs of this study, only secondary sources were employed to get the data used in this. Secondary information that is gathered from a variety of national and international agency reports, reliable websites, publications, and online content about women's empowerment.

Violence against Women in India

Physical or sexual abuse of women, particularly by men, is considered violence against women in India. Domestic abuse, sexual assault, and murder are common types of violence against women in India. Because the victim is a woman, this action must be taken solely to raise awareness about violence against women. These behaviours are frequently committed by men who have gendered roles. A crime against a woman is committed every three minutes, according to India's National Crime Records Bureau, which reports an upsurge in such incidents.

Table 1: Proportion of Crime against women (IPC) Towards Total IPC Crimes

S.No.	Year	Total IPC Crimes	Crime Against women	Percentage to total IPC Crimes
1	2009	2121345	203804	9.2
2	2010	2224831	213585	9.6
3	2011	2325575	228649	9.4
4	2012	2387188	244270	10.2
5	2013	2647722	309546	11.2

Source : Crime in India – 2013

- Murders:-** A married lady who commits suicide or is killed because of a dowry dispute. In some instances, the wife has committed herself or there will be an exchange of presents, money, or property during the daughter's wedding in the family. In other instances, the husband and father-in-law persistently try to collect extra dowries through harassment. The majority of these suicides have been carried out by hanging, poisoning, or setting oneself on fire. It is referred to as "burning the bride" when the bride is burned in order to obtain the dowry. The bride's murder is frequently presented to be a suicide or accident, and occasionally the victim is burned alive in a way that makes it appear as though she started a fire while cooking on a kerosene stove. Even though dowager is forbidden in India, lavish gifts are frequently given to the bride and her family at weddings that the bride's family plans. Murdering a family member is known as a "honour killing," because it is an offence against the family's honour. Honour killings can result from declining to enter a scheduled marriage, engaging in adultery, picking an unpopular family member, or experiencing rape. Caste councils frequently execute people in some Indian villages who break the laws of their caste or tribe. Indian women suspected of witchcraft are still being killed today. Women of lower social classes, widows, and income levels are especially at risk from this kind of murder.
- Sexual crimes:-** When it comes to sexual violence against women, India is regarded as the most hazardous nation in the world. In India, rape is one of the most frequent crimes. According to the Criminal Law (Amendment) Act of 2013, rape is the act of a male approaching a woman's physical beauty without her consent and without being penalised. The National Crime Records Bureau estimates that one woman is raped in India every 20 minutes. In India, raping a spouse is not a crime. One of the fifty nations that has not yet outlawed marital rape is India. 20% of Indian men admit to pressuring their partners or spouses into sexual activity. Human trafficking in India, although illegal under Indian law, is a major problem.

People are often smuggled through India for the purpose of commercial sexual exploit at and forced / enslaved labor.

- **Domestic violence:-**Domestic violence is the abuse of one partner by the other in a close relationship, such as a marriage, dating, or close familial relationships. Domestic abuse is another name for it, as are assault, domestic violence, dating abuse, and violence against intimate partners. Physical, emotional, verbal, financial, and sexual abuse are all examples of domestic violence. Domestic abuse can be coercive, aggressive, or subtle. According to politician Renuka Chaudhary, domestic abuse affects 70% of Indian women.
- **Forced marriage and child brides:** Girls who run the risk of being forced into early marriage run a double risk of being both a kid and a woman. Both boys and girls frequently lack an understanding of the purpose and obligations of marriage. Girls involved in these marriages are burdened by their parents and are afraid of losing their sanctity before marriage.
- **Acid throwing:-**Acid throwing is a sort of violent assault against women in India and is sometimes referred to as acid attack, vitriol attack, or vitriolage. Using "acid seeds or other alternative corrosive substances" to deform, maim, torture, or kill someone is referred to as "throwing acid." Acid assaults frequently target the victim's face, where they cause skin damage and frequently expose or shatter the bone. Attacks with acid can result in blindness, lasting scars, as well as social, psychological, and financial issues. The selling of acid seeds has been regulated by the Indian legislature. Compared to other countries, India has a greater rate of acid attacks against women. At least 72% of acid attacks in India that have been documented involve women. The number of acid assaults has increased in India for the past decade.

Challenges of Women Empowerment

There are many challenges facing women's rights issues in India. Targeting these issues will directly benefit women's empowerment in India.

- **Education:-**Since gaining its independence, the nation has advanced significantly, and concern over education has increased. There is a significant gender discrepancy. In India, just 65.46% of adult females are regarded as literate, compared to 82.14% of adult males who have a good education. Higher education has a gender bias, and specialised vocational training has a negative impact on women's employment and ability to rise to the top in any profession.
- **Poverty:** Because it is thought to be the biggest threat to world peace, eliminating poverty should rank right up there with eliminating illiteracy as a national priority. This results in the use of women as domestic workers.
- **Women's health and safety issues** are of utmost importance to the nation and play a significant role in the evaluation of women's empowerment in the country. However, there are worrying concerns where mothers are concerned.

- **Professional Inequality:-**Professional inequality: Employment and promotion are two areas where it is pervasive. Women encounter numerous obstacles in environments that are male-dominated and dominated in both government agencies and the business sector.
- **Household Inequality:** Gender disparities are present in family connections in very subtle but significant ways all around the world, but particularly in India. Sharing small tasks from the 'division of labour' like homework, child care, and household chores.
- **Unemployment:** Women are finding it harder and harder to find the proper jobs for them. They become more open to harassment and exploitation at work. Unbearable Factors: Women who lack education are more prone to be divorced and separate from their husbands at any stage of their lives. They will be forced to live in constant fear of becoming divorced. Sometimes they must come to an end their lives due to unbearable circumstances.

Conclusion

When a woman is in charge of the family, progress is made in the community and the country. This is essential because of how their beliefs and moral code shape a good family, good society, and eventually a good country. Incorporating women into the mainstream of development is the best approach to give them more influence. Only when women are financially secure and able to stand on their own two feet and establish their identities in society will there be true and lasting female empowerment. One of the most pressing issues of the twenty-first century, both nationally and internationally, is the empowerment of women. Government programmes by themselves are insufficient to accomplish these objectives. Gender discrimination should not exist, and society should take the effort to establish such a climate where women have full access to self-determination and can participate equally in the social, political, and economic life of the nation.

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ROLE OF ICT IN THE PROCESS OF TEACHING AND LEARNING

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Abstract

ICT enables self-paced learning through various tools such as assignment, computer etc as a result of this the teaching learning enterprise has become more productive and meaningful. ICT helps facilitate the transaction between producers and users by keeping the students updated and enhancing teachers capacity and ability fostering a live contact between the teacher and the student through e-mail, chalk session, elearning, web-based learning including internet, intranet, extranet, CD-ROM, TV audio-videotape. Edusat technology has become very powerful media for interactive participation of experts and learners and it reaches the unreachable. Emerging learning Technology (ELT) of blogging, Integrated Learning Modules, a pod cast, Wikis, Enhancement of Browsers, e-learning, M-learning, U-learning have started making rapid strides in teaching learning processes. Information and interchanges innovation (ICT) alludes to all the innovation used to deal with media communications, communicate media, smart building the executives frameworks, varying media handling and transmission frameworks, and system based control and observing capacities .Although ICT is regularly viewed as an all-inclusive equivalent word for data innovation (IT), its degree is more broad. ICT has all the more as of late been utilized to depict the assembly of a few advancements and the utilization of basic transmission lines conveying exceptionally different information and correspondence types and organizations. ICT is a nonexclusive term alluding to advancements which are being utilized for gathering, putting away, altering and passing on data in different structures.

Keywords: Web Browsers, Technology enhanced learning, Self paced learning, Interactive learning.

Introduction

The world that awaits us is a world of huge technical change presently the world is inhabited by very large number of scientists and technologists and they are more than the scientist and technologist that have lived on it during the history of mankind. All developments mainly on the economic growth of the nation are based on updated knowledge and information into economic activity has resulted in a profound structural and qualitative change. There is a window of opportunity for Indian because youth power in India is 59 % in the age group of 15-59 %. Japan is the most ageing nation in Asia, over 10 lac citizens are over the age of 90 years. Finland which is known as the proud nation of producing NOKIA mobile and earning over 40 billion dollars per year from it is the most ageing nation of Europe.

Dr Kastusiranjana demonstrated that the central role of advances in science and technology and their applications in the social economic and cultural transformation of the world is tremendous. Human experience with technology is constantly evolving and is finding expression in myriad dimension. Technology has been affecting every part of human endeavor.

India has 550 million below the age of 25 offers an excellent opportunity to become technical force. It is huge opportunity which unfortunately we have not fully tapped and transform our learning and teaching through ICT's in the knowledge based economy. The new ICT enables self-paced learning through various tools such as assignments, computer etc. as a result of this the teaching learning enterprise has become more productive and meaningful. ICT helps facilitate the transaction between producers and users by keeping the students updated and enhancing teacher's capacity and ability fostering a live contact between the teacher and the student through e-mail, chat session etc. This promotes active learning, sharing of ideas, discussion and also provides immediate feed back. This activates paced learning and allows effective mapping of learning path ways. This requires high quality meaningful digital content to be made available to teacher and student. Teachers particularly should possess updated knowledge and skills to use the new digital tools and resources to help students achieve high academic standards. We definitely need a vision to equip our students to meet the emerging trends. The present high tech and competitive society will sustain only through the knowledge of ICT. ICT has the capacity to store, retrieve and process e-content both fast as well as accurate. ICT represents one of the current applications of technology towards teaching- learning processes. According to UNESCO: ICT is a scientific technological and engineering discipline and management technique used in handling information in application and association with social, economic and cultural aspects. Various agencies like NCTE, SCERT, and IASES are being equipped with necessary hardware. NCTE is in the process of developing ICT based instructional packages for teacher educators. It would use ICT enabled learning which would bring in several innovations in teacher education.

Appropriate use of ICT can transform the whole teaching-learning processes leading to paradigm shift in both content and teaching methodology. ICT has the potential to transcend the barrier and space. ICT integration in the field of education has impacted hugely in improving the quality of education. It is widely believed that ICT integration will help us in making education more accessible and affordable. Increasing role of ICT will make education more democratic that is improving the quality education services available to even students sitting in far- flung remotest corners of the country.

The new environment of interactive learner-centered approach of ICT has completely meta-morphosised the process of education i.e delivery and dissemination. The technological creativity learner will help generate sharing of knowledge to perform tasks in a better way and to develop their capacity and skills to keep pace with the rapid changes but the pace of change is so fast that what was avant-garde few years ago is just a thing of past. We must not allow the ICT related opportunities to slip out of our hands. We must empower our youth with the latest technology to tap the latest skills and hidden potential of our youth population. There is considerable hope that technology can expand and improve education in all levels with special reference to design and content of instructional materials, delivery, and assessment and feedback.

In technology enhanced learning (TEL) teacher's role will be more challenging and definitely different from what is presently the traditional class room teaching. In the new

role he will be more a director/coach or a facilitator, because the ET enhances the quality of teaching and learning by arousing inquiry, curiosity and exploration. ICT will afford opportunity to the individual for self-paced learning, which caters to learner's abilities and aptitude. The paper attempts to discuss the role of ICT to meet the challenges of knowledge economy and to explain the development of new methodology of learning and teaching aptitude in the changing context i.e. privatization, liberalization and globalization.

One of the major advantages of using ICT's in the class room has been to prepare. The present and next generation of students for a workplace where ICT's particularly computers internet and others related technologies are becoming more and more important. These computer savvy and technologically literate students possess the desired competencies to use ICT's effectively. These knowledgeable persons possess the competitive edge in an increasingly uncertain globalizing job market. Along with the technology literacy development of specificity skills are also required. For well paying jobs specifically of skill is of the primary importance. ICT which includes radio and television as well as other high technology newer digital devices such as computers and Internet have been treated as generally powerful enabling tools for educational change and reform. On-line teaching as innovative teaching has been accepted widely, which includes on-line net working, role of e-moderator, e-learning? Web -sites which are very popular with teachers and students are Google, Yahoo, Gmail, Rediffmail, Wickipedia. The modern concepts of ICT have helped professionals to cope the challenges for digital information and technology through the development of digital literacy resources. This can be built by:

- (a) Acquiring Digital Media
- (b) Buying Access etc

The role of computers in Education computers is generally helpful for educational activity which requires significant interaction for that instructional software should be highly interactive. Interactive learning environments are called Intelligent Testing System. Because of their interactive capability computers provide individualized and self-paced learning. SW may be customized to meet the specific requirements of the individuals depending upon their diverse background and abilities.

Role of Emerging Learning Technologies

ICT helps facilitate the transaction between producers and users by keeping the students updated and enhancing teachers capacity and ability fostering a live contact between the teacher and the student through e-mail, chalk session, e- learning, web-based learning including internet, intranet, extranet, CD-ROM, TV .

1. **Blogging:** A blog (a blend of the term web log) is a type of website or part of a website. Blogs are usually maintained by an individual with regular entries of commentary, descriptions of events, or other material such as graphics or video. Most blogs are interactive, allowing visitors to leave comments. The ability of readers to leave comments in an interactive format is an important part of many blogs. Most blogs are primarily textual, although some focus on art photographs, videos, music and audio.

2. **Integrated Learning Modules:-** Availability of open source software has enabled development of content management system and learning management system such as a Module. Integrated Learning Module (ILM) is thematically focused classes, delivered primarily over Internet. The course content is integrated and comprehensive creating a unique perspective on course themes without the potentially repetitive requirements of separate stand-alone courses. Content and language integrated learning is an approach for learning content through an additional language (foreign or second language) thus teaching both the subject and the language.
3. **A podcast :** A podcast (or non-streamed web cast) is a series of media files (either audio or video) that are released episodically and often downloaded through web syndication. The mode of delivery differentiates podcasting from other means of accessing media files over the Internet, such as direct download, or streamed web casting. A list of all the audio or video files currently associated with a given series is maintained centrally on the distributor's server as a web feed, and the listener or viewer employs special client application software known as a pod catcher that can access this web feed, check it for updates, and download any new files in the series.
4. **Wikis:-** Ebers bach et al (2006) note that the following basic features are common in wikis:-
5. **Editing:** - Most of the wikis use the same basic page editing function such as Text editing and image, table list hyperlink and file insertion.
6. **Links:** - Each article can be linked to other articles and thus form a new network structure.
7. Improved Teaching and Learning Experience.
8. One of the biggest benefits of ICT training for teachers is the improvement in the teaching and learning experience. With the use of technology, teachers can create more interactive and engaging lessons that cater to different learning styles. This can lead to better retention of information and improved academic performance for students. Additionally, ICT training can help teachers stay up-to-date with the latest teaching methods and tools, allowing them to provide a more effective and efficient learning experience for their students.
9. **Increased Student Engagement and Participation:** One of the most significant benefits of ICT training for teachers is the increased engagement and participation of students in the classroom. With the use of technology, teachers can create more interactive and dynamic lessons that capture the attention of students and keep them engaged throughout the class. This can lead to better retention of information and improved academic performance for students. Additionally, technology can provide opportunities for students to collaborate and communicate with each other, which can enhance their social and communication skills. Overall, ICT training for teachers can have a positive impact on the learning experience of students and help them achieve their academic goals.

- 10. Access to a Wide Range of Educational Resources:** Another benefit of ICT training for teachers is access to a wide range of educational resources. With technology, teachers can easily access online databases, educational websites, and digital libraries that provide a wealth of information and resources for their lessons. This can help teachers to create more diverse and engaging lessons that cater to the different learning styles and abilities of their students. Additionally, technology can provide opportunities for teachers to collaborate with other educators and share resources and ideas, which can enhance their teaching practices and improve the overall quality of education.
- 11. Improved Communication and Collaboration.:** ICT training for teachers can also improve communication and collaboration between teachers and their students. With the use of technology, teachers can easily communicate with their students through email, messaging apps, and online discussion forums. This can help to create a more interactive and engaging learning environment, where students can ask questions and receive feedback in real-time. Additionally, technology can facilitate collaboration between students, allowing them to work together on projects and assignments, even if they are not in the same physical location. This can help to develop important teamwork and communication skills that are essential for success in the modern workplace.
- 12. Utilize Technology to Facilitate Student Learning.:** Technology is a powerful tool for teachers to help facilitate student learning. By utilizing technology such as interactive whiteboards, collaborative software, and other digital resources, teachers can create engaging and stimulating learning experiences for students. Additionally, these technologies can help make more complex topics easier to understand by providing visuals and audio feedback. Technology can be used in both the classroom and remotely to enhance student collaboration, comprehension, and communication.
- 13. Learn the Best Practices for Classroom Integration:** To ensure the successful integration of ICT into the classroom, teachers should become familiar with best practices for teaching with technology. This includes understanding different student learning styles and designing appropriate lesson plans to incorporate ICT tools. Additionally, teachers should be comfortable using the hardware and software needed to effectively teach ICT lessons. Taking part in ICT training for teachers can help provide teachers with the confidence and skills they need to effectively use technology in the classroom.
- 14. History & Recent change** - A function which saves all previous version or modifications of any single page. It allows tracking of the editing processes of an article since all changes have been documented. The features can provide a current overview of a certain number of recent changes to wiki pages or all changes within a predefined time period. Search function: - Most wikis also offer a classic full text or title search for wiki pages. A well known wiki is wikipedia ([http:// www.Wikipedia.org](http://www.Wikipedia.org)) online collaborative encyclopedias where anybody can edit update

the site content as they see fit. The homepage of wikipedia can be accessed easily on browsing the website. Journal of Education and Practice www.iistxcel, Access,

15. **Enhancement for browsers:** Web browsers are adding functionality for their uses. Del.icio.us is a programme which helps you to favorite online and then access in another computer instead of a dedicated computer. Thus these are all additional plug ins that add functionality to the browser. Now it is an information technological era. The students are willing to learn new technologies like mobile phones, i-pod, i-phone, computer and internet. This is an era of technological creativity. To keep pace with latest trends one should make use of electronic technology in teaching learning processes. The recent technology of our world is all pervasive and omnipresent and is developing at a higher speed. Let us encourage the use of ICT in teaching-learning processes in our educational institutions. Now U-Learning (ubiquitous) is making another leap-frog progress emerging through the concept of ubiquitous computing. After the use of computer in education the use of e-learning and mobile learning has made a transformative progress in the field of education. U-learning means every where, every time, every content learning (the, internet etc). Various devices retrieve the information in appropriate format (PDA, cell-phone lap top or any other technological gadgets). U- Learning consists of two components e-learning and m-learning. E-learning includes a wide range of application and processes including computer based learning, web-based learning, virtual class room, digital content. Delivery of content through e- learning is via all electronic media including internet, intranet, extranet, CD-ROM, interactive TV audio-videotape. Edusat's technology has an-in-built-mechanism for many of the existing inter related problem felt during teleconferencing. Time will not be a problem anymore with the off line access to the tele lectures. Through these interactive participation it-reaches the unreachable in the remotest corner and to far flung areas.

Challenges in using ICT in Teaching and Learning

Integrating ICT into teaching and learning is a complex process and one that may encounter a number of difficulties. These difficulties are known as "challenges" (Schoepp, 2005). A challenge is defined as "any condition that makes it difficult to make progress or to achieve an objective" (WordNet, 1997, as cited in Schoepp, 2005, p. 2). The following are some of the key challenges that have been identified in the literature regarding teachers' use of ICT tools in classroom.

1. **Limited accessibility and network connection:** Several research studies indicate that lack of access to resources, including home access, is another complex challenge that prevent teachers from integrating new technologies into education variousresearch studiesindicated several reasonsfor the lack of accessto technology.
2. **School with limited technical support:** Without both good technical supports in the classroom and whole-school resources, teachers cannot be expected to overcome the obstacles preventing them from using ICT (Lewis, 2003). Pelgrum

(2001) found that in the view of primary and secondary teachers, one of the top barriers to ICT use in education was lack of technical assistance.

3. In Sicilia's study (2005), technical problems were found to be a major barrier for teachers. These technical barriers included waiting for websites to open, failing to connect to the Internet, printers not printing, malfunctioning computers, and teachers having to work on old computers. "Technical barriers impeded the smooth delivery of the lesson or the natural flow of the classroom activity" (Sicilia, 2005, p. 43).
4. **Lack of effective training:** The challenge most frequently referred to in the literature is lack of effective training one finding of Pelgrum's (2001) study was that there were not enough training opportunities for teachers in using ICTs in a classroom environment. Similarly, Beggs (2000) found that one of the top three barriers to teachers' use of ICT in teaching was the lack of training. Recent research in Turkey found that the main problem with implementing new ICT in education was the insufficient amount of in-service training for teachers (Özden, 2007), and Toprakci (2006) concluded that limited teacher training in ICT use in Turkish schools is an obstacle.

Conclusion

ICT provide diverse options for taking in and processing information, making sense of ideas, and expressing learning. Over 87% of students learn best through visual and tactile modalities, and ICT can help these students 'experience' the information instead of just reading and hearing it.(20)(37) Mobile devices can also offer programmes ("apps") that provide extra support to students with special needs, with features such as simplified screens and instructions, consistent placement of menus and control features, graphics combined with text, audio feedback, ability to set pace and level of difficulty, appropriate and unambiguous feedback, and easy error correction.

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EMERGING DISRUPTIVE TECHNOLOGIES IN EDUCATION: TRANSFORMING LEARNING FOR THE FUTURE

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Abstract

This publication explores the rapid advancements in technology that have disrupted traditional educational practices, revolutionizing the way we teach and learn. Emerging disruptive technologies are reshaping classrooms and learning environments, fostering personalized education, enhancing collaboration, and bridging the gap between learners and educators. This paper discusses the key technologies driving this transformation, their impact on education, potential challenges, and the implications for the future of learning.

Introduction

The digital revolution has led to an explosion of innovative technologies that are reshaping every aspect of our lives, including education. In this paper, we delve into the realm of emerging disruptive technologies that have the potential to redefine education, making it more engaging, accessible, and effective.

Augmented Reality (AR) and Virtual Reality (VR)

AR and VR are transforming the educational landscape by creating immersive learning experiences. Virtual simulations enable students to interact with complex concepts, visit historical sites, explore distant planets, and conduct experiments in virtual labs. These technologies enhance comprehension, retention, and motivation in learners.

Artificial Intelligence (AI) and Machine Learning (ML)

AI and ML are revolutionizing the way educators analyze student data, personalize learning paths, and provide timely feedback. Smart tutoring systems, powered by AI, can adapt to individual learning styles and pace, ensuring a more tailored learning experience for every student.

Internet of Things (IOT) in Education

The IoT enables a connected educational ecosystem where smart devices and sensors track student progress, monitor classroom environments, and optimize resource allocation. Real-time data can be utilized to improve learning outcomes and streamline administrative processes.

Gamification in Education

Gamification incorporates game elements and mechanics into educational activities to enhance motivation, engagement, and learning outcomes. By transforming mundane tasks into interactive challenges, students become active participants in their learning journey.

Blockchain Technology and Credentials

Blockchain technology provides a secure and transparent way to verify credentials, certificates, and academic achievements. This decentralized system ensures the authenticity of educational records, making it easier for employers and institutions to trust the qualifications of potential candidates.

Robotics and Automation in Education

Robotics introduces students to coding, engineering, and problem-solving skills in a fun and interactive manner. Educational robots enhance the learning experience, especially in STEM (Science, Technology, Engineering, and Mathematics) subjects.

Cloud Computing in Education

Cloud-based platforms facilitate seamless collaboration, data storage, and accessibility of educational resources. Educators and students can access materials from anywhere, fostering a flexible and inclusive learning environment.

Big Data Analytics for Educational Insights

Big data analytics helps educators gain valuable insights into student performance and learning patterns. These data-driven insights aid in identifying areas for improvement and developing targeted interventions.

Challenges and Consideration

While disruptive technologies offer immense potential, they also bring challenges such as data privacy concerns, digital inequality, and the need for effective teacher training. Addressing these challenges is crucial to harnessing the full potential of these technologies in education.

The Future of Learning

The publication concludes with a look into the future, exploring how the integration of these disruptive technologies may shape the education landscape. It emphasizes the importance of a balanced approach, combining technological innovations with effective pedagogical practices.

Conclusion

Emerging disruptive technologies are paving the way for a more inclusive, interactive, and dynamic educational experience. As we embrace these advancements, it is vital to navigate the challenges responsibly, ensuring that education remains a powerful force in shaping a brighter future for generations to come.

In conclusion, the rapid emergence of disruptive technologies in education marks a transformative phase in the way we teach and learn. From augmented and virtual reality creating immersive educational experiences to artificial intelligence personalizing learning paths, these technologies hold immense promise for enhancing student engagement, knowledge retention, and overall educational outcomes.

The incorporation of Internet of Things, gamification, blockchain, robotics, cloud computing, and big data analytics further broadens the horizons of education, fostering interconnected and data-driven learning environments. However, we must acknowledge the challenges that accompany these advancements, including data privacy concerns, digital inequality, and the need for comprehensive teacher training.

To fully realize the potential of these disruptive technologies, it is essential for educational institutions, policymakers, and stakeholders to collaborate and develop robust frameworks that prioritize student well-being, equity, and academic achievement. An inclusive approach to technology integration, combined with effective pedagogical practices, can ensure that education continues to be a powerful catalyst for societal progress.

As we look to the future, we must remain open to embracing innovation responsibly, leveraging these technologies to empower learners, educators, and communities alike. By embracing emerging disruptive technologies in education, we embark on a journey to create a more dynamic, adaptive, and inclusive learning ecosystem that prepares individuals to thrive in an ever-evolving world. Let us embrace this transformative potential and collectively shape a brighter and more equitable future for generations to come.

WOMEN EMPOWERMENT TOWARDS RETAIL BUSINESS

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Abstract

Women play multiple roles in every stage of her life. Many women select to be entrepreneurs to manage both household & business activities. Work-life balance means balancing between personal life and professional life effectively. A sound and healthy working life are required to maintain effective balance between personal life and professional life. There is a dilemma in women nowadays in attaining perfection both in their professional and personal life. In the present competitive world entrepreneurs need to face many challenges and those must be handled properly. Women entrepreneurs are overburdened and find it increasingly difficult to balance their work & life roles. Therefore, the major objective of the present study is to suggest appropriate measures for the work-life balance (WLB) and factors that affect & creates the gap between personal & professional life. To achieve this data is collected from secondary sources. The researcher provides suggestions and recommendations to deal with the major Work-life balance issues faced by women entrepreneurs.

Keywords: *Women entrepreneurs, work-life balance, professional and personal life, etc.*

Introduction

Retail stores are defined as a shop that sells one type of merchandise and retailers tend to overload their stores with different products as possible to reach the highest sales per square meter. Nowadays, due to the rapid changing in the fashion industry, stores have to be designed and modernized to have a specific image that attracts more customers and in turn increase revenues. Store design includes store layout, and the use of colors, sound, scent, and merchandise displays that affect store atmosphere and make the store more legible for customers. Different researchers claim that store image is a determinant factor for consumers in choosing a store that stimulating their purchasing decisions. In addition, many studies support that design elements support the store image, attract the attention of customers, and store loyalty rather than ambient elements .In addition, store design is considered more influential as it affects peoples' perception of the overall brand and alters customers purchasing mood According to marketing researchers, store image is an important marketing strategy that has an influential role on store loyalty and patronage decisions rather than merchandise and price. To quote the designer Leandro Artigala, "One of the key things in retail is that consumers have to feel that they're in the environment that they are looking for" Different studies show that when consumers face multiple similar options, their choice will be based on the differences between these options.

When empowerment is considered in terms of women there are four key terms which overlap to form the consensus- "option, choice, control and power". In a broad sense this

describes how much flexibility a woman has to influence decisions in her family and own life; the degree to which they can influence decision making for themselves as well their family and the level of self-resilience and autonomy they possess in the functions of their own life. It can also be coined as having entitlement and confidence of a woman to take part in decision making with choice and self-interest.

Review of Literature

Dr. Padmaja, Priya.k (2022) conducted "**A Study on women empowerment through entrepreneurship in India**". The aim of the study is to analyze how women entrepreneurs play a vital role and have made significant contributions to economic growth and reduction of poverty. Sample chosen for this study is 65. Convenience sampling method is used for this study. Tool used for this study is anova. Secondary data were collected for this study. The findings of the study in the Business world women's are fighting for their independence rights and equality.

Ms. Shwetha ,Kagenavar ,Dr.G.H.kallimath (2021) conducted "**A Study on women entrepreneurship and work life balance.**" The aim of the study is to analyze how women play multiple roles in every stage of her life. Sample chosen for this study is 100. Judgment sampling method is used for this study. Tool used for the study is anova tool. Secondary Data were collected for this study. The finding of the study is to deal with the major work life balance issues faced by women entrepreneurs.

Dr. Jasleen Kaur, Chandandeep Kaur (2020) conducted a "**A Study on retail therapy behavior of women in India.**" The aim of the study lies in extending the retail therapy research to Indian Shoppers. Sample chosen for this study is 703. Snowball sampling method is used for this study. Tool used for this study is t-test tool. Primary data were collected for this study. The findings of the study have important implications for the retailers.

Deena Paul (2019) conducted a "**A Study on the impact of online shopping over small retailers of women**". The aim of the study to analyze the new business pattern for achieving their customer satisfaction. Sample chosen for this study is 50. Continent sampling method is used for this study. Tool used for this study is a statistical tool. Primary Data were collected for this study. The findings of the study are turnover and profit margin of the retailers has considerably decreased in the past few years.

Statement of the Problem

Women empowerment plays a major part in the family. She holds the family together. According to the olden days tradition Women were not allowed to work They were asked to stay back at home while their husbands went to works, for them work was household and kids. The main problem for women is experiencing specific challenges when trying to achieve a leadership role in retail management.(outland 2013) There can often be obstacles in women's way hindering their advancement in retail due to barriers of gender(nordell 2014). Women struggle with so-called second generation gender biases, which are "powerful yet often invisible barriers to women's advancement that arise from cultural

beliefs about gender, as well as workplace structures, practices, and patterns of interactions that inadvertently favor men".(patel and buiting 2020)There are a number of key themed areas that will be discussed which are generally the reason for women not progressing in retail management. And it is focus on essential for assessing the growing need for work life balance policies or programmes for the working women of india. To know the women empowerment of retailing. From this study the question has been raised to identify the major constraints that creates obstacle for women empowerment in starting or running their retail business in pollachi taluk.

Objective of the Study

- To study the demographic profile of women empowerment in the retail sector.
- To identify the major constraints that creates obstacle for women empowerment in starting or running their retail business

Sources of Data

Data nature collection is one of the most important aspects of research. Primary and secondary data were used in this study

Sampling

The data required for the study have been collected by way structured questionnaire on order to know the women's empowerment in retail business of the total 110 questionnaires issued 110 questionnaires are collected, and 110 questionnaires are taken for analysis. The convenience sampling method is adopted to select the sampling customers

Research Methodology

The present study is based on the primary data of Pollachi taluk by distributing the questionnaire containing questions relating to socio economic profile to the women empowerment in retail business. Necessary guidance was given to the respondents for filling up the questionnaire

Gender Equality of Women Empowerment

Data is to be collected from 110 respondents used for the study questionnaire is divided into 3 parts and containing 20 question is to allowed to assess the satisfaction level of women empowerment. Satisfaction level is calculated based on standard deviation at (11.29) and average (79.34).Respondents whose index value is below 68.05 is treated as "Low level of satisfaction of women empowerment ", whose index range between 68.06 to 90.62 is treated as" Medium level of satisfaction level", whose index treated is above 90.63 is treated as "High level of satisfaction level ".Chi – square analysis has been implemented to test association between the selected variables and satisfaction level.

S.NO	VARIABLES	NO. OF RESPONDENT	CHI-SQUARE VALUE	SIGNIFICANT/NOT
1	AGE Less than 20 21-30 31-40 Above 40	5(4.5%) 38(34.5%) 43(39.1%) 24(21.8%)	10.105	Significant @ 10 % level
2	MARITAL STATUS Unmarried Married Widow Divorced	26(23.6%) 71(64.5%) 5(4.5%) 8(7.3%)	16.104	Significant @ 10 % level
3	NUMBER OF YEARS 1-3 4-6 6-10 Above 10	43(39.1%) 39(35.5%) 21(19.1%) 7(6.4%)	4.649	Significant @ 10 % level
4	NUMBER OF EMPLOYEES below 10 10-20 workers 20-30 workers Above 30 workers	72(65.5%) 31(28.2%) 6(5.5%) 1(.9%)	15.658	Significant @ 10 % level
5	WORK AND FAMILY Always Most of the time Sometimes Never	17(15.5%) 48(43.6%) 44(40.0%) 1(.9%)	20.597	Significant @ 10 % level

In order to know the satisfaction of women empowerment by applying Chi - square. The associated variable are age, marital status, no. of years, no. of employees, work and family. When the age are increasing the gender equality of women empowerment reduced, When the no. of years are increasing the gender equality of women empowerment reduced, When the marital status are increasing the gender equality of women empowerment reduced, When the no. of employees are increasing the gender equality of women empowerment reduced, When the issues in retail are increasing the gender equality of women empowerment reduced, When the , work and family are increasing the gender equality of women empowerment reduced, When the sell retail product in e-commerce platform are increasing the gender equality of women empowerment reduced

Conclusion

Because of this competitive world, people are choosing to work over their personal life. Family, friends and relatives are ignored to manage their work life. It creates conflicts between work life and personal life. Women must have complete knowledge of their changing roles in family and work. Women have to develop relevant skills and good combination of effective skills enables them to maintain healthy balance between work life and personal life .It has a long time for fighting for women's rights, equality and independence of women. Till today in backward areas, women are facing many problems. There are genuine instances of dowry, rape, harassment, abandonment and other problems that a woman has gone through in a marriage and family. They need to be strong and use these laws to protect themselves. In every case of misuse of power, there is a human story, of someone being hurt and threatened, with an extortion that leaves them bitter, sick and damaged. Fair discussion can solve biggest family issue. Men and women both need to be humanists. Whether a woman has been hurt or a man, society and law should be sensitive to both. Instead of playing the power card, morality, forgiveness and happiness of family members should be motto. In family life ego should not take place, forgiveness can help to save a marriage.

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INFORMATION COMMUNICATION TECHNOLOGY TOOLS IN EDUCATION

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Abstract

Information and Communication Technology (ICT) is an extensional term for Information Technology (IT) that emphasizes role of unified communications and the integration of telecommunications (telephone lines and wireless signals) and computers, as well as necessary enterprise software, middleware, storage and audiovisual, that enables users to access, store, transmit, understand and make uses of the information. ICT is an umbrella term that includes any communication device, encompassing radio, television, cell phones, computer and network hardware, satellite system and so on, as well as various services and appliances with them such as video conferencing and distance learning. ICT is a broad subject and the concept is still evolving. It covers any product that will store, retrieve, manipulate, transmit or receive information electronically in digital form (e.g., personal computers, smart phones, digital television, e-mails, and robots). Use of ICT Tools is all pervasive in our everyday life, and use of ICT tools has almost revolutionized the way teachers impart knowledge to students and students receive knowledge from their teachers, Not only that, by making accessible entire bookshelf and whole of library to students and teachers on a click of their smart phones and laptops have made education simple, much more efficient and have enhanced their productivity enormously.

Keywords: ICT tool, Technology in Education, Teaching and Learning.

Introduction

Information and Communication Technology (ICT) includes computers, the Internet, and electronic delivery systems such as radios, televisions, and projectors among others, and is widely used in today's education field. Kent and Facer (2004) indicated that school is an important environment in which students participate in a wide range of computer activities, while the home serves as a complementary site for regular engagement in a narrower set of computer activities. Increasingly, ICT is being applied successfully in instruction, learning, and assessment. ICT is considered a powerful tool for educational change and reform. A number of previous studies have shown that an appropriate use of ICT can raise educational quality and connect learning to real-life situations. Learning is an ongoing lifelong activity where learners change their expectations by seeking knowledge, which departs from traditional approaches. As time goes by, they will have to expect and be willing to seek out new sources of knowledge. Skills in using ICT will be an indispensable prerequisite for these learners.

What is ICT?

- ICT stands for Information and Communication Technology.
- ICT are basically information handling tools, a varied set of equipment, applications and services that are used to produce, store, and process, distribute and exchange information.
- Old ICT include radio, television, telephone, tapes, cassettes etc.
- New ICT include computers, satellite, wireless technology and internet.
- Definition of ICT.
- As per IBM Glossary, "ICT is the use of computer based information systems and communication systems to transmit and store data and information".

Importance of ICT in Education

- No nation can develop without ICT based education. It is regarded as fuel for development.
- ICT based education is the essential ingredient in developing new ideas, in course content and curriculum and in creation of materials and methods of learning and teaching.
- Students need ICT for pursuing academic studies whereas teachers need ICT based information for teaching.
- ICT has made it easier to process and disseminate knowledge. It has increased the efficiency of the knowledge professionals in organizing and managing knowledge.
- It has saved the space of library by creating library on digital platforms and further by uploading them onto the servers or clouds. And thus making retrieval of information much easier for everyone.
- ICT Tools prevalent in colleges for imparting education to students.
- Nowadays teachers use well equipped classrooms with permanently installed and operational projectors. Teachers utilize these for purpose of teaching through presentations, videos and other relevant materials.
- Students are also encouraged to put up presentations and explain the topics to the teachers, while students are continuously evaluated during the process.
- During present pandemic time, teachers make extensive uses of ICT tools for teaching their students online thru Zoom and Google Meet. This could be possible only with such ICT tools, that includes smart phones, laptops, relevant software etc. During this pandemic scenario students and teaching faculties remained continuously in touch over whatsapp and Google Classroom (yet another example of ICT Tools).

ICT Tools in Vogue in Colleges

- Desktop
- Wifi
- Email
- MS Powerpoint

- Laptop
- Scanner
- Smart Board
- MS Office
- Printer
- Google Classroom
- Interactive Whiteboard
- Pen Drive
- Zoom
- MS Word
- USB
- WhatsApp
- MS Excel

Classification of ICT Tools

ICT could be classified in three categories:

1. Physical ICT hardware or Gadgets:

It include audio-visuals, telephone and computers

- Television
- Cell phones
- Modems: A modem is a device that translates signals to and from between two computer devices in a network.
- Computers: There is numerous things that computers can do as far as device connectivity, task processing, data management and storage is concerned. The computer connects us to the internet and helps us share information in a network. Other physical communication technologies (ICT gadgets or hardware) in digital devices include remote controls, keyless entry devices, walkie-talkies, Bluetooth earpieces, GPS Satellites, CD's DVD's, flash drives, tape, compact memory chips.

2. Non-Physical ICT Software (Virtual Communication Technology):

Software and Wireless Network represent ICT Software : Software is a program that direct smooth running of a computer system. It can be system software (such as Microsoft operating system) or application software (such as MS Internet Explorer, MS Word, MS Excel etc.).

3. Communication Technology Services (ICT Services):

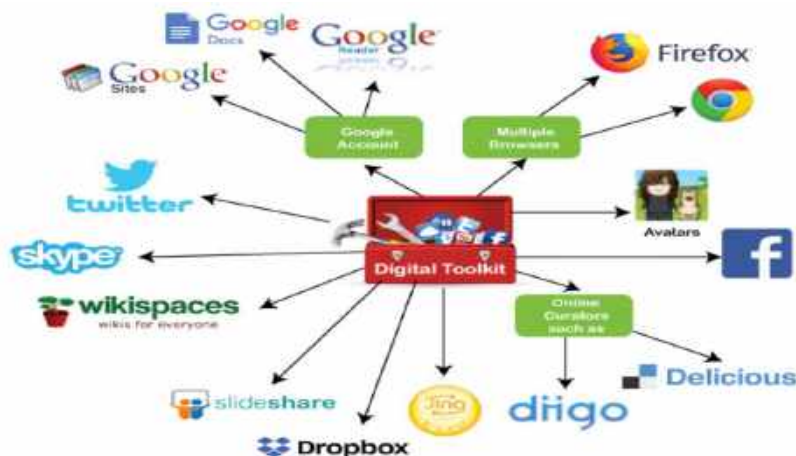
Internet and Email services are examples of ICT services.

ICT Equipment for Every Classroom:

Ideally, following 10 ICT items, should be features of every classrooms in our educational institutions. While majority of university colleges do possess majority of them but some of them are still just pipedream for many!

1. A social media output channel to connect with students, parents and fellow classrooms.
2. A desktop computer to access online resources.
3. USB or Wifi access for document sharing and device connectivity.
4. A projector with interactive whiteboard functionality or television screen connectivity.
5. A presentation clicker for classroom mobility. The best one I've found is Logitech which i use for keynotes.
6. A visualiser or document camera for displaying student work, or presenting live feedback.
7. Tablet devices for teacher and student e.g. i Pad.
8. Recording hardware/software for podcasting e.g. microphone, headphone and speakers.
9. A digital camera for showcasing work in film or photographs.
10. A few show-off gizmos; e.g. data-logging; remote control vehicles/robots/buzzers and lights.

ICT Tools being used normally by academicians



Applications of ICT in Education

- Enablement of employment of innovative educational resources
- Continuous renewal of methods of learning
- Sets up more active collaboration from students
- Makes possible simultaneous acquisition of technological knowledge
- It facilitates refinement in educational processes

Major applications of ICT

- Internet the miraculous all pervading medium
- Intranet
- E-mail

- E-group
- Mobile phone
- Fax
- Video conference
- Telecommunications and digital telephone exchanges

Everyday applications of ICT:

Banking, Education, Transport, Medicine, Agriculture, E-commerce, E-governance.

ICT is playing a pivotal role in today's world:

- ICT has made the whole world a global village.
- It is accelerating the information explosion.
- This has led to better information management and bibliographical control for digital content.

The job of library and information professionals is becoming tougher day by day and ICT comes to the aid by providing even ways to deal with scattered and unorganized information and avoid information pollution or misleading information some examples of ICT tools,

- Digital library.
- Greenstone.
- D space.
- UGC-Info net: E-Journals Consortium Greenstone and D Space are open source software for content creation to maintain an institutional repository UGC-Info net is a country wide network for improving the education system with state-of-the-art technology.

Advantages of using ICT

Communication

Speed / time – money can be saved because it's much quicker to move information around. With the help of ICT it has become quicker and more efficient.

Globalization :

Video conferencing saves money on flights and accommodation. ICT has brought the countries and people closer together.

Cost effectiveness

It feels free to send an email which is definitely cheaper than phone calls.

Bridging the cultural gap

Greater access to technology has helped to bridge the cultural gap by helping people from different cultures to communicate with one another, and allow for the exchange of views and ideas, thus increasing awareness and reducing prejudice.

Education:

Computer's along with their programs and the Internet have created educational opportunities not available to previous generations. Through ICT, images can easily be used in teaching and improving the retentive memory of student.

Disadvantages of using ICT**Lack of job security :**

Experts in a wide variety of fields believe that ICT has made job security a big issue, since technology keeps on changing nearly every day. This means that individuals need to be constantly studying or at least keeping up with changes in their profession, if they want to feel secure in their jobs to be secure.

Overriding Cultures :

While ICT may have made the world a global village, it has also contributed to one culture consuming another weaker one. For example, it is now argued that teenagers in the US influence how most young teenagers all over the world now act, dress, and behave.

Privacy

Though information technology may have made communication quicker, easier, and more convenient, it has also brought along privacy issues. From cell phone signal interceptions to e-mail hacking, people are now worried about their once private information becoming public knowledge.

Reliance on Technology

Professor Ian Robertson, a neuropsychology expert based at Trinity College Dublin who carried out the study, said: "People have more to remember these days, and they are relying on technology for their memory but the less you use your memory, the poorer it becomes. People don't bother learning to spell because they use spell-checker, or need a calculator do perform minor addition or subtraction.

Reliability of Information

Anyone with access to a computer and an internet connection internet can start a blog or post something up on a website, so just because something's on the web doesn't mean it's reliable. A prime example of this is the open source encyclopedia, Wikipedia, although considered a good source of information it is not recognized by academic institutions as a trustworthy reference.

Computer Viruses

Computer viruses, worms, Trojans, malware, spam, phishing- any or all can cause chaos and disrupt our daily lives.

Expensive:

Too expensive to afford.

Conclusion

It is true that with advent of numerous ICT tools our lives have changed drastically and it has revolutionized our education methodology, communication ways, as well as our business processes. Overall, we cannot imagine our world without ICT tools & gadgets. We cannot survive for even an hour without our smart phones, laptops, digital devices etc. etc. ICT has enabled revolutionary changes in creation, processing, handling, storage and dissemination of digital information through communication network. Millions and millions of digital information products are coming up day by day. There is an information explosion and bibliographical control is a tough nut to crack. Library and information professionals need training, orientation and awareness to face the big challenges of future.

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IMPACTS OF ICT AND IOT IN SMARTER EDUCATION PARADIGMS - A SPECIAL FOCUS ON STUDENTS WITH DISABILITIES

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Abstract

Recent years have seen a surge in the use of new technologies as well as its effects in many areas of life. IoT is playing a bigger and bigger role in special education and training over time. Collaboration between technology and educational specializations involved in the educational teaching of individuals is the key to students' holistic evolution and development. The Internet of Things (IoT) and AI-based techniques work together to create smart and intelligent paradigms, which is a major factor in their development. The treatment of student mental health issues, especially in the setting of physical education, can be advanced by using these strategies extremely effectively in a number of different fields. To calculate a student's stress or depression level and improve abilities and performance in the classroom, clever strategies might be applied. Innovative technologies make it possible to precisely analyze behavioral characteristics and spot any unfavorable patterns, allowing for the early detection of mental health issues. By reducing levels of worry and despair, AI can effectively assist students become more responsible citizens by enhancing their psychological health and mental performance. This article's major objective is to raise awareness of the impact of IoT based on ICT on special education students' education and health promotion, as well as on young people with physical and mental disabilities.

Keywords: Internet of Things; IoT applications; smart devices; Internet of Things (IoT); Education, Educational Technologies; Online Learning; Students with Disabilities.

Introduction

There is a significant impact of mobile technology and the IoT both within and outside of the classroom. Popular IoT education use cases have been highlighted by Insider Intelligence, including remote learning, the future of the internet in education, and IoT applications in higher education. The Internet of Things (IoT), which is the connecting of items to the Internet that are not mainstream products like computers and smartphones, is in the process of changing many aspects of our daily life. Education is included in that list, despite the fact that it may not seem like an obvious use of the IoT. E-learning is now a standard practice in the American school system as a result of the internet's pervasive influence on our classrooms. But the Internet of Things has many educational uses, and this disruption has huge ramifications. Schools may increase the security of their campuses, monitor important resources, and improve information access in the learning environment thanks to the growth of mobile technology and the Internet of Things (IoT). In addition, teachers can use this technology to develop "smart lesson plans" as opposed to the stolid plans of the past.

The combination of IoT and AI-based grounded operations is crucial for the creation of smart and intelligent paradigms. These techniques can be utilized very successfully to

improve a number of disciplines, including the treatment of mental health issues affecting students, especially in higher education. The goal of special education is to help the child become an active, autonomous member of society. Everything that is provided to the kid as part of special education is something that should be provided in the setting of the classroom and throughout the course of the child's academic career. ICTs are one tool for managing a person's unique educational requirements. The diagnosis and support of the educational needs of the disabled can be done using ICTs and IoT technologies [1,5]IoT in general and special education can leverage mobile applications in a variety of ways [2,3,4,14].

Impact of IoT& Technology on Special Education

By keeping track on each student's internet usage, ICT-based IoT applications in special education increase user navigation security. Teachers are able to design clever lesson plans. They gain knowledge in data collection and processing, data monitoring, and decision-making on the best study and teaching approach. Teacher and student contact is made possible through the use of technology and IoT devices. Students, for instance, are trained using mobile IPAD / Tablet devices equipped with interactive apps with integrated visuals and simulations, allowing them to escape from books.

Applications for AI and knowledge management can be used in conjunction with IoT and integrated into the IoT design to improve the overall services provided [6,7,8,9, 19], as well as to advance cognitive function, consciousness, and emotional intelligence [12,14-16,18,19]. IoT can also help with neurodevelopment and brain remodeling [17,18]. Additionally, there are numerous ways that serious games can be applied to improve IoT ecosystems [27,28,30,39,44]. The future educational system will be more diverse as a result of the new ideas that this digital transition will bring, which have the potential to alter how students and teachers think and study. According to an eMarketer estimate, 83.2% of all 12- to 17-year-olds have a smartphone. Additionally, 73.0% of parents said their kids had a smartphone between ages 11 to 13, and 31.0% said their kids had one between ages 6 and 10. Students who use these mobile IoT devices in the classroom can automate tasks that they already do now, such as note-taking, schedule checking, and research. As for the schools, the greatest benefits would be increased energy efficiency and reduced operating costs.

Ict Based Iot in Higher Education

The IoT can begin interfering with education as early as kindergarten and can do so until grade 12, although its effects are probably most noticeable in higher education. Particularly at colleges, students are gradually moving away from paper books and toward tablets and laptops. Since they have access to all the necessary materials, students may now learn at their own pace and enjoy a learning experience that is almost identical in the classroom and at home. Students find learning to be more convenient thanks to this propensity, while professors find teaching to be more successful as a result. Teachers are no longer necessary to hand-grade exams on paper or perform other customary tasks due to the advent of connected technology.

Professors can instead concentrate on the customized instruction that will benefit their students the best. Professors can gather data on their pupils using devices that are cloud-connected, then decide which ones require the most individualized care and attention. These data support teachers in enhancing student engagement and modifying their lecture plans for upcoming classes. Universities may monitor their students, staff, resources, and equipment outside of the classroom using linked devices at a lower operational cost, which saves money for everyone. Additionally, safer campuses should result from these tracking capabilities. Students, for instance, would be able to monitor connected buses and modify their itineraries accordingly, preventing them from wasting time in potentially hazardous regions.

Role of Ict And Iot in Our Intelligent Educational System

It incorporates numerous digital devices into the classroom and uses various technologies to provide an intelligent learning environment and enhance the learning process. Such a concept is applicable in both a virtual and a physical context, which meets the challenges arising during global crises and requirements of the digital generation, the IES provides a smart environment where the learning process is more engaging, adaptive, personalized, and efficient. It is achieved by utilizing a full range of contemporary educational technologies. They include networked interactive devices (e.g., notebooks, smart phones, computers, and tablets), IoT (sensors, actuators, cameras, RFID tags, RFID readers, and wearables), and other innovative technology tools. Furthermore, specialized software is used for monitoring, gathering, processing, analyzing, and managing all educational and environmental data. Also, smart decision making based on intelligent technologies such as learning analytics, artificial intelligence, semantics, on to logics, neural networks, and data mining provides smart resource control and smart management of the educational process.

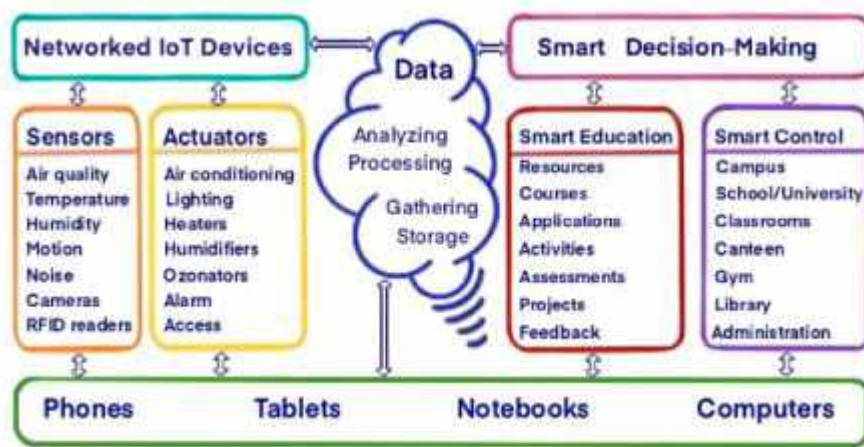


Figure 1: Block diagram of Intelligent education system

In the context of our IES, IoT has a twofold role – to intelligently control and manage classroom environmental parameters and to enable innovative teaching approaches that make the learning process efficient. It involves the integration of IoT devices within IES – sensors, actuators, wearable devices, cameras, etc. to allow the educational system to remotely monitor and control the physical parameters of the environment and the parameters related to the learning process (students’ behavior, engagement, and concentration).

Table 1 describes in detail the role of IoT in our IES, indicating the location in the smart school, purpose, and educational objectives of every device. Security and safety are a challenge in every public building. In our concept of a smart school, IoT devices (intelligent cameras, temperature, smoke and noise detectors, motion sensors, etc.) help monitor students, teachers, objects, and equipment in smart classrooms and the school as a whole. In such a case, alarms are triggered, and notifications are sent based on rules and events. Thus, the staff quickly can identify potential incidents and accidents, instantly make a proper decision and take the corresponding actions for prevention.

Table 1: List of IOT devices and its objectives

IOT	Purpose	objectives	Users	Place of IoT
Air quality analyzer	Optimal air quality conditions	Providing optimal environment for learning	Students, staffs, teachers, administrators	School classrooms, students work place, libraries, laboratories, Gyms
Temperature sensors, humidity sensors, motion sensors, noise sensors	Energy saving, lighthing, security supporting the educational process	Providing optimal environment for learning and supervising students	Students, teachers and staffs	
cameras	Security enhancing safety	Monitoring students mood and health	Students, teachers and staffs	
RFID tags, RFID Readers	Security access control and enhancing safety supporting students	Checking students presence, tracking tools and belongings locations	Administrators and teachers	
Wearables	Access control enabling security	Checking students presence and checking students mood	Staffs, teachers and administrators	

Automatic checking of students' presence is performed by facial recognition with cameras and wearables with RFID readers. Monitoring students' presence enables teachers and school authorities to check and track the students' attendance. It allows the system to notify the parents or guardians of any absence in a timely manner. IoT wearables can integrate the students' location information, interaction with IES, etc. Wide-angle cameras, noise sensors, and passive infrared sensors on students' desks can measure students' presence, movements, attention, and emotional state. Dedicated software can identify students' moods and monitor their health. These sensors also facilitate teachers to pay individual attention to the learners with special needs when necessary. IoT sensors help keep an appropriate learning atmosphere in classrooms. When an excessive level of noise or fidgeting is identified, an event is registered. Then a notification to the teacher is sent, which means that students' engagement and concentration are low and corresponding intervention is necessary. The appropriate actions involve changing the teaching approach, presentation mode, inclusion of interactive learning materials, simulations and multimedia demonstrations, and playing educational games. IoT devices enable customized learning environments according to the different activities performed (physical education, laboratory work, knowledge delivery, assessment, music). IoT devices gather continuous data about the parameters of a classroom environment and automatically adjust their values to optimal levels for the most efficient learning process. Some environmental parameters can be changed automatically in predefined mode if their value is inappropriate considering recommendations for optimal conditions. Actuators control ventilation, heating, air conditioning, humidifiers, lighting, and other systems to achieve target environmental parameters.

Innovative technologies play a significant role in our concept of smart schools, but privacy and ethical concerns are also considered. There should be strict predefined rules for the usage of applications based on IoT. Further, the IoT applications utilized in an educational context should be secure and reliable. Students and teachers should be aware of protocols for confidentiality and authenticity when using technology tools and devices. They must be familiar with the safe use of these technologies and protect themselves from any potential cyber threats. It is the responsibility of school authorities before employing new technology to inform the school staff and students about the functionalities and how to benefit from those technologies safely. Management of all users' rights and compliance with data protection and other legal regulations have to be taken into consideration.

IoT for Students with Sensory Difficulties

Students with sensory difficulties benefit from IoT applications from a large number of effective assistive technologies. For example, students who have hearing disabilities face challenges every day. The biggest challenge faced by them is communication. Deaf people can use an IoT Application to solve this problem. An App has been created on a system with two ends, at one end there is a normal person and at another end, there is a deaf person. The normal person will speak into the system through speech to the text module, a deaf person will get the text via Wi-Fi, Bluetooth, or Cloud Server according to the situation.

On the other hand, Deaf and people with hearing impairment face everyday challenges in identifying the occurrence of household sounds like door bell, child crying or phone ringing, simple things but very important. For that reason when the visitor presses the doorbell, capture image is transferred to the wearable device which helps to know the right person at the door or intruder. After transferring the image, the wearable device vibrates to notify. Those simple ways can help deaf people to gain independence and flexibility in different areas. Also, IoT apps have helped blind people and people with optic nerve disorder as a doctor. The eyeglasses can transmit the signals of the eye blood flow sensor and lens color and see the bleeding in the eyes; sending messages to the patient, physician, and the emergency contacts as well as informing the hospital emergency GPS and friends/families of a patient to be aware of the exact location of the patient.

Discussion

Using IoT Cognitive and meta cognitive functions such as memory, attention, self regulation, self-observation were tested and improved. New technologies and in particular IoT applications came to provide solutions in a demanding field with many users and many needs, special education. Internet connects all the people together, whereas the Internet of Things (IoT) connects all the tools together [46, 58]. The Internet of Things can offer people with special needs more independence, a more manageable home environment with only some smart devices that will help them to stay safe and secure. The Internet of Things (IoT) can mean different things to different people, but it undeniably involves many devices and a lot of data. A forecast by International Data Corporation (IDC) estimates that there will be 41.6 billion IoT devices in 2025, capable of generating 79.4 zetta bytes (ZB) of data.

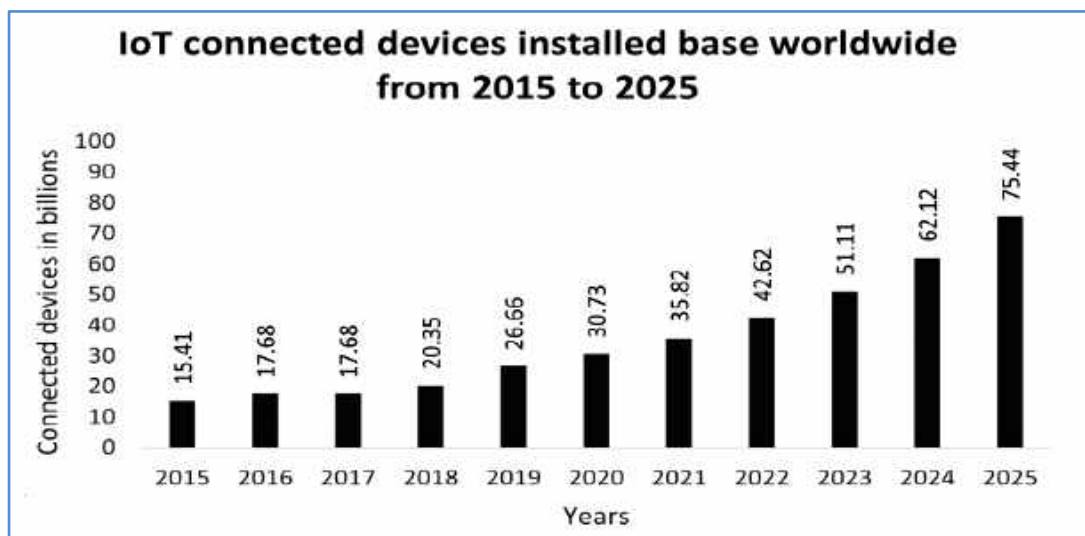


Figure 2: chart showing the growth of ICT based IOT in education sector

Wireless technology, the Internet of Things, and internet connectivity are some of the tools that can be used to increase the participation of students with disabilities in education

and address problems that arise both within and outside of the classroom. To make sure that the adoption of IoT and other technologies in education takes into account the needs of students with disabilities, it is crucial for disability activists, educational technology developers, academicians, and practitioners to collaborate. According to the findings of this study, IoT in the education of students with disabilities benefits both the individual student and society as a whole.

Conclusion

With the development of technology, including the Internet of Things, colleges may overcome a number of difficulties, including managing vital resources, enhancing information access, developing better planning, and creating safer campuses. IoT systems have the potential to significantly improve higher education by energizing the faculty and staff, encouraging the students, and accelerating the learning process. This study's goal was to determine the potential of IoT in higher education and how to make the most of its advantages while addressing its problems and lowering its risks.

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TEACHING AND LEARNING WITH ICT TOOLS: ISSUES AND CHALLENGES FROM TEACHERS' PERCEPTIONS

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Abstract

In this digital era, ICT use in the classroom is important for giving students opportunities to learn and apply the required 21st century skills. Hence studying the issues and challenges related to ICT use in teaching and learning can assist teachers in overcoming the obstacles and become successful technology users. Therefore, the main purpose of this study is to analyze teachers' perceptions of the challenges faced in using ICT tools in classrooms. Evidence has been collected through distribution of a modified- adopted survey questionnaire. Overall, the key issues and challenges found to be significant in using ICT tools by teachers were: limited accessibility and network connection, limited technical support, lack of effective training, limited time and lack of teachers' competency.

Keywords: ICT, teaching-learning, higher education, & Teachers' Perceptions.

Introduction

Information and Communication Technology (ICT) includes computers, the Internet, and electronic delivery systems such as radios, televisions, and projectors among others, and is widely used in today's education field. Kent and Facer (2004) indicated that school is an important environment in which students participate in a wide range of computer activities, while the home serves as a complementary site for regular engagement in a narrower set of computer activities. Increasingly, ICT is being applied successfully in instruction, learning, and assessment. ICT is considered a powerful tool for educational change and reform. A number of previous studies have shown that an appropriate use of ICT tends to expand access to education. Through ICT, learning can occur any time and anywhere. Online course materials, for example, can be accessible 24 hours a day, seven days a week. Teleconferencing classrooms allow both learner and teacher to interact simultaneously with ease and convenience. Based on ICT, learning and teaching no longer depend exclusively on printed materials. Multiple resources are abundant on the Internet, and knowledge can be acquired through video clips, audio sounds, visual presentation and so on. Current research has indicated that ICT assists in transforming a teaching environment

There were some challenges: lack of knowledge, confidence, enough experience, training, interest and access to ICT tools, lack of technical support, lack of genuine ICT Software and unstable and unreliable internet connection at the schools. Due to these challenges, teachers did not use ICT in the classroom. Therefore, teachers should learn more to improve their knowledge and skills in ICT. The government should focus on management strategies and policies to reduce the challenges faced by teachers in mathematics classrooms. By these policies, they can use the ICT tools in the classroom. the

current study presents teachers' perceptions regarding technology integration in their teaching-learning practices at all educational levels in light of the previous studies performed in the last 5 years. By knowing teachers' experiences and perceptions, this study would help teachers make the best use of ICT in teaching and learning activities by sorting out the challenges and assisting concerned authorities in formulating policies accordingly..

Literature Review

Challenges in using ICT in teaching and learning Integrating ICT into teaching and learning is a complex process and one that may encounter a number of difficulties. These difficulties are known as "challenges" A challenge is defined as "any condition that makes it difficult to make progress or to achieve an objective" The following are some of the key challenges that have been identified in the literature regarding teachers' use of ICT tools in classroom.

Limited Accessibility and Network Connection

Several research studies indicate that lack of access to resources, including home access, is another complex challenge that prevent teachers from integrating new technologies into education. Various research studies indicated several reasons for the lack of access to technology. In Sicilia's study (2005), teachers complained about how difficult it was to always have access to computers.

Providing continuity of learning in low and intermittent connectivity scenarios Millions of students have limited access to the internet at home, leaving them struggling to access interactive online lessons and forcing them to find offline workarounds on devices lacking storage for video and other resources. Today, devices and education technology tools are more integrated into education than ever before, and learning opportunities happen not just at school, but at home and everywhere in between. In this landscape, the ability to work online and offline is key so that learning can continue regardless of a student's ability to connect to the internet

School with Limited Technical Support

When teachers dwell on textbooks alone. The generation of students today learned how to use devices at a very young age, which is comparatively faster than other age groups. With that in mind, it is obvious that traditional teaching styles can hardly capture their interest. Because of that, most institutions began to eliminate the antiquated ways of teaching and started to inject technology into their curriculum and school processes.

From the blackboard method of teaching, schools integrated the use of different types of devices to facilitate student learning. The use of these devices, with proper administration from teachers and educators, encourages participation and collaboration.

Lack of Effective Training

Lack of trained teachers- A major obstacle in the use of ICT in rural education is the lack of knowledge and skills. There is dearth of dynamic teachers formally trained in ICT. Moreover, there is hardly any quality training imparted on a regular basis to teachers involved in ICT education.

Limited time

lack of time exists for teachers in many aspects of their work as it affects their ability to complete tasks. Some of the teachers who participated specifically mentioned that they need time to locate internet information, prepare lessons, explore and practice using the technology, deal with technical problems, and receive adequate training. Recent studies show that lack of time is an important factor affecting the application of new technologies in

ICT Education

Lack of Teachers' Competency

Teachers often worry that their knowledge level does not match those of their 'digitally native' students. This distracts from one of the main advantages of ICT skills for educators: being able to facilitate lessons more effectively using digital technologies. Another challenge directly related to teacher confidence is teachers' competence in integrating ICT into pedagogical practice (Becta, 2004). In Australian research, Newhouse (2002) found that many teachers lacked the knowledge and skills to use computers and were unenthusiastic about the changes

Methodology

The central objective of this systematic analysis was to present a succinct account of representative literature dealing with the teachers' perceptions and experiences while integrating ICT in their teaching-learning practices. The best literature review provides a full reflection, which helps develop theory

Research Design

In this research, quantitative methodology was used to collect and analyze the data obtained from all the respondents. A questionnaire was self-developed and finalized by the researchers before being distributed to the targeted group of respondents. The questionnaire was designed specifically to address research objectives with regard to teachers' perception on use of ICT tools

Data Collection Procedures

Data collection defines the procedure for collecting data by the researcher. The questionnaire has been distributed to 120 teachers randomly. They were given one week to fill in the questionnaire and return it to the researcher. All of the participants volunteered themselves in the research. Some questionnaires were with missing information that the details could not be used as a contribution in this research.

Data Analysis

Process The data collected from the respondents were gathered together to be analyzed using the Statistical Packages for the Social Sciences (SPSS) version 22. The analysis includes both descriptive and inferential analysis. The researchers used descriptive analysis to analyze the frequency and percentage of the overall population in the demographic background. Besides, it is also used to determine the mean, standard deviation, frequency and percentage

Validity & Reliability

Internal consistency is measured in this research using the Cronbach's coefficient alpha (α). This method is used to identify the correlation between scores of each item in the test and the total score for all items in the test or is known as test index score. Items with high correlation with the test index score have high reliability, and those with low correlation values with the test index score have low reliability and will be deleted from the test.

Discussion of Findings

In this chapter, I discuss the findings presented the challenges the six key participants faced

Perceptions

What are teachers' perceptions of using ICT in teaching?" Perceptions are discussed in relation to the two main components of the Technology Acceptance Model (TAM),

Ease of Use

Perceived ease of use has been shown to influence positive attitudes towards using computers which in turn influence behavioural intention to use ICT in teaching (Davis, 1986; In the below figure Table shows that 141 (77%) of the questionnaire respondents perceived computers as easy to use

Statements	Agree	Disagree	Not sure	Missing	Mean
I find the computer easy to use	141 (77%)	24 (13%)	14 (8%)	4 (2%)	1.73
It takes up too much time for me to find things on the computer	57 (31%)	102 (56%)	19 (10%)	5(3%)	2.17
I find the computer difficult to use	23 (12%)	132 (73%)	14 (8%)	14 (8%)	2.01
I find it easy to get the computer to do what I want to do	143 (78%)	19 (10%)	16 (9%)	5 (3%)	2.17

In the present study, teachers' general positive attitudes do not appear to reflect actual use and, even less so, their confidence in using computers for teaching. An overwhelming majority (170 or 93%) of questionnaire respondents enjoyed using the computer and 160 (87%) thought it was fun but only 128 (70%) claimed to use computers daily to a few times a week

Usefulness

Teachers perceived computers as useful for reducing their workload as teachers and for preparing lessons rather than for meaningful use in the classroom. Quantitative findings show that questionnaire respondents generally perceived computers as useful or administration and lesson planning or preparation rather than classroom use. For example, questionnaire respondent number 112 said, "...presentations, administration work such as schedules, reports can be done through them [computers]" while ACE-ICT student teacher 16 said, "this year I am doing the in-service ACE-iCT

Experiences

"What are teachers' first experiences using ICT in the classroom?" Positive perceptions towards ICT are an important determinant of the kind of experience a user will have while using ICT (Elwood et al., 2006). Given the generally positive perceptions reported above, the expectation for the six key participants was that they would have positive experiences of teaching with computers in the classroom.

Subject

Such use of ICT was a surprising finding as these teachers had completed in-service qualifications that focused on cross curriculum ICT integration (the ACE-ICT and the BE-ICT courses) in which learning theories and their implications for teachers as they integrate ICT into their teaching were discussed. In particular, teachers were taught to develop activities that promote higher order

Tools

Using ICT as a combination of different tools is an effective strategy for ICT integration and it is crucial to know when to use what. In the two classrooms where ICTs were used with learners, teachers used ICT as more than one too

Use of ICT tools in classroom

Items	Always	Often	Sometimes	Rarely	Mean	SD
Produces a text using a word processing program	39 (39%)	24 (24%)	30 (30%)	7 (7%)	2.05	.989
Use emails to communicate with other	26 (26%)	26 (26%)	38 (38%)	10 (10%)	2.32	0.973

Capture and edit digital photos, movies or other Graphics	39 (39%)	24 (24%)	30 (30%)	7 (7%)	2.05	.989
Edit text online containing internet links and images	26 (26%)	26 (26%)	38 (38%)	10 (10%)	2.32	0.973
Create a database	38 (38%)	27 (27%)	30 (30%)	5 (5%)	2.02	.943

Discussion & Conclusion

This study is more related to identifying the perceptions in implementing ICT tools in teaching and learning in the classroom among school teachers. Furthermore, it examines the challenges of using ICT tools in teaching and learning in the classroom among school teachers and recognizes the effectiveness of the extent of ICT tools in supporting classroom teaching and learning. Based on the study the findings indicate that average level of the perceptions in implementing ICT tools in teaching and learning in the classroom among school teachers, high level of challenges of using ICT tools in teaching and learning in the classroom among school teachers and recognizing the effectiveness of the extent of ICT tools in supporting teaching and learning in the classroom.

Study showed that teachers do combine different resources in their teaching, as well as utilizing various modes of ICT with almost two-thirds claiming to use technologies (63%) and website (62%). Anyway, it is also evident that textbooks are still considered fundamental in the educational systems. Nearly two thirds of our respondents (64%) always or often follow textbooks in their teaching.

Important technologies for learning such as computers (98%) and educational software (93%) were ranked as the top technologies the rate of ICT use among teachers in school is average. However, the finding shows that more teachers used computer with teaching software in the classroom to present or demonstrate examples to students. They also like to use the computer to access students' results and keep track of their progress.

ICT contribution to the teaching-learning process. Since the attitude and perceptions of the teachers are critical to how effectively an innovation is implemented, it is important to gauge how teachers perceive this innovation and its efficacy as a tool for enhanced teaching and learning. It is also hoped that this study will contribute to the growing knowledge base and 21st century generation regarding the use of ICT in education

In future studies more focus should be given on management strategies and policies to address the barriers faced by teachers in using ICT tools in teaching and learning. If the barriers faced by teachers can be overcome, it is a step forward to enhance our students' learning outcome. The studies done with the same gender distribution could give more appropriate analysis whereby the gender perceptions could be analyzed.

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A STUDY ON THE SEQUEL OF DIGITALIZATION IN EDUCATION

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Introduction

Education plays vital role in one's life as well as in an economy. Education is digitalization by the means of online classes, smart classrooms, artificial intelligence. Not only for student's learning but also for the teacher's to improve the ways of providing education like analytics. It has lots of problems to setup in schools which includes lack of up-to-date system. It is the major issue faced by most of the schools in India. Also no digitalization strategy, schemes to improve digitalization is more in economy but the strategies are not given clearly and also not in practice. Internet is the major source for digitalization but is not available in all the areas. Before pandemic period maximum of the students don't aware of digital education but in pandemic every students are compelled to access online classes. The problems they faced during pandemic and also sequel faced by them after pandemic is lot.

Objectives

- To analysis student's physical and mental health after digitalization in education.
- To examine technical knowledge in rural and semi urban areas.
- To find the usage of digitalization by people.

Limitations

- Primary data has its own limitations.
- The study cannot be generalized.

Statement of Problem

The study aims to analyse the problem faced by the students and the impact of digitalization in education. The reason for many problems is that lack of awareness in rural and in semi urban areas about digitalization in education. So, we must induced to bring knowledge about the schemes and how to use the technologies. On the contrary it does not mean that it do not possess any demerits. It means that the transformation however designed it brings long term benefits by knowing and adopting digital education.

Research Methodology

The study is analytical and descriptive in nature. The study on the digitalization in education conducted using a convenient sampling among students from various localities. We collected the information using google forms. The active participants are certain known persons that we identified to bring justification to our study. The study aims to concentrate the volume of students who used digital classes in pandemic situations.

Analysis and Interpretation

- The availability of quality technological infrastructure such that high speed network, personal computer system, software can have great impact over ability of students to integrate technology in learning activities.
- The availability of technically upgraded facilities may induce the students towards active learning process
- Acknowledge about digital education, during the pandemic situation where most of them shifted.
- Major problem of digital education are eye defection and mental depression.
- Usage of digital mode are internship, training programs, workshops, and distance mode of education.
- Keen interest attraction towards learning process and distraction in education.

Summary and Findings

1. Majority of respondents (64.3%) were convenient in using digital apps for fees payment whereas 36.7% reported that it was inconvenient.
2. Among 42 respondents, 50% reported that online classes have led to eye defection whereas 40.5% respondent reported reduced the level of learning in online classes.
3. Out of 42 respondents, 57% were easily accessible to internet facilities whereas 42.9% faced issues in accessing of internet.
4. Among 42 respondents, 54.8% using digital mode for internship and secondly 23.8% for training programme and 11.9% for workshops and only 9.5% have used distance mode of education.
5. Out of 42 respondents, 69% of them reported that there has been distraction in digital platform whereas 31% disagreed to the above statement.
6. Lack of adaptability and knowledge about digital platforms are the important feature in transformation of digital education as it acts as a barrier whose representation accounts to more than 70% collectively.
7. Since most of the respondent belongs to the age category of 18 – 30. They are the students and hence the other groups contribution is comparatively different.
8. Last among 42 respondents nearly half of the population sample lies with rural and semi urban areas.
9. Usage of digital education during pandemic is 72%, after pandemic is 21.2% and before pandemic 6.8%

Suggestions

- The study suggests to provide government and non – government organization can bring awareness about the free availability of online classes and its outcome.
- Also, availability of resources in affordable manner.
- Digital platforms are not beneficial to the students below the age of 16.
- It gives maximum advantage to the students above the age of 16.

EMPOWERING WOMEN; BASIC RIGHT FOR BEING AN INDIVIDUAL

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Abstract

Concept Women empowerment emerges from the middle of 20th century and now recognize globally. Empower the women from discrimination; inequality and injustice are the basic aspects of this approach. Gender equality, economic empowerment, social empowerment, political empowerment and education are all the integral of women empowerment which provide the safe space where they have rights for education, equal opportunities in social, economic and political status.

Keywords: *Battered Women, Abusive Relationship, Women's Mental Health.*

Introduction

Women empowerment is an essential aspect of socioeconomic development globally [1]. Empowering women through equal access to education, employment opportunities, and leadership positions can lead to gender equality and promote economic growth [2]. Therefore, this paper aims to investigate women's empowerment by employing a mixed-method approach. The study examines both qualitative and quantitative data to provide a comprehensive understanding of the subject matter.

The literature review focuses on the previous research works on women's empowerment. The review summarizes the existing literature on the topic, identifying the gaps in knowledge that this study aims to address. The literature review explores the various dimensions of women's empowerment, including economic, social, and political. The review also highlights the challenges to women's empowerment, including cultural and societal barriers, inadequate education and training, and discriminatory policies [3].

Women empowerment is the process of enhancing women's economic, social, and political status in society. It involves creating an environment where women have equal opportunities and access to resources to make decisions that affect their lives positively. Women's empowerment is essential for promoting gender equality, improving women's health and well-being, reducing poverty, and promoting economic growth [4,5]. Historically, women have been subjected to discrimination, oppression, and inequality. They have been denied basic human rights such as the right to education, health, and the right to own property. Women have also been excluded from participating in decision-making processes that affect their lives. However, over the years, there has been a significant shift towards promoting women's empowerment [6].

Methodology

This study employs a mixed-method approach to investigate women's empowerment. The study collects both qualitative and quantitative data to provide a comprehensive understanding of the subject matter. The quantitative data is collected using a questionnaire distributed among women in different regions. The survey questionnaire comprises close-ended questions that provide insights into women's empowerment levels [7]. Qualitative data, on the other hand, is collected through interviews with selected women from different regions. The semi-structured and open-ended interviews allow the participants to provide detailed information about their experiences and views on women's empowerment. To investigate the gaps between the knowledge of empowering women and to found the real struggle of women on daily basis we applied both the quantitative and qualitative data collection procedure, which include the questionnaire with close-ended question and the interviews with selected women from different region [8].

Results

The study's results indicate that women's empowerment levels vary across different regions, with some regions having more empowered women than others. The study also reveals that cultural and societal barriers remain the most significant hindrance to women's empowerment. In contrast, education and training opportunities positively impact women's empowerment levels. The study's qualitative findings reveal that the participants' personal experiences influence their views on women's empowerment, with some participants reporting progress in their empowerment journeys. Women with different background have different approaches and their empowerment vary according to it even though culture and social bouncing's hindering the pathway of empowerment. But it has been noted that the education and training sessions are helpful in bringing change in one's narrative and behavior. Empowering the women; it's not only the concept of girls education right, it also about their social, political and economic stability. Women empowerment is a multi-dimensional concept that involves enhancing women's economic, social, and political status in society. There are several themes that are integral to women's empowerment, and they include:

1. Gender Equality

Gender equality is a fundamental theme in women's empowerment, and it involves creating an environment where women and men have equal rights, opportunities, and access to resources. Gender equality is crucial to promote women's empowerment as it challenges gender norms, stereotypes, and discrimination that limit women's progress in society.

2. Education

Education is another essential theme in women's empowerment. Education provides women with knowledge and skills that enhance their decision-making abilities. Educated

women are more likely to participate in economic activities and become agents of change in their communities. Education also helps to reduce gender inequality, poverty and improve women's health and well-being.

3. Economic Empowerment

Economic empowerment involves providing women access to resources such as credit, financial services, and markets. Economic empowerment enables women to become financially independent, allowing them to make decisions that affect their lives positively. It also helps to reduce their vulnerability to poverty and exploitation.

4. Social Empowerment

Social empowerment involves promoting gender equality, challenging gender norms and stereotypes, and reducing gender-based violence. It involves creating an environment where women have equal access to resources, services, and opportunities. Social empowerment can be achieved through various means, including legislation, awareness campaigns, and community mobilization.

5. Political Empowerment

Political empowerment involves promoting women's participation in decision-making processes at all levels of society. It ensures that women have equal representation in political structures and are actively involved in policy-making processes. Political empowerment can be achieved through affirmative action policies, education and training, and increasing women's representation in decision-making structures.

Discussion

One of the essential aspects of women's empowerment is education. Educating girls and women has a positive impact on their empowerment levels. It helps to increase their knowledge and skills, which, in turn, enhances their decision-making abilities. Educated women are more likely to participate in economic activities, which can improve their economic status and reduce poverty. Education also empowers women to become agents of change in their communities, promoting social and political equality.

Another critical aspect of women's empowerment is economic empowerment. Economic empowerment involves providing women with access to resources such as credit, financial services, and markets. Social empowerment involves promoting gender equality, challenging gender norms and stereotypes, and reducing gender-based violence [9]. It involves creating an environment where women have equal access to resources, services, and opportunities. Social empowerment can be achieved through various means, including legislation, awareness campaigns, and community mobilization [10].

Political empowerment involves promoting women's participation in decision-making processes at all levels of society. It involves ensuring that women have equal representation in political structures and are actively involved in policy-making processes [11, 12]. Political empowerment can be achieved through affirmative action policies,

education and training, and increasing women's representation in decision-making structures.

Precisely, women empowerment is a basic approach in the modern world. It involves enhancing the economic, social, and political status of women in society, promoting gender equality, improving women's health and well-being, reducing poverty, and promoting economic growth. Women's empowerment can be achieved through various means, including education, economic empowerment, social empowerment, and political empowerment [13]. It is essential to promote women's empowerment to create a society where women have equal opportunities and their rights are respected and protected.

The study's findings support the previous research on women's empowerment, highlighting the need for policy changes to remove cultural and societal barriers to women's empowerment. The study's results also emphasize the need for increased education and training opportunities for women, which can have a positive impact on their empowerment levels [14]. However, the study acknowledges the limitations of its sample size and recommends further research on the subject.

Conclusion

In conclusion, women's empowerment is an essential aspect of socioeconomic development globally. This study employs a mixed-method approach to investigate women's empowerment, collecting both qualitative and quantitative data. The study's findings highlight the need for policy changes to remove cultural and societal barriers to women's empowerment and increase education and training opportunities for women. Overall, the study provides a comprehensive understanding of women's empowerment, contributing to the existing knowledge on the subject matter.

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NMEICT: A DIGITAL INITIATIVE FOR TEACHING AND LEARNING THROUGH INFORMATION COMMUNICATION TECHNOLOGY TO HEIS

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Abstract

Digital technology and literacy can heighten the transformation of teaching and learning in higher education institutions (HEIs). This study covers the extent to which digital Initiative have been used to advance the teaching and learning process in HEIs, The Government launch of these digital initiatives has necessitated evolving strategies for effective adoption and utilization in higher educational institutions (HEIs) to achieve the anticipated benefits and outcomes for sustainable change of these digital initiatives. This paper presented an overview on the digital initiatives launched by the government NMEICT to enhance access and promote quality in higher education. Few suggestions for the effective adoption and utilization to achieve the benefits of these digital initiatives in HEIs were also made.

Keyword: Digital Initiative, Teaching and Learning and ,ICT and HEIs

Introduction

Digital age has made strong impact on people's life in all spheres. Teaching and learning in digital era has also grown beyond the boundaries of classroom and books. Today's learners have exposure to various e-learning resources and plenty of information is available at click of mouse. But sadly, current state of affairs in Indian higher education presents a gloomy picture and education sector is struggling with various problems like shortage of trained faculty and lack supporting infrastructure facilities . Govt. of India has initiated a series of programs to improve the quality of education by leveraging the benefits of digital technology. High quality e-content has been created under various digital initiatives rolled out by Govt. of India and disseminated to all stakeholders using information and communication technology (ICT). In this paper, an overview of various learning resources funded by Govt. of India has been carried out.

Need of Digital Initiative

In ancient times, India has been a great center of learning with world famous institutions at Takshashila and Nalanda. But at present time higher education scenario in India does not look so promising. Barring famous IITs and few other elite institutions, most of the colleges and universities have shortage of qualified teachers and lack physical

facilities. Colleges in rural and remote places do not even possess basic facilities for a conducive learning environment for students. It is a mammoth task to improve the quality of higher education in India, as it requires large time-frame and enormous funding. Still it would not be possible to provide educational facilities to colleges and universities in remote areas at par with their urban counterparts by physically expanding the available resources. But by leveraging the power of ICT, the twin concerns of higher education can be addressed adequately.

The Govt. of India has been funding a series of programs under the mentorship of leading academic institutions to raise the quality standards in higher education. The main goal is to create high class e-content based on college curriculum which should be freely available to all stakeholders. As high quality content once created can be transmitted and scaled to any level by using state-of-the-art ICT. Premium Indian Universities and institutions have been assigned the task to create high quality content by recording live lectures of their classroom activities. Thereby giving a chance to students from various universities and colleges to access the education imparted in elite institutions. Under the National mission on Education through Information and Communication Technology (NMEICT), interactive digital content has been created on a large scale by many sciences and engineering institutions. Many other govt. entities are involved in creating e-content for other subjects such as Consortium for Educational Communication (CEC) for PG Level University courses and IGNOU in 17 disciplines of Social Sciences and Humanities

NMEICT

The National Mission for Education through Information and Communication Technology (NME-ICT) an ambitious project of Ministry of Human Resource Development (MHRD) of Government of India was formed in 2009 in order to sustain a high growth rate of Indian economy through the capacity building and knowledge empowerment of the people and for promoting new, upcoming multi-disciplinary fields of knowledge. Three guiding philosophies have been identified with NMEICT:

- a) No talent of the country should be allowed to go waste
- b) All the services available through the content delivery portal all platform should be free.
- c) Freely available material on the web should be used so as to avoid reinventing the wheel.

The main aim of Information and Communication Technologies (ICTs) in education is the implementation of ICT equipment and tools, as a media and methodology, in the teaching and learning process. Ministry of Human Resource Development (MHRD), put forth a set of objectives to be followed by the NMEICT in order to ascertain the success of this endeavor.

- a) Effective utilization of intellectual resources, minimizing wastage of time in scouting for opportunities or desired items of knowledge appropriate to the requirement

- b) Certification of attainments of any kind at any level acquired through formal or non-formal means in conventional or non-conventional fields.
- c) Any-time availability of desired knowledge at appropriate levels of comprehension to all for self-paced learning
- d) Support to all the learners and workers for any of their perceived learning needs
- e) Extensive leveraging of the advancements in the field of ICT for taking the knowledge resources to the doorsteps of the learner.
- f) Multi-lingual content development for the learners more comfortable in those languages
- g) Voice support for educational material delivery and interactivity for the content on the portal
- h) Development of knowledge modules having the right content to take care of the aspirations and to address to the personalized needs of the learners
- i) Standardization and quality assurance of contents to make them world class.
- j) Building connectivity and knowledge network among and within institutions of higher learning in the country with a view of achieving critical mass of researchers in any given field.
- k) Availability of e- knowledge contents, free of cost to Indians.
- l) Experimentation and field trial in the area of performance optimization of low cost access/devices for use of ICT in education

NMEICT - ICT Initiatives

SWAYAM (Study Web of Active Learning for Young Aspiring Minds)

(<https://swayam.gov.in/>)

It was established to provide online learning platforms using information and communication technology for students from high school through higher education courses, as well as skill development courses. It has proven to be a watershed moment in knowledge sharing, and it is a Government of India programme aimed at attaining the cardinal values of education policy of access, equity, and quality, as well as offering the best instructional learning resources to all e-learners. It also serves as a digital divide bridge for learners who have been left out of the knowledge economy's mainstream.

The SWAYAM platform facilitates the hosting of all courses available for students from 9th grade to post-graduation, and can be accessed by anyone, anywhere, at any time. The courses are provided to the learners free of charge, and over 1000 faculty and teachers from across the country assist in the preparation of different courses.

SWAYAM also organises all of the programmes and courses into four quadrants: video lectures, printed text content, self-assessment examinations or quizzes, and online discussion forums. The following national coordinators have been formed to ensure the learners receive the highest quality content: UGC, AICTE, NPTEL, NIOS, IGNOU, IIMB, CEC, and NITTTR

SWAYAM Prabha (<https://www.swayamprabha.gov.in/>)

It's a group of about 32 DTH channels dedicated to educating students by broadcasting higher-quality knowledge-sharing programmes. The channels offered on this platform are linked with the Gandhinagar-based BISAG. UGC, CEC, NPTEL, IITs, NCERT, IGNOU, and NIOS make study content or study material available.

SWAYAM Prabha also provides a learning environment for higher education students via DTH channels. Curriculum-based courses are also available for (UG) undergraduate and (PG) graduate students, and they cover a wide range of subjects including science, art, commerce, social science, engineering and technology, humanities, agriculture, law, and medical. Vageesh, Sanskriti, Prabodh, Saaraswat, Prabandhan, Vidhik, Kautilya, Aryabhata, Spandan, Daksh and channel 11 to 22 for humanities, social science, economics, commerce and finance, science, engineering, and computer field are some of the DTH channels provided by SWAYAM Prabha for higher education learners.

National Digital Library (NDL)(<https://ndl.iitkgp.ac.in/>)

The National Digital Library of India (NDL India) pilot project was launched by the Ministry of Human Resource Development (MHRD) as part of its National Mission on Education through Information and Communication Technology (NMEICT) to develop a framework for a virtual repository of learning resources with a single-window search facility. The MHRD has sanctioned IIT Kharagpur's project "Development of National Digital Library of India, towards Building a National Asset" under NMEICT.

NDL is a single-window platform that collects and collates metadata from prestigious Indian and international educational institutions, as well as other relevant sources. It's a digital library that houses textbooks, articles, films, CDs, lectures, simulations, fiction, and other forms of educational content.

The project's goal is to provide an overarching framework for collecting a significant number of e-contents for school, college, and higher education, as well as an e-content, virtual library that meets the demands of students of various abilities. Design and development of "OAI-PMH" Server for Metadata Harvesting, Indexing, and other functions.

It Serves as a pan-India virtual teaching-learning-evaluation-knowledge platform and for key national asset. Collect resources from other Ministries such as Ministry of Culture, Health, Rural Development, and Department of Science and Technology on this portal.

Virtual Labs(<https://www.vlab.co.in>)

Under the auspices of the National Mission on Education through Information and Communication Technology, the Ministry of Human Resource Development (MHRD) of the Government of India has launched the Virtual Labs project (NMEICT). IIT Delhi is the coordinating institute for this initiative, which is a partnership of twelve collaborating institutes. It's a watershed moment in ICT-based education. For the first time in distant testing, such an endeavour has been taken. Over 100 Virtual Labs with over 700 web-enabled experiments were built for remote operation and viewing as part of the Virtual Labs initiative.

All students and faculty members of Science and Engineering Colleges who do not have access to good lab facilities and/or instruments are the intended beneficiaries of the projects.

- Students in high school, whose curiosity will be piqued, maybe pushing them to pursue higher education. Researchers from a variety of institutions who can work together and exchange resources.
- The curriculum and related teaching resources can be used by a variety of engineering colleges.
- For conducting experiments at the user's location, Virtual Labs do not require any additional infrastructure. The internet can be used to access the simulation-based experiments.

e-PGPathshala(<https://epgp.inflibnet.ac.in/>)

e-PGPathshala is a content-focused internet portal that is open to the public. This portal is an MHRD project being built by a team from the NME-ICT department in accordance with UGC norms. e-PGPathshala is an online course that graduate students from various institutions, organisations, and universities PGPathshala was designed by a group of professionals who worked under various criteria across the country. This effort was initiated by the National Mission of Education through Information and Communication Technology (NME-ICT), which was established by the University of Georgia under the Ministry of Human Resource Development. The Ministry has provided funding to the University of Georgia for the development of online course work for postgraduate students. It offers course content for each of the 77 subjects, organised by disciplines.

It includes high-quality, interactive course materials for a variety of special areas in the social sciences, arts, fine arts & humanities, natural & mathematical sciences, linguistics, and languages, among other disciplines. Anyone, from wherever, can access all of these materials without paying a fee. This project covers the void left by teachers in various institutions and assists students in receiving education and increasing their knowledge of the subject. For all postgraduate courses, it improves the self-learning process, assessment, and updating with other courses. It offers a distinct platform for students as well as a separate platform for content creators. Students can study and learn by downloading a module.

Spoken Tutorial(<https://spoken-tutorial.org/accounts/login/>)

Spoken Tutorial is an educational multimedia platform that has won numerous awards. One can self-learn a variety of Free and Open Source Software here. Our self-paced, multilingual courses allow anybody with a computer and a desire to learn from any location, at any time, and in any language. The Spoken Tutorial project is an initiative of the Ministry of Human Resources and Development's 'Talk to a Teacher' programme of the National Mission on Education via Information and Communication Technology (ICT).

Spoken Tutorial Forum is a welcoming online community. You can join existing debates or initiate new ones, and the Spoken Tutorial community will respond quickly. Forum

registration is absolutely free and takes less than a minute. Even for computer rookies, using forums is quite simple. Formatting forum posts with fonts, colours, and a variety of other options is simple. You can simply attach files to your postings using your PC.

The MHRD has granted a project to IIT Delhi under the NMEICT to establish up a strong 24X7 supported Data Centre, and the activities have been set up at the NIC / NKN Data Centre, and the cloud is known as 'Baadal.' e-e-content Acharya's and video content are hosted on the IIT Delhi cloud.

The Free and Open Source Software for Education (FOSSEE) (<https://fossee.in/>)

The IIT Bombay-sponsored FOSSEE project has promoted the adoption of open source software in educational institutions (<http://fossee.in>). It accomplishes so through educational materials like spoken tutorials, documentation like textbook supplements, and awareness programmes like conferences, training seminars, and internships. The Textbook Companion (TBC) is a library of code for solved textbook examples. Approximately 2,000 college students and professors took part in this exercise, with close to 1,000 TBCs produced solely in Scilab and Python. All of the TBCs have been released open source and are available for free download through FOSSEE. TBCs for Scilab and Python are also on the cloud, so all you need is a browser to access/execute the TBC programmes.

Open FOAM, an alternative to the proprietary programme Fluent for computational fluid dynamics, and DWSIM, an alternative to the proprietary product Aspen Plus for chemical process simulation, are both promoted by FOSSEE. FOSSEE has also taken on several new open source software projects, including raising Scilab toolboxes to Matlab levels, developing eSim, an electronic design automation software that is an alternative to ORCAD, and developing Sandhi, a data acquisition and control software that is an alternative to LabVIEW. The FOSSEE team also contributes to open source hardware projects like Open PLC and Arduino. A vast number of students have been trained around the country as a result of these projects.

e-Yantra (<https://new.e-yantra.org/>)

An MHRD initiative under NMEICT Programme, named “e-Yantra” is implemented to incorporate Robotics into engineering education with the objective of engaging students through exciting hands-on application of mathematics, computer science, and engineering principles. Creation of robotic platforms has been very successfully demonstrated during Phase-I of the project. Presently, e-Yantra has been implemented in 100 colleges.

eYantra is creating skills by setting up lab infrastructure for project based learning and training teachers in these 100 engineering colleges. Going ahead, MHRD sees the core skills developed by IITB as generating, distributing and analysing content to further create manpower with practical skills.

eSkill India (<https://eskillindia.org/>)

The National Skill Development Corporation (NSDC) is a public limited company that was established on July 31, 2008 under Section 25 of the Companies Act, 1956.

(corresponding to section 8 of the Companies Act, 2013). The National Skills Development Corporation (NSDC) strives to encourage skill development by assisting in the establishment of large, high-quality, for-profit vocational institutions. Furthermore, the organisation invests in the development of scalable and profitable vocational training programmes. Its mandate is also to enable support system which focuses on quality assurance, information systems and train the trainer academies either directly or through partnerships. NSDC acts as a catalyst in skill development by providing funding to enterprises, companies and organizations that provide skill training. It also develops appropriate models to enhance, support and coordinate private sector initiatives.

NSDC has created the e-Skill India e-learning aggregator platform to help with this. In the skilling ecosystem, the aggregator brings together B2C e-learning portals that operate via the internet. In a hub-and-spoke model, these portals also develop and source e-learning content. As a result, multiple e-learning players with expertise in specific skilling areas can pool their resources as part of this aggregation effort. While students benefit from the e-learning alternatives available, they should keep an eye out for awards and bonuses for early e-Skilling accomplishments!

Pradhan MantriKaushalVikasYojana (PMKVY) (<https://www.pmkvyofficial.org/>)

The Pradhan MantriKaushalVikasYojana (PMKVY) is the Ministry of Skill Development and Entrepreneurship's flagship scheme (MSDE). This Skill Certification Scheme's goal is to enable a large number of Indian youth to participate in industry-relevant skill training. It will assist them in finding a better way of life. The programme aids in mobilisation, motivation, counselling, reward, and certificate distribution. The implementing agency will engage a third party to assess the training requirements in order to design a consistent skill development methodology. It is significant in the sense that it will aid in the development of skilled labour tailored to the industry's specific needs.

PMKVY objectives of Enable and mobilise a large number of youth to participate in industry-designed quality skill training, become employable, and earn a living; Increase productivity of the existing workforce, and align skill training with the country's actual needs; Encourage standardisation of the Certification process, and lay the groundwork for creating a skills registry.

Conclusion

Digital initiatives of Govt. have given a fillip to higher education in India. Students are getting used to e-content and its acceptability is growing day by day. The academicians engaged in the field of higher education will have to acquaint themselves with the pedagogic orientation as pedagogy in a general and epistemic dimension of the knowledge construction virtually or digitally in higher education institutions. Teachers should be trained to be technology savvy and adapt to incorporate the e-content in university curriculum. Students should be made aware about the free availability of digital content by organizing special campaigns and promotional events. The digital divide in terms of access and equity is still a major challenge in India which needs immediate and stark attention on

behalf of the Government of India to have comprehensive strategies to make a decisive intervention immediately to address the accelerating need for everyone to be digitally connected equitably.

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A NEW APPROACH ON E-LEARNING SYSTEM USING WEB MINING APPROACH

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Abstract

The E-Learning has become matured learning paradigm with the advent of web based learning and content management tools, and shifted the focus of entire world from instructor centric learning paradigm to learner centric approach. The Web Mining plays a very important role for the E-learning systems. In personalized E-Learning system, user customizes the learning environment based on personal choices. In a general search process, a hyperlink which is having maximum number of hits will get displayed first. For making a personalized system history of every user need to be saved in the form of user logs. The proposed system provides a new approach with combination of web usage mining, HIT algorithm and web content mining. It combines hits results on user logs and web page contents with a clustering algorithm called as Lingo clustering algorithm. In this paper, we will describe an approach aiming to achieve personalization in e-Learning services using web usage and Content mining. This paper discusses about the benefits and usefulness of web mining in e-learning.

Keywords: Web usage mining; web content mining; web personalization; e-learning system, Lingo; Hilltop Algorithm.

Introduction

The World Wide Web (WWW) is the subset of the Internet. E-Learning refers to the learning in which the learner and instructor are separated by time or space where the gap between two is bridged through the use of online technologies. With the help of web based learning, it is possible for learners to learn from anywhere at any time.

E-learning is a form of electronic teaching that enables people to learn anytime and anywhere. The objective of an online personalization system is to provide users with the information they require, without asking them explicitly. Web Personalization is outlined as any action that adapts the data or services provided by a website to the requirements of a selected user or a collection of users, taking advantage of the information gained from the users guidance behavior and individual interests.

The prominent characteristic of E-learning system is that the students become self-learners and explorers of knowledge. In learning process, learner is the main body but not passive recipient. E-learning system is built on web service related technology and provides all kinds of learning ways to students to realize real-time, interactive and cooperative learning at different places.

It should be able to find the individual differences of learners and construct personalized learning environment to meet their individual needs.

Personalization in E-learning

The personalization include how to find and filter the learning information that fits the user preferences and needs, how to represent it and how to give the user tools to reconfiguration the systems, in consequence, reconfiguration system could be part of personalized environment in some systems.

A core part of the personalization method is generation of interested information to users. It's strictly supported as certain patterns, and ensuing probabilities.

E-Learning systems are grouped in the following approaches:

- Personalization of the learning content, based on learners' preferences, educational background and experience.
- Personalization of the representation manner and the form of the learning content.
- Full personalization, which is a combination of the previous two types.

Distinguishing these changes and adapting to them may be a key goal of personalization. We recommend that the personalization process be taken to a new level, where the user doesn't to be actively attached the personalization method. All that the user has to do is to register to the system, create own profile and once the user logs onto E-learning system, the browser checks for that profile file as it checks for the cookies. The profile file describes the user's area of interest. Since the profile file is in standardized format, the contents are provided according to the profile file. This is able to enhance the user's personalization method while not their active involvement.

In e-learning systems, the challenges are increase of complexity and more interoperability between systems in distributed environment. The lacking is reference architecture in which by reusing web services, reusing learning objects etc

E-learning portal applications need to present data in a tabular format to the users. The functionality provided by the search component is dynamic query generation based on user input, sort order, joins, etc. There are multiple ways to invoke the query service. All are supported by this protocol. The search component of personalized E-learning systems is as shown in figure 1.

Therefore a well-designed customized distance education system might have the subsequent characteristics:

- It will find out the learners' study interest, access habits, learning orientation
- It will change the location map and customize the learners' interface dynamically consistent with the access log.
- It will suggest learning resources by analyzing the learner's interest and learning process.
- It will recommend interested information.

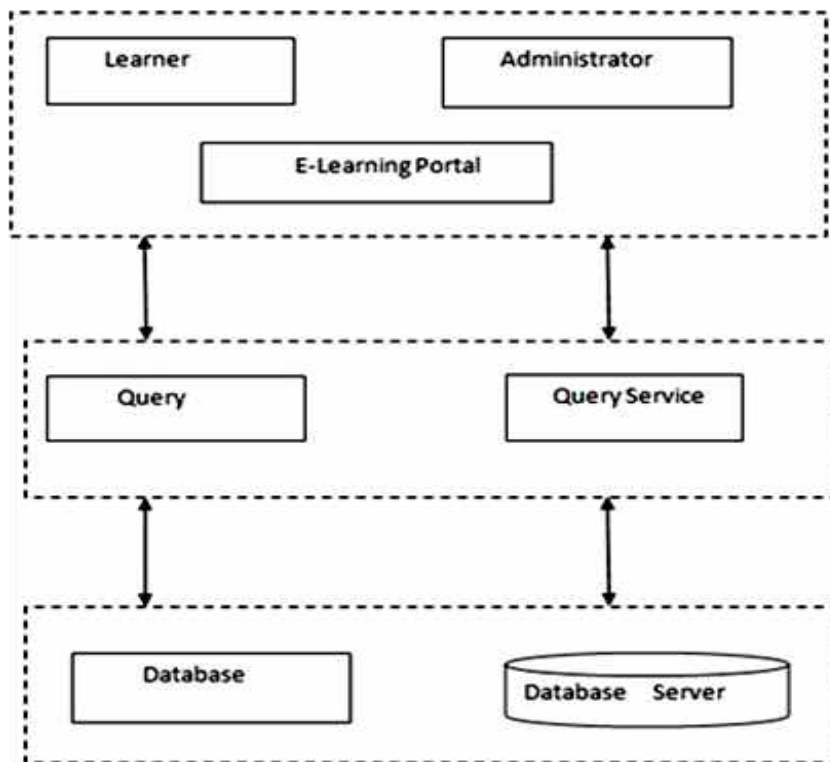


Figure 1: Search Component of ServiceOriented Reference Architecture for Personalized E-Learning System.

Based on the service description and the protocol, new client interfaces can be easily built according to users' preferences. Learners want search the learning object related to Computer Science, then they have to type 'Computer Science'. By activating the link on the query interface, it obtains the extra services exposed by other providers.

There are variations between layout customization and personalization.

In customization, the location is often adjusted to each user's preferences concerning its structure and presentation. Whenever a registered user logs in, his/her customized home page is loaded.

This method is performed either manually or semi-automatically. In personalization system advises in modifications regarding the content or maybe the structure of an online web site is performed dynamically.

Personalized E-Learning Services

Some basic and important e-learning services augmented with personalization (Figure. 2) features are as follows:

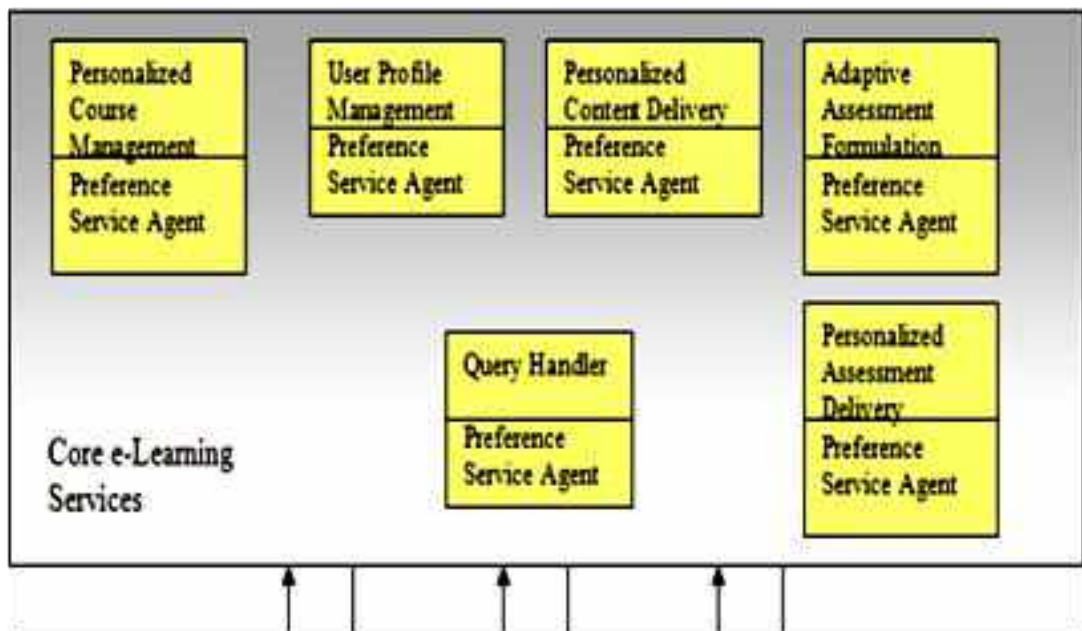


Figure.2. Personalized e-Learning services

- a. Personalized Course Management.
- b. User Profile Management.
- c. Personalized Content Delivery.
- d. Adaptive Assessment Formulation
- e. Personalized Assessment Delivery
- f. Query Handler

Web Mining Applicable To E-Learning

A. Web Mining Techniques

Web mining is one of the important branches in data mining. Extraction of useful information or pattern from the web data is called web mining. It can be classified into three following categories as shown in figure (3).

- Web structure mining
- Web content mining
- Web usage mining
- Web Structure mining:

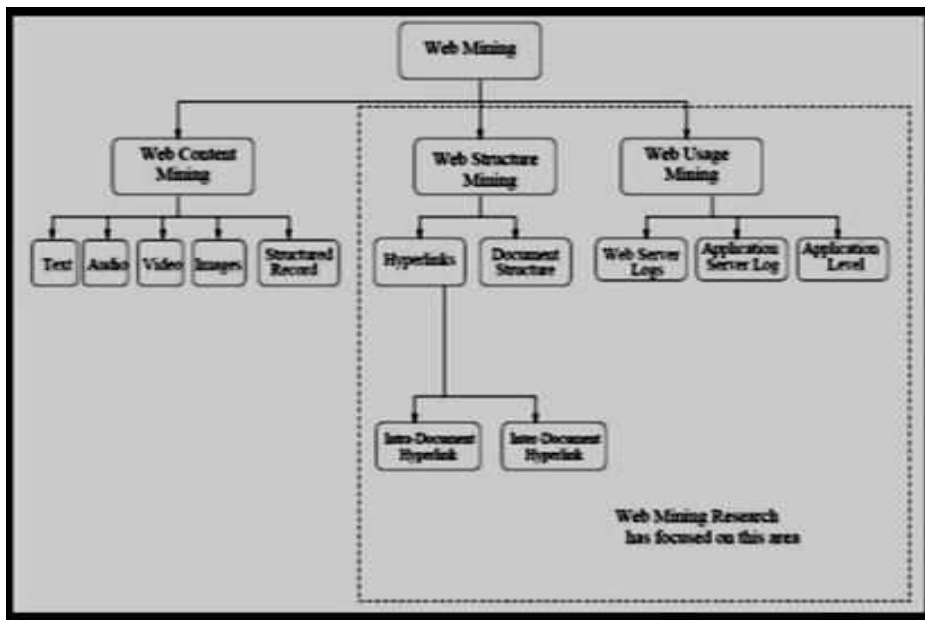


Figure 3. Structure of Web mining

Web Content mining

Web content mining refers to the extraction of useful information from the Web document's content. The content of the web page consist of text, images, audio, video etc., it includes the techniques like clustering or associating web pages according to the respective branches. It also helps in discovering patterns in web pages to mineuseful data.

- **Web Usage mining**

Web Usage Mining is the type of data mining techniques to discover interesting usage patterns from Web data, in order to understand and better serve the needs of Web based applications. Usage data captures the identity of Web users along with their browsing behavior at a Web site.

Moreover, the most important research initiatives in Web usage mining and personalization area are presented. But this is not as much effective method for personalization.

- **Web structure mining**

Web structure mining targets on analysis of theweb and one of its uses is to identify more preferable documents helps to discover similarities between web sites or discovering significant sites for a specific topic or branch or indiscovering web communities. It is also used to reveal the schema of web pages

Web mining based E-learning System

The E-learning system consist three parts. Teaching resource library, learning platform and user. Education resource library is a storage server to store different types of resource which is related to education. The learner of that web based system is the user.

Web server is the Learning platform that gives web based learning platform to user.

The Proposed System Architecture

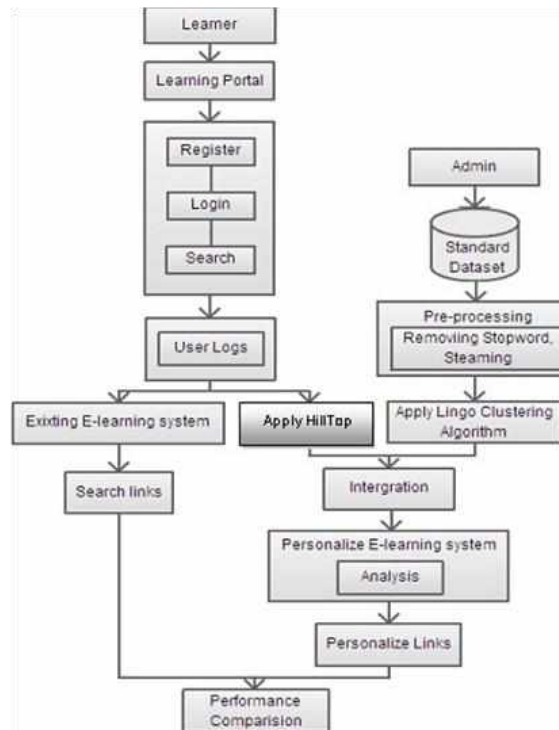


Figure 4. Architecture of proposed approach

The objective of this approach is to provide users with the information they want or need, without expecting from them to ask for explicitly. Figure (3) represents proposed architecture for personalized E-learning system combining HITS algorithm on user logs and Lingoclustering algorithm.

Admin is responsible for forming a standard dataset including learning objects. This dataset is preprocessed by removing stop words and stemming. A new user first makes registration to the learning portal. When user login to the

System using his own user name and password and search for a particular topic, at server side user logs are stored for that search. Then HITS algorithm is applied to those logs to increase the weight of that log.

For proposed approach, preprocessed data is given to content mining using Lingo clustering algorithm. Clusters are formed from preprocessed data. Final results are calculated by combining user logs, HITS algorithm and clustering results.

Algorithm of the Proposed System

HillTop Algorithm

The Hilltop algorithm is an algorithm used to find documents relevant to a particular keyword topic. Created by Krishna Bharat while he was at Compaq Systems Research Center and when you enter a query or keyword into the Google search engine, the Hilltop algorithm helps to find relevant keywords whose results are more informative about the query or keyword.

The algorithm operates on a special index of expert documents. These are pages that are about a specific topic and have links to many non-affiliated pages on that topic. Pages are defined as non-affiliated if they are authored by people from non-affiliated organizations. Results are ranked based on the match between the query and relevant descriptive text for hyperlinks on expert pages pointing to a given result page

Clustering Algorithm- LINGO

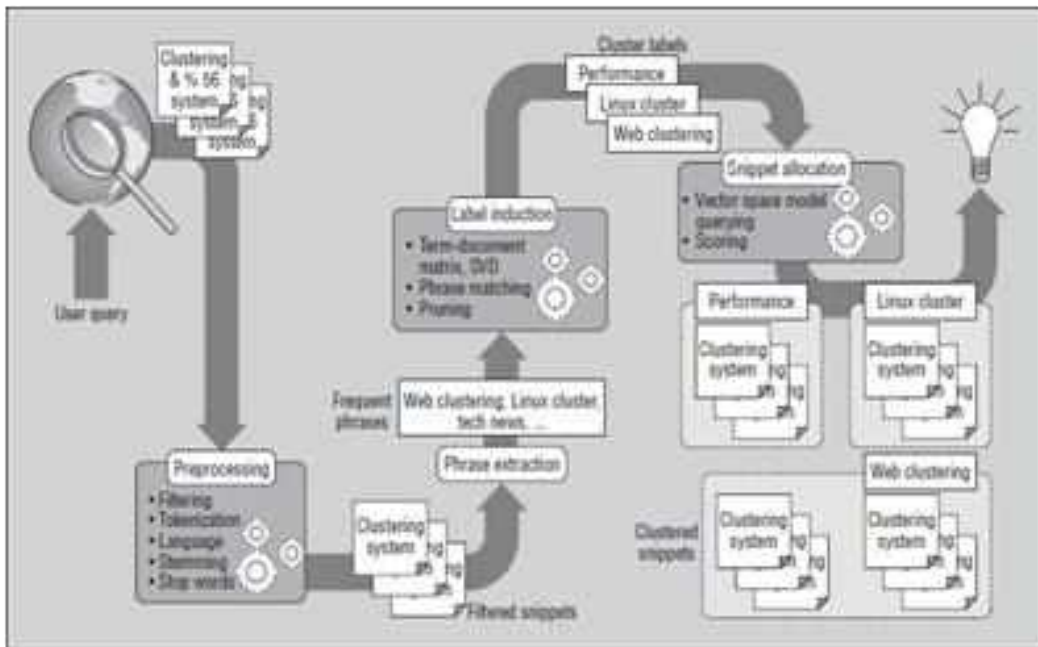


Figure 5 Overview of the Lingo algorithm's phases.

The performance of the web search engines could be improved by properly clustering the search result documents. Most of the users are not capable to give the appropriate query to get what exactly they wanted to retrieve. So the search engine will retrieve a massive list of data, which are ranked by the page rank algorithm or relevancy algorithm or human judgment algorithm.

Search-results clustering aims to present information about the matching documents. It's like taking a step backward to grasp a bigger picture. They consider no longer care about individual documents, but about some underlying semantic structure capable of explaining why these documents constitute a good result to the query. The user will always find to self with the unrelated information related to the search due to the ambiguity in the query by the user.

Evaluating the performance of the clustering algorithm is not as trivial as counting the number of errors or the precision and recall of a supervised classification

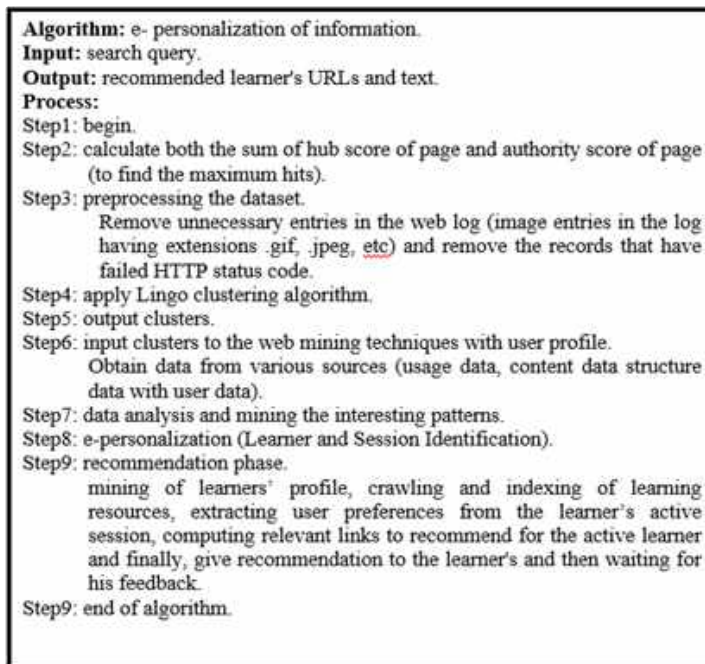


Figure 6.Lingo Clustering Algorithm

3. Results

A. Experimental Analysis

As we see in Figure. 7, this is home page of personalized E-learning system. There are two different logins as user login and Admin login. After registration user can login and search for a particular topic as we see in Figure. 7, this is the admin maintain material page of personalized E- learning system.

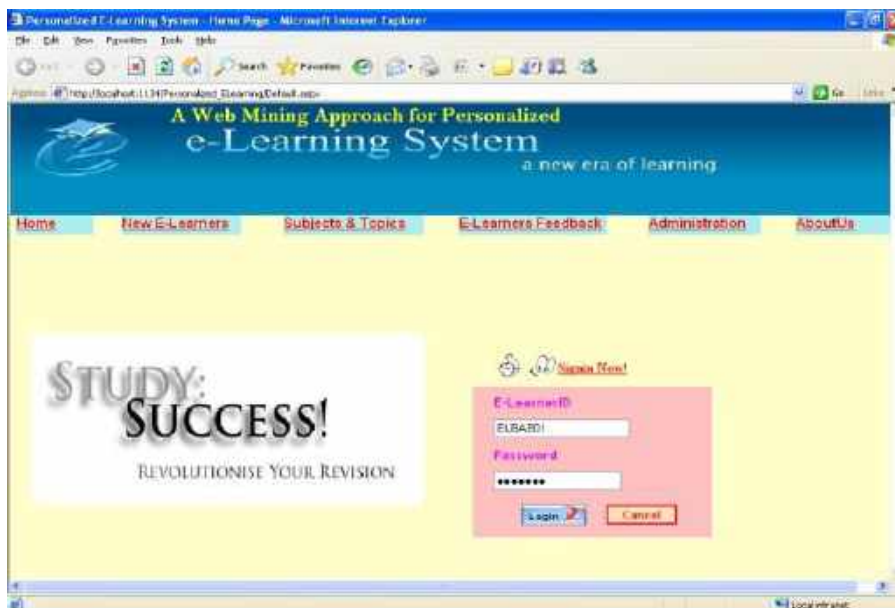


Figure 7: Home page of Personalized Learning system

Figure 8.Admin Maintain Material Details.

Search Date	Search Subject	Search Details	
10-02-2016	MapReduce	Search Algorithms, Mapper, Reduce	View Details
11-02-2016	MapReduce	Optimization, Word Frequency in Document with Mapper, Reduce, Combine	View Details
13-02-2016	MapReduce	Optimization, Word Counts For Document with Mapper, Reduce	View Details
14-02-2016	MapReduce	Term Frequency - Inverse Document Frequency, Web Analysis Algorithms	View Details
20-02-2016	MapReduce	Searching, Breadth First Algorithm and MapReduce	View Details

Figure 9. Search results for Map Reduce keyword with combined approach

As shown in Fig. 9, when users search for Map Reduce keyword, he gets different links. When user selects a combined approach, more accurate links are available to user, which results in personalized output.

Conclusion

The performance of the system is evaluated under different settings and in comparison with the previous method which is based only on the usage mining. The application can be used for personalized recommendation to give personalized recommendation based on users browsing history. Throughout this paper we have discussed many aspects of research for personalized E-learning system. Based on existing limitations, in this paper a new web mining approach based on combination of web usage mining and web content mining is presented which is showing the better performance improvement as compared to the existing method.

Future Work

In future we discover the learner's time distribution pattern to realize personalized curriculum organization, discover the learning behavior pattern to build up a series of feedback and motivation system and we will give different training according to different learners' levels.

For future work, research can be done in developing integration strategies for approaches that can accurately predict student performance in courses and approaches that help a select a subject or courses based on student interests.

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DISRUPTIVE TECHNOLOGIES IN HIGHER EDUCATION

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Abstract

The function of "disruptive" innovative technology in higher education is examined in this research. Higher education institutions (HEIs) in this country and abroad have made major investments in learning technology, with Virtual Learning Environments (VLEs) being more or less universal, although students and staff have not always adopted and used these technologies. Instead, additional technologies that are not owned or under the authority of HEIs are frequently used to support education. According to Christensen's theory of disruptive innovation, these disruptive technologies have the potential to improve education even though they were not specifically created to help learning and teaching in higher education. Expansive learning and Activity Theory are used in this study to analyze data on the effects of disruptive technology. The information was gathered by a questionnaire survey on technology awareness and use, as well as through participant observation and interviewing to learn more about their real practices. According to the survey results, participants develop meanings for technology through their use rather than in accordance with a designer's goals, supporting the Disruptive Innovation idea. The results of observation show that students use a limited set of technologies to enhance their learning, but they also have a propensity to use resources other than those offered by their HEIs. Participants use easy-to-use tools to help their teaching and learning, according to interviews. This study finds a discrepancy between the learning technologies made available by HEIs and the technology actually in use. There is no proof that numerous technologies are being employed to support teaching and learning. Instead, a limited number of technologies are being employed for several activities. In order to support learning and teaching, students and lecturers are not dependent on their HEIs. Instead, people choose technologies on their own, favoring well-known companies. The monitoring of teaching and learning, as well as the function of HEIs, which are no longer the gatekeepers to information, are all impacted by the usage of technology outside of HEIs.

Keywords: *activity theory, problem-solving, VLEs, informal learning, disruptive innovation, disruptive technology, confronting reality, and expanded learning*

Introduction

Virtual Learning Environments (VLEs) are more or less commonplace in Higher Education Institutions (HEIs) in the United Kingdom (UK). These institutions have made major investments in digital technologies for learning and teaching. In terms of acceptance and utilization, HEI-provided technologies haven't always been a hit (Blin and Munro 2008; Conole et al. 2008; Selwyn 2007). HEIs do not own or control the technologies that students and lecturers use to support and improve their learning and teaching.

Researchers (e.g., Blin and Munro 2008; Sharples 2003) predicted that the use of technologies in learning and teaching will alter traditional methods of instruction in higher education. Digital technologies have, in reality, primarily replicated current instructional

practices rather than changing and disrupting them (Fry and Love 2011; Margaryan, Littlejohn, and Vojt 2011). It is appropriate to investigate how non-institutional technologies affect teaching and learning in higher education as a result. This paper investigates the function of "disruptive technologies" (Christensen 1997) in higher education in order to address this problem.

Disruptive Technologies

Disruptive technologies are ones that alter existing processes; they may begin with a limited user base but over time expand to the point where they supplant an earlier, more established technology. Contrarily, as Christensen (1997) explains, sustaining technologies are those that improve the functionality of established technologies

All sustaining technologies enhance the functionality of existing items, which is something they all have in common. Compared to what was previously accessible, disruptive technologies offer a radically different value proposition to the market. Disruptive technology-based products are frequently more affordable, easier to make, smaller, and more user-friendly. (p. xv)

The term "disruptive technology" was later altered to "disruptive innovation" by Christensen and Raynor (2003), who argued that the disruption is not an inherent characteristic of the technology but rather evolves via practice. For the sake of clarity, I will refer to disruptive technology in this work even though the focus of my research is on educational technologies.

According to Christensen, Horn, and Johnson (2011) and Christensen and Eyring (2011), the American educational system has relied on sustaining technologies. They claim that even when computers were first introduced into classrooms, they were used to supplement rather than replace pre-existing instructional strategies. For instance, computer visuals were added to lectures, but the lectures themselves continued in their basic format" (p. 18). In this way, Christensen's thesis is a reiteration of the conclusions reached by Blin and Munro (2008) in their investigation of a VLE at an Irish campus institution. There is little disruption of teaching procedures as a result of extensive usage of the VLE in universities, according to Blin and Munro's conclusion.

According to Christensen et al.'s argument on page 488, "despite the introduction of computers and other modern technologies," "little change in traditional instructional practices has occurred." (2011, p. 83).

Expansive Learning and Activity Theory

Activity Theory, which was developed from Vygotsky's (1978, 1927/1997) theory of human development, is where Expansive Learning (Engestro m 1987) originates. According to activity theory, human activities are mediated by the employment of (broadly defined) tools rather than being a direct transmission between subject and object.

Because it enables an investigation of how digital technologies effect other parts of higher education, including social relations, Activity Theory is an excellent lens for this paper. At the school level, Hardman (2005) utilized Activity Theory to analyze the impact

of technology in teaching mathematics in underprivileged communities in South Africa. Scanlon and Issroff (2005) previously used Activity Theory to analyze the impact of technologies in higher education. The researchers highlighted the effects of new technologies on the labor allocation in a classroom environment in both instances. The first-generation model of human activity was depicted by Vygotsky (1978) as a straightforward triangle (Figure 1). The model developed by Vygotsky demonstrates his theory that people do not interact with their surroundings directly.

Instead, they act as mediators through the use of tools, such as signs, codes, and physical equipment.

By including social components to Vygotsky's initial model of human activity, Engestrom (1987) created the extended model of human activity (the activity system), which is seen in Figure 2. This model highlights the collaborative character of human action. The rules, the community, and the division of labor are represented as the nodes in the triangle's bottom row (the layer added by Engestrom). The conventions and laws that shape an activity (like testing in a school system) are represented by the rules node. The term "community" refers to individuals who will be impacted by the activity, while the "division of labor" node shows who is responsible for what during an activity, showing both the allocation of tasks and the hierarchy of power.

However, there may be inconsistencies in the way the nodes interact. Engestrom (1987, 2001) identified these discrepancies as important in expansive learning because they might lead to the creation of new knowledge. As an illustration, a professor works with students to ensure high-quality learning. The learning process can be aided by digital technologies (tools). Scanlon and Issroff (2005) noted that if a new tool is accessible and the students (rather than the lecturer) possess expertise, this may necessitate new practices within the activity system in order to achieve the goal of high-quality learning. When digital technologies are used in a learning environment, To promote better learning, the lecturer might need to give up some control (affecting the "rules" and "division of labor" nodes in the process). The study shares similarities with Christensen's Disruptive Technology hypothesis (1997) in that a new technology can challenge established practices (and run the danger of being rejected), but it can also lead to a change in the practice itself.

Tools don't need an instruction manual, according to Engestrom's methodology, because they "always imply more possible uses than the original operations that have given birth to them" (1987) and "the material form and shape of the artifact [sic]" have only a small degree of control over determining its epistemic use" (2007, pp. 34–35). Engestrom comes to the conclusion that "In Expansive Learning... reconfiguration of given technologies by their users is essential" as a result of this. (2007, p. 35). The thesis put up by Engestrom suggests that individuals define the meanings of technology via their use of them. Design does not limit meaning.

Research Techniques

Understanding the impact of disruptive technologies on learning and teaching in higher education is the main goal of this project.

A pilot survey was carried out from November 2010 to March 2011 using a questionnaire with checkbox questions and open-ended inquiries. The following topics were covered by the questionnaire: What technology are participants aware of, and what purposes do they serve? (3) How much do participants use technology for multiple purposes? The poll produced baseline information on technology use, including which technologies were most often employed and for a variety of purposes. Four postgraduate students and one postgraduate researcher were among the 28 respondents, while 13 of the participants were undergraduate students. Six lecturers and four academic staff members were also included in the poll.

Technologies that were not covered in the pilot research questionnaire were added to the original questionnaire. An updated survey was conducted in October–November 2011. The responses to the twenty surveys came from 15 undergraduate students, 1 postgraduate researcher, 2 lecturers, and 2 academic staff members. These responders weren't any of the ones in the first sample.

Seven observation investigations were carried out between October and November 2011. The task, which concerned the identification and storage of information to help learning and teaching, was delivered to the participants (four students and three lecturers), and the researcher recorded their responses.

Five interviews were also conducted between December 2011 and January 2012. Two were semi-structured and mostly concentrated on using particular technologies. The remaining three interviews were organized and focused on a broader examination of technology use.

Results and Analysis

Questionnaire Research

The results of the pilot survey demonstrated that various technologies were being employed for multiple purposes. For instance, 16 individuals used Facebook for leisure, but also for work (seven) and informal learning (three), where informal learning is learning that is not done as part of a formal course. Ten people used Twitter for leisure, but seven also used it for work and five for informal learning. The responses to the pilot questionnaire also revealed how little respondents knew about new technologies; 21 participants had never heard of Wallwisher, Xtranormal, or Prezi, and 13 individuals had never heard of Delicious.

The results of the Wikipedia pilot poll showed how widely utilized it is: 21 people used it for leisure, 20 for informal learning, 15 for formal learning, and 16 for employment. Wikipedia frequently serves as the initial stop for quick research, however owing to its (sic) dependability, I would typically strive to validate any material obtained there, according to one participant. "I wouldn't blindly believe the articles themselves as legitimate sources of information," another participant commented. "I'm always suspicious about the reliability of the content," another participant added. It is significant that Wikipedia's apparent unreliability does not deter people from using it because it is a freely available tool with a purpose, and as such, it has a place in an Activity Theory paradigm.

The pilot poll recommended that people develop their own Wikipedia goals. More established encyclopaedias, which can be categorized as sustaining technologies because they update their knowledge along established lines and within comparable publication formats, have also been challenged by Wikipedia, an alternative online encyclopedia that is free and widely accessible. The main benefit of Wikipedia, according to one participant, is that you can ask a question and get an immediate response without having to flip through pages of text. Like many innovative technologies, Wikipedia is more affordable (free in this case), easier, more compact, and more practical than its more well-established competitors. The results of the second poll revealed that participants tended to rely on well-established technologies and had little knowledge of emerging technologies that may be utilized to help learning and teaching. For instance, 15 of the 20 participants had never heard of Delicious, and 19 of the 20 participants had never heard of Xtranormal, Wordle, or Wallwisher.

The results of the second survey likewise revealed that 10 of the second sample's 17 participants used Wikipedia for formal learning while 15 used it for enjoyment, 12 for job, and 17 for informal learning. In that participants created their own technological goals and used various technologies for various goals, their results were similar to those of the first poll. Participants also used a few technologies.

As one participant put it, "Adding too many tools to help teaching/learning, especially if one or two can do the job adequately, might overload the learner (and the educator!). According to the Activity Theory, a multitude of tools can create conflict between the subject (the learner) and the object (the learning); learners gain from explicit instructions on how to use digital resources to enhance their learning.

Only one participant in each survey had used Second Life. The participant that used Second Life for the second survey did so in their capacity as a research student: once more,

It is important to highlight that the user chose the purpose, not the designer's objectives. The learning curve for Second Life is comparatively severe.

However, practically every participant utilized Wikipedia, which is remarkably simple to use—not least because it is an encyclopedia, a well-known sort of publication. Before consumers can use Second Life, a virtual environment, they must become acclimated to it. Wikipedia meets Christensen's criteria for a disruptive technology, however Second Life does not have the simplicity of Wikipedia.

Interviews

In February 2011, two of the initial survey's participants were each given time to adopt a new technology into their practices after being exposed to it. Ten months later, in December 2011, an interview was conducted with them on how they used the new technology as well as other technologies in general.

The researcher had presented Delicious to the first respondent, a lecturer, but had not provided any instructions on how to utilize it. She had used Delicious frequently throughout the previous ten months, expanding its use to include her family and her larger social network. She compared her experience to Delicious' user-friendliness: "I believe that

adoption happened fairly quickly. Although I wouldn't describe myself as having a natural aptitude for technology, it was a really instinctive environment. Because it is simple to use, Delicious complies with Christensen's definition of a disruptive technology (1997). It is also cost-free and easy.

Three months into the academic year, this respondent was again questioned about how she saw her undergraduate students using technology to promote learning.

They have access to the virtual learning environment at [name of HEI]. Some of them have embraced that fairly quickly. Others still haven't logged in, which is worrying because we even demonstrated how to do it throughout the orientation week. Therefore, some people are not as tech-savvy as we had anticipated. Others are really skilled. They were content to hyperlink to YouTube and other websites when we gave some presentations earlier this week. Additionally, students are more than eager to use their own laptops or iPads to conduct research, preferring to do so even when you remind them that the information is available in the main text. They automatically latch onto what they are more accustomed to.

The students appear to have their own preferred learning technologies, which are not necessarily the learning technologies provided by their HEI, although the interview did not explore theories as to why they were not all accessing the institutional VLE but frequently using other technologies. The second responder, a learning technologist and graduate student, was questioned about using Wallwisher, a free online message board that the researcher had introduced to her. Wallwisher had not been used by the participant since, "as with all of these stuff, unless everyone else is using it, Perhaps it falls short of its potential. She couldn't create a personal meaning for the technology, therefore it sat unused. She was also annoyed by the fact that nobody else was employing the technology. A critical mass may be necessary for a technology to be widely adopted, potentially through marketing that might build a user community. inventive applications of technology to support.

According to Markides' (2006) critique of disruptive innovation, learning may be created.

Observational Research

The identification and storage of information to help learning and teaching were the subjects of the observation investigations. Four of the seven participants were students, and they were tasked with the following:

You have been asked to produce an essay about increasing participation in higher education for evaluation at an H.E. institution. Utilizing nothing but the computer in front of you, identify, collect, and store pertinent information for this article. Spend fifteen minutes doing this.

The following assignment was assigned to the remaining three participants, who were lecturers:

In H.E., you have been tasked with organizing a lesson on emerging types of assessment. Only the computer in front of you will be used to locate, collect, and save the

educational and instructional materials needed for this purpose. Spend fifteen minutes doing this.

Given the limited time they had, it may not be surprised that participants in both groups used a limited number of technologies. The majority of the research was conducted using Google, and five of the participants used this method. The results (text or URLs) were then saved to a blank Word document and saved in My Documents. Four of the participants used the academic journal aggregator provided by their HEI, however only one of them used it after conducting their initial Google search. Five participants copied links to a blank Word document and one participant sent links through email to herself using a feature provided by the academic journal aggregator. Only one participant utilized Delicious to store and tag online links.

Five individuals did not browse past page 1 of Google or Google Scholar results, and the majority of participants did not go past the first two pages of Google results. Users seem to favor accessibility, quick results, and convenience of use (according to Christensen's claim), even though the participants' behaviors may suggest otherwise also have been shaped by the short time allowed for the tasks.

Google Scholar was used by three individuals. Google was used by six of the seven. On the home page of her HEI, one participant typed in search terms. Bing's results were displayed. Without looking at the results, the participant left Bing and ran the same query again on Google. The participant seemed to have a favorite brand and was not eager to test another. Considering technology in terms of brand preferences is related to Markides' (2006) critique of disruptive innovation, which contends that marketing strategies rather than spontaneous creativity have a greater influence on technological advances and disruptions.

All of the participants were able to complete the task, even though the two observation studies only showed persons using a limited set of technologies. The pupils didn't use other technologies because the ones chosen could complete the task. Although the evidence from the observation studies suggests that a limited range of technologies is being used to support learning and teaching, this is also the conclusion reached by Margaryan, Littlejohn, and Vojt (2011) and Jones and Healing (2010) in their studies of students' uses of technologies to support learning. Technologies are being used flexible and, in some ways, disruptively because the user creates a purpose for the technology.

The observation studies demonstrate how technology, as a tool, affects other nodes within the activity system from the standpoint of activity theory. In particular, how technologies are utilized to enhance learning and teaching has an impact on the social nodes in Engeström's activity system triangle (rules, community, and division of labor). Students now use additional sources to supplement their learning rather than relying just on the reading lists provided by instructors. Because information can be accessed at any time and from any location, the HEI's traditional duty as the guardian of knowledge is transformed.

Structured Interviews

In January 2012, three formal interviews took place. Inquiries about how each of the interviewees—a lecturer and two students—uses technology to support learning and teaching included, for the students, "Where do you get the learning materials you use for work you submit for assessment?" and, for the lecturer, "In your opinion, where do students get the resources they use for assessed work?" One participant (the lecturer) claimed that her pupils rarely used an academic journal aggregator and frequently used Google to find their course materials. The graduate student said that in order to support her assigned texts, she used Google and Google Scholar.

The instructor said that she found Google Scholar to be more user-friendly than the academic journal aggregator offered by her HEI, saying, "I don't find it as user-friendly as I find Google." The participant's perception of their HEI as the knowledge gatekeeper is not supported by the interviews, it seems. When participants need information to support learning and teaching, they turn to Google rather than the journal aggregators at their HEIs. The speaker claimed that choosing Google was influenced by its usability. Google might therefore be considered a disruptive technology in and of itself because of how convenient and user-friendly it is compared to a HEI's own resources.

By offering a different way to access knowledge and indirectly contesting the HEI's role as knowledge's custodian, Google in this context also has an impact on the academic community and the division of labor within it.

Conclusion

The surveys and interviews provide no proof that a variety of technologies are being used to support teaching and learning in higher education. Instead, a limited number of tools, including Wikipedia and Google, are being utilized to do a wide range of jobs. People prefer to use technologies that are free and simple to use, as predicted by Christensen's theory. People will use technology more frequently if they are kept simple.

For further information on why specific technologies reach a critical mass of users, consult Markides (2006). According to survey, observation, and interview data presented here, instructors and students each have a favorite technology brand. According to Markides' argument, markets for disruptive technology can be developed by clever use rather than emerging organically. For instance, encyclopedias are a well-established form of publication, but Wikipedia has altered the creation, dissemination, and use of encyclopedias and, perhaps, knowledge more broadly. Markides's theory does not necessarily conflict with Christensen's because people can also create their own uses for technologies via practice, which is a key component of disruption. Disruption is not caused by the inherent characteristics of the technology (Christensen and Raynor 2003); practice is influenced by underlying economic and social issues rather than occurring in a vacuum. Wikipedia is a tool that, according to Activity Theory, breaks the activity triangle's rules and division of labor nodes. Students don't have to get all of their education from their HEI. The function of the professor and the HEI as gatekeepers is allegedly changing, according to activity theory. There are other ways to learn, and they are frequently quick,

handy, and easy to use. When it comes to learning tools offered by HEIs, the same cannot always be said.

Due to the abundance of alternative information pathways that implicitly challenge the function of the lecturer, the disruptive use of technologies has ramifications for the monitoring of learning as well as the labor division within higher education.

As the research has consequences for how knowledge is accessed, further study may be able to inform the strategic development of library services in HEIs. The range of participants' technology preferences and the degree to which participants' decisions in this regard are influenced by the successful marketing of technologies are other topics for future investigation.

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EMERGING DISRUPTIVE TECHNOLOGY IN EDUCATION

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Introduction

Before the age of computer and digital communication technology, traditional classroom education has been used for the transfer of knowledge from teacher for the student and high dependency was there on the capabilities of the tutor. Knowledge transformation was also limited in time and space by there sources available to students such as libraries etc. But the scenario is change now. There are many digital technologies are available which have high impact on education system. Also due to globalization, there is a pressure on nations of the world to use new technologies in teaching.

There are many technologies have disrupted both our every day lives and commerce. Many disruptive technologies in education are also introduced and the students (according to their needs and teachers can use different technologies controlled by different higher education institutions to support and entire their learning and teaching. The use of ICT is rapidly changing the technological forces that will shape the structure of educational systems of the world.

The role of teaching in a classroom is to help students who are slow learner and to catch up them with other students. But what is about them who are faster at learning? For those students, there are additional courses according to their interests to fulfill their requirements of free elective students. MOOCs is there to enhance online learning with technology.

The teachers can post their instructions online to participants through MOOCs, which is helpful to students to know how to complete the course. The integration of online course material can increase interaction among students and between the students and the teacher, for exp. through virtual group work, building an online community for module, discussion questions, instructor participation and so on. A number of institutions offer virtual distance learning which allows teachers and students to interact with each other.

Digital technology thus provide the potential for establishing communities of inquiry in which elements of social presence and teaching presence interact to create an education experience. Disruptive technologies are also provide an opportunity to those students who can't not come to traditional institutions due to scheduling issues. There are other disruptive technologies also which are useful in education such as cloud learning, mobile learning, e learning, artificial intelligence etc. And are mentioned in the next section of this paper.

Objectives

1. To provide education in the use of Information and Communication Technology or ICT.
2. To encourage higher-level thinking and creativity through ICT.
3. To deliver students with a learning experience in instructional technology.
4. To promote computer-based educational resources.
5. To make students aware of Information Technology.
6. To determine the practical use of technology integration.

Disruptive Technology In Education

1. Online Learning Platforms

- Accessible Education: Online learning platforms provide access to education for learners worldwide, overcoming geographical limitations.
- Flexibility and Convenience: Students can learn at their own pace and access resources anytime and anywhere, accommodating various schedules and obligations.
- Diverse Course Offerings: Online platforms offer a vast range of courses and subjects, allowing learners to explore diverse areas of interest.

2. Artificial Intelligence (AI) in Education

- Personalized Learning: AI can analyze student data and adapt learning materials to individual needs, offering personalized learning experiences.
- Real-time Feedback: AI-powered systems can provide immediate feedback and suggestions to students, aiding in their understanding and progress.
- Administrative Efficiency: AI can automate administrative tasks, freeing up teachers' time for more instructional activities.

3. Virtual and Augmented Reality

- Immersive Learning: VR and AR technologies offer immersive simulations, allowing students to experience complex concepts and scenarios.
- Active Learning and Critical Thinking: VR and AR foster active learning by engaging students and encouraging critical thinking and problem-solving skills.
- Inclusive Learning Experiences

4. Blockchain in Education

- Secure and Transparent Credentialing: Blockchain provides secure systems for storing and sharing educational records and credentials, reducing fraud and increasing transparency.
- Self-Verification: Individuals have control over their educational qualifications, allowing them to easily verify and share their credentials.

- **Reliable Digital Records:** Blockchain ensures the tamper-proof nature of educational achievements, providing individuals with a digital, reliable record of their qualifications.

Conclusion

The technology needs to be kept in perspective, as a tool to enhance learning. Teachers felt that roll of the institution is to deliver more than mere academic facts, students need to develop their interpersonal skills. For this reasons, teachers need to make every effort to ensure that students are able to use the technology intelligently and critically in order to succeed in today's online global workplace. Teachers maintain that technology is not to be considered as a finite entity, it need to be carefully integrated in to the culture of the institution. Above all, technology enhanced learning needs to be approached with caution, in order to not lose sight of the basic fundamentals of higher education. Give sufficient training to teachers to use the technology and to be able to pass those skills on the students.

WOMEN EMPOWERMENT

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Introduction

“Women empowerment” and “women equality with men” is a universal issue. Women empowerment is a term that is used to encourage, inspire and celebrate women. It is also used to celebrate the strides that women and girls have taken in terms of gender equality, financial independence and high confidence. Women Empowerment today, has become the most discussed topic around the world. In basic terms, it means to diminish the gender gap and providing equal opportunities and rights to men and women. **Women empowerment is all about giving women the power and control of their lives to become anything they want and to do what they want in situations where they were not allowed once upon a time.** It refers to the creation of an environment for women where they can make decisions of their own for their personal benefits as well as for the society.

Need for Women Activism

Women’s empowerment is not simply a trendy idea; it is essential in today’s society. Despite considerable advancements in women’s rights as well as gender equality, there are still many obstacles and problems that prevent women from contributing fully to society and reaching their full potential. The following are some strong arguments in favor of women’s empowerment:

Gender Equality

The empowerment of women is necessary to achieve gender equality. Social conventions, cultural practices, as well as discriminatory attitudes that restrict women’s prospects and undercut their rights are at the heart of gender disparity. By empowering women, we question these expectations and work to create a society where men and women are afforded the same rights, opportunities, and obligations.

Economic Development

Economic growth and the empowerment of women are intimately related. Half of the world’s population is made up of women, and economic sustainability depends on their active engagement. Whenever women have the same opportunity for education, work, and entrepreneurship, they make a substantial contribution to economic production, the eradication of poverty, and general development.

Education and Knowledge

A potent strategy for changing civilizations is educating and empowering women. Women who have received an education are more educated, more competent, and more

self-assured, which empowers them to question gender norms and actively engage in social, economic, and political realms. Education increases a woman's propensity to make investments in her family's welfare, especially the health and education of her children.

Steps for Women Empowerment

Empowerment of women can be done in various ways, through both government schemes and individual levels. The government has come up with various schemes like BetiBachaoBetiPadhaoYojana, Mahila-E-Haat, SukanyaSamriddhiYojana, etc., to empower women. Apart from this, individually, we can work by abolishing social evils like dowry and child marriage. Respecting women and providing equal opportunities can be done individually.

Importants of Women Delegation

Empowering women is important because women aren't getting what they deserve.

Underemployed and unemployed: Women population constitutes around 50% of the world population. A large number of women around the world are unemployed. The world economy suffers a lot because of the unequal opportunity for women at workplaces.

Inspiration for others: There are a lot of women in India who have done exceptionally well in various fields of life. Women like PT Usha, Hima Das, PV Sindhu, SaniaMirza, SainaNehwal, etc. have won various trophies and medals in their respective fields and showed the girl power to Indian people. After looking at them, a lot of girls came out of their houses and showed what actual talent they carry inside them.

Overall development of society: The main advantage of Women Empowerment is that there will be an overall development of the society. The money that women earn does not only help them and or their family, but it also help develop the society.

Economic Benefits: Women Empowerment also leads to more economic benefits not to the individuals but to the society as well. Women empowerment leads to more **financial independence of women and girls**. They are taught on how they can use their skills to get income that they can use to support their families. Women empowerment helps women to stand on their own legs, become independent and also to earn for their family which grows country's economy.

Reduce Poverty: Women Empowerment also reduces poverty. This also **contributes significantly to the family welfare**. This is because their children are more likely to acquire good education and they are also able to save and invest for the benefit of their families.

National Development: Women are increasingly participating in the national development process. They are making the nation proud by their outstanding performances almost every spheres including medical science, social service, engineering, etc. This leads to **more developed economies**. This is because the women are able to work and acquire income which translates to higher levels of a country's GDP. By empowering women, we enable the nation.

Availability of Quality workforce: Large organizations need a large pool of high quality workforce. Empowerment of women would help in increasing the total workforce of quality people.

Educated society: Women empowerment leads to **increased levels of literacy** in the world. This is the case when these girls gain education that can help them better their lives. Many people do want their daughters to study and thus a lot of women remain illiterate. But, girls should be allowed to study till the time she feels it is good for her. This is not only good for her but also from the country's perspective as well.

Gender equality: Empowerment of women is also important in **accomplishing the world goal of gender equality**. By empowering girls, this goal is achieved as they are better able to compete with their male counterparts in places such as government, learning institutions and even leadership positions.

Political representation: Girl empowerment also **contributes to equality in political representation**. This is because the girls have more confidence to compete for leadership and political seats.

Ways to Empower Women



“Empowering women isn’t just the right thing to do, it’s the smart thing to do.”

–Barack Obama

In recent years, there have been many positive developments in India's efforts to empower women. The government has implemented several programs and policies aimed at improving women's health, education, and economic opportunities. There has been a significant increase in the number of women participating in the workforce, and women have achieved high positions in various fields, including politics, business, and entertainment.

- Freely live their life with a sense of self-worth, respect and dignity.
- Have complete control of their life, both within and outside of their home and workplace.
- To make their own choices and decisions (right to choose: to say yes or no)
- Have equal rights to participate in social, religious and public activities.
- Have equal social status in the society.

- Have equal rights for social and economic justice.
- Determine financial and economic choices.
- Get equal opportunity for education.
- Get equal employment opportunity without any gender bias.
- Get safe and comfortable working environment.

The empowerment of women is a very important task that every one of us should undertake. This is because empowering women is equal to empowering the whole community and generations to come. There are many ways in which we can empower girls and women and the task does not solely lay with the government but with everyone in the society.

Rights of Women



A strong woman makes strong nation, teach it to your next generation. Women are to be praised, not to be suppressed. Treat her like a queen and she will make you the king. She will protect you from the world, if you make her empowered.

Right to equality

Article 14 of the Indian Constitution guarantees the right to equality to all citizens, regardless of their gender.

Right to education

The Right of Children to Free and Compulsory Education Act, 2009, makes it mandatory for all children, including girls, between the ages of 6 and 14 to receive education.

Right to work

The Equal Remuneration Act, 1976, ensures that men and women receive equal pay for the same work.

Right against sexual harassment

The Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013, provides a framework for addressing complaints of sexual harassment at the workplace.

Right to property

The Hindu Succession Act, 1956, was amended in 2005 to give equal inheritance rights to daughters in Hindu families.

Right to marriage and divorce

The Hindu Marriage Act, 1955, gives women the right to seek divorce on various grounds, including cruelty and adultery.

Right against domestic violence

The Protection of Women from Domestic Violence Act, 2005, provides legal protection to women from physical, emotional, and verbal abuse by their spouses or relatives.

Conclusion

Feminism isn't about making women stronger. Women are already strong. it's about changing the way the world perceives that strength."

Despite progress toward women's empowerment, there is still a long way to go.

Making women aware of their potential has now become a need of the times, and the government should implement measures such as health, education, employment, women's awareness, and so on.

It is vital to raise societal awareness and establish public attitudes encouraging women's empowerment.

Many women have even absorbed patriarchal conventions to assert their authority over other women, such as the mother-in-law's over her daughter-in-law.

Finally, women must take the initiative to fulfill their desires for empowerment. There is no better weapon for the development of women than empowerment.

Everything is within your power, and your power is within you." "If you ask a woman who she is, she'll tell you who she serves and sometimes what she does. But that isn't the whole story." "We may encounter many defeats but we must not be defeated."

ROLE OF ICT IN THE PROCESS OF TEACHING AND LEARNING

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Abstract

ICT enables self-paced learning through various tools such as assignment, computer etc as a result of this the teaching learning enterprise has become more productive and meaningful. ICT helps facilitate the transaction between producers and users by keeping the students updated and enhancing teacher's capacity and ability fostering a live contact between the teacher and the student through e-mail, chalk session, e-learning, web-based learning including internet, intranet, extranet, CD-ROM, TV audio-videotape. Edusat technology has become very powerful media for interactive participation of experts and learners and it reaches the unreachable. Emerging learning Technology (ELT) of blogging, Integrated Learning Modules, a pod cast, Wikis, Enhancement of Browsers, E-learning, M-learning, U-learning have started making rapid strides in teaching learning processes.

Keywords: Web Browsers, Instructional software, Interactive learning, Integrated Learning Module, U-learning, E-learning, M-learning.

Introduction

Huge changes in technology can be observed across the globe on a regular basis. It can also be stated that developments and economic growth resulted in multiple changes in the overall structural foundation. Information and communications technology (ICT) can be used as a viable tool towards the overall learning process. With the rise of the internet and usage of various technologies towards the learning process, usage of ICT will be beneficial. ICT also has the potential to increase the level of interaction between the teacher and the student, which will increase efficiency of the entire process of learning. The interest of the student also increases as there are multiple audio and visual methods of learning associated with the ICT process. In the past few years, the world has witnessed a phenomenal growth in communication technology, computer network and information technology.

Role of ICT in Teaching and Learning

India has made great strides in the utilization of data and correspondence innovation as of late and this is reflected in an energetic and quickly developing economy. It is currently a recognized world pioneer in the information business. Today, every one of our exercises are winding up very information based. There is a move from the mechanical period to the instructive time.

Globalization, progression and a market situated economy have added new flavor to our exercises, with the outcome that learning and aptitudes of each expert, including Teachers should have been ceaselessly refreshed. Anyway the instruction segment, especially the region of educator training, has fallen behind different segments of the Indian economy in profiting from the products of innovative advancement.

The present training framework faces the difficulties to get ready people for the data society in which a standout amongst the most critical points is to deal with data. So as to work in the new world economy, students and their Teachers need to figure out how to explore huge measure of data, to dissect and decide, and to ace new information and to achieve complex errands cooperatively.

Use of Emerging Learning Technologies (ELT)

We may have heard the names of following terms without understanding. Here are few ELT which are in use:

Blogging: A blog (a blend of the term web log) is a type of website or part of a website. Blogs are usually maintained by an individual with regular entries of commentary, descriptions of events, or other material such as graphics or video. Most blogs are interactive, allowing visitors to leave comments. The ability of readers to leave comments in an interactive format is an important part of many blogs. Most blogs are primarily textual, although some focus on art photographs, videos, music and audio.

Integrated Learning Modules:- Availability of open source software has enabled development of content management system and learning management system such as a Module. Integrated Learning Module (ILM) is thematically focused classes, delivered primarily over Internet. The course content is integrated and comprehensive creating a unique perspective on course themes without the potentially repetitive requirements of separate stand-alone courses. Content and language integrated learning is an approach for learning content through an additional language (foreign or second language) thus teaching both the subject and the language.

A podcast :- A podcast (or non-streamed web cast) is a series of media files (either audio or video) that are released episodically and often downloaded through web syndication. The mode of delivery differentiates podcasting from other means of accessing media files over the Internet, such as direct download, or streamed web casting. A list of all the audio or video files currently associated with a given series is maintained centrally on the distributor's server as a web feed, and the listener or viewer employs special client application software known as a pod catcher that can access this web feed, check it for updates, and download any new files in the series.

Wikis:- Ebers bach et al (2006) note that the following basic features are common in wikis:-

Editing: - Most of the wikis use the same basic page editing function such as Text editing and image, table list hyperlink and file insertion.

Links: - Each article can be linked to other articles and thus form a new network structure.

History: - A function which saves all previous version or modifications of any single page. It allows tracking of the editing processes of an article since all changes have been documented.

Recent changes: - The features can provide a current overview of a certain number of recent changes to wiki pages or all changes with in a predefined time period.

Conclusion

Teaching occupies an honorable position in the society. ICT helps the teacher to update the new knowledge, skills to use the new digital tools and resources. By using and acquire the knowledge of ICT, student teacher will become effective teachers. ICT is one of the major factors for producing the rapid changes in our society. It can change the nature of education and roles of students and teacher in teaching learning process. Teachers in India now started using technology in the class room. Laptops, LCD projector, Desktop, EDUCOM, Smart classes, Memory sticks are becoming the common media for teacher education institutions.

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ICT FOR PROFESSIONAL DEVELOPMENT

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Topic of Ict

- Introduction
- Objectives
- ICT in Education
- ICT Tools for teaching learning process
- Professional development of teaching
- Tools of ICT
- Modern Technology in ICT
- Covid-19
- Conclusion
- Reference



Introduction

Information and communication technology (ICT) is an umbrella term that include any communication device or application encompassing mobile phone, computer and network hardware, software, internet, satellite and so on...

ICT in Education is the mode of education that use information and communication technology to support, enhance, and optimize the delivery of information. worldwide

research has shown that ICT can lead to an improvement student learning and better teaching methods.

It can impact student learning when teachers are digitally literate it into curriculum. School use a diverse set of ICT tools to communication, create, disseminate, store and manage information.



Objectives

- To explain the new technologies in teaching-learning process.
- To define the feature of ICT.
- To define concept and needs of e-content.
- To discuss the role of e-content in future classroom.
- Explore various online programs available for professional development
- Critically reflect on effectiveness of professional development programs through MOOC.



Ict in Education

ICT in education improves engagement and knowledge retention: When ICT is integrated into lessons, students become more engaged in their work. This is because technology provides different opportunities to make it more fun and enjoyable in terms of teaching the same things in different ways.

ICT enables the use of innovative educational resources and the renewal of learning methods, establishing a more active collaboration of students and the simultaneous acquisition of technological knowledge.

Electronic textbooks, instructional software, email, chat, and distance learning programs.

Ict Tools for Teaching Learning Process

Following tools are used in the Teaching learning process in Online- Offline mode of instruction. During lockdown these ICT tools proved to be a boon for making the teaching learning process easy and accessible to all students.

1. Learning management system (MOODLE and Google classroom):

Moodle stands for Modular Object-Oriented Dynamic Learning Environment and statistics. Moodle is free software, a learning management system providing a platform for e-learning and it helps the various teachers considerably in conceptualizing the various courses, course structures and curriculum thus facilitating interaction with online students. It is configurable, highly-flexible, and feature-rich. RSCOPR has a self-customized MOODLE developed by Digital Content development team.

2. Google Classroom – Blended Learning Platform:

Google Classroom is a free, blended learning platform that offers a variety of benefits for both students and teachers. Google Classroom enhances the productivity and take workflow management to the next level. It keeps track of assignments coming in with a simple glance making it very easy to know everyone's status and to follow up with students who are missing work. Everything is time stamped, so late work is easily identifiable. Since Google apps are cloud based the work in Google Classroom saves automatically and is accessible from any device. With the app, both students and teachers can enjoy the full functionality of Google Classroom on a mobile device. Students receive notifications on their phone when assignments and announcements are posted, making it easy for students to stay on top of classroom happenings. As a teacher, the app enables you to post from your phone either right from the app or using share-sheet support.

3. Google Forms:

Google Forms allows to conduct MCQ quizzes online. The information is stored as a spreadsheet automatically record the answers. The spreadsheet then populates the responses from the quiz or survey in real-time. Google forms can be used to give feedback to and receive feedback from students and parents.

4. Videoconferencing Platforms:

During COVID pandemic when the world shifted to Online mode for teaching learning various free videoconferencing platforms like Google meet, Zoom and Cisco webex were used to conduct online classes.

5. Virtual Labs:

The Virtual Labs provides remote-access to simulation-based Labs in various disciplines of science and engineering. This student-centric approach facilitates the absorption of basic and advanced concepts through simulation-based experimentation. Internet-based experimentation further permits use of additional web-resources, video-lectures, animated demonstrations and self-evaluation. Virtual labs are any place, any pace, any-time, any-type labs. It is a paradigm shift in student-centric, online education. Virtual labs sessions available on Virtual labs an MOE Government of India Initiative for Physical Pharmaceutics, Organic Chemistry and Inorganic chemistry subjects as well as Virtual labs sessions from Amrita Vlab portals for Microbiology, Organic chemistry and Inorganic chemistry practicals provide helpful tool to teacher during onlineteaching learning process.

6. Educational Videos and animations (Youtube and Internet):

Various valuable educational videos of pharmacy subjects available on internet, youtube provide additional help in better understanding of subject knowledge.

7. Smart Classroom:

Classroom integrated with Smartboards and internet connections provides enhanced and interactive learning and teaching opportunities for students and teachers. The internet-connected to systems in smart classes is stored with abundant information. It is accessible anytime for their teaching and learning process. Teachers can access information from various educational sources for teaching purposes. It helps in easy access to online resources. Smart Classrooms helps in developing critical thinking and problem-solving skills in students.

8. E-Resources:

E- journals from Proquest Pharma and DELNET were available for students to access remotely inonline mode and enhance their learning experience. E books were uploaded on MOODLE and Google Classroom.

Professional Development in Teaching

ICT can be used for training teacher in many ways as structured by Collis and Jung (2003) teacher training can take many forms. The framework has four extreme dimensions core technology, complementary technology, learning How to use ICT and learning via ICT.

ICT helps a teacher to guide his students about the learning materials available on internet, e- books, e-journals-magazines and social sites like linked -in which are helpful in better learning ofsubject skills. 6. ICT also helps him framing curriculum of subjects

Moreover, ICT can promote international collaboration and networking in education and professional development. There's a range of ICT options - from video conferencing through multimedia delivery to web sites - which can be used to meet the challenges teachers face today (Pacey, 1999).

Tools of ICT

Information Communication Technology tools are digital infrastructures such as; computers, laptops, desktops, data projector, software programs, printer's scanners and Interactive teaching box. A set of technological tools used, for example, to store, manage or communicate information.

ICT is the infrastructure and components that help to enable modern computing systems. ICT consists of both the internet as well as the mobile connected which are connected by wireless networks. It also includes all the antiquated technologies such as landline telephones, television and radio

Modern Technology in Ict

Technology has made it possible for people from all walks of life to have access to different resources. Further, technology is also being used to equip people who need a certain type of assistance to improve their quality of life and help them avail opportunities that would otherwise be inaccessible.

In general, modern refers to a hardware device or software program released recently.

COVID-19:

The pandemic caused further shocks to the system with schools forced to shut down during the lockdown period, and the transition of students and teachers to online teaching-learning. In India, around 250 million students were affected due to school closures at the onset of lockdown induced by COVID-19.



Its of poor students do not have access to laptops and computers; all these students are naïve, think there should not be this disparate education. Surely there are lots of disadvantageous factors like there are no exams; students are being given marks by the internals. This may impact their career in the future.

Conclusion

The intervention of information and communication technology is redefining the way students learn. It is making the process of learning more efficient and effective for students and teachers. ICT tools in education make it easier for teachers to use the best strategies to bring out the best in their students.

Education Creates a Better Society: An educated person is more likely to develop better moral and ethical values as compared to an uneducated person. Education brings equal opportunity for everyone and educated people will be able to create a better society.

For the conclusion, Information Technology is essentially a wide and varied field. Information technology can speed up the time it takes new products to reach the market. From innovations in microprocessors to efficient drug delivery systems, information technology helps businesses respond quickly to changing customer requirements. Other than that, information technology provides a wide range of tools entrepreneurs can use to guide their new companies through the startup and growth stages.

The companies that will succeed and flourish in the 21st century are the companies that will understand what users need and will be able to offer them the experience that can be obtained through technology information systems. Modern information technology has gained popularity rapidly since the mid-twentieth century, and the trend is likely to continue into the future. Simply put, Information Technology has changed the business landscape due to its wide and varied scope.

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ICT TOOLS IN TEACHING - LEARNING PROCESS

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Abstract

ICT enables self-paced learning through various tools such as assignment, computer etc as a result of this the teaching learning enterprise has become more productive and meaningful. ICT helps facilitate the transaction between producers and users by keeping the students updated and enhancing teachers capacity and ability fostering a live contact between the teacher and the student through e-mail, chalk session, e-learning, web-based learning including internet, intranet, extranet, CD-ROM, TV audio-videotape. Edusat technology has become very powerful media for interactive participation of experts and learners and it reaches the unreachable.

Keywords: *ICT, learning, Teaching, Student*

Introduction

Education is becoming a major source of competitive advantage when global economic and technological competition is growing sharper. With the passage of time, a lot of changes have taken place in the field of education technology. Good education is seen as a stepping stone to high flying career in life. UNESCO defines ICT as technologies that help to create, propagate and exchange information. This definition includes various tools of communication/multimedia e.g. television, phone, satellite systems, computer network, associate services and equipments such as e-mail, videoconferencing etc. Demand for skilled and competent labour is ever increasing in the contemporary globalized society. The role of ICT in the education and society is becoming more and more important and this importance will continue to grow and develop in the 21st century. ICT contribute in education in many ways such as a collaborative tool, ICT as a tool to support traditional subjects, ICT as an administrative tool and many more. Teachers use ICT for making teaching learning process easy and interesting, A competent teacher has several skills and techniques for providing successful teaching. In modern science and technological societies, education demands more knowledge of teacher regarding ICT and skills to use ICT in teaching learning process. It can make the institution more efficient and productive. This knowledge is essential to develop new, sustainable faculty support solutions. It can be said that the knowledge of ICT will help teachers to know integrated technology with classroom teaching.

Objectives of the Study

- To identify the ICT tools used in teaching-learning process.
- To examine the benefits of using ICT tools

ICT Tools in Teaching-Learning Process

- Learning management system (MOODLE and Google classroom)
- Google Classroom - Blended Learning Platform
- **Google Forms**
- Videoconferencing Platforms
- Virtual Labs
- Educational Videos and animations (YouTube and Internet)
- Smart Classroom
- E-Resources

Learning Management System (MOODLE and Google Classroom)

Moodle stands for Modular Object-Oriented Dynamic Learning Environment and statistics. Moodle is free software, a learning management system providing a platform for e-learning and it helps the various teachers considerably in conceptualizing the various courses, course structures and curriculum thus facilitating interaction with online students. Moodle supports a range of media to present or link to learning materials, support the students and to assess their learning. It is able to provide automated assessment in the form of quiz, and give immediate detailed feedback to the students. The messaging system allows learners and teachers to communicate easily. Teachers can also communicate with groups of learners via course forums either to provide answers to learners' questions or to just get involved in discussions. The uploaded learning resources are available to the students whenever they want them.

Google Classroom - Blended Learning Platform

Google Classroom is a free, blended learning platform that offers a variety of benefits for both students and teachers. Google Classroom enhances the productivity and takes workflow management to the next level. It keeps track of assignments coming in with a simple glance making it very easy to know everyone's status and to follow up with students who are missing work. Everything is time stamped, so late work is easily identifiable. Since Google apps are cloud based the work in Google Classroom saves automatically and is accessible from any device

Google Forms

Google Forms allows to conduct MCQ quizzes online. The information is stored as a spreadsheet automatically record the answers. The spreadsheet then populates the responses from the quiz or survey in real-time.

Videoconferencing Platforms

During COVID pandemic when the world shifted to Online mode for teaching learning various free videoconferencing platforms like Google meet, Zoom and Cisco webex were used to conduct online classes. All these have varying needs and features. Zoom allows the facility of using its features using a browser also without the need to download the application, the app download is mandatory in case of the other two software. Zoom allows face touch up facility as well which is not present in the other two competing software. Google Meet allows the maximum on-screen chatting time with respect to the others.

Virtual Labs

The Virtual Labs provides remote-access to simulation-based Labs in various disciplines of science and engineering. This student-centric approach facilitates the absorption of basic and advanced concepts through simulation-based experimentation. Internet-based experimentation further permits use of additional web-resources, video-lectures, animated demonstrations and self-evaluation. Virtual labs are any place, any pace, any-time, any-type labs

Educational Videos and Animations (YouTube and Internet):

Various valuable educational videos of pharmacy subjects available on internet, youtube provide additional help in better understanding of subject knowledge.

Smart Classroom

Classroom integrated with Smartboards and internet connections provides enhanced and interactive learning and teaching opportunities for students and teachers. The internet-connected to systems in smart classes is stored with abundant information. It is accessible anytime for their teaching and learning process. Teachers can access information from various educational sources for teaching purposes. It helps in easy access to online resources. Smart Classrooms helps in developing critical thinking and problem-solving skills in students.

E-Resources

e- Journals and DELNET were available for students to access remotely in online mode and enhance their learning experience. E books were uploaded on MOODLE and Google Classroom.

Benefits of using ICT Tools

- Enhances interaction and increases student engagement
- Learning is accessible any time, any place
- Offers new learning techniques as classroom tools are constantly evolving

Enhances interaction and increases student engagement

When integrated effectively into a classroom environment, there's no question that technology can increase student engagement and encourage interaction. Teachers are able to present long-established ideas in new and innovative ways.

Learning is accessible any time, any place

The uber-connectivity of smart devices and the emergence of cloud technology means that students have access to their educational ICT tools wherever and whenever they like. Academic development doesn't have to stop in the classroom and collaborative projects can be worked on in real-time through applications.

Offers new learning techniques as classroom tools are constantly evolving

Technology is never one to stand still; it's in a constant state of advancement and evolution - much like the process of teaching and learning. Developers are forever releasing apps to improve the digital learning experience in classrooms — which can only benefit both students and teachers.

Conclusion

Educational systems around the world are under increasing pressure to use the new technologies to teach students the knowledge and skills they need in the twenty first century. The educational institutions have a great opportunity and responsibility to design their educational system leading to the society and nation. Online resources that can be accessed from anywhere at any time from multiple devices are essential for supporting innovations in the teaching learning practices. The idea of interactive learning beyond the classroom, remote learning may really take off due to developing science and technology.

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ARTIFICIAL INTELLIGENCE IN EDUCATION (AIED) AND AI AS A DISRUPTIVE TECHNOLOGY IN LEARNING

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Abstract

At its simplest form, artificial intelligence is a field, which combines computer science and robust datasets, to enable problem-solving. It also encompasses sub-fields of machine learning and deep learning, which are frequently mentioned in conjunction with artificial intelligence. These disciplines are comprised of AI algorithms which seek to create expert systems which make predictions or classifications based on input data. Over the years, artificial intelligence has gone through many cycles of hype, but even to skeptics, the release of OpenAI's ChatGPT seems to mark a turning point. The last time generative AI loomed this large, the breakthroughs were in computer vision, but now the leap forward is in natural language processing. And it's not just language: Generative models can also learn the grammar of software code, molecules, natural images, and a variety of other data types.

Introduction

Artificial Intelligence in Education is developing new solutions for teaching and learning for different situations. Nowadays, AI is being used by different schools and colleges across different countries. AI in education has given a completely new perspective of looking at education to teachers, students, parents, and of course, the educational institutions as well. AI in education is not about humanoid robots as a teacher to replace human teachers, but it is about using computer intelligence to help teachers and students and making the education system much better and effective. In future, the education system will have lots of AI tools that will shape the educational experience of the future. In this topic, we will discuss the impact and application of Artificial Intelligence on Education.

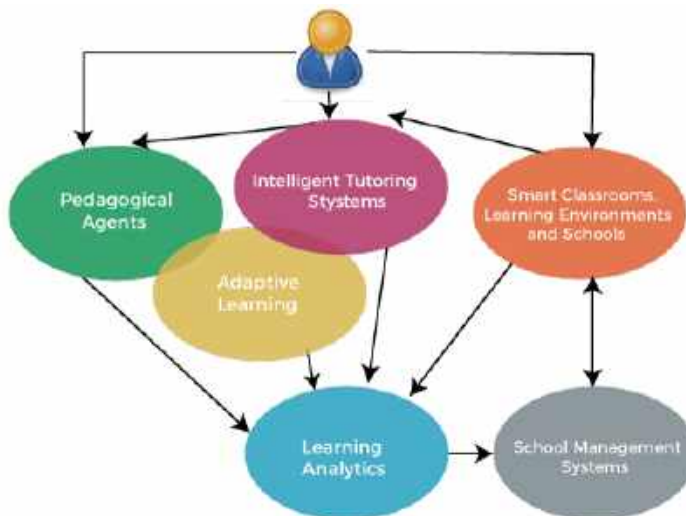
AI in Education

Artificial Intelligence (AI) has the potential to address some of the biggest challenges in education today, innovate teaching and learning practices, and accelerate progress towards SDG 4. However, rapid technological developments inevitably bring multiple risks and challenges, which have so far outpaced policy debates and regulatory frameworks. UNESCO is committed to supporting Member States to harness the potential of AI technologies for achieving the Education 2030 Agenda, while ensuring that its application in educational contexts is guided by the core principles of inclusion and equity.

Education is an important part of life for everyone, and a good education plays a vital role to have a successful life. In order to improve the education system for the students, there are always a lot of changes happening around the world, ranging from the way of teaching to the type of curriculum. Artificial Intelligence is a thriving technology that is being used in almost every field and is changing the world. One place where artificial intelligence is poised to make big changes is (and in some cases already is) in education

Overview of Aied (Artificial Intelligence in Education)

Artificial Intelligence (AI) is a simulation of human intelligence into a computer machine so that it can think and act like a human. It is a technology that helps a computer machine to think like a human. Artificial Intelligence aims to mimic human behaviour. AI has various uses and applications in different sectors, including education. In the 1970s, AIED has occurred as a specialist area to cover new technology to teaching & learning, specifically for higher education. The main aim of AIED is to facilitate the learners with flexible, personalized, and engaging learning along with the basic automated task. Some popular trends in AIED include Intelligent tutor systems, smart classroom technologies, adaptive learning, and pedagogical agents. Below diagram shows the relationship between all these trends:



Applications/Roles of Artificial Intelligence in Education

Automate basic activities in education with AI

In the education system, there are various activities which take lots of time of teachers such as grading tests and home-works. These tasks require lots of time and effort, while this time could be used in interacting with students, letting them know their errors, teaching new things, and many more. To save this time, Artificial Intelligence can be used. With AI tools, it is possible to automate the grading system for nearly all types of MCQ(Multiple choice questions) and fill-in-the-blank, and they are very close to being able to grade written responses.

Additional Support for students with AI tutor

As it is obvious that teachers can't be present with students all the time while they study, as teachers in colleges have fixed timings. But each student is not smart enough to grasp all the things at once, and they need additional supports from someone to help them in the understanding study material. This additional support can be provided by the AI tutors. Currently, there are various AI-driven tutoring programs that can help students in learning the basics of mathematics, writing, and other subjects. With these AI programs, students can learn fundamentals, but still, they are not suitable to learn high-level concepts of any subject

Helpful feedback to students and teachers with AI-driven programs

AI is not only helping the students to learn the customized course as per their requirements, but it can also give feedback to both the teachers and students about the success level of the course. Some online course providers are currently using such feedback-based AI systems to analyse the progress of the student and also alert the professors for the critical performance issue of the student. These type of AI-driven systems enables the student to get the proper support, and professors can determine the areas of teaching where it requires improvement. Instant feedback to students helps them understand where they are going wrong and how they can do it better.

Finding improvement required in course with AI

In the education system, it is very hard to find out the gaps in learning. Teachers have limited time to teach in the classroom, and they may not always know where the students are lacking and what concepts have confused the student. To solve this problem, AI-driven programs can help the education system. Coursera and some other learning platforms are already using AI-driven programs in practice. For example, when a large number of students are found to submit the wrong answer to a homework assignment, the system alerts the teacher and gives future students a customized message that offers hints to the correct answer.

Changing the role of the teacher.

Teachers always have a critical role in the education system, but this role and its requirement may change with the new technologies. As in the above points, we have already discussed that Artificial Intelligence can automate different tasks such as grading, reports, help students while learning, and may also be an option of real-world tutor in some cases. AI can be included in different aspects of teaching. AI systems can be programmed for providing expertise to students, a place where students can ask their doubts and could take the place of teacher for teaching basis course materials.

Personalize education with AI

The main aim of Artificial Intelligence in education is not to completely replace teachers. Instead, it aims to act as helping hands for teachers as well as students. AI

systems can be programmed to provide personalized learning to students. With personalized learning, each student can have their own way of learning as per their level of understanding and need. By understanding the needs of every student, teachers can come up with a tailor-made study plan for every student. As AI is developing day-by-day, it is possible that machines can identify the facial expressions of students while learning the concepts can understand if they are finding any difficulty in learning, and according to that make changes in the way of teaching.

Generating Smart content with AI

With AI, it is possible to generate smart content in three ways:

Digital Lessons	Nowadays, everything is becoming digital, and so the education. Digital learning is being preferred in colleges with customization options, e-books, study guides, bite-sized lessons, and many other things with the help of AI.
Information Visualization	Visualizing things rather than listening is much more efficient to understand in a better way and keep in mind for a long time. With Artificial Intelligence, the study information can be perceived in new ways of visualization, simulation, web-based study environment.
Learning content Updates	Moreover, AI also helps in preparing the content of lessons, keeping information up to date, and make it adaptable as per different learning curves.

Ensure Access to Education for Students with Special Needs

Life is full of challenges for those students who have some learning disabilities such as deaf or hard of hearing, visually impaired, etc. Such students may face various difficulties while learning and studying. Moreover, they also need extra care & time. With the adoption of innovative AI technology, there will be new ways of interacting with such students. AI-enabled tools can be successfully trained to help a group of students with special needs.

Universal Access

One of the great uses of Artificial Intelligence of digital learning in education is universal access to study material. Each student has his own grasping capability, and with the use of universal access, they can learn anywhere and anytime. Students can explore things whenever they want to learn without waiting for the tutor. Moreover, students get the facility of high-quality courses and material from all over the world at their place only without travelling away from their home.

Benefits of AI for Students

24*7 access to Learning

With AI-driven digital Learning, students can learn anywhere, anytime. Every learner is free to plan their schedule, rather than being linked to a specific place only. Everyone can make their learning easier and effective as per their most productive hours.

Better Engagement

With personalized learning, custom tasks, and digital visualisation, the study becomes more interactive and engaging. Personalized learning and great experience with AI-driven programs make students feel much confident and smarter as they can explore many things apart from their syllabus without any hesitation or fear of asking. All these things and new AI technologies are increasing the interest of students in studies.

Less Pressure

With AI-driven programs and personalized learning, students feel less pressure of studies. AI-enabled virtual assistants help the students whenever they ask a question, with a complete explanation. In the traditional learning methods, a student needs to ask queries in class in front of everyone, which might hesitate some students, and these issues can be resolved with the help of virtual assistants. However, all the questions can't be correctly answered by these virtual assistants. But for basic queries, they can be much helpful that can boost the confidence of each learner and reduce the pressure.

Future of AI in Education

As per the researches, in the near future, AI in education will step in three main ways, which are:

Performance personalization

With day-by-day development in AI technology and computing power, it will be possible to create personalized curricula through collecting and generalizing the information. Various new AI solution such as "Brightspace insights" helps the instructor to track, measure, and monitor the progress of learners, and also help them in this learning journey. It provides a complete picture of the learning journey of a learner across the platform.

Violation Bias

Human bias has always remained a hindrance in the education system and also an issue in AI tools. In future, AI in education will find new solutions that can evaluate work and tests exams using established criteria in order to eliminate bias.

Combined Assistance

Professors/teachers in colleges usually have masters in their field and have a degree in specific areas of development. But the administrative work is often a frustrating attempt at rapprochement with students. AI in education can solve this problem in the future with smart classrooms with AI assistance who can provide necessary help to the teachers to give their best.

AI-Guided Learning

Whether the public can see it or not, the education system is undergoing a transformation, and it will look drastically different than what we have known. This change has been in the making for years, with questions arising about the effectiveness of standardized testing, class size, personalized lessons, and much more. However, with the introduction of artificial intelligence (AI) and robotics now making it into the classroom and homes of students, we are just beginning to see the biggest change yet. It is time for a new approach to education and artificial intelligence, with a major focus being put on a new category led by ROYBI in this transformative field: “Self-Guided Learning Through AI.”

A big portion of self-guided learning takes place outside of the official classroom. That is why homework assignments have been used traditionally to allow students to repeat and practice what they have learned in the classroom, and also, develop self-discipline, self-reliance, and independent thinking. Roybi Robot encompasses this new idea of self-guided learning through AI and goes a step further, to use technology to assist students and teachers in a more efficient way. While Roybi Robot is not intended to replace the role of in-person instruction, it can allow any environment to become an extension of the classroom.

Being able to guide oneself through some portion of the learning process is an opportunity that every student would benefit from in our current unequal distribution of academic resources. It also greatly increases the effectiveness that a single instructor can have. For example, through the use of Roybi Robot, a teacher located anywhere around the world can teach any number of students without the restriction of classroom walls. On top of that, teachers can use the technology to track all of the students’ progress in one place.

Educational robots provide a variety of different ways for students to learn STEM disciplines and languages. There are a few main reasons kids learn better from robots than traditional methods, and much research has been done on the topic. The use of educational robots is more likely to elicit from the user beneficial behaviors for learning. They are perceived to be more engaging and enjoyable than virtual agents like tablets and computers. Research has also suggested that users respond and comply much more with physical robots compared to a video representation of the same robot.

Conclusion

Artificial intelligence and its uses in our lives are growing day by day in many segments. In the field of education, AI has started showing its influences and working as a helping tool for both the students and teachers and supporting the learning process. But still, the use of AI in education is not adapted by all the colleges completely, and it will take a long journey to do this. However, studies show that in the near future, AI will have a good impact on the education sector. It is currently transforming the education industry but is yet to show its real potential in education. Further, learning from computer systems can be much helpful, but it is unlikely to fully replacing human teaching in schools and colleges.

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A REVIEW ON ROLE OF TEACHERS IN BLENDED LEARNING-ITS CHALLENGES AND LEARNING OUTCOMES

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Abstract

Blended learning is becoming more and more popular in higher education as a result of the quick growth of information technology. Blended learning, which blends in-person and online instruction, gives students access to timely, ongoing, and flexible learning options. It improves the e-learning activities' engagement, aids students in learning more deeply, and encourages their independent and group learning. Blended learning can significantly improve student learning while also lowering the cost of instruction when it is effectively designed and implemented. However, there are still certain issues with the application of blended learning. It is a widespread complaint among university teachers that if an online component of a blended course is not required, many, if not most, of the students do not actively participate in it. The adoption of the e-learning system by college students in required blended learning contexts was our main focus as a result. In this review, the importance of blended learning, its implications challenges and learning outcomes of students were discussed.

Keywords: *blended learning, challenges and learning outcomes*

Introduction

In view of this scientific shift, the education sector has assimilated the application of ICTs in education resulting in the establishment of e-learning platforms (Lee, 2010). Competitive global institutions of higher education were under significant pressure to expand their delivery of courses through e-learning platforms such as Moodle or Blackboard. Past studies have shown the adaptation of e-learning to be effective in connecting people and resources, facilitating active learning, deepening understanding, enhancing critical thinking skills as well as promoting creative communication (Romero-Frias et al., 2013; Khan et al., 2012).

The introduction, administration, and ongoing improvement of blended learning in higher education depend greatly on the successful application of the e-learning system. Universities in the twenty-first century are still undergoing quick socioeconomic and technical developments. Universities are being urged by these shifts to thoroughly review their instructional strategies from a fresh viewpoint and to prepare for the problems that a knowledge-based society will present. The need for more "client" responsive and flexible courses; the push to use information and communication technology (ICT) in teaching and administration are a few of these challenges. There is a large population of students with a variety of needs, motivations, abilities, learning preferences, time availability, and course

content requirements (Challis, Holt&Rice, 2005). Academic leaders in higher education must rethink organizational structures, operational tactics, and regulations fit for the current digital age in order to meet these difficulties.

However, as there is a growing need for qualified teachers, e-learning platforms continue to grow. For the future development of their institutions as well as the development of young minds, well-established universities and developing institutions must hire knowledgeable teachers and train them effectively.

To address the complexity of ICT integration in higher education, this paper attempts to explore the pedagogical use of ICT in a blended learning context. The exploration is focused on the experiences of teachers and students, and guided by two research questions: What are the students' and teachers' experiences in engaging with different blended learning modes? What are the teaching approaches involved in blended learning across disciplines?.

ICT Implementation in Higher Education

ICT implementation in higher education is not a simple technological adoption, but involves the consideration of a number of issues, such as infrastructure, pedagogical practices, obstacles, student learning, organizational culture, organizational structures, operational strategies, and appropriate policies (Duderstadt, Atkins & Houweling, 2002; Guri-Rosenblit, 2005). There is a need to relate the normative interpretations of the potential effects of ICT on teaching and learning in higher education to the empirical realities that higher education institutions are facing (Stensaker, et al., 2007) because "successful technology integration is a sociological issue" and "appropriate use of technology in teaching requires the thoughtful integration of content, pedagogy, and technology" (Mishra, Koehler & Zhao, 2007, pp. 1-2).

Blended Learning

Information and communication technologies based on the internet have created new opportunities in higher education. Most colleges now provide some coursework online, and some have even transformed entire degree programmes to be fully accessible online (Ward, Peters, & Shelley, 2010). Today, distance learners have access to a variety of online materials and can study at their own speed while working together with other students rather than alone. Web-based learning modules by their very nature provide the adaptability of self-directed learning and the chance to depart from teacher-directed methods of instruction. Many instructional design approaches are available to help with course design, but for a well-designed, student-centered course, alignment between learning objectives, assessment methods, and instructional activities is crucial (Rubin, 2013).

LMS for Blended Learning

Online learning has grown in favour as a practical and adaptable substitute for conventional brick-and-mortar academic methodologies due to the abundance of web applications. Today, educational courses are delivered to students via a variety of

electronic distance media without regard to their physical location or available time. Online technologies for synchronous and asynchronous communication and collaboration offer learning opportunities that are adaptable and sensitive to the needs, learning preferences, and backgrounds of learners. There is no discernible difference in learning results between traditional face-to-face learning in higher education and online training, according to study comparing their efficacy (U.S. Department of Education, 2010)

Blended Learning is Facilitated through LMS Software

Campuses have embraced LMSs, such as Blackboard and Moodle, for their features for content development, communication, evaluation, and administration in order to allow online, onsite, and hybrid courses (Pia, 2010). LMSs compile and deliver learning information quickly, customize content, and enable knowledge re-use in addition to centralizing and automating administrative duties including creating and managing user accounts, preparing syllabi and assignments, grading, etc. (Ellis, 2009). Teachers can design and maintain a learning structure or sequence in an LMS environment, load and replace resource files, manage access to resources, plan and facilitate group activities, monitor learner activity, alter learning sequences, mark assignments, and offer feedback. Using sophisticated relational database software based on data independence, such as Oracle, Microsoft SQL, or MySQL, which place an emphasis on security, connectivity, and data independence, LMSs include different login roles (instructor, student, and guest) that enable the instructor to communicate privately with one student or form teams and discussion groups with various profiles (Kats, 2010).

Students can connect with professors and peers, submit assignments, and access learning materials like papers, spreadsheets, PowerPoint presentations, hyperlinks, audio, and video of lectures through LMS platforms. Both synchronous and asynchronous LMS platforms can support all of the social and collaborative features of blended learning. Tools that are asynchronous (not in real-time) include email, calendars, wikis, blogs, and threaded discussion forums.

Implications of Blended Learning

Teaching in blended learning environments is a challenging process that, among other responsibilities, calls for constant observation of students' comprehension and engagement with the online course material. By analysing data about how students are interacting with the online environment, learning analytics give teachers the tools they need to better educational results. Different levels of autonomy, collaboration, and online technology can allow various blended learning methodologies, but the goal of learning analytics is to enable deeper understanding and better decision.

Role of Teachers in Online mode of Teaching

Nevertheless, the e-learning modes continues to expand as there is augmenting demand for proficient instructors. The developing institutes or well established universities has to appoint knowledgeable instructors and train them efficiently for future

growth of institutes as well as young minds (Gregory and Lodge, 2015; Alvarez et al., 2009). Today, the online mode of teaching, research is opted. Hence, much skilled and effective instructor appointment is initiated for teaching several online courses.

Learning Outcomes and Challenges

The online environment of the teaching and learning process expedites various challenges to educators. The major problem faced is the acclimatizing practice to the latest digital mode of teaching-learning environment (Mills, 2015). In accordance to Fletcher and Bullock (2015), the online mode of teaching is certainly a challenge for teacher educators as they have to create a positive relationship between the teacher and student which encourage attention, interest along with concentration in students to learn more from educators.

Conclusions

It's not always simple to create a blended learning course that is effective. There is a considerable demand for monitoring and tracking students' social media platforms to connect in addition to the need to address technology requirements, choose the best content to offer, or build an engaging collection of classroom and online activities. Instructors can track student progress and develop interventions by extracting and analyzing LMS usage data from their log files. The implementation of blended teaching also required technology and a learning teacher community, age old teachers suffer or lack of the technical knowledge, before implementing this points also to be considered.

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PERSPECTIVE TOOL FOR BRAIN STORMING

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Abstract

The purpose of this study is to investigate the effect of using brainstorm strategy in developing creative problem solving skills among male students . The sample of the study consisted of (98) male students. The sample was distributed into two classes, the first represents the experimental group totaling (47) students taught through brainstorming strategy within the course of developing thinking skills in the academic year 2012/2013, and the second represents the control group totaling (51) students. The instruments of this study were a program to use brainstorming strategy and Torrance creative thinking test. Both validity and reliability were checked by the researcher. The findings of the study showed that there are statistical significant differences at the level of ($\alpha = 0.05$) between the experimental group and the control group in the total score and the sub scores of the creative thinking in the favor of the experimental group indicating the effectiveness of using brainstorming strategy in developing creative thinking skills.

Keywords

Brain storming, Problem solving skills, Creative thinking, Thinking skills, Experimental group, Control group.

Introduction

The globe is turning to be a small village, due to the developments in the scientific, economic and social aspects of life as well as the communication revolution results from the knowledge development and globalization. As a response to those developments and challenges it was necessary to prepare a generation that capable of confronting those challenges through changing the traditional methods of learning and teaching as well as focusing on providing students with the suitable training on different thinking styles. Individuals can't be prepared for present and future through pouring information into them through the traditional teaching methods that depend on the teacher in the first place. However, this must be done through guiding students towards achieving knowledge understanding in relation with everyday problems since we live in the era of openness between communities requiring us to employ information and investing it in solving problems in the environment leading to the development of the ability of thinking as well as developing innovation and creativity (Al-daoud, 2004). Brainstorming strategy is one of the most important strategies in provoking creativity and solving problems in the educational, commercial, industrial and political fields. Brainstorming strategy was introduced by Alex Osborn, an American advertisement company manager in 1938 as a

result of his inconvenience of traditional business meetings. Brainstorming means the use of brain to the active problem solving and the brainstorming session aims to develop creative solutions to problems (Jarwan, 2005). On the other hand, creative thinking is known as a compound mental activity aiming to direct a strong desire to look for solutions or reaching original solutions that were not known before (Jarwan, 2008). Hoing (2001) defined it as the multiple thinking that includes the breaking up of old ideas, making new connections, enlarging the limits of knowledge and the onset of wonderful ideas. With regard to creative problem solving it is based on the cognitive theory that adopts the concept of the cognitive structure. It is the mental process of creating a solution to a problem. It is a special form of problem solving in which the solution is independently created rather than learned with assistance. Creative problem solving always involves creativity (Qattami, 2010). It can be defined as a frame of styles designed to help and enhance the problem understanding then generating new and different solution and assessing those solutions using the creative skills (Gardner, 1999; Richard, Angle & Ann, 1999). Due to the importance of both concepts (brainstorming and creative thinking) the current study aims to explore the relationship between them especially in developing creative problem solving skills.

What is Brainstorming?

Madison Avenue advertising executive Alex Osborn developed the original approach and published it in his 1953 book, "Applied Imagination." Since then, researchers have made many improvements to his original technique. The approach described here takes this research into account, so it's subtly different from Osborn's approach. Brainstorming combines a relaxed, informal approach to problem solving with lateral thinking. It encourages people to come up with thoughts and ideas that can, at first, seem a bit crazy. Some of these ideas can be crafted into original, creative solutions to a problem, while others can spark even more ideas. This helps to get people unstuck by "jolting" them out of their normal ways of thinking. Therefore, during brainstorming sessions, people should avoid criticizing or rewarding ideas. You're trying to open up possibilities and break down incorrect assumptions about the problem's limits. Judgment and analysis at this stage stunts idea generation and limit creativity. Evaluate ideas at the end of the session – this is the time to explore solutions further, using conventional approaches.

Why Use Brainstorming?

Conventional group problem solving can often be undermined by unhelpful group behavior. And while it's important to start with a structured, analytical process when solving problems, this can lead a group to develop limited and unimaginative ideas. By contrast, brainstorming provides a free and open environment that encourages everyone to participate. Quirky ideas are welcomed and built upon, and all participants are encouraged to contribute fully, helping them develop a rich array of creative solutions. When used during problem solving, brainstorming brings team members' diverse experience into play. It increases the richness of ideas explored, which means that you can often find better solutions to the problems that you face. It can also help you get buy-in

from team members for the solution chosen – after all, they're likely to be more committed to an approach if they were involved in developing it. What's more, because brainstorming is fun, it helps team members bond, as they solve problems in a positive, rewarding environment. While brainstorming can be effective, it's important to approach it with an open mind and a spirit of non-judgment. If you don't do this, people "clam up," the number and quality of ideas plummets, and morale can suffer.

Individual Brainstorming

While group brainstorming is often more effective at generating ideas than normal group problem solving, several studies have shown that individual brainstorming produces more – and often better – ideas than group brainstorming. This can occur because groups aren't always strict in following the rules of brainstorming, and bad behaviors creep in. Mostly, though, this happens because people pay so much attention to other people that they don't generate ideas of their own – or they forget these ideas while they wait for their turn to speak. This is called "blocking."

When you brainstorm on your own, you don't have to worry about other people's egos or opinions, and you can be freer and more creative. For example, you might find that an idea you'd hesitate to bring up in a group develops into something special when you explore it on your own. However, you may not develop ideas as fully when you're on your own, because you don't have the wider experience of other group members to draw on.

How to Use the Tool (Brainstorming)

Step 1: Prepare the Group

First, set up a comfortable meeting environment for the session. Make sure that the room is well-lit and that you have the tools, resources, and refreshments that you need. How much information or preparation does your team need in order to brainstorm solutions to your problem? Remember that prep is important, but too much can limit – or even destroy – the freewheeling nature of a brainstorming session. Consider who will attend the meeting. A room full of like-minded people won't generate as many creative ideas as a diverse group, so try to include people from a wide range of disciplines, and include people who have a variety of different thinking styles. When everyone is gathered, appoint one person to record the ideas that come from the session. This person shouldn't necessarily be the team manager – it's hard to record and contribute at the same time. Post notes where everyone can see them, such as on flip charts or whiteboards; or use a computer with a data projector. If people aren't used to working together, consider using an appropriate warm-up exercise, or an icebreaker.

Step 2: Present the Problem

Clearly define the problem that you want to solve, and lay out any criteria that you must meet. Make it clear that the meeting's objective is to generate as many ideas as possible. Give people plenty of quiet time at the start of the session to write down as many of their own ideas as they can. Then, ask them to share their ideas, while giving everyone a fair opportunity to contribute.

Step 3: Guide the Discussion

Once everyone has shared their ideas, start a group discussion to develop other people's ideas, and use them to create new ideas. Building on others' ideas is one of the most valuable aspects of group brainstorming. Encourage everyone to contribute and to develop ideas, including the quietest people, and discourage anyone from criticizing ideas. As the group facilitator, you should share ideas if you have them, but spend your time and energy supporting your team and guiding the discussion. Stick to one conversation at a time, and refocus the group if people become sidetracked. Although you're guiding the discussion, remember to let everyone have fun while brainstorming. Welcome creativity, and encourage your team to come up with as many ideas as possible, regardless of whether they're practical or impractical. Use thought experiments such as Provocation or Random Input to generate some unexpected ideas. Don't follow one train of thought for too long. Make sure that you generate a good number of different ideas, and explore individual ideas in detail. If a team member needs to "tune out" to explore an idea alone, allow them the freedom to do this. Also, if the brainstorming session is lengthy, take plenty of breaks so that people can continue to concentrate.

Problem Solving in Brainstorming Session

A-blowy (2006) mentioned for stages that must be followed in problem solving within the brainstorming session, those are:

- a) Phrasing the Problem: The teacher who is responsible on the sessions offers a problem and discusses its various dimensions for students to ensure understanding.
- b) Framing the problem: in this stage the teachers determines the problem accurately by reframing the problem in certain questions. This may offer acceptable solutions without the need for further brainstorming.
- c) Practicing brainstorming for one or more than one statement in problem. This step is very important as many ideas are generated. Al-qarni (2011) mentioned that this step needs:
 1. Conducting warming up session
 2. Receiving ideas even if they were nonsense.
 3. Offering the four principles of brainstorming on the board in order to be seen by students.
 4. Writing and presenting all ideas (Proposed solutions).
 5. Frustration and boring must be avoided.
- d) Offering the ideas: Brainstorming session lead to generate a big number of ideas and therefore, those ideas must be evaluated and select the most suitable and important ones according to novelty, originality, usefulness, duration and cost as well as logic (Bani Hamid, 2006).

Creative Thinking

Scholars and researchers discussed the issue of creative problem solving of problems in general and especially in the field of gifted students. The creative problem solving can be defined within its three components as the solution, this means finding a way to solve the problem. The problem refers to obstacles that present a challenge to the individual to reach the goal. This challenge needs a solution or making a decision. Thus, creative solving is a frame or system including productive thinking tools that can be used to understand problems or generating different ideas that are not traditional then evaluating them to reach new solutions (Mitchell & Kowalik, 1999). Qattami (2010) mentioned many definitions for creative problem solving. As (Barens, Noller & Blondi) stated that it is taking a creative decision through thinking and reflecting and predicting ideas and solutions through deep awareness. Meanwhile, Asaks and Trafinger argued that it is the natural and dynamic system and a way to handle a certain challenge. It is noted that through the steps of creative problem solving model brainstorming strategy has its own importance since the aim is to generate many idea that may be the solution of a problem (Abu Jado and Nawfl, 2007). The creative problem solving approach is the effort by the individual or the group's creative thinking to solve a problem, and can be used in many areas, and provide a framework regulating the use of tools and specific strategies to help generate and develop products that are characterized by novelty and utility, it is a framework of processes with a regulatory function, a system used by the product of the thinking tools in order to understand the problems and opportunities and the generation of many diverse ideas is familiar as well as evaluating, developing and implementing the proposed solutions (Al-asar, 2000).

Conclusion

Based on the findings of the study the researcher recommended, Encouraging Tutors and Teachers to use brainstorming strategy in teaching in the schools and conducting more studies discussing this strategy and its relation to other variables such as critical thinking, and conducting more studies on other samples from different study and age levels and from different environments like Universities or Training Institute.

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ICT TOOLS FOR CREATIVITY IN TEACHING LEARNING PROCESS

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Abstract

ICT is an expansive term represents Data Correspondence Innovation. ICT apparatuses for educating and learning cover everything from advanced foundations like printers, PCs, PCs, tablets, and so forth., to programming instruments, for example, Google Meet, Google Bookkeeping sheets, and so forth. In customary study halls, an educator's fundamental educational devices for showing data are blackboards, multipurpose sheets, announcement sheets and graphs. In any case, in the present current situation, apparatuses of numerous callings are changing at an fantastic rate and that instruction is no special case. The effect of innovation has prompted the expanded utilization of PCs for introducing data in a significant number of the present homerooms. To make ICT educating and learning more intelligent, different stages also, apparatuses have been made and refreshed over the timeframe. Imaginative ICT devices utilized in homeroom showing which makes a difference educators to coordinate in their subject, for educating learning and evaluation. There are various subject explicit liberated from cost ICT instruments accessible on the web and disconnected stages which can be utilized for educating, learning and evaluation. They are utilized by instructors to energize support and draw in learning in their homerooms. ICT can likewise be utilized by educators to advance cooperative work and imagination across a great many subjects. This study targets featuring the predominance of ICT apparatuses for working with understudy learning, maintenance and mentalities.

Keywords: Data Correspondence Innovation, Instructing Learning, Visual Data, Online Stages

Introduction

In the present globalized world the Data and Correspondence Advancements (ICTs) have become profoundly established in instructive settings. Their utilization has encouraged subjective changes in how educating is drawn nearer, particularly as far as introducing the items sound outwardly. Despite the fact that there has been much conversation over various techniques to instruct school understudies, addresses are not liable to quit being utilized. To under score specific focuses, many talks utilize composed material introduced on a blackboard, whiteboard, or by transparencies on an above projector. In any case, over the most recent 10 years, one more strategy for introducing visual data with addresses has acquired unmistakable quality which is projecting data straightforwardly from a PC onto a screen for example PowerPoint introductions. Numerous schools and, as a matter of fact colleges have rooms outfitted with innovation essential for any educator to show data thusly. Besides, a few organizations are pushing the educators to utilize different different innovations for inventive educating and learning.

1. Data Correspondence Innovation:

The ICT devices means to advanced frameworks like PCs, PCs, printers, scanners, programming programs, information projectors, and intuitive instructing box.

2. Instructing Learning:

Educating can be characterized as commitment with students to empower their understanding and use of information, ideas what's more, processes while learning is the securing of information or abilities through study, insight, or being instructed.

3. Visual Data:

It is utilization of at least one of the different visual media regardless of sound. For the most part, visual data incorporates still photography, movement picture photography, video or sound recording, realistic expressions, visual guides, models, show, visual show administrations, and the help processes.

4. Online Stages:

A web-based stage is a computerized administration that utilizes the Web to work with collaborations between at least two separate yet reliant clients.

Literature Review

1. **Simin Ghavifekr, Thanusha Kunjappan,• Logeswary Ramasamy and Annreetha Anthony**, in their research paper, **“Teaching and Learning with ICT Tools: Issues and Challenges from Teachers’ Perceptions (2020)”**, revealed that their review is more connected with distinguishing the discernments in executing ICT devices in educating and learning in the homeroom among teachers. It looks at the difficulties of utilizing ICT apparatuses in educating and learning in the study hall among teachers and perceives the adequacy of the degree of ICT apparatuses in supporting homeroom educating and learning.
2. **D. Sakthivel, Dr. B. Radha**, in their study **“ICT Tools for Modern Education (2021)”**, believed that Innovation can be an incredibly significant instrument, yet it is just an instrument and innovation "can't supplant an educator" also, isn't expected to supplant the educator. A decent educator should carefully be in a real sense and should know the powerful method for incorporating innovation into the educational plan so instructors can keep the understudy committed.

Objectives of the Study

This study intends to examine whether utilizing ICT devices would be more useful for understudies than Blackboard instructing. It likewise expects to evaluate the adequacy of ICT apparatuses in helping the understudies in getting it and holding the data.

Limitations

One of the significant limits of the review was that it is absolutely subject to auxiliary information that may not be completely verified. Additionally the time used for the review was very restricted which limited the extent of the review.

Research Methodology

The study is based on secondary data. Relevant data are availed from various sources of information such as Books and Various websites.

ICT Empowered Devices for Viable Showing Educational Experience

Most educators feel great in utilizing address strategy, which is not equipped for accomplishing different goals of study hall guidance. ICT might be of extraordinary use in accomplishing different targets of educating - educational experience. It gives right data in a far reaching way with various models. It assists students with expanding their data base. ICT gives assortment in the introduction of content, which helps students to get the hang of as indicated by their own speed. It helps in better understanding, and long maintenance of data. Following devices are utilized in the Showing educational experience in Online and Offline method of guidance.

Learning Management System

Moodle represents Measured Object Oriented Dynamic Learning Climate and insights. Moodle is free programming, a learning the board framework giving a stage to e-learning and it helps the different instructors significantly in conceptualizing the different courses, course designs and educational program in this manner working with communication with online understudies. Moodle upholds a scope of media to present or connection to learning materials, support the understudies and to survey their learning. It can give mechanized appraisal as test, and give quick itemized input to the understudies.

Google Classroom

Google Classroom is a free, mixed learning stage that offers an assortment of benefits for the two understudies and instructors. Google Homeroom improves the efficiency and take work process the executives to a higher level. It keeps track of tasks coming in with a basic look making it extremely simple to know everybody's status and to circle back to understudies who are missing work. Everything is time stepped, so late work is effectively recognizable. Since Google applications are cloud based the work in Google Study hall saves naturally and is open from any gadget. With the application, the two understudies and educators can partake in the full usefulness of Google classroom on a cell phone

Google Forms

Google Structures permits to direct MCQ tests on the web. The data is put away as a book keeping sheet naturally record the responses. The accounting sheet then populates the reactions from the test or overview continuously. Google structures can be utilized to give input to and get criticism from understudies and guardians.

Videoconferencing Stages

During Coronavirus pandemic when the world moved to Online mode for showing learning different free videoconferencing stages like Google meet, Zoom and Cisco Webex and so forth., were utilized to direct on the web classes. Every one of these have differing necessities and elements for working with intelligent educating and learning.

Virtual Labs

The Virtual Labs gives remote access to reenactment based Labs in different disciplines of science and designing. This understudy driven approach works with the assimilation of essential and high level ideas through reenactment based trial and error. Web based trial and error further allows utilization of extra web-assets, video-addresses, vivified shows and self evaluation. Virtual labs are any spot, any speed, any-time, any-type labs.

Educational Videos AND Animations

Different significant instructive recordings of different subjects accessible on web likewise has a incredible effect. YouTube give extra assistance in better comprehension of subject information.

Smart Classroom

Classroom incorporated with Smart boards and web associations gives upgraded and intelligent learning and educating open doors for understudies and educators. The web associated with frameworks in brilliant classes is put away with plentiful data. It is open whenever for their educating and educational experience. Instructors can get to data from different instructive hotspots for educating. It helps in simple access to online assets. Shrewd Homerooms helps in creating decisive reasoning and critical thinking abilities in understudies. There are a lot more ICT instruments that work with creative showing educational experience.

Advantages of Using ICT Tools in Teaching Learning Process

1. Teaching Makes Easier

Educators are individuals with one of exceptionally benefited of having ICT in schooling. Using it, it makes the instructing simpler. At the point when an instructor shows the understudy on another example it makes for them simple to illuminate and to assess what they need them to be aware. Making reports records, pdf documents or power point show using PC or PC for them to show the points that they will going to handle is an extraordinary way for educating.

2. Illustration should be visible and heard

The upside of data correspondence innovation is the illustrations should be visible and be hear. Not at all like on the books you can simply see it, seeing those pages with sections and loaded with text also, at some point we can see the photos. Sound coming from the recordings or music that being utilized will be played again and again that makes it to recall well.

3. More clear

At the point when the understudies see pictures showing up on the white screen utilizing a projector they comprehend it effectively what it truly implies.

4. Further develops Correspondence

Having an innovation in the school conversation gets to the next level correspondence. Since through that medium the instructor as well as the understudy find out increasingly more jargon words. The legitimate approach to saying a word or words, the right language and the importance of the words gets to the next level.

Conclusion

ICT devices are exceptionally strong in educating and learning. ICT apparatuses engage the two educators and students. They change the educating and educational experiences from being profoundly teacher dominated to becoming understudy driven and this change brings about expanded learning gains for understudies, making and taking into consideration valuable open doors for students. Moreover, they are cost efficient and take out the utilization of paper. Close by limiting cost, they additionally save time during class addresses empowering quick and dynamic transmission of content. They give admittance to dynamic educating and learning strategies and work with simple understudy the executives. ICT is an amazing asset for instructive change and change. Proper utilization of ICT has helped the school raise the interest levels among the understudies and has associated figuring out how to genuine circumstances. Understudies appreciate while learning and perform better.

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CHALLENGES OF WOMEN EMPOWERMENT IN INDIA

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Abstract

The study examines the state of women's empowerment in India and identifies key issues and Women's Empowerment Challenges. One of the most pressing issues of the 21st century is now the empowerment of women. However, in actuality, women's empowerment remains a fantasy. The researchers observed how many societal injustices target women in everyday life. Empowering women is the essential tool for increasing women's access to resources and their capacity to make wise life decisions. Women's empowerment is fundamentally the process of improving the status of traditionally underprivileged women in society on the economic, social, and political fronts. It entails protecting kids from all sorts of assault. The study only used secondary sources for its data. Despite numerous government initiatives, the survey shows that women in India still have a comparatively low level of influence and status compared to men. It has been discovered that women continue to accept gender standards that are not equal in society. The study's conclusion states that women's empowerment is only made possible through access to education, employment, and social structure change.

Keywords: Women Empowerment, Challenges, Underprivileged, Empowering, Government initiatives.

Introduction

In order to empower women, one must first increase their spiritual, political, social, educational, gender, and economic strength. In India, a number of factors, such as physical location (urban vs. rural), educational attainment, social standing (caste and class), and age, have a significant impact on how empowered women are. At the federal, state, and local (Panchayat) levels, policies promoting women's empowerment are in place in a variety of fields, including health, education, economic opportunity, gender-based violence, and political engagement. However, there is a large gap between policy developments and actual community practise. Women's empowerment is fundamentally the process of improving the status of traditionally underprivileged women in society on the economic, social, and political fronts. It entails protecting kids from all sorts of assault.

Review of Literature

- **Dr. Abeda Sultana 2021** in his study states that women empowerment; theory, practice, process and importance Women empowerment is a significant topic of discussion in development and economics. Economic empowerment allows women in controlling and getting benefit from resources, assets and incomes. It also grows ability to manage risks and improves well-being. It refers to women's ability to make strategic life choices which had been previously denied them. The worlds, Nations, businesses, communities and groups may benefit from women empowerment. It enhances the quality and the quantity of human resources available for development.
- **Prof. Seema Singh and Dr. Antra Singh 2020** in their study states that being a traditional patriarchal society, women have been given a secondary status which is reflected in the economic, social and political spheres. However, women equality and empowerment has always remained a priority area and has been taken utmost care by stake holders. The paper critically investigates the Indian status among other countries and tries to find out preparedness to achieve Sustainable development Goal -5 of the United Nations. The paper develops argument on the basis of secondary sources as review of existing literature published in journal, books, reports of various, NGOs, Government and international organisations and websites. The paper critically examines women empowerment in India, various models and dimensions. The paper discusses constitutional safe guards as well as plans and programmes by the government and their implementation, indicators of women empowerment.

The Challenges of Measuring Women's Empowerment

Measures of empowerment have multiplied without being properly assessed throughout time and in many circumstances. One the one hand, women's empowerment is multifaceted and context-dependent from a theoretical standpoint. However, comparable measurements have been created for usage in a variety of settings. Therefore, it is crucial to thoroughly examine these measurements' consistency through time and across situations. I have been pushing for the creation of surveys that enable both comparative and in-depth, context-specific evaluations of women's empowerment. Other items may function well across multiple contexts and survey years, whereas some items may function well in some circumstances but not in others.

Why is measuring women's empowerment important in development work?

Measurement of women's empowerment is crucial because it serves as a constant reminder to staff and programmes of its significance. Although many agricultural development programmes lack a gender or empowerment focus, staff members are prompted to think about women's empowerment as a project aim by the inclusion of metrics of women's empowerment in their monitoring systems. Training staff employees on current injustices, gender and other socioeconomic inequities, and how empowering

practises might improve equity are also crucial. The effects of integrating women's empowerment measures into programme monitoring on norm transformation are also crucial.

Barriers to the Empowerment of Women in India

In India, particularly the women are suppressed in the name of culture and tradition. However, it is time to open the minds and let go of this old way of thinking to empower the women for their own good as well as the overall well-being of our society.

Cultural and Traditional Barriers to Empowerment of Women

The culture and tradition of our country is such that it restricts the women and confines them within the four walls of their houses. The tradition of our country expects a woman to do the household chores, cook for her family, take care of the elders and raise children. It is believed that this is her sole responsibility and this is what she is born for.

A woman who steps out defying the set norms of the society is considered to lack virtue. This is one of the major barriers to the empowerment of women in our society. Though women in the metropolitans and other big cities around the country have joined various professions and are making it big in this male-driven world, people living in the rural areas are still not open about the idea of females seeking education and working. Woman in most parts of our country are dominated by the males. They are not even given the basic right to education and have no say in the family or business matters.

Family Responsibilities Hinders Women Empowerment

Family responsibilities are another hindrance to women empowerment. While men are allowed to act carelessly, women are expected to act responsibly at all times. Taking care of her kids, her husband's parents and household chores is her main responsibility. She needs to fulfil these responsibilities in order to prove that she is a good mother, a good wife and a good daughter or a good daughter in law.

If she doesn't do these tasks properly and tries to concentrate on her profession just like her male counterpart then she is tagged as an irresponsible woman. Many women give up on their jobs and stay financially dependent on the male members of their house as they are not able to handle the stress caused trying to manage both the roles efficiently. Men must share the family responsibilities to stop this injustice against women. They must be held equally responsible for the household chores.

The Mindset of the Male: A Barrier to Women Empowerment

The mindset of the male members of our community is yet another barrier to women empowerment. Women who go out to work or seek education are scared of travelling alone during the late evening hours as it is not safe for them. The male members of our community leave no chance to harass or take advantage of the women.

The growing numbers of rape cases are clear evidence of the same. This serves as yet another barrier to women empowerment. Many families do not allow their daughters/

daughter in laws to go out for the fear they might face problems. A woman is not allowed to work as freely as men. She has to think twice before working overtime or going for an official trip owing to safety issues. This hampers her professional growth.

Obstacles on the Path to Women's Empowerment in India

1. Gender Inequality

In India, women continue to be discriminated against at the gender level. In many areas, women are not even allowed to go out for education and employment. With this, they do not have the freedom to work freely or spread through the family.

Women are considered less than men in all tasks. This type of discrimination worsens the social and economic condition of women and also affects the goal of women's empowerment in a negative way.

2. Inequality in payments

Women in India are paid less than their male counterparts, and the problem is even worse in the unorganized sector, especially in places with daily wages. Women are paid significantly less than men despite doing the same amount of work at the same time.

Such actions demonstrate the disparity of power between women and men. Women working in the organized sector are paid less than men, despite having the same experience and qualifications as their male counterparts.

3. Illiteracy

Problems such as illiteracy among women and the omission of intermediate studies are also important obstacles to the empowerment of women. Although in urban areas, girls are equal to boys in terms of education, in rural areas, they lag far behind in this case.

India's female education rate is 64.5 percent, while men's education rate is 81 percent. Many rural girls who go to school also lose their education and cannot pass even the tenth standard.

4. Child Marriage

Although in recent decades, effective government decisions have reduced the prevalence of **child marriage** in India to a great extent, in 2018 a UNICEF report shows that India still has around 1.5 million girls each year. Marriage takes place before the age of 18, due to early marriage, a woman's development stops and she cannot mature physically and mentally.

5. Social norms

Due to old orthodox ideologies, many areas of India are prohibited from leaving their homes. In such areas, women are not free to leave the house for education or employment. By living in such an environment, women are inferior to men and do not change their current social and economic conditions.

6. Physical abuse in the workplace

Exploitation in the workplace is also a major obstacle to the empowerment of women. Private sectors such as service industries, software industries, educational institutions, and hospitals are the most affected by this problem. This creates more problems for women due to the dominance of male prominence in society. In the recent past, there has been a rapid increase in harassment of women in the workplace and there has been an increase of about 170 percent in recent decades.

7. Female fetish

Feticide or gender-based female abortion is one of the biggest obstacles on the road to women's empowerment in India. Female feticide refers to gender-based feticide, whereby female fetus is aborted without the mother's consent.

Due to female feticide, there has been a big difference in the sex ratio between men and women in states like Jammu and Kashmir and Haryana. These affirmations of our empowerment of women will not come true until we can eradicate the problem of female fetish.

8. Crimes against women

Serious crimes such as dowry, honour killings, and trafficking are seen against Indian women along with much domestic violence. However, it is quite strange that women in urban areas are more prone to criminal attacks than women in rural areas. Even working women do not use public transport late at night due to their safety.

In the true sense, the empowerment of women can only be achieved when the safety of women can be guaranteed, and, like men, they can come freely without any fear.

Government's Role for Women's Empowerment in India

- Mahila Shakti Kendra
- Reservation for women in Panchayati Raj schemes
- Beti Bachao Beti Padhao Yojana
- Women Helpline Scheme
- Ujjwala Scheme

India has always been a male-dominated nation. However, realizing the importance of women in upgrading the nation has transformed the perspective, and we are shifting towards a significant change. 50% of India's population comprises women, and most are economically dependent. Women empowerment in India is based on various factors-geography, class, caste, age and education. Women in India encounter differentiation in most sectors like education, economic opportunities, health and medical assistance and political participation, demonstrating that there are substantial gaps between strategy advancements and real exercise at the community level.

Reasons why you should emphasize women empowerment in India

It's her right:

As per the principles laid down by the United Nations, women empowerment is subject to human rights. Every female is entitled to get empowered by going to school and college, staying safe from violence, accessing adequate health services, making a living for herself and fully participate in her community.

Best way to make Families Healthy:

Women are the backbone of the family. She can focus on making her family healthy when she is empowered with education and finance. She can plan better for her family as she is aware of society's good and bad, the right and wrong. Her empowerment paves the way to not only a healthy family, but a happy family.

Breaking the Poverty Cycle:

In India, most families belong to the middle or low class. However, if women are empowered, they tend to help their families create a better living standard. Educated women can get higher incomes and financially empowered women can educate their children better; thus, breaking the poverty cycle.

Strengthening Economies:

India is becoming world's fastest-growing economy. However, it has a long way to go. Women empowerment can be a significant contributor to strengthening the nation's economy. As per research, increasing the number of women completing secondary education by just 1 percent could increase a country's economic growth by 0.3 percent.

Develops the Society Holistically:

The overall upliftment or development of a society depends on women. Today, women in India are in every field. They are ahead in all spheres and making India proud. They are taking society to the next level.

Conclusion

Women empowerment is a serious issue. Women must be empowered so that they can lead a better life. They must be educated and trained to be financially independent. In addition to it, they must be provided a safe environment to live freely and independently.

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ICT BASED PROFESSIONAL DEVELOPMENT FOR EDUCATORS STRATEGIES AND OUTCOMES

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Abstract

In order to establish a society, education is crucial. It is crucial and necessary for both a person's and a society's wellbeing. Quality education encourages societal empowerment and fosters growth. The country in all facets. There are numerous strategies to improve the students' Technology and knowledge are the most efficient means. Knowledge and ICT, or information and communication technology, is becoming more and more essential. From the moment we wake up till the moment we leave, the educational system is To go to bed at night. Informational tools and artifacts are all around us. As well as media and computing technology, such as newspapers, radio, television, and computers. Etc. Our lives have changed significantly as a result. These modifications have led to Instructors, administrators, and educational institutions.

Keywords: Information and communications technology, Educators, strategies and outcomes, Professional development.

Introduction

"Education is the most powerful weapon in the world"

In order to establish a society, education is crucial. It is crucial and necessary for both a person's and a society's wellbeing. A good education encourages social empowerment. And therefore advancing the country overall. Numerous methods exist for Expand the understanding of the students, and technology is the most efficient method. The use of information and communication technology (ICT) in education is becoming more and more essential from the moment we get up until we leave for the day. To go to bed at night. Informational tools and artifacts are all around us. As well as media and computing technology, such as newspapers, radio, television, and computers, Etc. Our lives have changed significantly as a result. These modifications have led to Rethinking roles in educational institutions, with administrators, instructors, and teaching Approach, as well as provide their outlook on the future.

Professional development for educators that incorporates ICT (information and communication technology) focuses on utilizing technology to improve teaching methods and student outcomes. Teachers may better engage students, tailor learning experiences, and promote 21st-century skills like critical thinking and digital literacy by incorporating ICT tools and resources into their activities. This introduction lays the groundwork for examining several strategies educators can use to alter their instruction and provide students with memorable learning opportunities.

Review of Literature

Bano (2016) conducted an experimental study to see the effect of smart classroom learning environment on the performance of first-grade students in English. The study was done on 30 students and pre-test post -test design was used. A performance test was constructed for data collection. Data were analysed with the help of t-test. The results revealed that there was a significant effect of classroom learning environment on the performance of first-grade students in English.

Inderpreet Kaur Chachra (2015) studied the effect of smart classroom assisted teaching on the academic achievement of students of different intelligence level in social science. She selected 100 students and categorized them on the basis of intelligence_ below average, average and above average category. It was an experimental study. The result was analysed with the help of t-test.

Chetan Sharma (2014) conducted a case study on e-governance in India. The aim of the study was to draw out learning from ICT based projects implemented in West Bengal. The findings of the study revealed that 98% schools had given a positive response after implementing the project. It had improved the attendance of students.

Hernandez, Ronald M.(2017) discussed the main challenges about the future of ICTs and their connection with education. He stated that teacher training is first priority so that teachers can better use ICT tools in the classroom.

Sood, Manju (2014) has done an evaluative study of ICT in schools of Punjab. It was descriptive survey research. The main objective of the study was to evaluate the provisions made by Punjab government under the ICT program. The findings revealed that the teachers were aware about the LITERATURE REVIEW 50 projects and its implementation. ICT became a compulsory subject for class 6 to 12th. ICT teachers were appointed for implementing the projects in urban and rural schools.

Objectives of the Study

1. To research the numerous ICT-based projects being carried out in various schools.
2. To evaluate how ICT-based projects affect the curriculum.
3. To determine the impact of ICT-based projects on curriculum delivery
4. To examine how ICT-based projects affect students' attitudes toward ICT.

Limitations

While ICT-based professional development for educators offers numerous benefits, it also comes with some limitations that need to be acknowledged and addressed:

Access and Infrastructure: Not all educators and institutions have equal access to technology and reliable internet infrastructure, which can hinder their participation in online courses and access to digital resources.

Digital Literacy: Some educators may have limited experience or confidence in using technology effectively for teaching, which can impact their ability to fully embrace ICT-based strategies.

Costs: Implementing ICT-based strategies often requires investment in hardware, software licenses, and ongoing maintenance, which may strain budget constraints for some educational institutions.

Training Time: Learning to use new digital tools and platforms can take time, and educators may find it challenging to balance their professional development with their teaching responsibilities.

Pedagogical Integration: Integrating technology seamlessly into pedagogical practices requires thoughtful planning and training to avoid superficial use or distraction from learning goals.

Scope

1. **Pedagogical Strategies:** Teachers can investigate cutting-edge pedagogical strategies that smoothly incorporate technology into the educational process. This encompasses project-based learning, gamification, flipped classrooms, and group projects conducted online.
2. **Digital Tools and Resources:** A variety of educational programs, websites, and mobile apps are available that can help with content delivery, student engagement, and evaluation. Teachers can learn how to use these technologies efficiently.
3. **Personalization:** Educators can better meet the requirements and preferences of each student by using ICT to create personalized learning pathways and adaptable content.
4. **Data-Driven Decision Making:** Examining data from technology-integrated exams and learning management systems enables educators to pinpoint areas that need improvement and to make data-driven choices that will maximize their instructional approaches.
5. **Professional Learning Communities (PLCs):** Through online PLCs, webinars, and social media groups, ICT enables educators to cooperate and connect with colleagues around the world, exchanging best practices and experiences.
6. **Global Perspectives:** Through ICT, instructors and students can interact with communities around the world, increasing variety in education and building cross-cultural understanding.
7. **Accessibility and Inclusivity:** ICT can be utilized to generate educational materials that are inclusive of students with a range of requirements.

8. **Continuous Learning:** ICT-enabled professional development enables educators to keep abreast of the newest developments in the field of education, ensuring that they continue to be skilled and informed facilitators.
9. **Online Professional Development Courses:** A variety of online courses and certifications are available that are aimed at improving instructors' ICT proficiency and instructional strategies.
10. **Emerging Technologies:** As technology develops, teachers can investigate cutting-edge innovations like augmented reality, virtual reality, and artificial intelligence, which create new opportunities for interactive and immersive learning experiences.

What is ICT?

Information and communications technology (ICT) is an abbreviation for information technology (IT) that emphasizes the importance of unified communications[1] and the integration of computers and telecommunications (phone lines and wireless signals), as well as the enterprise software, middleware, storage, and audiovisual components that are required to enable users to access, store, transmit, comprehend, and work with information.

Benefits of Using ICT in Education

ICTs are a huge asset in the development of discernment. Some of the most noticeable abilities that students acquire as a result of using ICT are the ability to compare and contrast multiple sources and organize knowledge. But there are more benefits as well:

- Their enthusiasm in learning increases thanks to the usage of resources like movies, internet, graphics, and games, which add excitement to conventional subjects. A great technique to engage pupils in learning is through interesting and comprehensive multimedia content.
- Student cooperation: Thanks to numerous digital instruments, student cooperation is undoubtedly improved. They can work together, develop team projects, and share knowledge much more easily.
- They foster creativity: ICT tools encourage all students' initiative and the growth of their imagination.
- Better communication: More informal and spontaneous intimate communication between students and teachers is promoted through a variety of methods.

Strategies for Educators

- Workshops and Training Sessions: Hold engaging workshops and training sessions to improve instructors' ICT proficiency. These sessions should cover subjects including using educational apps, using online collaboration tools, and making the best use of digital resources.
- Practical application: Encourage educators to practice with ICT technologies in a secure setting to build confidence and competence.
- Personalized Learning Plans: Individual educators' needs and interests in ICT

integration should be taken into account when creating professional development plans.

- **Collaborative Learning Communities:** Establish online discussion boards or groups where teachers can exchange concepts, stories, and best practices around the use of ICT in the classroom.
- **Online Courses and Webinars:** Provide in-depth information about integrating ICT in the classroom through self-paced online courses and webinars to fit educators' busy schedules.

Outcomes of the Training

- **Increased Student Engagement:** By utilizing technology, educators may design engaging, interactive lessons that take into account students' individual learning preferences.
- **Data-Driven Instruction:** By using technology to gather and analyze student data, educators may make more informed decisions that will enhance learning outcomes.
- **Professional Development:** Participating in ICT-based professional development equips educators with new abilities and information, which advances their careers as a whole.
- **Access to a Wide Range of Resources:** When educators use ICT, they have access to a wide range of online resources, which enables them to diversify their lesson plans and cater to the requirements of various learners.
- **Culture of Lifelong Learning:** Supporting ICT-based professional development among educators fosters a culture of lifelong learning that encourages creativity and adaptation.
- **Enhanced Teaching Methods:** Teachers will be better able to successfully use ICT resources into their classes, creating more interactive and interesting lessons.

Tools

1. **Learning management systems (LMS):** LMS platforms act as central hubs for course materials, assignments, quizzes, and conversations, giving teachers the ability to organize and deliver content to students while keeping track of their progress.
2. **Interactive Whiteboards (IWB):** IWBs combine conventional whiteboards with digital technology to give teachers the ability to interactively display and change content, resulting in more dynamic and engaging courses.
3. **Video Conferencing Tools:** These tools enable real-time communication and virtual classrooms, allowing instructors and students from many locations to collaborate and engage in remote learning.
4. **Screen Capture and Recording Software:** Teachers can use these programs to make tutorials, presentations, and instructional videos that can be accessed by students who are learning in an asynchronous fashion.

5. **Online Assessment Tools:** These tools simplify the assessment procedure and give teachers access to automated grading and data analysis for a clearer understanding of student performance.
6. **Virtual reality (VR) and augmented reality (AR):** These immersive technologies provide interactive and experiential learning opportunities, enabling students to investigate challenging subjects in a more compelling manner.
7. **Collaborative Tools:** Websites like Google Workspace (formerly G Suite) and Microsoft 365 provide tools for teamwork like document sharing, in-the-moment editing, and group projects.
8. **Online Discussion Forums and Social Media:** These tools promote peer-to-peer learning and interaction by letting students talk about class material, exchange ideas, and work together outside of the classroom.
9. **Gamification Tools:** To inspire students and improve their learning experience, gamification components can be incorporated into educational activities.
10. **Artificial Intelligence (AI) Tools:** AI-powered adaptive learning systems can modify educational content and exercises in accordance with the requirements and development of each individual student.
11. **Cloud Storage and File Sharing:** Cloud-based services allow instructors and students to easily store and share instructional materials.
12. **Mobile Applications:** Students may learn while on the go with the help of educational apps for smart phones and tablets.

Educational Implications

- The current study emphasizes the value of ICT at all educational levels, but especially at the secondary level. ICT is required in school curricula for creative and successful teaching-learning processes.
- The study strongly supports the use of ICT in current educational system. The report carefully examines the many ongoing ICT based projects and highlights the key components and the implementation procedure.
- Thus It may be useful while creating the best ICT-based projects for classrooms. The report advocates the integration of ICT into the current educational system and provides a full analysis of numerous ICT projects.
- In the current study, the researcher addresses the many initiatives in Depth and identifies the modifications that must be made to the current curriculum Structure for accommodating such initiatives in a suitable manner. Therefore appropriate The curriculum should be altered to better incorporate ICT. Based initiatives.
- The study strongly suggests curriculum and syllabus flexibility for the best possible ICT adoption. The syllabus should be designed such that ICT can be included in the lessons. If necessary, a classroom should be available, with adequate freedom. Its application
- The study grabs the teachers' attention by highlighting the Shortcomings in the curriculum techniques needed for appropriate Using ICT. Therefore, it is evident that it is necessary to create a Changing the way teachers teach ICT usage.

- The present study directs the school organisation that the school Environment should be made more techno-savvy and ICT friendly.
- The researcher, in the present study, encourages the regularity of ICT Based projects in the schools for its successful implementation. Therefore The study suggests the school management should have a regular Monitoring of various projects.

Suggestions for Educators

- Teachers must develop the appropriate ICT skills in order to properly use the ICT-based technologies in the classroom.
- Teachers may brush up on their understanding of the newest ICTs (information and communication technologies).
- Teachers may develop a good attitude regarding the use of ICT in the Classroom.
- They might provide a stimulating environment for creativity and problem-solving so that children develop a positive attitude toward ICT.
- Teachers could gain knowledge from their colleagues who successfully use and manage ICT in the classroom.
- Teachers can use ICT regularly and judiciously in the classroom.

Conclusion

It is possible to draw the conclusion that ICT-based projects have had a substantial impact on the educational process based on research data. Although ICT has been incorporated into the curriculum, the study shows that, The syllabus's material remains unchanged. The syllabus lacked any unique features or revisions that would have encouraged the thoughtful integration of ICT. ICT integration into the curriculum took a variety of forms depending on the organization's rules and the particular school. While some schools have included ICT into the curriculum, others merely use it outside of the classroom or as teaching tools.

The use of interactive whiteboards and technology-integrated material delivery in the classroom has improved the efficiency of the curricular exchange. The majority of instructors have been shown to have positive attitudes toward using ICT, however there are still a significant number whose attitudes are still average or negative. The instructors' reluctance to include ICT into their lesson plans is likely due to their lack of familiarity with the technology and inadequate training in its use. The lack of adequate training facilities, adequate ICT infrastructure, and clearly defined policies surrounding the use of ICT projects in the classroom encourages teachers and students to have negative views toward ICT programs. The development of the curriculum and its delivery have also been impacted by the school administration's confusing policies.

The methods of instruction have also been modified by ICT-based projects. The teachers were able to choose better teaching strategies for a variety of courses thanks to ICT-based programs. The teachers were in agreement that these ICT projects had a good impact on a number of teaching-related areas.

ICT-based programs envisioned unique and new approaches to goal-setting, lesson planning, the choice of instructional methodologies, and even evaluation. The pupils' enactive, figurative, verbal, reproducing, and constructive learning styles were all significantly improved by the ICT projects.

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WOMEN EMPOWERMENT IN INDIA

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Abstract

Empowerment of women is essentially the process of upliftment of the economic, social, and political status of women in Society. Women equality and Empowerment has always remained a priority area and has been taken utmost care by stake Holders. Women constitute almost 50% of the world's population, but India has shown a disproportionate sex ratio, whereby females' population has been comparatively lower than males. The Paper develops argument on the basis of secondary sources as review of existing literature published in journal, books, reports of various, NGOs, Government and international organizations and websites. The paper critically examines women empowerment in India, various models and dimensions. The paper discusses constitutional safe guards as well as plans and programmers by the government and their implementation, indicators of women empowerment.

Introduction

The concept of "Empowerment" traces its history in the mid 17th century with the legalistic meaning "to invest with authority". Thereafter, this concept was modernized to mean "to enable or permit". Women empowerment is an increasing and improving the social, economic, political and legal strength of the women and ensure the equal right to women, to make them confident, freely live their life with self-respect and self-dignity. This aspect visualizes the full participation of people in the decision-making process that shapes their lives. The goal of inclusive growth and human development cannot be achieved without the development and empowerment of women.

In India, in theory women enjoy a status of equality with the men as per constitutional and legal provisions. Although, our country has taken various steps towards inclusion and empowerment of women in all fields of life but with headlines about dowry killing, female feticides and domestic violence still making the newspapers, put a silent question mark behind the two words. Today, true development and growth can only be achieved by taking successful steps in eliminating deep-rooted ideologies of gender bias and discrimination like the confinement of women to the private domestic realm, restrictions or

their mobility, poor access to health services, nutrition, education and employment and exclusion from the public and political sphere.

Scope

The current study makes an effort to assess women's empowerment, which will be useful in analyzing gaps in a developing economy like India. Additionally, it can be beneficial to investigate some undeveloped regions with development potential. The study would for women's empowerment by creating economic opportunities and strengthening the nation's independence. Because some of the methodologies and procedures used in the study should be useful in conducting more studies of a similar sort, it may also be essential for anyone interested in conducting comparable research in the context of other elements of the notion.

Objectives

- To analyse the importance of women empowerment.
- To evaluate the present status of women in the society.
- To evaluate the role of women empowerment in the overall development of the country.
- To study the necessity of women empowerment.

Research Methodology

In the field of human development, women's roles are now extensively acknowledged and accepted throughout much of the universe. The recent significant prominence that the Indian government has given to this idea makes it necessary to analyze women's empowerment. The Research evaluated the effectiveness of both government and non-government groups in empowering women in India to analyze their roles in these endeavors. The overarching goal of this study is to assess women's empowerment, which eventually contributes to the nation's overall development.

Limitations

- This study focuses only on the Women empowerment in India
- This study is only based on the secondary data.

Review of Literature

When the weak have more influence on ideology and resources, this is referred to as empowerment. It has been linked to concepts like agency, prestige, power, and autonomy. The Indian constitution has made it very clear that women have an equal chance at success and has given authorities the authority to create rules and regulations to protect the right. As the majority of international conferences focused on seizing possibilities, the 1990s may be remembered as an impertinent decade for women's empowerment worldwide. It highlighted concerns about gender inequality, violence against women, and sexual and reproductive rights. Even among the eight the Millennium Development Goals (MDG) of

UN Developed in 2000 was targeting to be achieved by 2015, the Goal three was to promote gender equality and empower women. Women empowerment is the defined as the change in the context of a women's life, which enables her increased capacity for leading a fulfilling human life.

National Commission for Women

The National Commission for Women was set up in 1992 to protect and safeguard the rights of women. The activities of the Commission include receiving complaints or Suo moto enquiring in cases of deprivation of rights of women, providing counseling, conducting Parivarik Lok Adalats and legal awareness programmers and organizing public Hearings. The National Commission for Women being the nodal agency for protection of the rights of women needs to be strengthened. The NCW Act needs to be suitably amended to give the Commission more power. The requirement of funds for the XI Plan for the activities of the Commission is estimated as Rs.35 crore.

Means of Empowerment

- Social Empowerment
- Economic Empowerment
- Political Empowerment
- Legal Empowerment
- Cultural Empowerment

Social Empowerment

Under the social empowerment of women steps needs to be taken to improve the health status of women, reduce maternal mortality rate especially in the arose which do not have good medical facilities. Awareness programmers for diseases need to be launched. Women face high risk of malnutrition hence focus should be given to meet the nutritional needs of women at all stages of their life cycle. Schemes need to introduced for helping women who are victims of marital violence, who are deserted and those engaged in sex protection, Government have to be vigilant for ensuring that there is no discrimination against the girl child and her rights are protected.

Economic Empowerment

Financially empowering women becomes crucial for the nation's long-term growth and development in a fast-growing economy like India. The idea of sustainable development has evolved along with changes in how people view development. As well as modified. We are talking about sustainable development because it has expanded to encompass social responsibility, making women's roles more significant for the growth of the economy.

Political Empowerment

In order to gain any kind of agency over their lives, women need proper political representation that provides them power to bring a change in economic, legal as well social status of their gender. Women's participation in politics can be seen since freedom struggle through examples like Sarojini Naidu, Kamladevi, Hirabai Tata or Begum Shali Nawaz. Even though women are participating in politics since a long time, their percentage is very low when compared to men's. Since the 1950s and 1960s, women's Representation in Panchayat Raj was being discussed among the political leaders of India.

Role of NGOS in Women Empowerment

Governmental organizations are recognized institutions dedicated to empowering women. However, because this job necessitates a multifaceted strategy, a great number of non-profit organizations (NGOs) have seen an increase in interest from the local level to the national and international levels. They play such an impressive role because they are so dedicated and zealous about their missions. NGOs operate in an open, honest, and friendly manner. They are therefore more successful in this regard. For the purpose of enlightening the general public, they arrange seminars, conferences, and workshops on women's rights and the abolition of prejudice.

Special Legislation for Women

- Legal practitioners (women) act, 1923
- Immoral Traffic (Prevention) Act, 1956 Maternity Benefit Act, 1961
- Dowry Prohibition Act, 1961
- Equal Remuneration Act, 1976
- Crimes Identified Under I.P.C
- Indecent Representation of women (Prohibition) Act, 1986
- Commission of sati (Prevention) Act 1987
- Pre-conception and Pre-Natal Diagnostic Techniques Act, 1994
- Protection of women from Domestic Violence Act, 2005
- Prohibition of child marriage Act, 2006
- Protection of children from sexual offences as (POCSO) Act, 2012

Importance of Women Education

According to JAWAHARLAL NEHRU, PT, "Educating a man educates an individual; however, Educating a woman educates an entire family." "When women are empowered, mother India is also Empowered." In India, women's education plays a major role in the country's overall growth. It not only contributes to the development of half of the world's human resources, but also to the improvement of life quality at home and abroad. It will not be incorrect to say that education is the solution to all problems. A lot of definitions of education have been proposed by thinkers, but M.Phule's term is the most important. "Education is that which illustrates the distinction between what is good and what is evil," M. Phule says. If we study the preceding concept, we can see that education is at the heart

of all the revolutions that have occurred throughout our history. Education entails changing one's behaviour in all areas, including thinking, viewpoint, and attitude. Educated women are more likely to encourage their daughters to attend school, as well as provide greater advice to all of their children. Furthermore, educated women can aid in the lowering of new-born mortality and population increase.

Conclusion

Women are crucial in advancing a country and directing it toward growth. Giving women access to education must be a top priority if we want to see a bright future for them in our nation since they are vital components of a vibrant humanity that are needed for national advancement. Moving from a vulnerable position to use a power is empowerment. In conclusion, whether a woman is married or unmarried, financially independent or dependent, her role in the patriarchal family dynamics does not change and she still remains powerless. Defeating the norm-based society's logo centric forces is crucial for women to achieve true empowerment in India. The empowerment of women in India depends on each of them, and when they work together, they make a difference. This implies that every Indian woman has a responsibility towards herself that she is capable of fulfilling if she is to achieve overall empowerment.

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A STUDY ON INTER CORRELATION BETWEEN FINANCE AND WOMEN EMPOWERMENT

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Abstract

This study examines the intricate relationship between finance and women's empowerment, highlighting the critical part that financial inclusion also plays an important role in advancing gender equality and elevating women's social standing. According to the report, financial knowledge and access are important factors in empowering women, fostering their economic independence, and advancing social justice. It also makes the case that the financial industry may be crucial in eradicating structural gender inequities, promoting economic growth, and realizing sustainable development objectives. The project is set up to first map the existing situation of women's access to finance on a global and regional scale, identifying major obstacles such as salary inequality, loan availability, and financial literacy. We anticipate that the findings from our study can guide fact-based guidance for policy and decision-makers in the financial sector and beyond. Our research findings could stimulate initiatives to advance gender equity in finance, creating a society that is more inclusive and equitable.

Keywords: *women empowerment, finance, gender inequities, financial inclusion.*

Introduction

In recent years, financial security has gained importance. The gender differences in financial well-being, as well as their causes and effects, have been extensively studied. Financial empowerment and well-being have both been shown to be significantly influenced by financial literacy. As the financial world becomes more complicated, financial literacy is becoming ever more crucial. Therefore, it has become essential to have a better grasp of financial ideas and financial goods in order to build the abilities to make wise financial decisions in order to increase financial well-being and empowerment. Increasing women's financial empowerment is crucial since, in contrast to males, they lack authority over economic resources. The current study suggests a conceptual framework that investigates the contribution of financial socialization and financial literacy to the growth of financial self-efficacy and financial coping. The current study puts out a

conceptual framework that investigates how financial socialization and literacy affect financial self-efficacy, coping mechanisms, and financial empowerment in India. The current study offers a conceptual framework that investigates the contribution of financial socialization and financial literacy to the growth of financial self-efficacy, coping mechanisms, and financial empowerment. We also discovered that financial self-worth and financial means of coping have a constructive influence in the growth of financial empowerment.

The current study puts out a conceptual framework that investigates how financial socialization and literacy affect financial self-efficacy, coping mechanisms, and financial empowerment in India. The current study offers a conceptual framework that investigates the contribution of financial socialization and financial literacy to the growth of financial self-efficacy, coping mechanisms, and financial empowerment. We also discovered that financial self-worth and financial means of coping have a constructive influence in the growth of financial empowerment.

What is Women Empowerment?

Providing women equal rights in all spheres personal, social, economic, political, legal, and so forth means empowering them with the power to make decisions about their personal lives and professions. Women are working side by side with men in places of employment today because of the empowerment of women. A woman also strikes a balance between her dedication to her career and her responsibilities to her home and family. With amazing ease and compatibility, they are juggling several roles at home as a mother, daughter, sister, and wife; and at work as professionals. To be able to properly handle their families while also harmonizing the need to work while helping their families, women have to be empowered. This is crucial for the future development of any nation. Women have also established themselves as equal partners in handling the household's financial needs at the same time. Women have effectively established their unassailable positions both nationally and internationally, yet they still pale in contrast to their male colleagues.

- Women in rural towns and villages are also progressively raising their voices loudly and clearly in society, proving that women's empowerment is not just a phenomenon of metropolitan areas. While it is true that women do not experience discrimination to a major level in society today, many of them nevertheless endure exploitation and harassment, which can take many different forms, including emotional, physical, mental, and sexual. They frequently experience rape, abuse, and other types of mental and physical violence.
- Right to work, right to study, right to make decisions, and other sociopolitical rights are now being asserted by women. The Indian Parliament has also approved a number of laws to protect women from different types of injustice and discrimination. The legislation listed below aim to empower women: Equal Remuneration Act-1976; Dowry Prohibition Act-1961; Immoral Traffic (Prevention) Act-1956, Medical termination of Pregnancy Act-1971; Maternity Benefit Act-1961;

Commission of Sati (Prevention) Act-1987; Prohibition of Child Marriage Act-2006; Pre-Conception & Pre-Natal Diagnostic Techniques (Regulation and Prevention of Misuse) Act-1994; and Sexual Harassment of Women at Work Place (Prevention, Protection and) Act-2013.

- According to the Indian Constitution's provisions, it is permissible to accord women in society the same opportunities that men do in all fields. In India, women have always held a prominent position, but they haven't always been empowered to take part in all activities. In order to develop and flourish, they must always be strong, attentive, and vigilant. The development department's major goal is to empower women since a mother with a kid who is empowered has a bright future for any country.

Review of Literature

- Holloway, K., Z. Niazi, and R. Rouse (2017), says that, there are a number of product design aspects that financial service providers and other stakeholders may use to get around some of these obstacles to women's financial inclusion. More research is required on efficient product-led methods to overcome these obstacles and enhance the outcomes of women's economic empowerment.
- Bardhan K. (1985). includes that the indicators of women's empowerment range significantly amongst the various states and socioeconomic and cultural contexts in India. All four facets of women's empowerment identified as being significantly influenced by the educational attainment of women. Age and media exposure have become key indicators for various aspects of women's empowerment.
- M., Dhanamalar; S., Preethi; and S., Yuvashree (2020), says that beyond having a beneficial effect on women's everyday lives, women's empowerment is essential to the general advancement of any community. Wide-ranging opportunities for women in India and throughout the world have been brought about by the winds of rapid change in the job and information technology areas.
- Yadav, Pratibha (2022), says that the main goal of all governments overseeing improved life standards helpful to mankind is to empower women everywhere. In Indian Vedic tradition, a woman is referred to as "Shakti Swaroopa" and is endowed with the capacity for procreation and multifaceted conduct. In the modern world, digitization has impacted every aspect of society, with a particular focus on the empowerment of women.

Benefits of Women Empowerment

Women's empowerment increases their belief in their potential to live fulfilling lives. They become independent persons after losing their reliance on others. They may live their life with dignity and independence, which boosts their self-esteem and gives them a sense of individuality. They are able to become well-known and make a significant contribution to society's welfare. Due to their financial independence, ability to spend on all of their needs and wants, and fair and equitable access to the nation's resources, women contribute

as capable citizens to the achievement and growth of the Gross Domestic Product (GDP). It's crucial to keep in mind that women's empowerment encompasses more than simply personal achievement or economic production. It concerns respect for human rights, freedom from oppression and violence, and equality. It involves building communities in which every woman has the freedom and power to decide what to do with her life.

Economic Growth: Empowering women can result in higher economic output. Women can participate more successfully to economic activities when they have the same opportunities and resources as men. According to research, gender imbalance in the workplace and society might have a huge financial impact on the entire world.

Enhanced Political Participation: Women who are empowered are more likely to participate in part in social and political decision-making, which ends up resulting in laws and policies that more accurately reflect the desires and requirements of women and girls. This enhances the possibility that equitable and well-balanced policies will be implemented in all spheres of society.

Gender Equality: Empowering women is a necessary initial step in reaching gender equality. Women who are empowered can challenge injustice and traditional conventions, which leads to a society that is fairer and more egalitarian.

Reduction of Violence Against Women: Women who are empowered are more competent to stand by themselves and confront various types of abuse and violence. Further, they can play a crucial role in transforming society attitudes and conventions that support such violence.

The Challenges of Financial Inclusion for Women

Around 1.1 billion women worldwide, or nearly one in three, are not included in the official financial system. Women are 7 percent less likely than males worldwide to hold simple transactional accounts, and this discrepancy is worse among the poor. Women are 28% less likely than males to hold a bank account if their daily income is less than \$2. These women frequently have to keep their cash on hand and rely on personal connections or loan sharks to cover their most basic expenses. This perpetuates the cycle of poverty by leaving people open to theft, loss, and other forms of exploitation. Some of the major challenges includes,

- It's considerably harder to locate excluded women.
- Through conventional approaches that target males as well, it is tougher to reach women.
- A lesser incentive prevails for providers who assist women.
- The requirement for monetary services by women is limited by norms of society.
- Technology is less approachable to women.

Many social conventions and traditions prevent or even ban women from working in the official financial industry in many regions of the world. Women, for example, may not be permitted to possess assets, which are frequently required as security for loans. Many women, particularly in rural and underserved regions, lack access to excellent education

and, as a result, financial literacy. This limits their grasp of money management, saving, investing, and protecting oneself from financial threats. Overcoming these issues will need a collaborative effort from governments, non-governmental organizations (NGOs), financial institutions, and society at large. This involves establishing gender-equal legislation, investing in women's education and financial literacy, developing financial products that are accessible and relevant to women, and utilizing technology to reach women who do not have access to traditional banking services.

Rural Women in the Digital Era

The amazing potential of ICTs must be fully realized in order to solve gender-based and other injustices and imbalances in society and empower women. Inaccessible ICT projects in many regions of humankind have revealed the benefits that such programs may provide for women. According to Vodafone's "linked Women" project, by 2020, mobile technology might help 5.3 million women escape illiteracy. With the use of such technology, violence against women may be reduced and women could pursue novel options, which would raise economic activity by an estimated 3.4 billion US dollars. When attempting to create a sound financial strategy, women sometimes run into unexpected problems. Women face challenges on a daily basis, but women also face challenges that most men cannot imagine. The typical modern woman adheres to various standards, which frequently prohibit her from moving up the corporate ladder.

Impact of Financial Accessibility and Availability For Women

Various aspects of women's empowerment can be strongly impacted by financial accessibility and availability, both on an individual and social level. Women are more capable of participating in the economy when they have access to financial resources and services. This might involve a variety of activities, including as finding work, establishing and expanding a business, and boosting the local and global economy. Women can live more independently and in control of their life if they are financially independent. Their ability to make decisions regarding family size, children's education, and the distribution of household resources may rise as a result. Women who have access to money can afford medical treatment for themselves and their families. Since women can afford routine checkups, required medications, and emergency treatments, having better financial health is frequently associated with having better physical health.

Women may benefit from a safety net against unforeseen economic shocks thanks to financial inclusion. This includes having access to credit, insurance, and savings that can assist in reducing financial risks brought on by unexpected medical expenses, lost income, or natural catastrophes. Women's social standing and self-esteem can be raised by financial access, which increases their propensity to engage in political and social activities. This may strengthen their positions as civic leaders and women's rights supporters. Women can be empowered by financial resources to create and launch their own enterprises. These business possibilities benefit not just the women who take them, but also the local economy and development of the neighbourhood.

Key Policies for Financial Inclusion

Certain national planning documents, programs, and legislation address the use of finances as a development instrument. Here, important policies are examined in light of how they treat the financial inclusion of disadvantaged and vulnerable groups. Although the policies in question seldom make clear how they propose to address the overlapping elements that impact women's economic possibilities, these papers mostly discuss gender equality concerns in the context of women's economic empowerment. Only a few policies address concerns relating to the financial inclusion of underprivileged populations, except than via gender equality.

Five-year Plans

Bangladesh's five-year plans serve as the country's overarching policy texts, from which other policies, initiatives, and rules are derived. A strategic goal of Bangladesh's current 8FYP is to increase women's economic involvement and benefits. Enhancing women's access to and control over productive resources through improved access to financial services is one strategy for attaining this goal.

National Strategy for Social Security

Unshakable dedication to eliminating poverty and vulnerability is shown in the NSSS, which was approved in 2015 (footnote 4). At the same time, Bangladesh strives to promote the social and financial inclusion of underprivileged groups. For instance, the NSSS strives to improve programs for the working-age population, including lowering vulnerability via initiatives like maternity insurance.

National Women Development Policy 2011

A road map for carrying out and coordinating all financial inclusion measures is supposed to be provided by the National Financial Inclusion Strategy-Bangladesh (NFIS-B)³⁰. Owners of cottage, micro, small, and medium-sized companies (CMSMEs), participants in unserved and underserved financial markets who belong to poor and disadvantaged groups, and others are among those excluded from financial services, according to this plan.

Effect of Policies and Laws in Women's Economic Status

The economic standing of women may be strongly impacted by laws and policies. Depending on how they are created and implemented, they can either support women's economic empowerment or obstruct it. Women's economic situation may be dramatically impacted by laws that forbid gender discrimination in the workplace. These regulations support equal compensation for equal labour, provide protection against sexual harassment, and guarantee ethical recruiting and promotion procedures. The "motherhood penalty" that many women experience in the workplace can be lessened by policies that offer paid maternity leave and help for child care. They make sure women don't have to choose between having a family and their employment, allowing them to keep their

economic standing. The economic potential of women may be considerably impacted by policies that support equal access to high-quality education for boys and girls. Such laws can assist females in gaining the information and abilities needed for a successful job. The economic standing of women can be improved through laws and regulations that support their access to financial services including opening bank accounts, getting credit, and owning property. Women's economic security and independence can be strongly impacted by laws that grant them the ability to engage into contracts, inherit and own property, enter into wills, and have equal rights in marriage.

Sugesstions

- It's never too late to master the art of investing if you don't know how.
- Find friends and family who are knowledgeable about investing and money management.
- Be a part of the financial plan and take a more active role in making financial decisions. Seeking support helps people become stronger and conquer their weaknesses.
- Considerable is to be given to the women especially to the entrepreneurs, in financial plans, policies and schemes and institutional training arrangements from both government as well as from private sector's side.
- Financial education should be prioritized related to financial inclusion for women and how to overcome them
- Supporting initiatives are to be taken which promote and ease women's entrepreneurship, such as giving them access to loans and giving them business skills training.

Conclusion

In conclusion, it's critical to acknowledge the relevance of women's financial inclusion and economic empowerment in India. It's time to remove the glass barrier and allow women in India's culture and economy equal opportunity to engage in economic activity and decision-making. Women have historically been sidelined in Indian society and the economy. All interested parties, including the government, financial institutions, civil society groups, and the commercial sector, must work together in unison to accomplish this. The establishment of supportive legislative and regulatory frameworks that promote women's financial inclusion and economic empowerment may be greatly aided by the government. This study would contribute to help policymakers, financial institutions, and other stakeholders develop strategies and interventions that successfully promote women's financial inclusion and empowerment, this study will add to the body of knowledge already available on women's empowerment and financial inclusion.

This study emphasizes the strong connection between women's empowerment and financial accessibility. It shows that boosting women's economic independence, decision-making ability, and overall socioeconomic standing requires financial inclusion as a key trigger. Through increased access to education, healthcare, and business possibilities,

women who have access to financial resources and services are better able to enhance their own and their family' quality of life.

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A CRITICAL EVALUATION AND IMPACT OF E-LEARNING IN HIGHER EDUCATION

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Abstract

E-learning has significantly impacted higher education, revolutionizing the way students' access and engage with learning materials. This critical evaluation examines the advantages and drawbacks of e-learning in the context of higher education. The benefits include enhanced accessibility, flexibility, and cost-effectiveness, enabling a broader range of learners to pursue education. However, challenges such as the digital divide, potential for reduced social interaction, and concerns about academic integrity and quality arise. Despite these issues, e-learning's impact on higher education has been profound, transforming traditional learning environments and shaping the future of education.

Introduction

E-learning in higher education has significantly transformed the traditional learning landscape, offering new opportunities and challenges. This critical evaluation will examine the impact of e-learning on students, educators, institutions, and the overall learning process.

E-learning has revolutionized access to education, enabling students from various geographical locations to access courses and resources remotely. It has also provided flexibility in learning schedules, allowing students to balance their academic pursuits with other commitments. Additionally, the use of multimedia, interactive content, and gamification in e-learning has enhanced student engagement and retention.

However, despite these advantages, e-learning has its share of drawbacks. One major concern is the potential for a digital divide, where students without access to reliable internet and proper devices might be excluded from the educational opportunities e-learning offers. Moreover, the lack of face-to-face interaction can lead to reduced socialization and a sense of isolation among students.

Furthermore, the effectiveness of e-learning largely depends on the quality of course design and the ability of educators to adapt their teaching methods to the digital

environment. Institutions must invest in training and support for educators to ensure they can effectively utilize e-learning tools and platforms.

Another critical aspect to consider is the issue of academic integrity and plagiarism. With online assessments and exams, ensuring the authenticity of students' work becomes more challenging, requiring robust measures to maintain academic standards.

Problem on Hand

E-learning, being the most recent rush of instruction is as of now having a sensible show in spite of posing challenges for the two teachers and understudies. While teachers need to put in escalated work and time to outline the rule, understudies need to furnish themselves with specialized capability to translate the course material. There are 5 standard issues looked by understudies in E-Learning classes and which we try to be understood through appropriate activities by our examination for the understudies' future advantages.

Different Tools for E-Learning

No matter a shakeout inside the market inside the past few years, many authoring tools are to be had that will help you create powerful WBT. These range from standard-motive equipment designed for displays and internet-authoring to dedicated E-mastering packages. The gear cowl a 33 extensive range in terms of charge, sophistication, and the way clean they are to learn.

- **Dreamweaver:** Dreamweaver is an first-rate starter device for WBT and preferred net-page authoring. Basically, Dreamweaver automates the authoring of internet content through generating HTML and JavaScript code thru a WYSIWYG interface. Among its many abilities, Dreamweaver makes it smooth to create animations and show/cover layers for WBT pages. When you have Dreamweaver, you can download loose extensions for E-learning. As soon as installed, those added modules come to be to be had via the Dreamweaver interface. They permit you to create quizzes, along with drag-and-drop exercises, and additionally to music learner consequences and output them to standards-compliant studying management systems (LMS). Dreamweaver is reasonably short to research and expand on. But, it is not as effective for WBT as many other equipment. It's abilities are restrained to what can be supported via the of native HTML and JavaScript functionality of internet browsers.
- **Macromedia Flash:** Although it was initially designed for growing small and rapid-loading web animations, Flash has evolved into an business-energy device for web programs. An increasing number of, it's miles becoming a improvement device of preference for WBT. With Flash, you could do the whole thing you can do in Dreamweaver plus a great deal more. Whilst Dreamweaver's output is limited to what a native internet browser can help, Flash's output is nearly limitless. This is due to the fact Flash creates its very own application file that runs within the browser window but does not depend upon the browser's native talents.

- Flash is extraordinary for creating animations, sporting events, and simulations of a wide variety. It supports rich media, inclusive of audio and video. Delivered to this, its modest rate makes it a totally appealing device for even low-finances WBT initiatives. The 34 handiest drawback of Flash rather than a few other tools is its complexity. The mastering curve may be steep. And, even as many outcomes can be attained via the person interface, you need to jot down code to unleash Flash's complete strength. Flash's ActionScript language may be very much like JavaScript.

Review of Literature

1. **AnejaNeena** [2016] has examined about an arrangement of scholarly review at each progression of the usage of the idea of self-governance ought to be satisfactory to every single concerned gathering. The offices for doing self-governing capacities, for example, advancements in curricular substance, frameworks of examination and assessment, showing techniques, supplementary learning, and so forth require adequate budgetary assets as well as constant preparing and up degree of educators. Independent foundations should, thusly, have the way to activate assets on an anticipated premise.
2. **Desai Swati** [2015] has discussed the function of records and verbal exchange technology . Information and communicate era additionally focuses amendment of the role of instructors. Further to school room coaching, they may produce other competencies and obligations. Instructors will act as digital publications for college students who use digital media.
3. **Chandra Sumitra** [2014] has focused on quality of E-learning learning system and E-learning facilities. The E-learning situation in India is as yet developing at exponential stage. Numerous universities also offer online scholar help services, together with on-line recommendation and registration, E-counselling and on line textbooks.
4. **Iqbal Ahmad** [2014] has focused on the need of development of E-learning system in modern learning system. Also explain how to help teachers and student realize free exploration of knowledge. This thesis show the effects of E-learning and compare it with traditional of learning.

Impact of E-Learning in Higher Education

1. **Enhanced Accessibility:** E-learning enables students from diverse backgrounds to access educational content and resources from anywhere, overcoming geographical barriers and promoting inclusivity.
2. **Flexibility and Personalization:** E-learning platforms offer self-paced learning options and personalized study paths, allowing students to tailor their education to their individual needs and preferences.
3. **Interactive Learning Experiences:** Multimedia tools and interactive content in e-learning foster active engagement, leading to a deeper understanding of complex subjects and increased student motivation.

4. **Cost-Effectiveness:** E-learning can reduce expenses associated with traditional classroom-based learning, such as travel, accommodation, and physical materials, making higher education more affordable for many learners.
5. **Data-Driven Insights:** E-learning platforms generate valuable data on student performance and engagement, enabling educators to identify areas of improvement and personalize their teaching methods for better learning outcomes.
6. **Global Reach and Collaboration:** E-learning breaks down international barriers, allowing students and educators from different parts of the world to collaborate, share ideas, and gain diverse perspectives, enriching the learning experience.
7. **Continuous Learning Opportunities:** E-learning facilitates lifelong learning by providing readily accessible resources and courses, empowering individuals to upgrade their skills and knowledge at any stage of their career.
8. **Adaptive Learning and Personalized Feedback:** E-learning platforms use adaptive algorithms to customize content and assessments based on individual progress, providing timely feedback to help students address their weaknesses and build on strengths.
9. **Innovation in Teaching Methods:** E-learning encourages educators to explore creative approaches, incorporating gamification, virtual reality, and other technologies to make learning more engaging and effective.
10. **Sustainability and Eco-Friendly Practices:** By reducing the need for physical infrastructure and printed materials, e-learning contributes to environmental sustainability, minimizing carbon footprint and resource consumption in higher education.

Technologies Commonly Utilized in E-Learning

1. **Learning Management Systems (LMS):** LMS platforms serve as the central hub for e-learning, hosting course content, assessments, and communication tools. They enable educators to manage and deliver online courses efficiently.
2. **Multimedia Content:** E-learning incorporates multimedia elements such as videos, audio, animations, and interactive simulations to engage learners and present information in a dynamic and appealing manner.
3. **Virtual Reality (VR) and Augmented Reality (AR):** VR and AR technologies create immersive learning experiences, allowing students to explore virtual environments and interact with objects, enhancing understanding and retention of complex concepts.
4. **Mobile Learning (M-Learning):** Mobile apps and responsive websites enable learners to access course materials on smartphones and tablets, promoting flexibility and learning on-the-go.
5. **Gamification:** Gamification techniques, like badges, points, and leaderboards, are integrated into e-learning platforms to incentivize participation, boost motivation, and make the learning process more enjoyable.

6. **Artificial Intelligence (AI):** AI is employed in e-learning for adaptive learning pathways, personalized feedback, and automated assessment grading, tailoring the learning experience to each individual's needs.
7. **Social Learning Tools:** Discussion forums, chat functionalities, and social media integrations facilitate peer-to-peer interaction, collaborative learning, and knowledge sharing among students and instructors.
8. **Cloud Computing:** Cloud-based storage and computing services ensure seamless access to learning resources and allow for easy scalability of e-learning platforms to accommodate a growing number of users.
9. **Big Data and Learning Analytics:** Data analytics tools track and analyze learner performance, engagement, and behavior, providing valuable insights to educators to optimize course design and instructional strategies.
10. **Video Conferencing and Webinars:** Live virtual classrooms and webinars enable real-time interaction between instructors and students, fostering synchronous communication and remote teaching.

Disruptive Innovation

Disruptive innovation is a term coined by Harvard Business School professor Clayton Christensen. It refers to a transformative concept, product, or service that fundamentally alters an industry or market by introducing a new approach that often displaces existing solutions or practices.

Key characteristics of disruptive innovations include:

- Targeting Underserved Markets
- Lower Cost and Simplicity
- Technological Advancements
- Incremental Improvements
- Changing Consumer Behavior
- Challenging Established Players

Challenges to Educational Planners

The ICT change gives new normal open entryways; it significantly modifications what can be mentioned and by whom and furthermore what may be conveyed and given via whom. These capacity adjustments, anyhow, act numerous new problems for academic coordinators. Those troubles may be divided into two massive makes: people who perceive with esteem and those that pick out with pleasant. But, unless educational coordinators respond to those actions and issues with proportionate speed. Esteem even though in numerous Western countries, the bigger pieces of families have computers 42 related to the internet, noteworthy differentiations remain alongside local and class lines. Multiple examinations report that young fellows are more powerful than younger ladies in the use of the new specific gadgets. Except, besides schools in like manner are dynamically all around arranged and related, requirements vacillate inner countries with academic stage

and kind. The same applies to instructor getting equipped and capacities. This raises the extra vast issue of large really worth: internal international locations and moreover among nations, mainly among the industrialized and making global. Without query an extensive variety of computers are offered every 12 months and hundreds of thousands get admission to the net.

Health Related Concerns

E-learning calls for the utilization of a pc and other such gadgets; this means eye fatigue, loathsome stance and different bodily troubles may affect the pupil. Whilst jogging an internet path it is a no longer too bad practice to bring policies approximately right sitting stance, paintings area tallness, and suggestions for general breaks. One of the best longstanding discourses inside the area of mentoring has been whether or now not we can profit by E-acing to break down. It's valid that as people don't all answer to no less than one training strategy inside the same way - a few learn outwardly, and others learn with repetition or maintaining in contact with; some choose to study without all people else, while others need someone to manual them up and down the manner; a few are extroverts and feel secure talking earlier than human beings, while others are introverts and are reluctant to speak brazenly inside the lecture room. E-studying responds to the ones exceptional wishes with the use of different apparatuses and an expansion of substances. For instance, E-learning ordinarily offers various media content material or interactive trying out in a hurry that may be more appealing for younger inexperienced persons than conventional books. E-gaining knowledge of, in examination with traditional studying, altogether reduces the time had to locate data. It likewise offers get right of entry to online resources, databases, periodicals, diaries and different fabric you would not often have get entry from a library.

Suggestions

- Properly train instructors to design and deliver effective e-learning courses, ensuring they can maximize the benefits of digital education.
- Invest in reliable and user-friendly e-learning platforms, providing technical support to both students and educators.
- Implement initiatives to bridge the digital divide, such as providing internet access and devices to students in need.
- Combine e-learning with face-to-face instruction when possible, creating a balanced approach that leverages the advantages of both methods.
- Regularly assess and improve e-learning courses based on feedback from students and faculty to enhance the learning experience.
- Offer online counselling, tutoring, and academic advising to ensure students receive adequate support throughout their e-learning journey.
- Implement robust methods to maintain academic integrity during online assessments, such as proctoring services and alternative evaluation techniques.

- Encourage group projects and virtual team activities to foster collaboration and interpersonal skills among online learners.

Conclusion

E-learning has significantly impacted higher education, presenting both advantages and challenges. The accessibility, flexibility, and personalized learning opportunities offered by e-learning have expanded educational access and improved the learning experience for many students. The availability of engaging multimedia content and interactive features has enhanced the quality of educational materials and fostered active learning.

However, e-learning also faces obstacles, such as student engagement issues, the digital divide, and concerns about assessment integrity. These challenges need to be addressed through faculty training, technological support, and initiatives to bridge the digital gap.

To make the most of e-learning's potential, a balanced approach that incorporates blended learning and regular improvement based on feedback is essential. Supporting services, like online counseling and academic advising, can ensure students receive the necessary assistance throughout their e-learning journey. By taking these steps, higher education institutions can harness the benefits of e-learning while overcoming its challenges, creating a more inclusive and effective educational experience for learners in the digital age.

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DEVELOPMENT OF REASONING AND THINKING ABILITIES AMONG STUDENTS

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Abstract

Reasoning skills and logical thinking is inseparable; it is beneficial for developing insight in thinking and task which will help them to solve a problem. This ability helps in adjustments in new situation of life which will further help in success of all area of life². At present era, development of reasoning and thinking abilities is an important one to fulfil the needs in effective manner, especially for younger generation. Students must have to improve the reasoning and thinking abilities because it enhances the interest of the students in studies and shapes the future education plans, career plans, and personality. This paper explore in detail about the concepts related to the reasoning ability and reasons behind the low reasoning ability of students and how to impart these skills among students.

Keywords: Reasoning Skills, Thinking ability, Arithmetic and Logical Reasoning, Critical Thinking, etc.,

Introduction

Reasoning and thinking abilities are developed in order to address the challenges of modern education, global competition and democratic life⁵. From the beginning this skills must have inculcate among the students for the betterment of the society. Reasoning and thinking abilities helps the students not just follow the ideas or facts but to find the meaning and connection behind them. Critical thinking is the ability to find solutions on the basis of evaluation, logic and evidence¹. There is a difference between memorization and learning. Memorization of answer to the question without clearly understands the concepts and its meaning, may improve the remembering quality of the brain but this habit deteriorating the quality of learning.

Statement of the Problem

Lack of reasoning ability among students is the major issue in Indian context². After Covid-19 the entire scenario of learning habits of the students are changed. Online classes and ICT tools usage help the students to know and utilize the various learning platform at maximum level, but in regular classes we can see the students hesitate to ask questions in the classroom. To narrow down the reason for this gap the following questions have been raised:

Why the students have low reasoning ability? What are the basic concepts related to improve reasoning ability? What are the strategies to improve the reasoning and thinking skills among the students?

Objectives of the Study:

This study makes an attempt to find the solutions for the questions asked in the statement of the problem. Accordingly the following objectives have been framed.

1. To know the concepts and importance of reasoning and thinking ability.
2. To identify the reasons behind the low reasoning and thinking ability of students.
3. To suggest the strategy to develop the reasoning and thinking ability among students.

Research Methodology

As the research paper is of conceptual and review nature, the researcher has applied exploratory research design by using varied secondary data availed from the secondary data sources. Based on the secondary data and review, the researcher has reported on various strategies to develop the reasoning and thinking ability among students.

Review of Literature

Dr. Madhuri Hooda and Anita Devi (2018) entitled a study on “Development of Reasoning Ability and Barriers among Students.” In this study they described about the different kind of strategies for developing reasoning ability and factor that affects reasoning ability of students. The authors indicates the role of Inductive and deductive reasoning and the four basic reasoning skills i.e spatial, reasoning, logical reasoning, numerical reasoning and verbal reasoning which are important to everyday living.

Wayan Suarniati et al (2018) entitled a study on “The Development of Learning Tools to Improve Students’ Critical Thinking Skills in Vocational High School”. In this study the authors expressed the necessity to produce a preparation of learning tools in the form of a teaching plan based on Problem-Based Learning, and valid and reliable critical thinking instruments which is based on Watson-Glaser Critical Thinking Appraisal (WGCTA) with five dimensions: Inference, Recognition Assumption, Deduction, Interpretation and Evaluation of Arguments with the subject of Pancasila and Civic Education. Instrument validity test is analyzed using product moment Pearson's correlation analysis, and factor analysis. While the instrument reliability test using Alpha Cronbach formula, it was declared valid and reliable after it was tested on the students through three trials which resulted in 16 question items from 50 items prepared.

In Pearson Blog - article titled as “Strategies to Increase Critical Thinking Skills in students (2021)” reveals that the essential qualities of reasoning and thinking abilities among students community. It also express that the accomplishment of this objective cannot be done through the curriculum, rather through the combination of academic learning and the development of life skills.

Concepts and Importance of Development of Reasoning and Thinking Ability

Reasoning and thinking skills in education are important because it can determine the quality of the school, business, career, and students’ behavior that all depends on students' ability to solve problems and make decisions⁵.

Reasoning ability is problem solving ability which solves different kind of problems related to learning and tasks. It can be developed with proper teaching and training. The process of actively conceptualizing, analyzing and applying the information gathered through observation, experience or reflection helps to develop the reasoning ability and thinking level of the students.

Level of Thinking	Skills Students Demonstrate	Questions to Ask
Lower Levels		
Remembering	recognize, describe, list, identify, retrieve	What do we already know about...? What are the principles of ... ? How does ... tie in with what we learned before?
Understanding	explain, estimate, describe, generalize, predict,	Summarize...or explain... What will happen if? What does....mean?
Higher Levels		
Applying	carry out, use, implement, show, solve	What would happen if...? How could...be used to...? What is the counterargument for..?
Analyzing	compare, deconstruct, organize,	Why is...important? What are the implications of...? Explain why/Explain how...
Evaluating	check, judge, critique, conclude, explain	Why is...happening? What is the best..and why? How does...affect?
Creating	construct, plan, design, produce	What is the solution to the problem? What do you think causes..? Why? What is another way to look at?

Source : Adapted from Brown University's Harriet W Sheridan Center for Teaching and Learning

Reasons for Lack of Reasoning and Thinking Ability

The Education system in a country has to be able to create a condition of learning that allows students to think critically, creatively, responsibly, and provide opportunities for students to explore their imaginative ideas⁵. Teachers play an important role in developing reasoning and teaching ability among students. Normally teachers only ask the students to learn, but rarely teach students how to learn as a result they are difficult to solve problems, make decisions, think critically, and think creatively ⁵.

Apart from that, the following aspects are considered as a key reason for lack of reasoning and thinking ability of students.i.e

- Anxiety and Stress
- Learning environment
- Task Complexity
- Less Motivation
- Intelligence
- Interest
- Activeness

Strategies for developing reasoning and thinking abilities:

The thinking ability can be created and developed in the classroom by solving real-world problems. The problem-based learning strategies are perceived as good approaches because they are supported by various learning theories (cognitive and constructivism) and many results of the research have proved that as an intervention model, PBL is effective in encouraging high thinking, constructing knowledge⁵.

Tools to improve Reasoning and Thinking ability:

Preparation of learning tools with appropriate strategies and critical thinking instruments that are tested to be used by teachers can improve the reasoning and thinking ability. The students are motivated to ask questions, participate in discussions, practice active learning, study with the help of examples and should go beyond the academic learning. Then only they will get the chance of developing their skills.

The following activities are used to increase the reasoning and thinking abilities of students

Reflecting activities: Reflection activities provide students with opportunities to track their learning and demonstrate their progress throughout the semester⁴.

Peer review activities: Peer review activities enable students to demonstrate communication skills by giving feedback on each other's work, expose students to alternative perspectives, and allow students to question what they are reading⁴.

Discussion forums: Discussion forums allow students to communicate with their peers, answer questions that require them to demonstrate both lower-level and higher-level critical thinking skills, and analyze course content⁴.

Small group activities: Small group activities allow students to communicate, problem solve, hear different perspectives, and collaborate to analyze and synthesize course content⁴.

Digital Storytelling Activities: Telling digital stories allows students to use multimedia (images, audio, video) to present information. Digital stories can include 1) Personal narratives, 2) Stories that document events, and 3) Stories that inform and instruct. Creating digital stories allows students to evaluate, reflect on, or analyze course content⁴.

Conclusion

Proper reasoning and thinking abilities will improve the cognitive ability of the students. Therefore it is necessary to create an atmosphere of learning that allows the

students to be able to think critically⁵. We can able to develop a reasoning and thinking ability among students through encourage to ask questions and participate in discussion form to share ideas and thoughts, it will increase the independent thinking ability and helps to set up their own goal with self-confidence.

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INNOVATIVE ICT PEDAGOGIES IN BIOLOGICAL SCIENCE EDUCATION: TRANSFORMING LEARNING EXPERIENCES

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Abstract

Information and communication technologies (ICT) have completely changed the educational landscape and opened up new possibilities for improving teaching and learning. The incorporation of cutting-edge ICT pedagogies has drawn a lot of attention in the area of biological science education because it holds the promise of revolutionising conventional methods and producing more immersive and engaging learning environments. This paper investigates the effects of online collaborative projects, augmented reality, gamification, and virtual labs on biological science education. We investigate the effectiveness of these technologies in raising students' comprehension, critical-thinking abilities, and general engagement with the subject matter through a thorough analysis of empirical evidence and case studies. The results imply that cutting-edge ICT pedagogies have the ability to promote a greater appreciation for biological science while providing students with crucial scientific competencies for their future jobs. To give a more complete picture, problems and factors related to the application of these technologies are also discussed. Teachers may develop dynamic learning environments that motivate a new generation of scientifically literate and motivated students in the field of biological science by embracing these transformative pedagogies.

Key words: Innovative ICT Pedagogies, Biological Science Education, Transforming Learning Experiences, Information and Communication Technologies, Virtual Laboratories, Augmented Reality, Gamification

Introduction

The fast development of information and communication technologies (ICT) in recent years has profoundly changed many facets of our lives, including how we teach and learn. ICT has become a potent weapon in the field of education, changing conventional teaching techniques and creating new opportunities for immersive and interactive learning experiences (Smith *et al.*, 2022). The use of cutting-edge ICT pedagogies has had a particularly revolutionary impact on biological scientific education, providing teachers and students with fresh avenues for investigating challenging ideas, carrying out experiments, and working together on projects.

Biology education has undergone a paradigm shift with the introduction of virtual laboratories, augmented reality, gamification, and online collaboration platforms. These innovative tools give teachers the tools they need to design dynamic, interesting learning environments that pique students' curiosity and enhance their comprehension of biological processes. As a result, students not only acquire practical skills that are crucial for their future professions in the biological sciences, but are also better able to understand scientific theories.

This paper explores the realm of cutting-edge ICT pedagogies in biological science education and their profound influence on the learning process. We intend to emphasise the potential of these technologies to revolutionise the way we teach and learn biology, creating a new generation of scientifically literate and enthusiastic learners. To do this, we will examine the advantages, difficulties, and empirical data supporting the use of these technologies.

Virtual Laboratories and Simulations

Simulations and virtual labs have become essential teaching tools for biological science. Students can conduct experiments and investigate difficult concepts in these controlled virtual worlds. Without the use of tangible objects or equipment, students can obtain practical experience while observing the impacts of variables, making predictions, and drawing conclusions. According to a study by Rutherford *et al.* (2019), students exposed to virtual laboratories performed better on practical exams, proving the effectiveness of this ICT-based education for developing scientific skills.

Augmented Reality (AR) in Fieldwork

The learning experience for students studying biological science can be greatly improved by incorporating augmented reality (AR) into practical activities. Students can discover flora, wildlife, and ecological interactions in a dynamic and engaging way thanks to augmented reality (AR), which overlays digital information onto the real-world environment. This all-encompassing method develops a sense of curiosity, critical thinking, and problem-solving abilities. According to a research by Chen *et al.* (2020), students who engaged in AR-based fieldwork showed greater levels of engagement and a deeper comprehension of ecological topics than those who used more conventional fieldwork techniques.

Gamification for Concept Reinforcement

The incorporation of game aspects into educational activities, or "gamification," has been shown to be a successful method for teaching biological science subjects. Virtual scavenger hunts, instructional games, and interactive quizzes encourage healthy competition among students while encouraging active participation in the learning process. Gamification can be used to build cooperative learning environments that promote cooperation and peer interactions. Gamified learning activities have been shown to increase students' knowledge retention and engagement, according to a Smith *et al.* (2018) study, making them a viable ICT pedagogy for biological science education.

Online Collaborative Projects

ICT enables seamless student collaboration, allowing them to collaborate on biological science projects regardless of distance. Students can interact with various viewpoints, discuss ideas, and jointly create comprehensive answers to real-world problems through online collaborative projects. In a case study, Brown *et al.* (2021) showed how online

collaborative projects can improve students' collaboration and communication abilities while also fostering a better comprehension of biological topics.

Conclusion

Innovative ICT pedagogies in biology classrooms have created exciting new opportunities for teachers and students. Learning experiences have changed, becoming more dynamic, engaging, and accessible because to innovations like virtual laboratories, augmented reality, gamification, and online collaborative projects. By embracing new tools, educators may better enable students to understand biological science topics and to develop the next generation of capable and enthusiastic biologists. In order to ensure that their students have a transformative educational experience, educators must stay current on the newest ICT tools and approaches.

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ENHANCE THE SECURITY IN PUBLIC KEY ALGORITHM RSA AND OAEP

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Abstract

There square measure few end-users nowadays UN agency create use of real security applications. These applications tend to be too difficult, exposing an excessive amount of detail of the scientific discipline method. Users would like easy inherent security that doesn't need additional of them merely clicking the secure checkbox. Cryptography may be an initial abstraction to separate specific algorithms from generic scientific discipline processes so as to eliminate compatibility and upgradeability issues. The core plan is enhancing the protection of RSA algorithmic rule. This public key algorithmic rule RSA and increased RSA square measure compared analysis is created on time supported execution time.

Key Terms: Public key, Encryption, Decryption, RSA, OAEP

Related work

In [4], Lih-Chung Wang et al., have proposed a new encryption scheme namely A Medium Field Multivariate Public-key encryption Scheme (MFE) belonging to MQ and provided a performance and security review. They presented the classical trapdoors central to PKCs like RSA and ElGamal were relatively slow due to modular exponentiation and discrete logarithm respectively and argued that MQ-Schemes based PKC were usually faster and no known assisted attack on them. In [5], Ding et al. proposed a high order linearization equation attack and resisted HOLE attack on MFE multivariate PKC. Xin Wang [6] et al. have proposed some improved scheme for public-key polynomials of degree four and operated on smaller fields. The security analysis obtained from the proposed scheme proved that it was more security. Yun-Ju Huang [7] studied a new multivariate MQ assumption that could be used to construct public-key encryption schemes. For that they gave two directions viz., asymptotic formulation of MQ problems and provided empirical evidence to confirm the hardness. They proved that the proposed public-key encryption was efficient because only ciphertext length $L + \text{poly}(K)$ was needed to encrypt a message M . In [8], Farshid et al. proposed a multivariate key pre-distribution scheme (MKPS), which was based on the category of threshold schemes for WSNs to improve the security in the MKPS. In that, they assigned d tuples of nonnegative integers to the sensor nodes as their IDs that were used to distribute the shares of multivariate polynomials. Once the network deployment has been done, nodes with $d-1$ common keys were used to shares of polynomials stored in their memories. Rajesh [9] et al. proposed an efficient MKPC based on permutation p -polynomials over finite fields. They proved that decryption was much faster than other multivariate public-key cryptosystems and found that complexity encryption in the proposed MPKC was $O(n^3)$ and for decryption it was $O(n^2)$.

Introduction

Data communication is a very important side of our living. So, protection of information from misuse is important. A cryptosystem defines a combine of information transformations referred to as cryptography and decoding. cryptography is applied to the plain text i.e. the info to be communicated to supply cipher text i.e. encrypted information exploitation cryptography key. decoding uses the decoding key to convert cipher text to plain text i.e. the first information. Now, if the cryptography key and also the decoding secret's an equivalent or one is derived from the opposite then it's aforementioned to be centrosymmetric cryptography. this kind of cryptosystem is simply broken if the key accustomed cipher or decode is found. to boost the protection mechanism Public Key Cryptosystem was introduced in 1976 by Whitfield Diffie and Martin Lillian Hellman of Stanford. It uses a combine of connected keys one for cryptography and alternative for decoding. One key, that is termed the personal key, is unbroken secret and alternative one called public secret's disclosed. The message is encrypted with public key and may solely be decrypted by exploitation the personal key. So, the encrypted message cannot be decrypted by anyone WHO is aware of the general public key and therefore secure communication is feasible. RSA (named once its authors – Rivest, Shamir and Adleman) is that the preferred publickey algorithmic program. In depends on the factorisation downside of arithmetic that indicates that given a really range | sizable amount} it's quite not possible in today's side to seek out 2 prime numbers whose product is that the given number. As we have a tendency to increase the quantity the likelihood for factorization the quantity decreases. So, we want terribly massive numbers for a decent Public Key Cryptosystem. antelope has a superb library referred to as GMP which will handle numbers of impulsive preciseness. we've got used this library to implement RSA algorithmic program. As we've got shown during this paper variety of bits encrypted along employing a public key has vital impact on the decoding time and also the strength of the cryptosystem.

Proposed Algorithm

Optimal uneven secret writing cushioning (OAEP) could be a technique for coding messages developed by Mihir Bellare and Phil Rogaway . The technique of coding a message with OAEP then encrypting it with RSA is incontrovertibly secure within the random oracle model. Informally, this implies that if hash functions are actually random, then associate degree mortal World Health Organization will recover such a message should be ready to break RSA.

An OAEP encoded message consists of a "masked data" string concatenated with a "masked random number". within the simplest type of OAEP, the disguised knowledge is created by taking the XOR of the plaintext message M and therefore the hash G of a random string r . The disguised random variety is that the XOR of r with the hash H of the disguised knowledge. The input to the RSA secret writing perform is then $[M \oplus G(r)] \parallel [r \oplus H(M \oplus G(r))]$

Often, OAEP is used to encode small items such as keys. There are other variations on OAEP (differing only slightly from the above) that include a feature called "plaintext-awareness". This means that to construct a valid OAEP encoded message, an adversary

must know the original plaintext. To accomplish this, the plaintext message M is first padded (for example, with a string of zeroes) before the masked data is formed. OAEP is supported in the ANSI X9.44, IEEE P1363 and SET standards.

The security of RSAES-OAEP depends on the security of the underlying RSA encryption and Decryption primitives, RSAEP and RSADP and the Security of the OAEP encoding method.

The advantage of the technique that is generically known as OAEP (Optimal Asymmetric Encryption Padding) is that under one model of analysis -- the so-called random oracle model -- the security of RSAES-OAEP can be tightly related to the security of RSAEP/RSADP. This allows us to consider the security of RSAES-OAEP

RSA encryption and decryption primitive over the years many different researchers have considered the security of RSAEP/RSADP. Boneh gives an excellent survey of the main attacks which we summarize here. In some cases, the discussion of the private exponent d refers to the inverse of $e \bmod (p-1)(q-1)$ as opposed to the alternative definition given in this document; knowledge of either is of course sufficient to compromise security.

Implementation of RSA Algorithm

Step 1: Create p & q Step 2: Calculate $N=p*q$
 Step 2: Calculate $N1=(p-1)(q-1)$ Step 4: Select Encryption
 $E=D.\text{ModInverse}(N1)$ Step 5: Select Decryption
 $D=\text{Choose 256 bits of random number}$ Step 6: Calculate OAEP
 Padding
 $m=\text{Give any value (random number)}$ Step 7: padding= m -plaintext length
 Padded message M bit length of m $k=\text{give a value (random number)}$ Create new
 random variable r of k bits
 Step 8: Create $G(r)$ which m bit integer from r bit integer $Gofr=r.\text{shiftright}(m-k)$
 Step 9: Create $p1$ & $p2$
 $p1=M.\text{xor}(Gofr)$ $Hofp1=p1.\text{shiftright}(k-m)$ $P2=Hofp1.\text{xor}(r)$
 Step 10: plain=Concatenate $p1$ and $p2$ Step 11: Decryption (OAEP)
 $r=(p1.\text{shiftright}(k-m)).\text{xor}(p2)$
 $M=(r.\text{shiftright}(m-k)).\text{xor}(p1)$
 Plaintext= $M.\text{shiftright}(\text{padding})$
 Step 12: Encryption Cipher= $\text{plain.modpow}(E,N)$ Step 13: Decryption
 Plaintext = $\text{Cipher.modpow}(D,N)$ OAEP Decryption ($p1,p2$)

Step 14: Plaintext=Plain

Result and discussion

RSA and RSA-OAEP square measure enforced in java. These algorithms square measure tested by totally different file size and calculate the coding and cryptography times. The results square measure tabulated as follows

RSA Encryption decryption

Input Size	Encryption Time	Decryption Time	Total Time
14kb	10	52	62
24kb	13	61	74
30kb	16	66	82
39kb	17	101	118
62kb	17	142	159

RSA-OAEP Encryption Decryption

Input Size(kb)	Encryption Time	Decryption Time	Total Time
14kb	15	63	78
24kb	16	76	92
30kb	15	78	93
39kb	15	170	185
62kb	16	190	206

RSA and RSA - OAEP Encryption Decryption

When scrutiny with RSA, RSA - OAEP algorithmic program needs longer for coding. Wherever as RSA-OAEP is a lot of secured cryptography algorithmic program than RSA, as a result of RSA -OEAP includes OAEP construct, which is a lot of problem for the persona non grata to seek out the plain text from the encrypted message. Therefore, it's finalized that RSA -OAEP is secured coding and coding algorithmic program.

Conclusion

A slight modification of the well-known and sensible RSA-OAEP has been enclosed coding. Per this theme it is further benefits, particularly its IND-CCA, security remains extremely associated with hardness of the RSA drawback, even within the multi-query setting. The RSA provides the highest security to the business application. Moreover, this theme will be used for coding of long messages while not using the hybrid and cruciform coding.

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APPROACHES AND METHODS OF PEDAGOGY IN TEACHING AND LEARNING PROCESS

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Abstract

ICT helps Teacher to communicate properly with their students. ICT helps Teacher to pass information to students within a very little time. ICT helps Teacher to design educational environment. The effective integration of ICT alongside the curriculum is associated with a new pedagogy which changes the role of the teachers and increases students' control of their learning, self-regulation, and collaboration. ICT also helps teachers, students and parents to come together. Continuous and Comprehensive Evaluation (CCE) helps students as well as teachers to use more technology for making teaching learning more attractive for the betterment of our future generation. Teachers must know the use of ICT in their subject areas to help the learners for learning more effectively. So, the knowledge of ICT is very much essential for the both prospective teachers as well as in-service teachers also. This will help teachers to know integrated technology with classroom teaching. Hence ICT bridge the gap between teacher and students.

Keywords: ICT, CCE, IT.

Introduction

Today's age of 21st Century and it is also the age of information and technology (IT). Every aspects of life are related to science and technology. Huge flow of information is emerging in all fields throughout the world. Now information and technology is popularly using in educational field for making teaching learning process successful and interesting for students and teacher both.

Origin of Pedagogy

During an ancient period in Greece, the role of the teacher was first introduced, and teaching was considered an art form. Attending school and getting education was something that only the wealthiest could afford for their kids. The educators weren't the first pedagogues. The rich individuals of the area used slaves to take their children to school. They were considered as the experienced and wise who imparted knowledge to the children they were taking to school. In that way the word pedagogue was created. It is described as the 'leader of children'. They guide the students academically as well as morally.

Meaning of Pedagogy

Pedagogy is a method of teaching in which teachers teach, both in theory and in practice. It is crucial for students to have meaningful classroom relationships in order to build on prior learning. The main aim of pedagogy is to build on previous learning of the students and work on the development of skills and attitudes of the learners. Pedagogy enables the students to get a thorough understanding of the subject and helps them in applying those learning in their daily lives outside of the classroom.

Approaches of Pedagogy

Constructivist

In this approach, the students are permitted to present in the procedure of understanding and gaining knowledge rather than just inactively receiving information. This facilitates critical thinking among the students and gives a learning environment in which they can connect with what they are hearing.

Collaborative

The students form groups of learners that learn together and work to solve a problem, build strategies, ideas, create products or complete a task. This is a joint rational effort by the students among themselves or with the help of the teachers.

Integrative

For the integrative approach, the students are given a learning atmosphere that helps them in connecting with their learning across the curriculum. The four objectives of integration include-

- Understanding the process of learning
- Differentiating issues by relevance
- Making use of the lessons in practical scenarios
- Associating the concepts in regular lives

Reflective

In this approach, the students are expected to evaluate themselves. It means observing the activities of the teachers and other students in the classroom and analyzing reason for occur and the process of work.

Inquiry-Based Learning

The educators are expected to not just answer the queries of the students, but also build a culture where their ideas are explored, challenged, improved, and refined. It aims to take the students from the position of wondering about a question to understanding the answer and then questioning it further.

Importance of Pedagogy in Teaching

1) Improves Quality Of Teaching

The quality of education can show a drastic improvement. This will benefit the students by helping them thoroughly understand the education material, thereby improving the **learning outcomes**.

2) Encourage Cooperative Learning Environment

The implementation of pedagogy in education encourages the students to work together towards completing a task and learn together. This increases their perceptions by understanding and taking views from the other students, thereby implementing the cooperative learning environments making them better leaders in the future.

3) Eliminates Monotonous Learning

Pedagogy helps the student to think in different ways and move beyond the customary methods of memorization and understanding for learning. It invokes complex processes of learning among the students such as analyzing, creative thinking, and appraisal. Further, it makes students more receptive to what the teacher is teaching.

4) Student Can Follow their Ways Of Learning

A well thought pedagogy can help the students to grasp education in various ways. It caters to the learning abilities of different students. Students can follow their preferred ways of learning and stick to them. In this way, the students develop a better understanding of the subject, which eventually improves their skills and learning outcomes.

5) Convenient Learning Approach For All

Students with special needs require different ways of learning and teaching in the institutes. Implementation of a suitable pedagogical approach will help them learn better and encourage them to be a part of the mainstream learning community.

6) Improves Teacher-Student Communication

The teacher understands the student in a better way which helps them to focus on the student's weaknesses and guide them.

Pedagogical Strategies

Case-based learning

In a case-based approach, students look at and investigate an actual series of events and their outcome or a realistic scenario or simulation in order to understand its history, context, and consequences. This approach gives students the opportunity to explore the decision-making process.

Collaborative and cooperative learning

Collaborative learning is a pedagogy that involves groups of students working together to solve a problem, complete a task, understand a concept or undertake a project. Group learning offers a way to help students develop social skills, problem-solving skills, collective decision-making skills and presentation skills.

Critical and transformational pedagogy

The starting point for critical pedagogy is recognition that classrooms are sites of power, opportunity and hierarchy; that teaching is an essentially political act; and that the politics of the classroom are complicated and need to be revealed and critically assessed.

Experiential learning

Effective experiential learning activities must be carefully prepared and supervised; engage meaningful relationships; have visibly defined prospect, goals, responsibilities and actions; and offer opportunities for feedback and manifestation. A student must document clear facts of learning and produce an outcome, normally kind of remarks, a thoughtful essay or a concluded product or project.

Field- and place-based learning

Learning need not take place in a classroom; field-based learning can take place in almost any discipline and give students the opportunity to apply their research skills. A belief that neighboring communities and environments outside the classroom contain assets that can significantly enhance student learning. The students need to formulate a research question undertake background research; collect, process and interpret data; and draw and present conclusion

Gamification

This approach integrates game like elements -- such as interactivity, competition, liveliness and immediate feedback -- into teaching and learning. The use of rewards, appreciation, points and levels helps motivate students and encourages determination.

Global learning

To develop students' ability to participate in a globally interconnected world, this approach examines international relations, complex global challenges, cultural differences and transnational processes (like migration), and gives students the tools to communicate and engage meaningfully and effectively across national and cultural boundaries. 8. Immersive learning.

Inquiry-based learning

Inquiry-based learning is a form of active learning that places students at the center of the learning process. It begins with a question or problem that students must investigate. The students, then, conduct research; identify, analyze and interpret the evidence they uncover; draw conclusions; and present their findings. The inquiries can be structured or more open, and the outcomes can be known in advance or only discovered in a process of investigation.

Research-based learning

Research-based learning gives students hands-on experience in applying the methodologies and modes of distribution of a particular discipline.

Service Learning

Service learning allows students to connect skills and knowledge gained in the classroom to a specific community need or challenge. Rather, it combines specific learning goals with an outcome deemed significant by a particular community client.

Public Scholarship

Public scholarship supports the academy's civic mission by speaking to public issues and collaborating with cultural institutions outside higher education, such as archives, historical societies, libraries, museums, newspapers, performance venues, schools and humanities councils

Technology-Enhanced Learning

Technology is a tool, not pedagogy. On the other hand, new instructional tools have the power to transform education by facilitating new forms of collaboration and interactive learning; Examples abound, and include blogging, concept and network mapping, creating podcasts, data visualization, digital storytelling, etymology, exhibition creation, social annotation, text mining and timeline construction. Students can create and analyze virtual scenarios.

Learning by Making and Doing

The best-known form of learning by doing is project-based learning. It involves more than simply completing a project; to a certain extent, it is the primary way that students master skills and knowledge. Ideally, project-based learning requires students to go through a multistage process of design, planning, execution, a public presentation, critique and revision, and formal assessment. The project outcome need not be a physical product. It can consist of a detailed policy proposal, a teaching resource, a briefing paper or another authentic outcome.

New forms of Assessment

Just because you covered a topic in class does not mean that the students learned it. These include reliable evaluation that mimics expert practice (such as a policy brief, a funding proposal or an environmental impact statement); peer evaluation, in which students develop, apply a rubric and provide beneficial feedback; and project-based assessment, in which a project is subject to accurate evaluation.

Role of Pedagogy in Effective Learning

Improves Teaching Quality

It enhances student contribution in learning and makes them more accessible to what is being taught.

Encourages Different Learning Styles

The main focus is given on the outcomes of courses and the students are free to learn in their styles.

Enables Learning for Students With Special Needs

It encourages the students with special needs to be a part of the mainstream teaching ways and engage with other students.

Clarifies Learning Objectives

The student studies a particular subject with a clear objective of outcomes such as gaining skills and knowledge of the subject.

Different Pedagogical Approaches to Learning

Children have a right to high quality education as this prepares them for their future. The way education is delivered comes in a variety of forms and lots of teachers have their own methods of teaching. A well thought out pedagogy can improve the quality of teaching and the way that students engage in different activities. This increases the likelihood of children achieving their goals as they are more likely to participate in the classroom. Pedagogical approaches can help stimulate a child's development and motivate them to keep learning. This is an important building block for their future as it means they will be excited about the learning process as a whole. Teachers should be aware of the importance of a good pedagogical approach to ensure each and every child receives the best possible learning experience.

Four Learning Styles

The four core learning styles in the VARK model include visual, auditory, reading and writing, and kinesthetic.

Impact of Pedagogy in Learner's Perspective

Student-Centered Approach

Pedagogy is a student-centered approach in which the students take responsibility for learning in their ways.

Continuous Assessment Of Students

Teachers evaluate the students regularly to see if they are improving and moving towards their target outcomes.

Encourages Teamwork

The study methods encourage teamwork and group projects for the students to meet like-minded individuals and work with them

Develops Cognitive Skills

Helps students to develop **cognitive skills** using evaluation, detailed analysis, comprehension, and application of the courses

Conclusion

In this way, the well-thought, modern-day pedagogy is a complete interrelation of the concepts and ideas, along with the ways of teaching the students. It also indicates that these practices have direct involvement with the student's achievements, results, and skills developed after following the approach.

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"TRANSFORMATIVE POTENTIAL OF ICT PEDAGOGIES: EMPOWERING LEARNERS IN THE DIGITAL AGE"

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Abstract:

In the digital age, Information and Communication Technology (ICT) has emerged as a powerful tool in education, revolutionizing traditional pedagogical practices. This research explores the transformative potential of ICT pedagogies in empowering learners and enhancing their educational experiences. By leveraging various ICT tools and resources, educators can tailor learning experiences to meet individual students' needs, interests, and learning styles. The study investigates the impact of ICT pedagogies on student engagement, academic performance, and critical thinking skills. Drawing on a comprehensive literature review and case studies, this research examines the effectiveness of personalized learning, blended learning, gamification, online collaborative projects, and other innovative ICT-based approaches. It investigates how these pedagogies foster global connections, cross-cultural understanding, and collaborative problem-solving, preparing learners for the challenges of a connected world. Furthermore, the research delves into the challenges faced by educators in implementing ICT pedagogies, such as digital equity, teacher professional development, and technological infrastructure. Strategies for overcoming these obstacles and optimizing the integration of ICT in education are explored. By shedding light on the theoretical foundations and practical implications of ICT pedagogies, this study contributes to the ongoing dialogue surrounding effective technology integration in education. It aims to provide educators, policymakers, and educational institutions with insights to develop learner-centered, digitally enriched educational environments that empower students to thrive in the ever-evolving landscape of the digital age.

Keywords: ICT pedagogies, Empowering learners, Educational experiences, Student engagement, Digital age

Introduction

In the fast-paced and interconnected world of the digital age, Information and Communication Technology (ICT) has revolutionized various aspects of society, including education. With the ubiquitous presence of digital tools and resources, educators now have an unprecedented opportunity to transform traditional pedagogical practices and create innovative learning experiences that cater to the diverse needs and interests of students. This research delves into the transformative potential of ICT pedagogies, focusing on their capacity to empower learners and enhance their educational journeys.

The integration of ICT in education opens doors to a plethora of possibilities, enabling educators to tailor learning experiences to match the unique learning styles and preferences of individual students. By leveraging a wide array of ICT tools and resources, instructors can engage learners on a more personalized level, creating an environment that fosters active participation, critical thinking, and a deeper understanding of the subject matter.

Central to this research is the investigation of the impact of ICT pedagogies on student engagement, academic performance, and critical thinking skills. Through a comprehensive literature review and analysis of relevant case studies, the study aims to shed light on the efficacy of various ICT-based approaches, such as personalized learning, blended learning, gamification, and online collaborative projects. These innovative pedagogical strategies not only enhance academic outcomes but also cultivate essential 21st-century skills, preparing learners to thrive in a globally connected and technologically advanced world.

ICT (Information and Communication Technology) pedagogies refer to innovative teaching approaches that incorporate digital technologies to enhance the learning experience. These pedagogies leverage various ICT tools and resources to engage students, promote critical thinking, and encourage collaborative learning. Here are some examples of innovative ICT pedagogies:

Flipped Classroom:

In a flipped classroom, students consume educational content (videos, readings, tutorials) outside of class and use class time for interactive activities, discussions, and problem-solving. Teachers can create and share video lectures or interactive online modules, which students can access at home. In the classroom, teachers can then focus on addressing students' questions, facilitating group activities, and providing personalized attention. This approach encourages active learning and helps students take ownership of their learning process.

Example: A high school math teacher creates video tutorials explaining complex mathematical concepts and uploads them to a shared platform. Students watch the videos at home, take notes, and attempt practice problems. In class, the teacher divides students into groups to work on challenging math problems collaboratively, clarifying doubts and providing support as needed.

Project-Based Learning (PBL):

Project-Based Learning is an inquiry-based approach where students work on real-world projects to explore and solve complex problems. ICT tools such as online research, data analysis software, multimedia creation platforms, and virtual collaboration tools can enhance the project's depth and scope.

Example: A science class investigates climate change's impact on their local community. Students use ICT resources like climate data websites, geographical information systems (GIS) software, and digital storytelling tools to analyze data, create presentations, and propose solutions to mitigate the effects of climate change in their area.

Gamification:

Gamification involves incorporating elements of games into the learning process to increase engagement and motivation. ICT allows educators to create interactive and immersive learning experiences that mimic games.

Example: An elementary school teacher uses educational apps that turn math exercises into fun and interactive games. Students earn points, badges, or rewards as they progress through the challenges, motivating them to improve their skills and reach higher levels of achievement.

Online Collaborative Learning

ICT enables students to collaborate with peers and experts beyond the classroom walls. Virtual classrooms, discussion forums, video conferencing, and shared documents facilitate meaningful collaboration and interaction.

Example: Students from different countries collaborate on a digital storytelling project about their cultural heritage. They use video conferencing and online collaboration tools to plan, script, and produce a series of multimedia presentations that showcase their traditions, customs, and history.

Augmented Reality (AR) and Virtual Reality (VR) Learning

AR and VR technologies offer immersive experiences that can bring abstract concepts to life and create interactive simulations, fostering deeper understanding and engagement.

Example: A history teacher uses augmented reality to provide virtual tours of historical sites and events. Students can explore ancient civilizations, walk through historical landmarks, and interact with virtual historical figures, making history more tangible and captivating.

Innovative ICT pedagogies leverage technology to make learning more dynamic, interactive, and accessible, catering to different learning styles and enhancing students' overall educational experience.

Personalized Learning

Purpose: Personalized learning aims to tailor educational experiences to individual students' needs, interests, and learning preferences. It helps students progress at their own pace, fostering greater engagement and understanding.

Example: Adaptive learning software that assesses students' abilities and provides customized learning paths and content based on their performance. Students receive targeted support in areas where they struggle and can advance faster in subjects they excel in.

Blended Learning

Purpose: Blended learning combines traditional face-to-face instruction with online learning experiences. It offers flexibility and allows students to access resources and engage in activities both in the physical classroom and through digital platforms.

Example: A history teacher uses a combination of in-person lectures and online resources, such as virtual museum tours, interactive timelines, and historical documentaries, to create a comprehensive learning experience.

Design Thinking

Purpose: Design thinking is a problem-solving approach that encourages creative and collaborative solutions to real-world issues. It focuses on empathy, defining problems, generating ideas, prototyping, and testing potential solutions.

Example: Students are given a challenge to design a sustainable and energy-efficient school building. They use ICT tools like 3D modeling software to create virtual prototypes, perform energy simulations, and collaborate on innovative design concepts.

Computational Thinking

Purpose: Computational thinking emphasizes problem-solving skills that draw on principles used in computer science. It helps students approach complex problems logically, break them down into smaller parts, and devise algorithms to solve them.

Example: Students apply computational thinking in a science class to analyze environmental data. They use data visualization tools and programming languages to identify patterns, trends, and correlations in the data to draw meaningful conclusions.

Online Collaborative Project-Based Learning

Purpose: This approach combines the benefits of project-based learning and online collaboration. It allows students to work on projects with peers from different locations, fostering global connections and cross-cultural understanding.

Example: Students from different schools in different countries collaborate on a joint research project on climate change. They use online tools like video conferencing, shared documents, and collaborative project management platforms to work together, share resources, and present their findings.

The purpose of these emerging ICT pedagogies is to enhance student engagement, promote critical thinking and problem-solving skills, encourage collaboration, and provide more personalized learning experiences. As technology continues to evolve, educators will likely explore new and innovative ways to integrate ICT into their teaching practices to meet the needs of 21st-century learners.

Challenges Faced by Educators in Implementing ICT Pedagogies

1. Digital Equity:

Digital equity refers to ensuring that all students have access to the necessary technology and internet connectivity to participate fully in digital learning experiences. However, not all students may have equal access to technology outside of the classroom, leading to disparities in their ability to engage with ICT-based pedagogies.

Example: In a school district, some students come from low-income families that cannot afford personal laptops or reliable internet connections at home. As a result, these students may struggle to complete online assignments, access educational resources, or participate in virtual class discussions, putting them at a disadvantage compared to their peers with better access to technology.

2. Teacher Professional Development

Effectively integrating ICT tools into the teaching process requires teachers to be proficient in using the technology and understanding how to leverage it to enhance learning outcomes. However, many educators may lack the necessary training and support to effectively integrate ICT into their teaching methods.

Example: A group of teachers receives a set of tablets for their classrooms, but they have limited experience using these devices in an educational setting. Without proper professional development opportunities, they may feel overwhelmed or uncertain about how to incorporate the tablets into their lessons effectively, leading to underutilization of the technology and missed opportunities for student engagement.

3. Technological Infrastructure

Robust technological infrastructure is essential for successful implementation of ICT pedagogies. Schools need reliable internet connectivity, sufficient bandwidth, and up-to-date hardware to support the use of digital tools and resources in the classroom. Inadequate infrastructure can hinder the smooth integration of ICT into the learning process.

Example: A school invests in a learning management system to facilitate online assignments and assessments. However, the school's internet connection is slow and frequently experiences downtime, causing frustration among both teachers and students. As a result, the platform becomes unreliable and disrupts the continuity of learning activities.

Addressing the Challenges

To overcome these challenges, educators and educational institutions can take various measures:

- 1. Digital Equity:** Schools can explore initiatives to provide technology access to students in need, such as lending laptops or tablets to students for use at home. Additionally, schools can collaborate with community organizations to expand internet access in underserved areas or provide offline access to digital content.
- 2. Teacher Professional Development:** Offering ongoing training and professional development workshops can empower educators to effectively integrate ICT tools into their teaching practices. Peer learning and mentorship programs can also support teachers in gaining confidence and expertise in using technology for pedagogical purposes.
- 3. Technological Infrastructure:** Schools should invest in upgrading their technological infrastructure to ensure reliable internet connectivity and sufficient hardware for both teachers and students. Regular maintenance and technical support can help minimize disruptions caused by technical issues.

By addressing these challenges, educators can create an inclusive and supportive environment for implementing ICT pedagogies, enabling students to benefit from the transformative potential of technology in education.

Addressing the Challenges:

1. Digital Equity:

- a) **Device Loan Programs:** Schools can establish device loan programs to lend laptops or tablets to students in need, allowing them to access technology outside of the classroom.
- b) **Mobile Hotspots:** Providing mobile hotspots or collaborating with internet service providers can offer internet access to students in areas with limited connectivity.
- c) **Community Partnerships:** Schools can partner with local organizations and businesses to secure donations of used devices or funding for technology initiatives, promoting digital inclusion.
- d) **Offline Access:** Curating offline educational resources and materials can benefit students with limited internet access, ensuring they can still engage with educational content.

2. Teacher Professional Development:

- a) **In-Service Training:** Schools should prioritize ongoing professional development programs that focus on ICT integration, catering to teachers with various levels of technological expertise.
- b) **Collaborative Learning Communities:** Establishing peer learning communities where educators share best practices and strategies for integrating technology can foster a supportive learning environment.
- c) **External Experts:** Inviting experts in educational technology to conduct workshops and training sessions can provide fresh insights and inspire teachers to explore innovative approaches.
- d) **Online Courses:** Offering online courses and webinars allows educators to engage in professional development at their convenience, accommodating busy schedules.

3. Technological Infrastructure:

- a) **Infrastructure Assessment:** Conducting regular assessments of the school's technological infrastructure helps identify weaknesses and areas in need of improvement.
- b) **Budget Allocation:** Schools should allocate a portion of their budget to upgrading and maintaining technological resources, ensuring a reliable and up-to-date infrastructure.
- c) **Technical Support Team:** Employing a dedicated technical support team can promptly address any technical issues and provide assistance to teachers and students.
- d) **Pilot Testing:** Before implementing new ICT initiatives on a large scale, schools can conduct pilot tests to identify potential infrastructure challenges and address them beforehand.

By implementing these measures, educators can create an inclusive and supportive environment that fosters the effective integration of ICT pedagogies. Addressing digital

equity, providing professional development opportunities, and ensuring robust technological infrastructure will empower educators to leverage technology effectively, ultimately enhancing the learning experiences and outcomes of students in the digital age.

Conclusion

The transformative potential of ICT pedagogies in education is evident, as these innovative approaches offer unique opportunities to empower learners and enhance their educational experiences in the digital age. By leveraging various ICT tools and resources, educators can create dynamic and personalized learning environments that cater to individual students' needs, interests, and learning styles. The integration of ICT pedagogies has the potential to improve student engagement, academic performance, critical thinking skills, and 21st-century competencies. However, implementing ICT pedagogies comes with its set of challenges that must be addressed to maximize their impact on education. Ensuring digital equity is crucial to provide equal opportunities for all students to access technology and participate fully in digital learning experiences. Schools and educational institutions can take proactive measures, such as device loan programs, mobile hotspots, and community partnerships, to bridge the digital divide and promote inclusivity. Furthermore, teacher professional development plays a vital role in effectively integrating ICT tools into the teaching process. Providing ongoing training and support for educators can equip them with the necessary skills and confidence to leverage technology to enhance teaching and learning. Collaborative learning communities and external experts can complement traditional professional development, fostering a culture of continuous improvement and innovation among educators. In addition to digital equity and teacher development, investing in robust technological infrastructure is essential for successful ICT integration in education. Schools need reliable internet connectivity, adequate bandwidth, and up-to-date hardware to support the use of digital tools and resources effectively. Regular assessments, budget allocation, and technical support teams can help ensure that technological infrastructure remains efficient and accessible. By addressing these challenges proactively, educators can create an inclusive and supportive environment that enables the effective implementation of ICT pedagogies. Through collaborative efforts from schools, policymakers, and the broader educational community, the transformative potential of ICT pedagogies can be harnessed to create learner-centered, digitally enriched educational environments. Ultimately, this will empower students to thrive in the ever-evolving landscape of the digital age, equipping them with the skills and knowledge needed to succeed in a globally connected and technologically advanced world.

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EXPLORING TEACHERS' PERSPECTIVES ON THE ISSUES AND CHALLENGES OF IMPLEMENTING ICT TOOLS IN THE TEACHING AND LEARNING PROCESS

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Abstract

The integration of Information and Communication Technology (ICT) tools in education has transformed teaching and learning, providing new opportunities for engagement and personalized instruction. However, teachers face various challenges when adopting these innovative approaches. This article aims to explore the issues and obstacles faced by teachers in implementing ICT tools, such as technical difficulties, limited access to technology, resistance to change, and the need for professional development. Understanding these challenges is crucial for developing strategies that support teachers in utilizing ICT tools effectively and ensuring equitable learning opportunities. The study aims to gather teachers' perspectives to inform improvements in professional development and create an enabling environment for successful ICT integration. The research methodology involves a sample of 150 faculty members, and the literature review highlights the importance of ICT in education and its impact on teaching and learning. The findings reveal demographic factors, teaching preferences, and teachers' perceptions on technology-based teaching and learning. Moreover, the study identifies issues and challenges in using ICT tools, emphasizing the lack of pedagogical models as a significant concern.

Keywords: *ICT tools, Challenges, Teachers' perspectives, Professional development, Equitable learning opportunities*

Introduction

The integration of Information and Communication Technology (ICT) tools in education has revolutionized teaching and learning, offering new possibilities for engagement, collaboration, and personalized instruction. With the emergence of new teaching pedagogies that leverage ICT tools, educators have the opportunity to create dynamic and interactive learning environments. However, along with the promises and benefits, there are several issues and challenges that teachers encounter when adopting and implementing these innovative approaches. In this article, we will explore the issues and challenges faced by teachers from their perspective while embracing a new teaching pedagogy using ICT tools. From technical difficulties and limited access to technology to resistance to change and the need for professional development, teachers face a multitude of obstacles that can impact the effectiveness of their teaching practice. Understanding these challenges is crucial to developing strategies and solutions that support teachers in

utilizing ICT tools to their fullest potential and ensuring equitable learning opportunities for all students. By examining the issues and challenges faced by teachers, we can gain insights into the complexities of integrating ICT tools in the classroom and explore ways to address these concerns. Ultimately, the goal is to empower teachers with the necessary support and resources to navigate these challenges effectively and harness the transformative power of technology in education.

Statement of Problem

The integration of ICT tools in education lacks a comprehensive understanding of teachers' perspectives on the specific challenges they face. This research aims to explore teachers' viewpoints, concerns, and experiences to address this gap. The problem lies in the limited understanding of the unique obstacles teachers encounter when incorporating ICT tools in their classrooms. This study investigates these challenges, including technical difficulties, inadequate training, resistance to change, and pedagogical alignment. By gathering teachers' perspectives, valuable insights will inform strategies to enhance professional development and create an enabling environment for successful ICT integration. This research contributes to advancing ICT integration in education, improving learning experiences for students.

Objectives of the Study

- To explore teachers' perspectives on the issues and challenges associated with the implementation of ICT tools in the teaching and learning process.
- To understand the complexities faced by teachers involved in incorporating technology effectively within the classroom.

Research Methodology

Sample Size: 150 faculty members were selected from the specified region

Sampling Technique: Convenient Random Sampling Technique has been used to select the samples.

Limitations

- The geographical area is restricted to Coimbatore, hence the opinions may vary
- The number of the respondents are limited to 150

Review of Literature

AbidHaleem, MohdJavaid, MohdAsimQadri, Rajiv Suman, "Understanding the role of digital technologies in education: A review" this research aims to ensure inclusive and equitable quality education for all. Digital technologies have emerged as an essential tool to achieve this goal. These technologies are simple to detect emissions sources, prevent additional damage through improved energy efficiency and lower-carbon alternatives to fossil fuels, and even remove surplus greenhouse gases from the environment. Digital technologies strive to decrease or eliminate pollution and waste while increasing

production and efficiency. These technologies have shown a powerful impact on the education system. The recent COVID-19 Pandemic has further institutionalized the applications of digital technologies in education. These digital technologies have made a paradigm shift in the entire education system. It is not only a knowledge provider but also a co-creator of information, a mentor, and an assessor. Technological improvements in education have made life easier for students. Instead of using pen and paper, students nowadays use various software and tools to create presentations and projects. When compared to a stack of notebooks, an iPad is relatively light. When opposed to a weighty book, surfing an E-book is easier. These methods aid in increasing interest in research. This paper is brief about the need for digital technologies in education and discusses major applications and challenges in education.

RadhikaKapur(2019), *Use of ICT in Improving Quality of Education*, in this research discussed about the utilization of ICT has rendered a significant contribution in bringing about improvements in the quality of education. In educational institutions at all levels, individuals are required to implement number of tasks and functions. In putting into operation various tasks and functions, the individuals are required to make use of ICT. Through the use of ICT, individuals are able to generate awareness and augment their knowledge in terms of various aspects. When the educators need to enrich the teaching-learning methods and instructional strategies, then they make of ICT. On the other hand, when students need to work on assignments and projects, then they make of ICT to carry out their task in a well-organized manner and in accordance to the desired expectations. The main aspects that are taken into account in this research paper include, ICT as a change agent in learning process, ICT enhancing educational management, factors influencing quality of education through ICT, and role of ICT in improving quality of education.

SiminGhavifekr, Wan Athirah Wan Rosdy(2015), *“Teaching and Learning with Technology: Effectiveness of ICT Integration in Schools”*. This study aims to analyze teachers’ perceptions on effectiveness of ICT integration to support teaching and learning process in classroom. A survey questionnaire was distributed randomly to the total of 101 teachers from 10 public secondary schools in Kuala Lumpur, Malaysia. The data for this quantitative research were analyzed for both descriptive and inferential statistic using SPSS (version 21) software. The results indicate that ICT integration has a great effectiveness for both teachers and the students. Findings indicate that teachers’ well-equipped preparation with ICT tools and facilities is one the main factors in success of technology-based teaching and learning. . It was also found that professional development training programs for teachers also played a key role in enhancing students’ quality learning. For the future studies, there is a need for consideration of other aspects of ICT integration especially from management point of view in regard to strategic planning and policy making.

Demographic Factors

	Category	Frequency	Percentage
Gender	Male	77	51.3
	Female	73	48.7
	Total	150	100
Teaching Experience	< 1 Year	2	1.3
	1-5 Years	21	14
	6-10 Years	98	65.3
	>10 Years	29	19.4
	Total	150	100
Preference of Teaching Style	Conventional /Traditional	97	64.7
	Modern/Contemporary	53	35.3
	Total	150	100.0
The Ability of Handling ICT in Teaching	High	25	16.67
	Medium	76	50.66
	Low	49	32.67
	Total	150	100.0

From the respondents taken for the study, based on Gender, there are majority male(51.3%) respondents and majority(65.3%) of the respondents have a teaching experience between 6-10 years majority (64.7%) respondents who prefers conventional or traditional teaching and learning methods as majority (50.66%) of these faculty has medium level of ability to handle ICT based Classes.

Teachers' Perception on Technology-based Teaching and Learning

Items	Always	Often	Sometimes	Rarely	Never	Mean
Students concentrate more on their learning	38	27	30	5	0	2.02
Students try harder in what they are learning	40	29	26	5	0	1.96
Students feel more autonomous in their learning	39	24	30	7	0	2.05
Students understand more easily what they learn	26	26	38	10	0	2.32
Students remember more easily what they learnt	38	27	30	5	0	2.02
ICT Facilitates collaborative work between students	32	41	25	2	0	1.97
ICT improves the class climate	32	41	25	2	0	1.97
Overall Mean						2.04

From the above table it's clear that highest response towards ICT based teaching learning process where 38% of the students concentrate more on their learning and 40% of the students try harder to learn 38% of the students feels more easy to understand the concepts through ICT and 41 % of the students makes the class room climate cool by facilitating collaborative teaching learning process along with their teachers.

Issues and Challenges in using ICT tools in Teaching & Learning

Items	Always	Often	Sometimes	Rarely	Never	Mean
Lack of adequate content / material for teaching	10	15	15	31	29	3.54
Too difficult to integrate in ICT use into curriculum	33	35	29	3	0	2.02
Lack of pedagogical models on how to use ICT for learning	0	6	9	51	34	4.13
Pressure to prepare students for exam and tests	11	23	16	27	23	3.28
Insufficient bandwidth or network speed	17	31	18	19	15	2.84

From the above table its evident that, highest mean for lack of pedagogical model (4.13) when compared to lack of adequate content (3.54) than that of insufficient bandwidth (2.84) compared to difficulty in integration of ICT usage in curriculum (2.02).

Conclusion

In conclusion, the integration of ICT tools in education has revolutionized teaching and learning, but it is not without challenges. This article has explored the obstacles faced by teachers, including technical difficulties, limited access to technology, resistance to change, and the need for professional development. Understanding these challenges is crucial to support teachers in utilizing ICT tools effectively and ensuring equitable learning opportunities. Through a study involving 150 faculty members and a review of literature, it was found that teachers prefer traditional teaching methods and have a moderate ability to handle ICT-based classes. Teachers perceive that ICT enhances students' concentration, effort, autonomy, understanding, and retention. However, the lack of pedagogical models for ICT usage emerged as a significant concern. To address these challenges, providing adequate resources, integrating ICT into the curriculum, and offering professional development are crucial. By doing so, educators can harness the transformative power of ICT to improve learning experiences and outcomes. Further research and strategic planning are needed to ensure successful integration of ICT in educational institutions.

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ICT TOOLS IN TEACHING AND LEARNING PROCESS

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Abstract

This abstract highlights the role and impact of Information and Communication Technology (ICT) tools in the teaching and learning process. It emphasizes the benefits of integrating ICT tools, such as smart boards, educational apps, and multimedia resources, in education. These tools enhance engagement, interactivity, and personalization, allowing for individualized learning experiences tailored to students' needs and learning styles. Furthermore, the abstract discusses the access to a wide range of educational resources through the internet, promoting critical thinking and global collaboration among students. However, it also acknowledges the challenges of ensuring digital equity and providing adequate training for teachers. The abstract concludes by emphasizing the transformative potential of ICT tools in creating inclusive, student-centered learning environments that foster essential skills for the digital era.

Keywords: ICT tools, Teaching and learning process, Educational technology, Smart boards

Introduction

In today's digital age, Information and Communication Technology (ICT) has revolutionized various aspects of our lives, including education. The integration of ICT tools in the teaching and learning process has opened up new avenues for enhanced engagement, personalized learning, and improved outcomes. This article explores the significant benefits and potential challenges associated with leveraging ICT tools in education.

ICT Tools

ICT tools refer to various technologies and digital resources used in the field of education to enhance teaching and learning processes. These tools encompass a wide range of hardware and software applications that facilitate communication, information retrieval, content creation, collaboration, and interactive learning experiences. Some examples of ICT tools include:

Smart boards and interactive whiteboards: These interactive display boards enable teachers to present multimedia content, annotate lessons, and engage students in collaborative learning activities.

Educational apps and software: These applications and software programs are designed specifically for educational purposes, providing interactive and engaging learning experiences on various subjects.

Learning management systems (LMS): LMS platforms facilitate online course management, content delivery, student assessment, and communication between teachers and students.

Multimedia resources: This includes audio, video, and interactive content that can be used to supplement traditional teaching materials, making lessons more engaging and dynamic.

Online collaboration tools: These tools enable real-time collaboration and communication among students and teachers, promoting teamwork, discussion, and knowledge sharing.

Virtual and augmented reality (VR/AR): VR/AR technologies offer immersive experiences that simulate real-world environments, allowing students to explore concepts and interact with virtual objects.

Online assessment tools: These tools streamline the process of evaluating students' knowledge and performance, providing immediate feedback and generating analytics to monitor progress.

Web-based research tools: These resources include online databases, digital libraries, and search engines that facilitate access to a vast amount of information for research and study purposes.

Digital content creation tools: These tools allow students and teachers to create multimedia presentations, videos, podcasts, blogs, and other digital artifacts to demonstrate knowledge and express creativity.

Cloud storage and collaboration platforms: These platforms enable easy storage, sharing, and collaboration on documents, presentations, and other files, facilitating seamless collaboration among students and teachers.

Online communication tools: These tools include email, video conferencing, instant messaging, and discussion forums, allowing effective communication between students and teachers regardless of geographical distance.

Gamification and educational games: These tools employ game-like elements and mechanics to enhance engagement, motivation, and learning outcomes, making the learning experience more enjoyable and interactive.

Assistive technologies: These tools support students with disabilities by providing accommodations, such as screen readers, speech-to-text software, and adaptive input devices.

Data analytics and learning analytics tools: These tools analyze data generated from students' interactions with ICT tools, helping educators gain insights into student performance, identify areas for improvement, and personalize instruction.

Mobile devices: Tablets, smartphones, and other mobile devices enable access to educational resources, apps, and communication tools, facilitating anytime, anywhere learning.

These ICT tools continue to evolve and offer new opportunities for educators to enhance teaching effectiveness, engage students, and promote 21st-century skills in the digital age.

ICT Tools in Teaching and Learning Process

Enhanced Engagement: ICT tools facilitate interactive and engaging learning experiences, capturing students' attention and fostering active participation.

Personalized Learning: ICT tools allow for individualized instruction, catering to students' diverse needs, learning styles, and pace of learning.

Access to Information: ICT tools provide access to a vast array of digital resources, including educational websites, digital libraries, and online databases, expanding students' knowledge and research capabilities.

Collaboration and Communication: ICT tools enable seamless collaboration and communication among students and teachers, fostering teamwork, discussion, and knowledge sharing.

Multimedia Learning: ICT tools leverage multimedia elements, such as videos, animations, and interactive content, to enhance understanding, visualization, and retention of complex concepts.

Flexibility and Adaptability: ICT tools offer flexibility in terms of time and location, enabling remote and asynchronous learning, as well as adapting to students' individual schedules and preferences.

Assessment and Feedback: ICT tools streamline the assessment process, allowing for online quizzes, automated grading, and immediate feedback, facilitating ongoing monitoring of students' progress.

Differentiation and Inclusion: ICT tools support differentiated instruction, accommodating diverse learning needs, and ensuring inclusion for students with disabilities or special requirements.

Digital Literacy and 21st-century Skills: By utilizing ICT tools, students develop digital literacy skills and are exposed to technology that prepares them for the digital workforce and future career demands.

Teacher Professional Development: The integration of ICT tools necessitates ongoing professional development for teachers to effectively utilize and integrate these tools into their teaching practices.

Cost-effectiveness: ICT tools can provide cost-effective solutions, reducing the need for physical resources and offering scalable learning opportunities.

Continuous Improvement: The use of ICT tools allows for the collection and analysis of data on students' progress and engagement, facilitating continuous improvement in teaching methodologies and learning outcomes.

Global Connections and Cultural Exchange: ICT tools enable students to connect with peers globally, fostering cross-cultural understanding, collaboration, and exposure to diverse perspectives.

Lifelong Learning: ICT tools promote a culture of lifelong learning, encouraging students to engage in self-directed learning, research, and exploration beyond the classroom.

Ethical and Responsible Use: ICT tools provide an opportunity to educate students about responsible and ethical digital citizenship, including topics such as online safety, privacy, and responsible use of technology.

By embracing ICT tools in the teaching and learning process, educators can create dynamic, learner-centered environments that foster engagement, collaboration, and the acquisition of essential 21st-century skills.

Enhanced Engagement and Interactivity:

ICT tools, such as smart boards, educational apps, and multimedia resources, make the learning process more interactive and engaging for students. Visual and auditory aids help to capture students' attention, while interactive platforms allow for active participation, collaboration, and knowledge sharing. These tools create a dynamic learning environment, stimulating students' curiosity and fostering a deeper understanding of complex concepts.

Personalized Learning and Differentiation:

ICT tools enable personalized learning experiences tailored to individual student needs and learning styles. Adaptive learning platforms, virtual simulations, and online assessments provide opportunities for students to learn at their own pace, receive immediate feedback, and access additional resources for reinforcement. This individualized approach promotes self-directed learning, boosts student motivation, and enhances overall academic performance.

Access to a Vast Array of Resources:

The integration of ICT tools in education opens up a wealth of resources that can enrich the learning experience. Through the internet, students can access educational websites, digital libraries, and online databases to explore diverse perspectives, conduct research, and expand their knowledge beyond the boundaries of traditional textbooks. This access to a vast array of resources promotes critical thinking, information literacy, and the development of digital research skills.

Global Collaboration and Cultural Exchange:

ICT tools facilitate global collaboration and cultural exchange among students from different geographic locations. Video conferencing, online discussion forums, and collaborative platforms enable students to connect and collaborate on projects, fostering cross-cultural understanding, teamwork, and communication skills. These interactions broaden students' horizons, expose them to diverse perspectives, and prepare them to thrive in a globalized world.

Challenges and Considerations:

While the integration of ICT tools in education offers significant advantages, it is important to address potential challenges. Access to reliable internet connectivity and necessary hardware devices can be a barrier, particularly in rural or underserved areas. Additionally, teachers require adequate training and professional development to effectively integrate ICT tools into their teaching practices. It is crucial to ensure digital equity, provide technical support, and continuously evaluate the effectiveness of ICT tools to maximize their impact.

Conclusion

The integration of ICT tools in the teaching and learning process has the potential to revolutionize education, providing students with engaging, personalized, and globally connected learning experiences. By leveraging ICT tools, educators can create an inclusive and student-centered learning environment that fosters critical thinking, collaboration, and digital literacy skills. To harness the full potential of ICT tools, it is essential for educational institutions, policymakers, and teachers to embrace these tools, address challenges, and continually adapt to the evolving landscape of technology. Through thoughtful integration, ICT tools can pave the way for a more effective and transformative educational journey for students in the digital era.

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ROLE OF ICT TOOLS IN WOMEN EMPOWERMENT

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Abstract

ICT is playing an important role in changing the attitude and perspective of society towards women. It is creating a psychological comfort level of women at their work place by providing them additional knowledge and skills. Women's economic empowerment is essential for supported progress, reduction in absolute poverty and the acquirement, is about of all the Women's empowerment is about rights and just a fair societies. These ICTs factors include computer, mobile telephony technology, the internet and other facets of the changing methods and means of communication to man today. In the recent past, ICTs have been added to the women and gender equality debate. ICTs are being presented as a tool having potential to benefit women.

Keywords: ICT, Women Empowerment.

Introduction

"The empowered woman is powerful beyond measure and beautiful beyond description." Women in developing countries are facing economic and social hardships and have limited access to ICT, which in turn translate into their lack of skills, lower literacy rate and restricted social engagement. ICT is playing an important role in changing the attitude and perspective of society towards women. It is creating a psychological comfort level of women at their work place by providing them additional knowledge and skills. Psychological empowerment can be at organizational level, personal level or social level. Through Internet, television, radio and mobile phones women are getting information about all the real incidents happening in world and learning skills to tackle situations; it is helping to bring leadership qualities in them

ICT is playing an important role in changing the attitude and perspective of society towards women. It is creating a psychological comfort level of women at their work place by providing them additional knowledge and skills. Psychological empowerment can be at organizational level, personal level or social level. Through Internet, television, radio and mobile phones women are getting information about all the real incidents happening in world and learning skills to tackle situations; it is helping to bring leadership qualities in them.

Women's Economic Empowerment

Women's economic empowerment is essential for supported progress, reduction in absolute poverty and the acquirement, is about of all the Women's empowerment is about rights and just a fair societies. Women's economic empowerment is the volume of women and men to take a part in, accord to and welfare from growth process in ways which identify the advantage of their participation, favor their honor and make it practicable to arrange of equitable distribution of the benefits growth. The women's Economic

empowerment increases the women's achievement to economic resources and chance including jobs, monetary services, depressiveness and other productive assets, skills development and market information.

The Women's economic empowerment is the foundation of women's empower and strength which enable the women to have control on their lives and increase the chance of self-esteem. It is about to increase the equal chance for women in all the activities of the society. Women often bear differences and gender inequalities, with some women experiencing multiple differences and prohibition due to the elements such as origin or project. Women fulfill 66 percent of the world's work, and manufacture 50 percent of the food, still earn only 10 percent of the income and have individual 1 percent of the depressiveness however, the problem is better education in the development world, or fighting global weather change, or addressing nearly any other challenge we face, empowering women is a significant part of the education.

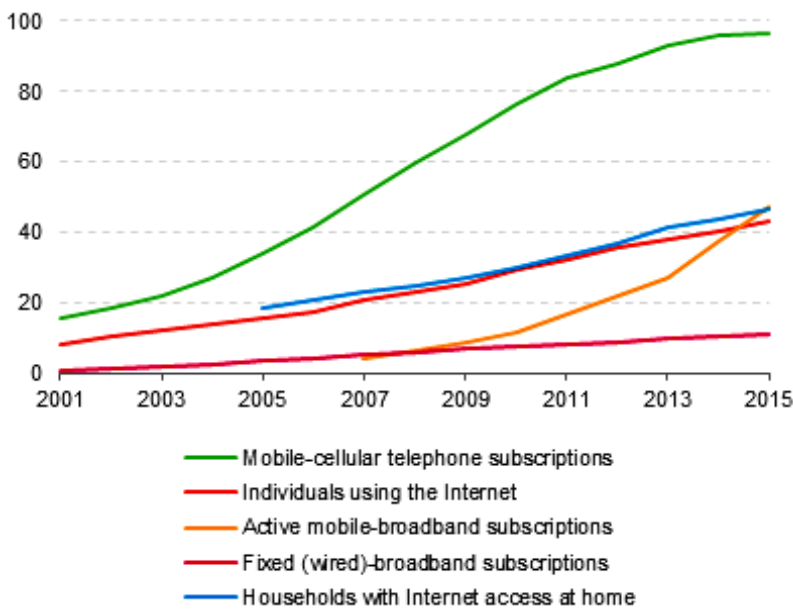
Women's Empowerment and Social Context

Social scientists have been also interested to improve the women's empowerment. Actually the equality of male and female is important for economic growth; to reduce the depressiveness and increase the human welfare, and interest in the ingredient and correspond of women's empowerment has also grown. Unhappily, ignorance over the definition and measurement of this idea remains, universal. Actually the women's social empowerment measures by their years of schooling, employment skilled and age at marriage rest alive, though increasingly called into question on both spiritual and actual aims. The current discussion on that topic is that what is women empowerment, how can we measure it and what are its ingredients. After studying about the spiritual problems, we back to the facts and figures collected in South and Southeast Asia that allow explaining three main factors about the conceptuality and measuring of women's empowerment.

The first point is that power within family circle the particular aspect of women's empowerment on which we meeting point is strongly unfair by social context because it is strongly determined by social institutions rather than by individual characteristics. The second point is that all aspects of women's empowerment are multidimensional and the interrelations among different scope depend on social context. Finally, the socioeconomic proxy for women's empowerment uses in past studies do good job of indexing only some aspect of women's empowerment and power and only in some framework.

Women's Education using ICT Tools

The advances in the use of information and communication technologies for example, mobile, internet, social media and telephone represents a insurrection that people interrelate among each other, communicate, access information, entrance services live by acting as a facilitators for easier and faster work at all levels. These increments have a tough prospective for the empowerment of women, as well as for the society as a whole. At the same time, new challenges come into view in conditions of risks posed, that need to be recognized and addressed properly by strategy maker and humanity as a whole.



The presence of a mobile phone in a household is no guarantee that female household members will have access to it. The June 2013 revisions to the core information and communications technology (ICT) household indicators stipulate that those indicators should refer to household ICT devices that are available for use by any member of the household at any time. Operationally however, this is very hard to determine, as cultural gender bias is difficult to establish in an interview. Householders are unlikely to say that boys and men in the house are given preference in accessing ICT, or that socio cultural differences, such as greater workloads for females, constrain girls and women from having equal access to ICT. This pattern undoubtedly holds true for mobile phone access, particularly when cost-per-use is involved.

Since 2001, access to Internet and mobile phone ownership has increased dramatically in most countries around the world (ITU, 2015) (see figure 5.5). In the developing world more affordable handsets are increasingly available. Despite the progress that has been made in recent years, there are still challenges to be overcome to ensure that women are included in an increasingly connected and Internet-enabled world. Mobile phones are important tools for enhancing the lives of women in low- and middle-income countries. Mobile phones can help women feel safe and more connected, save time and money, and access life-enhancing services such as mobile money or potential education and employment opportunities.

A broad choice of goals have been recognized in key to uphold the empowerment of women in the digital world, such as guarantee entrance to information through the internet; supporting education, training and literacy in ICTs; involving women in the decision-making in the media sector; promoting employment and entrepreneurship of women in the media and ICTs; fighting violence against women through and trafficking in human beings through the internet; countering stereotyping of women in the media and the internet.

To understand the extent of the influence of ICTs education on women's empowerment, an exploratory research was conducted. These ICTs factors include computer, mobile telephony technology, the internet and other facets of the changing methods and means of communication to man today. In the recent past, ICTs have been added to the women and gender equality debate. ICTs are being presented as a tool having potential to benefit women's empowerment and a number of ICT projects that specifically target women have been established in several developed and underdeveloped countries. In spite of constitutional guarantees, legislative provisions, judiciary mandate and administrative efforts, the women empowerment India is still lacking in some areas. Mere enactment of laws and chalking out of schemes are not much effective for women empowerment. Hence education is need for this.

The national curriculum framework of women pointed out, education of women is an important key to improving health, nutrition and education in the family and also empowering them participate in decision making". Moreover education enables women not only to acquire knowledge but also help them to achieve economic security, self-confidence, vocational and technical skills and guidance, good health and safety, courage and inner-strength to face challenges in every spheres of life and enable them to play equal role as men in nation-building. Education can be used as a tool for reduction of inequalities and gender bias so that women can move from weak position to execute their power or capabilities in society.

Conclusion

Digital technology provides an important means for all women to access information and share views, and contributes to promoting their inclusion, participation and rights in society. The women's empowerment as dependent variable and ICT, use of mobile and internet, the gender equality in education, the economic equality as independent variables. That indicates that use of mobile and internet positively affect women's empowerment as use of mobile and internet increase women's empowerment also increase.

WOMEN EMPOWERMENT

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Abstract

This Paper deals with "Women Empowerment" a burning issue all over the world. "Women empowerment" and "women equality with men" is a universal issue. Women Empowerment refers to the creation of an environment for women where they can make decisions of their own for their personal benefits as well as for the society. Women Empowerment refers to increasing and improving the social, economic, political and legal strength of the women, to ensure equal-right to women, and to make them confident enough to claim their rights, such as: freely live their life with a sense of self-worth, respect and dignity, have complete control of their life, both within and outside of their home and workplace, to make their own choices and decisions, have equal rights to participate in social, religious and public activities, have equal social status in the society, have equal rights for social and economic justice, determine financial and economic choices, get equal opportunity for education, get equal employment opportunity without any gender bias, get safe and comfortable working environment Women have the rights to get their voices heard. Women population constitutes around 50% of the world population. A large number of women around the world are unemployed. The world economy suffers a lot because of the unequal opportunity for women at workplaces. Women are equally competent. Nowadays, women are even ahead of men in many socioeconomic activities. Women Empowerment leads to decrease in domestic violence. Uneducated women are at higher risk for domestic violence than an educated woman.

Introduction

The term women empowerment is all about authority, or the power embarked on women sharing indistinguishable rights. The term refers to the liberation of women from socio-economic restraints of reliance. Women comprise around 50% of the country's population, and a bulk of them stays economically dependent on each other without employment. In the age of feminism, a small portion of women in India are freed and can employ their free will and are permitted to carve out their lives the way they want. But there is a considerable division of the women in this nation who require optimistic support. In most Indian villages and semi-urban cities, women are still denied fundamental education and are never authorized to continue higher education despite amassing the understanding required.

Women are known for delivering multiple roles effortlessly per day, and thus, they are considered the backbone of every society. Living in male-dominating societies, women play a wide range of roles, such as caring mothers, loving daughters, and capable colleagues. The best part is that they fit the bill perfectly in every role. Nonetheless, they've also stood as a neglected bunch of society in different parts of the world. In turn, it has resulted in women surviving the brunt of unevenness, financial trustworthiness, oppression, and distinct social evils. Women have been residing under the shackles of enslavement for centuries now that impedes them from attaining professional as well as personal highs. Being an NGO for women empowerment in India, Hindrise Foundation

has designed our dynamic and transformation-oriented programs in such a manner that the grooming of impoverished young girls will uplift the condition of the nation.

Factors Affecting Women's Empowerment in India:

- **Gender Discrimination must be Checked-** The problem of gender discrimination has affected the pace of women empowerment in India. Gender discrimination in all realms of action must be checked. Women must be furnished with a resort to take an active part in decision making at every level and direction procedures to attain the motive of empowering women. They need to get due admiration and prominence, which they rightfully earn on merit basis in society to accomplish their fate.
- **Educational Factor-** Education is the most vibrant factor of advancement and growth. It is the only significant tool for anticipating women empowerment in India & human resource development. It gives light to the possibilities for access to employment and making a livelihood, which in twirl revivify economic empowerment to women. In order to join the community of developed countries, people should understand the value and importance of women's education and, thereby, put combined efforts to make India on the progressive track. Education makes the individual conscientious, enabling them to comprehend, interpret, criticize, and eventually transform their atmosphere. It results in the accession of abundances of skills that heighten a person's enthusiasm and her proficiency to shape life in a better form.

Importance of Women Empowerment

In recent times, everyone is pointing on the empowerment of women. It's right to say that women's empowerment has become the necessity of the time. Women should possess liberty, faith, and self-worth to opt for their needs and demands. Discrimination based on gender is useless and is having zero worth by looking at the growth of women in the last few decades. Women are paid less and are treated as a cook and slave in families, and their real potential fails to get highlighted. Women empowerment in India is required to overcome situations of such types and to provide them with their independent role in Indian society. Empowering women is a necessary right of women. They should have proportional rights to contribute to society, economics, education, and politics. They are approved to gain higher education and receive a similar treatment as men are receiving.

Ensures Holistic Development of Society

Women empowerment in India is one of the principal terms for society's overall development. There is nothing erroneous in participating in the development of society. In the world of corporate, women are playing numerous roles in meadows such as medical, engineering, and so on. Apart from taking part in the sphere of technology, they are energetically partaking in security services such as police, navy, military, etc. All these before-mentioned services are taking the community to another level.

Reasons for Women Empowerment

Today we have noticed different Acts and Schemes of the central government as well as state government to empower the women of India. But in India women are discriminated and marginalized at every level of the society whether it is social participation, political participation, economic participation, access to education, and also reproductive healthcare. Women are found to be economically very poor all over the India. A few women are engaged in services and other activities. So, they need economic power to stand on their own legs on par with men. Other hand, it has been 202 Dhruba Hazarika observed that women are found to be less literate than men. According to 2001 census, rate of literacy among men in India is found to be 76% whereas it is only 54% among women. Thus, increasing education among women is of very important in empowering them. It has also noticed that some of women are too weak to work. They consume less food but work more. Therefore, from the health point of view, women folk who are to be weaker are to be made stronger. Another problems is that workplace harassment of women. There are so many cases of rape, kidnapping of girl, dowry harassment, and so on. For these reasons, they require empowerment of all kinds in order to protect themselves and to secure their purity and dignity. To sum up, women empowerment can not be possible unless women come with and help to self-empower themselves. There is a need to formulate reducing feminized poverty, promoting education of women, and prevention and elimination of violence against women.

Principles of Women Empowerment

- **Principle 1:** Establish high-level corporate leadership for gender equality
- **Principle 2:** Treat all women and men fairly at work – respect and support human rights and nondiscrimination
- **Principle 3:** Ensure the health, safety and well-being of all women and men workers
- **Principle 4:** Promote education, training and professional development for women
- **Principle 5:** Implement enterprise development, supply chain and marketing practices that empower women
- **Principle 6:** Promote equality through community initiatives and advocacy
- **Principle 7:** Measure and publicly report on progress to achieve gender equality

Way's to Empower Women

- Boost her self-esteem. ...
- Shut down the negativity. ...
- Support Women-Run Businesses. ...
- By giving proper education. ...
- Giving job opportunities. ...
- Be Open and Honest. ...

Financial Support for Women

- Bharathiyamahila bank business loan
- Mudrayojana scheme
- Dena shakti scheme
- Cent kalayani scheme
- Mahilaudyamnidhi scheme
- Women entrepreneurship platform(WEP)

Re-View of Literature

- **Venkata Ravi and Venkataraman (2005)** focused on the effects of SHGs on women participation and exercising control over decision making both in family matters and in group activities.
- **Juhi Gupta (2009)** suggested that for recognizing and tracing economic, social, cultural roots of violence against women. It is essential not only to mobilize policies that shape the state and societal response to individual acts of violence but also to change the processes of liberalization and corporate globalization that have indirectly aided such violence in general
- **K. Geetanjali et.al (2011)** has compared the status of women in India with those of other countries. Women in Europe were almost at par with men and have equal participation in public sphere
- **H. Subrahmanyam (2011)** compares women education in India at present and past. Author highlighted that there has a good progress in overall enrolment of girl students in schools The term 'empower' means to give lawful power or authority to act. It is the process of acquiring some activities of women. Employment and status of women, in the country is far behind the developed nations of the world. The census figures indicate that majority of women in India are illiterate, ill fed, unemployed, low paid occupying a very poor status in the society. The concept of "Employment" for women and thereby their empowerment deserves a special emphasis in this contex.

Constitutional Provisions for Empowering Women in India

- Equality before law for all persons (Article-14);
- Prohibition of discrimination on grounds of religion, race, caste, sex or place of birth (Article 15(i));
- However, special provisions may be made by the state in favour of women and children Article 15(3);
- Equality of opportunity for all citizens relating to employment or appointment to any office under the state (Article 16);
- State policy to be directed to securing for men and women equally the right to an adequate means of livelihood (Article 39(a); (v) equal pay for equal work for both men and women (Article 39(d);

- Provisions to be made by the state for securing just and humane conditions of work and maternity relief (Article 42);
- Promotion of harmony by every citizen of India and renouncement of such practices which are derogatory to the dignity of women Article 51A(e)
- Reservation of not less than one-third of total seats for women in direct election to local bodies, viz; Panchayats and Municipalities (Articles 343(d) and 343 (T)).

Conclusion

To conclude, it might be observed that India has enacted many constitutional and legislative provisions for empowerment of women. Many development schemes especially for women have also been launched for improving their fortune. Such measures have started giving positive outcomes relating to women's problems. But the position of women in our country still leaves much to be desired. Top priority should be given in our developmental plans for improving female literacy and creating skills and capability among women for enabling them to stand on their own feet. Unless the process of development is properly engendered, it shall remain endangered. No doubt women have the potential to achieve an equal footing with men. But, it is the social practices and male attitudes that are making an effective and invisible barrier preventing women from rising above a certain point. Empowerment of women could only be achieved if their economic and social status is improved. This could be possible only by adopting definite social and economic policies with a view of total development of women and to make them realize that they have the potential to be strong human beings. The first and foremost priority should be given to the education of women, which is the grass root problem. Swami Vivekananda had said "That nation which doesn't respect women will never become great now and nor will ever in future" and in pursuit of making India a great nation, let us work and strive hard in empowering women to the maximum. Swami Vivekananda has also said "arise away and stop not until the goal is reached". Thus our country should thus be catapulted into the horizon of empowerment of women and revel in its glory. "We have a long way to go, but we will get there someday". We shall overcome.

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AN INTRODUCTION TO ICT TOOLS

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Introduction

“Technology will never replace great teachers, but in the hands of great teachers, it’s transformational.” – George Couros

ICT tools stand for Information Communication Technology tools. The ICT tools means to digital infrastructures like computers, laptops, printers, scanners, software programs, data projectors, and interactive teaching box.

The ICT devices are the latest tools, concepts and techniques used in student-to-teacher, student-to-student interaction for example: - clicker devices, mobile applications, flipped classroom) for information and communication technology. Use of ICT Tools is all pervasive in our everyday life, and use of ICT tools has almost revolutionized the way teachers impart knowledge to students and students receive knowledge from their teachers, Not only that, by making accessible entire bookshelf and whole of library to students and teachers on a click of their smart phones and laptops have made education simple, much more efficient and have enhanced their productivity enormously.

Had it not been for availability of such modern ICT tools, we could not have pushed through education of our students during pandemic period in such an efficient manner for almost last two years. With advent of ICT Tools, students-teachers community has been benefitted immensely. Now-a-days, classrooms are equipped with desktops, projectors, internet (which facilitates downloading of info from across the world). With availability of smart phones, teachers and students can “virtually” assemble in a classroom and interact with each other with help of ICT software tools such as Google Meet, Zoom etc.

Objectives of the Study

- To study about some of the commonly used ICT tools.
- To assess the importance of ICT in education.
- To evaluate the advantages and disadvantages of ICT tools.

Some ICT Tools



The most commonly used ICT tools for teachers are discussed below,

1. Genially: excellent for creating different content in which interactivity and information are highly valued. Perfect for classroom use, getting students hooked, and explaining full lessons with a single image.
2. Microsoft Teams: the perfect tool to bring all your content together in one place. Integrated into Office 365, it's Microsoft's solution for encouraging collaborative work. Create teams in each classroom where class jobs are shared, assignments are given out, and other participants can chat.
3. Kahoot: allows you to create quizzes that serve to test students' knowledge or review content that has already been worked on in the classroom. There are four types of tests: contest, puzzle, debate, and survey. Games can be projected on a screen, making the entire class participate and having students respond from their computers or mobile devices.
4. Dropbox: this accommodation space has different tools to save files such as documents, images, and presentations. But storage is not your only feature, as it allows you to synchronize folders with classmates, students, and family members. You can also talk to other users through the feedback system and access it from different devices.
5. We Transfer: ideal for exchanging files. Without having to be registered to an account, you can send files that do not exceed 20 GB, which really allows for professional use.
6. Mindomo: one of the best resources for creating mental and conceptual maps. It allows you to create and collaborate online, synthesize ideas, analyze and generate new ones, and solve problems.

7. **Visual.ly** : create and view infographics. In addition, it allows you to share the content you've created on social networks.
8. **Trello**: the ideal place to organize your life. Notes, emails, reminders... Everything will be organized there in a very visual way.
9. **Feedly**: with Feedly you can stay up to date with new content and news that are emerging in the world of education and use them in your classes.
10. **Clippings**: perfect for reading on electronic devices and also underlining appointments and creating notes. It allows you to import clippings from your ebooks, and then select them and organize them into categories and tags.

Importance of ICT in Education

1. **ICT Brings Inclusion**: - The advantage of ICT in education is that all the students in the classroom can learn from the course material. Students with special requirements are no longer at a drawback because they have the necessary materials. Students can use special ICT tools so that they can use the ICT tools to their educational requirements. Despite this, it opens up new problems related to the 'digital divide' and provides those who are less fortunate with access to ICT resources and tools.
2. **E-Learning or Online Learning**: - The ICT tools provide a new way of learning for students and teachers. Online or E-learning is getting popular. Different extraordinary events are happening in our lives, opening up opportunities for schools to ensure that students can access course materials while in the classroom. Outside students are also allowed to make sure. One can also learn in class, such as at home or in hospitals.
3. **ICT Enhances Subject Learning**: - These days, it is well known that in education, ICT adds a huge value to key learning areas like numeracy and literacy.
4. **ICT Use Motivation Learning**: - The demand of society for new technology has not left out children and their requirements. With new technology, children are fascinated, motivating and encouraging children to learn in the classroom.
5. **ICT Use Allows for Effective Differentiation Instruction with Technology**: - We all learn and understand things differently at different levels, styles, and the technology offers chances for this to happen.
6. **ICT in Education Improves Engagement and Knowledge Retention**: - Students become more involved in their work if the TCT is integrated into lessons. And the reason behind that is the technology offers various opportunities to make it more enjoyable and fun in the context of teaching similar things in a number of ways. As a result of this increased busyness, it is said that they are capable to retaining knowledge more efficiently and effectively.
7. **ICT Use Encourages Collaboration**: - We only need a computer, iPad, or laptop in the classroom to understand how it works. Naturally, ICT brings children together so that the children can discuss and talk about what they are exactly doing for their

work. This in turns opens communication avenues that lead to the development of language.

8. **ICT Use Develops ICT Literacy and ICT Capability:** - ICT literacy and ICT capability are the skills of the 21st century which are best developed in ICT and remain transparent in the subject learning context. Offering them meaningful activities that are embedded in purposeful subject-related contexts is a great way to develop the capability of ICT.

Advantages of ICT Tools

There are various advantages of ICT Tools:

1. Cost-efficient
2. Provide the facility for easy student management
3. Direct classroom teaching
4. Improved modes of communication
5. Eco-friendly-Eliminate the usage of paper
6. Direct classroom teaching
7. Minimize cost and saves time
8. Improved data and information security
9. Web-based LMS tools link teachers, students, researchers, and scholars and education together.
10. Teachers are able to teach better with graphics, video and graphics.
11. Teachers can create interesting, well-designed and engaging classroom activities.
12. Provide better teaching and learning methods
13. To spread awareness about the social impact of technological change in education.
14. Promoting and improving the digital culture in universities, colleges, and schools.
15. Automated solutions to paper-based manual procedures and processes.

Disadvantages of ICT Tools

There are various disadvantages of ICT Tools:

1. **Unemployment:** -Although IT has streamlined the process of business, it has created redundancy and subcontinent in the job. Employers can save more money by using computers instead of human resources, but due to this, employees are losing their jobs as no longer needed.
2. **Lack of Security/Privacy:** - Although IT has changed and may be more convenient, it has also raised issues of privacy and security. Phone signal interception, email hacking, etc., people are concerned that personal information can become public knowledge. IT continues to change almost every day, which means that to secure their jobs, everyone has to be up-to-date in IT. Risk factors for attacking computer viruses, trojans, spam, malware is also present in the systems.
3. **Cyber Bullying:** - In social network pages, it is now so easy to bully and bully others as it has become very easy for the users of the internet around over the world. They do not realize the consequences of reading/listening to hostile

comments. There have been various investigation cases involving cyberbullying with lethal implications in the recent past.

4. **Reliance on Technology:** - People no longer bother to read, write, or calculate without computers because of losing handwriting skills (why write if spell checker can be used). Calculate without calculator even for the small addition, reading books (why read if there is huge information on the internet).
5. **Social Media:** - Network pages are open for everyone who can influence their physical and mental health by playing and watching violent games, including young children and teenagers. They are addicted to iPods, phones, gaming consoles, forgetting about society's external activities and communication.
6. **Preparation Time:** - Preparation takes more time so that the internet can be used effectively for education. In addition to designing internet-based plans, we have to surf the Internet in order to download the lesson plans and adapt them to support the course's objectives or visit sites to choose appropriate places for the classes needed.

Conclusion

Students these days are becoming smart. And smart students need even smarter ways when it comes to teaching. If you are a teacher and want your students to be the best, you must include some of the ICT tools for teaching and learning. Integration of ICT in classroom needs serious consideration in order to increase the competency of the country's education system. This will help in increasing the world ranking of the national education and produce the better future work force. In order to enhance the use of ICT in classroom, the government needs to improve and change the teachers' belief about the integration of ICT in classroom. As the teachers' role is the key role in making any of the new policy to be implemented efficiently and successfully. The changes that is taking place is driven by advanced technology and communication devices that should be available to students wherever they are either at school or home. In addition , the needs for teachers to be literate and have good skills and knowledge in using ICT to improve their teaching methods and approach is desired to promote effective learning as well as to meet the demand of the 21st century teaching skills.

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ICT FOR PROFESSIONAL DEVELOPMENT

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Abstract

The pace of technological revolution and emergence of a knowledge society can change the traditional role of the teacher and the students. Traditionally, the teacher used to be the source of knowledge for the students. There is some cooperation among students to explore new knowledge. In many cases, the teachers do not possess passable knowledge to supplement the view of the student. And the main source of knowledge remains limited to text book. The development of ICT changes the epic centre of knowledge. Technological enlargement always warrants transition to newer technologies by jeopardizing the cost effectiveness of the education programme. The increase in expenditure on elementary education alone over the last four Five Year Plan periods has been more than the increase in expenditure on education as a whole. Professional development goes afar the term 'training' with its implications of learning skills, and encompasses a definition that includes formal and informal means of helping teachers not only learn new skills but also develop new insights into pedagogy and their own practice, and explore new or advanced understandings of content and resources. This paper presents the role of ICT in the professional development of teachers. ICT can contribute to teacher and student learning; and good models of effective computer integration as a learning tool; and high quality professional development that transforms this vision into classroom reality, policymakers can turn schools into partners in the creation of the knowledge society envisioned in national policy plans.

Introduction

Professional development activities are an integral part of one's professional life. These activities help one to grow, learn and excel in one's professional field. The increased use of information and communications technologies (ICT) in the classroom to support students' learning places new demands on teachers at all levels, from pre-school to graduate school. This in turn increases the expectations on the teachers' abilities to develop their own proficiency of using this technology: internationally, such proficiency is commonly referred to as digital literacy, while within the Scandinavian educational context the term digital competence is more common (Hanell, 2018; Ilomäki et al., 2016; Krumsvik, 2008). Digital competence refers here to a holistic perspective incorporating proficiency with pedagogical judgement and with the focus on pedagogy and subject matter. In other words, digital competence is knowledge about how digital tools affect our everyday life, and how to use digital tools to support critical thinking, creativity, and innovation. As a teacher, you must have participated in various types of professional development activities/programmes either through the support of your institution or through your

personal effort. Have you tried to analyse the benefits of undergoing professional development programmes? Why are such activities necessary for a teacher? What are the opportunities, avenues in professional development activities for working teachers? What are the hurdles one faces in participating in such activities? These are a few questions which need to be answered. With the innovation of Information Communication Technologies (ICTs) and their uses in teaching learning process and in teacher training, the nature, scope and opportunities for professional development of teachers have changed. The present study will discuss various aspects of using ICTs for professional development of teachers including their uses at personal and at institutional level. The Unit will also highlight various digital initiatives of Government of India in this regard. This unit will help you understand how Massive Open Online Courses (MOOCs) are being used in India as well as globally for professional development of teachers. The study will also critically scrutinize various factors associated with use of ICTs for professional development.

Role of ICT in a Positive Learning Environment

The appropriate use of ICT tools helps in catalyzing the paradigmatic shift in making the classroom a creative space for exploration and experiment for both the teachers and students. It promotes the acquisition of skills and knowledge for students to become lifelong learners. Thus making students autonomous learners and bringing the world into their classrooms. The new ways of teaching and learning create a shift from a teacher-centered pedagogy to studentcentered pedagogy. Various innovative platforms provide an active learning classroom environment and opportunities to work on real-life problems in depth making it less abstract. By keeping the classroom environment engaging, technology enables students to become better focused on their learning. This also helps teachers to juggle various responsibilities like attendance maintenance, delivering academic content, monitoring student's progress, and much more.

ICT Tools

Powerpoint

Continuing on with the digital images theme this program and others similar to it can provide children with a multimedia experience they will enjoy and be able to develop their creativity skills. These programs have colour, movement and sound so it is no surprise that it is quite appealing. It is just as appealing though for children with profound and multiple learning difficulties. PowerPoint can make learning meaningful and relevant. With the use of transition effects, it can reveal a favourite character with a single touch by using it with the Interactive Whiteboard.

Word Processing

Word processing not only can enhance literacy in English lessons, but can enhance literacy throughout all key learning areas. It is a basic and important skill to have not just throughout formal schooling but later in the workforce. Typing skills, saving documents

and knowing how to send a document to the printer are all associated with the use of the word processor.

Spreadsheets

Spreadsheets are undervalued by teachers at times despite being useful for even key learning areas such as English. Besides being a great ICT tool for mathematics and science this needs to be used throughout the curriculum.

Presentation Software

Multimedia programs such as Keynote, PowerPoint and Prezi are commonly used in education settings as teachers often present lessons using them. They are also wonderful learning tools if used correctly to enable students to share their ideas and notes with others in the class. You can focus ICT techniques the students need and monitor their progress along the way.

Desktop Publishing

Publishing programs such as MS Publisher can be a very useful ICT tool to learn during primary school. Much of the formats and templates tend to match learning outcomes. They also offer great opportunities to teach literacy with ICT. It too can be used right across the primary curriculum.

Characteristics of ICT

They are used from anywhere

If something has to stand out as a priority of ICT is the possibility of maintaining a continuous and direct contact with students. The advantage that the student can connect to teaching from anywhere in the world, with the appropriate means to do so, facilitates learning, making it attractive.

For example, when the holiday periods begin, the child usually switches off during the time he does not come to the classroom. This disconnection, only subject to some exercise or list of tasks that must comply, gives way to oversight and a longer time of adaptation period upon return.

Union of culture, science and technology

ICT is the union of beliefs, customs and all those habits that society has adopted as routine. On the one hand, talking about culture is about the everyday routine of society, about the benefits that technology brings to the whole community. On the other hand, it encompasses science, as it is also responsible for giving answers to the human being of what happens in the world.

It is the curiosity to learn that leads man to carry out scientific research to respond to his concerns, producing the *Scientific knowledge*. And finally, the technique is responsible for responding to the need for transformation that man requires to meet his needs.

It is a Mobilizing Teaching

Teaching through ICT gives the possibility that the student can move in different contexts and different realities. In this way we choose a quality teaching in which the student can interact with the world and can face different situations.

For example, before subjects such as geography, the student will be able to contemplate images and videos of geographic features that he has never seen before. In this way, visualizing the content, making it more practical, is given the motivation that it needs.

It is based on other scientific aspects

ICTs applied to education are enriched by other scientific aspects, such as the pedagogical sciences, through innovations in teaching-learning methodologies; Of the psychology of the learning, showing special attention to the stimulus-answer; Of sociology, of anthropology and of philosophy.

Focuses on Objectives

Teaching through ICT is based on keeping in mind, at all times, the objectives. Achieving the proposed goals is essential and, therefore, we are faced with a flexible working methodology.

For example, situations are commonly encountered in ordinary classrooms in which teachers, because of the need for the whole group to carry out a temporary planning, move quickly, leaving behind students who do not carry the same pace.

It is an excellent channel of communication

Another advantage of ICT is the promotion of communication. The use of new technologies favors the communication that the teaching - learning process needs.

For example, there is the possibility that the teacher can maintain daily and fast contact with the family. In addition to answering questions that the students raised when they left the classroom.

It is changeable

As time goes by, the world is changing and new technologies are also changing. Therefore, it adapts to the changes of the context itself and of education, based on the sciences that support them.

Challenges

Technology integration can also present significant challenges to educators. There are several barriers, some extrinsic related to the availability of resources, time, support system, training facilities, and some intrinsic factors such as attitudes, beliefs, practices, and the resistance of the teachers. The constant need to keep updating with the new innovations makes it an overwhelming experience for the teachers. Teachers are constantly adapting the new ways of learning and teaching at the same time. In a diverse country like India, the digital divide also plays a major role in access to ICT tools. Availability of limited or no access to hardware facilities can pose the biggest challenges in adopting technologies

for the teachers. Many schools in rural India lack basic facilities of electricity and internet making teachers rely on textbookbased teaching. School-level factors such as organizational culture and teacher-level factors as beliefs about teaching and technology also impact the motivation levels of the teacher. Lack of digital literacy and adequate continuous training about the use of technology in the teaching process makes it difficult to navigate with the technology in the classroom. Another constraint is of insufficient time and content to use their ICT skills. The non-teaching responsibilities and pressure to complete the textbook syllabus also discourage teachers to use ICT tools. All these factors contribute to making it difficult for teachers in India to explore digital resources and use technology with their teaching.

Future of ICT in Teaching Profession

The role of interactive multimedia in a perspective where learning is part of schooling, working or just living. ICT also includes web TVs, Net PCs, and Web-Based Education that offers accessibility, flexibility and innovativeness in teaching and learning. ICT integrated teacher education is more important to Indian education system that is committed to maintain global partnership as well as leadership in knowledge-based society.

Prof Ram Takwle (2003) says about IT driven education: "They are changing the methods of content generation, content storage, content packaging and content delivery and hence offer a new paradigm of education." These multimedia programs and packages are also intended to supplement the real classroom activities and help their easy assimilation. ICT especially in the 21st Century context of teacher education fulfills the following objectives.

1. It envisages excitement to the learner's eyes, ears, and more importantly the head.
2. ICT fulfills the needs of learners by providing items and packages of higher standard and interest.
3. It helps in transforming the definition of literacy, learning and knowledge; a definition that increasingly includes multimedia digitized literacy.
4. Multimedia provides a kind of control over the learning environment to the pupil teachers and they experience learning from their failures and ill practices.
5. ICT facilitates the learner to have control on lesson, pace the sequence, content, feedback, which in turn enhances the efficiency of learning.
6. Unlike books, it is interactive in nature and creates motivation and interest among the learners, in turn meeting the individual unique needs effectively and efficiently.
7. Develops the ability of self-learning and interacting individually, as the learner attains vast experiences effectively, efficiently and expeditiously.
8. ICT-empowered simulated situation minimizes dangers in the real world' e.g. practical in science, pilot training driving etc.
9. ICT is a powerful new development with ambitious role in teacher education, Digital and Internet.-based multimedia transforms the present trend in the field. It takes just a computer to play multitude of media enabled programs and packages.

Conclusion

The analysis of ICT based approaches to prospective teachers' professional development indicates that there are possibilities and challenges in adopting ICT in teacher training and professional development. Although valuable lessons may be learned from best practices around the world, there is no one formula for determining the optimal level of ICT integration in the educational system. Overall, governments and teacher training institutions seem to recognize the importance of integrating ICT in education and teacher training. In many cases, the national vision for ICT use in education has been integrated into teacher training. Teacher training approaches in this paper show that many cases adopt ICT into their training process not just as content of the training but rather as an integrated training environment and thus allow teachers to experience ICT-based pedagogies. Hence, it may conclude that a variety of approaches in ICTPedagogy integration in teacher training. Via a variety of examples, the author tries to show that ICT use is not only a matter of new possibilities but that it also brings with it new implications and new challenges. Significant challenges that policymakers and planners, educators, education administrators, and other stakeholders need to consider include educational policy and planning, infrastructure, language and content, capacity building, and financing.

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AN EYEVUEW ON DIGITAL LITERACY IN 21ST CENTURY

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Abstract

Digital literacy encompasses a range of competencies that enable individuals to use digital tools, devices, and information effectively and responsibly. These competencies include basic digital skills, such as using computers and the internet, as well as more advanced abilities like critical thinking, media literacy, information evaluation, and data analysis. In the 21st century, digital literacy is closely intertwined with traditional literacy skills, fostering communication, collaboration, creativity, and critical thinking among individuals across different age groups and backgrounds. As digital technologies continue to shape our lives, the development of comprehensive digital literacy skills becomes an essential endeavor for individuals and society at large. Embracing digital literacy equips people with the tools they need to harness the vast potential of technology while navigating its challenges responsibly, ensuring an inclusive and prosperous digital future. The paper aims to explore the overview of digital literacy and its relationship to 21st-century skills, which are crucial for navigating the complexities of the modern world.

Keywords: Technology, Communication, ICT skills, Knowledge, Tools,

Introduction

Digital literacy is an individual's ability to find, evaluate, and communicate information by utilizing typing or digital media platforms. It is a combination of both technical and cognitive abilities in using information and communication technologies to create, evaluate, and share information. The origin of the word literacy refers to the ability to read and write. Early descriptions of computer-related literacies also focus on the acquisition of sets of rules and technical capabilities. However, by the end of the 20th century, this definition had expanded considerably. While digital literacy initially focused on digital skills and stand-alone computers, the advent of the internet and the use of social media has resulted in a shift in some of its focus to mobile devices. Similar to other evolving definitions of literacy that recognize the cultural and historical ways of making meaning, digital literacy does not replace traditional methods of interpreting information, but rather extends the foundational skills of these traditional literacies. Digital literacy should be considered a part of the path towards acquiring knowledge.

Components of Digital Literacy

ICT literacy refers to a set of user skills that enable active participation in a society where services and cultural offerings are computer-supported and distributed on the internet. Technological literacy (previously called computer literacy) entails a deeper understanding of digital technology and comprises both user and technical computing skills.

Information literacy focuses on one of the key aspects of our Knowledge Society: the ability to locate, identify, retrieve, process and use digital information optimally. There are many of them with direct relevance to digital literacy – ICT skills, civic skills, learning to learn skills, participation of adults in lifelong learning. High values in these targeted areas certainly require the development of digital competence. Other indicators also may involve ICT skills. For example, cross-national mobility of students in higher education is made possible through blended learning courses that involve travelling students staying in touch with the learning process of their peers at home. Professional development of teachers and trainers, another key indicator, is mostly achieved through blended or e-learning courses in which new methodological skills are acquired and then applied in the workplace. These examples illustrate the importance of digital literacy for the achievement of Information Society goals.

Digital literacy is a life skill because it targets all areas of contemporary existence. In seven out of the sixteen literacy indicators, digital literacy plays a central role. In the last century, the shift from the manufacture of goods to the provision of services has resulted in an economy based on information and knowledge. Computers substitute for workers who perform routine physical and cognitive tasks, but they complement workers who perform non-routine problemsolving tasks. Modern organizations and companies have been facing a restructuring of work, which means flatter organizational structures, decentralized decision making, widely shared information, flexible work arrangements and collaboration in project teams.

Importance of Digital Literacy Skills for Students

As technology continues to become more and more ingrained in daily life, the importance of learning digital literacy skills is becoming increasingly apparent. Below are five reasons students should learn digital literacy skills.

Support Educational Progress

One of the first reasons digital literacy skills are important is because of the increased use of technology in education. The use of technology as a learning tool has grown in the past 15 years, with technology platforms such as computers, tablets and the internet becoming increasingly prominent in K-12 schools and universities.

Students with digital literacy skills will be more comfortable and confident in these learning platforms, while those without digital literacy skills may have their progress stymied by an inability to or lack of confidence in navigating the related technology. In addition, with the majority of standardized state assessments being administered online,

it's increasingly important that students have the confidence to focus on the material in question instead of being slowed or distracted by using technology for the test.

Increase Online Safety

Online risks are complex and ever-changing, with nefarious individuals or groups continually discovering and creating new ways to take advantage of others. While digital literacy cannot prevent students from facing safety challenges online, it can empower them with important knowledge, tools, processes and resources to help protect their safety and privacy as much as possible.

Understand Digital Responsibility

Along with online safety, digital literacy also teaches digital responsibility, which is the ability to consume and communicate information ethically online. Increased technology dependence exposes students to challenges related to copyright and plagiarism, cyberbullying, vetting informational resources, and interacting responsibly with others. Digital literacy skills help students master their ability to understand and effectively navigate these challenges, making them more responsible digital citizens.

Improves Social Opportunities

Digital Literacy plays a role on being able to socialize with people outside of immediate territory. Where friendships and even familial relationships used to depend on slow-communication, the use of technology eliminates the barriers of location when it comes to socialization. However, this opened world of social opportunities also exposes people—especially young people—to dangerous social scenarios. Mastering digital literacy skills allows students to connect with others online while protecting their information and safety.

Improve Digital Equity

Digital equity also helps to bridge the digital divide. Even with the proliferation of technology in households and educational institutions, there remains a disproportionate number of minority workers with limited digital literacy skills. By making digital literacy a priority in K-12 education, institutions can help to improve digital literacy among underrepresented groups, helping to upskill these students so they may have increased career opportunities in the future.

Supports Lifelong Skills

While technology is ever-changing, digital literacy foundations empower students with base knowledge and skills that can be applied to various types of technology now as well as in the future. For instance, learning basic concepts such as input/output, application operation, discerning hardware devices and how to use them, etc., can provide basic transferable knowledge that can be applied to new and emerging technologies.

1. **Critical Thinking:** It is learning how to solve problem. It teaches students not to accept immediately claims without seeking the truth.
2. **Creativity:** Requires student to think outside of the box and to take pride in what uniquely theirs.
3. **Communication:** Makes students express their ideas in the clearest and organized manner.
4. **Collaboration:** Happens when students know how to work well with others to accomplish a given task or solve a problem

Major Concerns about Digital Literacy in India

- We need to keep track of the young digital citizens and guide them to consume content thoughtfully and be creative.
- Though there have been some efforts to impart digital education to teachers, there is a dearth of computer teachers in rural areas. A certain village in Odisha has 18 computers, but only 10% of population is computer literate as there is no teacher there.
- Many children have the privilege of getting exposed to digital media, and they tend to learn using it without formal training. In the process, they may harm themselves
- The digital divide is a major concern in the Indian scenario where there is a wide disparity in economic conditions.

After reviewing the status of India's digital literacy rate we can conclude that we have a long way to go, none the less we cannot forget our achievements and see the other side of the picture. Our education system has been revamped, and Information technology has been introduced as an important subject. Computers have been made available to many underprivileged schools to make our rural population digitally literate. To make this development forward, we need to focus on making our teachers digitally literature.

Benefits of Digital Literacy in the Classroom

Digital literacy addresses the growing need for critical analysis of digital content, teaching students to assess its source, credibility, and quality. Digital literacy instruction engages students' cognitive abilities, asking them to apply critical thinking skills to their actions, behaviour, and social engagement on digital platforms. Social media's explosive growth has made information literacy and digital citizenship increasingly important components of digital literacy.

Analysis of online news and advertising teaches critical thinking skills and prepares students to identify credible information sources. Lessons in responsible digital communication and ethical use of digital resources. Privacy and security are also components of digital literacy. Teaching students to understand their digital footprints—personal information actively and inadvertently shared online—makes them less likely to fall victim to criminal behaviour, such as cyber bullying and identity theft.

Digital Literacy for Employability

Digital literacy improves employability because it is a gate skill, demanded by many employers when they first evaluate a job application. It also works as a catalyst because it enables the acquisition of other important life skills. Companies applying these changes in organizational structures and business practices require new skills, as well as an increased role of ICT in the work place for communication, information sharing, and simulation of business processes. Routine cognitive and manual tasks in the economy decline, and non-routine analytic and interactive tasks rise. Resulting new hiring practices demand workers with the ability to respond flexibly to complex problems, communicate effectively, manage information, work in teams, use technology, and produce new knowledge. These capabilities are rarely taught in schools or measured on typical assessments. The challenge school systems face today is to embed digital literacy in all levels of the educational system as well as in the professional development of teachers and trainers.

Challenges of Digital Literacy

Lack of Access to and Knowledge of Technology

One of the most challenging aspects of digital literacy is the requirement for a certain level of technical expertise and understanding. Not everyone has access to cutting-edge technology and tools or has been properly trained to use them, which can result in a digital divide in which certain people lag in digital skills and knowledge. This can have severe consequences for access to school, employment, and social and civic participation.

Trouble in Finding the Right Resource

Another barrier to digital literacy is the lack of capability to find the right resource from the billions that are available online. With so much information at your fingertips, it can be difficult to identify which sources are genuine and trustworthy. Critical thinking and analytical skills are needed to evaluate the quality of material found online and discern between facts and opinions, biases, disinformation and propaganda. This necessitates a critical approach with experience, awareness and knowledge.

Lack of Guidance

Concerns about privacy and security are amplified when we talk about digital literacy. Many people are unaware of the potential dangers of the internet and lack supervision from a digital expert. With a lack of information about digital literacy, trainers and practitioners, it is a topic that needs greater attention than we think.

Lack of Awareness & Interest in Digital Technology

Another challenge is the lack of awareness and interest in digital technology among certain sections of the population, particularly older adults and women. Nearly half of the world's population is still not online. While Asia has the highest number of people without access, Africa tops the world in the percentage of the population without connection at 88 per cent. Furthermore, in digitally connected countries, male internet users outnumber

their female counterparts in every region of the world. This 'digital divide' does not just signify those who have access to the internet and those who do not. The gap also encompasses several other discrepancies, including the quality of digital infrastructure in rural communities, the speed of connectivity in remote areas, and the training and skills required to navigate such technology.

Lack of Emphasis on Digital Literacy in Education

There is a lack of emphasis on making individuals digitally literate. Despite the growing importance of digital skills in the job market, many schools and colleges worldwide do not offer adequate training in digital literacy. This results in a lack of digital skills among young people, which can hinder their employment prospects in the future.

Conclusion

In the rapidly evolving digital landscape of the 21st century, digital literacy has emerged as a crucial skill set that individuals must possess to thrive in both personal and professional spheres. This paper has explored the multifaceted nature of digital literacy and its significance in various aspects of modern life. The findings reveal that digital literacy encompasses not only technical proficiency but also critical thinking, ethical decision-making, and information evaluation. Embracing digital literacy as a foundational skill in education and the workforce is pivotal to building an inclusive, innovative, and digitally empowered future. By promoting digital literacy, we equip ourselves and future generations to leverage the vast potential of technology responsibly and ethically.

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AN OVERVIEW OF ACADEMIC WRITING TOOLS FOR THE BEGINNERS IN RESEARCH PUBLICATION

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Abstract

The quality of the publication in reputable international journals is continuously being improved. However, many writers struggle to be able to write a qualified article for such journal. Based on the observation and interview, it was found out that though the writers already knew about the rhetorical structures in the finding and discussion section, still their articles were not considered eligible to be published. Academic writing can be difficult and time-consuming, but with the right tools, we can drastically simplify the process. It is critical to prepare before beginning to write. Before submitting our essay, we must organise our thoughts, materials, and actions. The objective of this paper is to discuss the various helping tools for presenting the authors' content with clear, concise and accurate. It will help their article to be published in a reputable international journal.

Introduction to Automated Tools

The automated tools are available to reengineer the article in the defined manner. Few of them are

1. Writing Your Paper
2. Todoist : A to-do list to organize your work
3. Evernote : As a Research notebook
4. Grammerly : Cloud based typihg assistant
5. Ref-n-Write : Look up and learn while writing your paper
6. Hemingway Editor : Refine your work to be bold and clear
7. Our downloadable Article and Journal Templates
8. Out 10-point checklist to guide your writing process

1. Writing your paper: a comprehensive free guide

“Writing your paper free guide” is a helpful tool to aid the author through his various writing phases if he is prepared to begin writing.

This tool will help one to write his paper from beginning to end, from planning and establishing his framework to writing each section and getting it ready for submission.

This will guide to find out all you need to know about

- Article structures and formatting
- Choosing keywords and writing for SEO
- How to write your research manuscript
- Refining your writing
- Finalizing the details of your paper
- Considering ethics

2. Todoist

A task management tool like **“Todoist”** can keep the author organised while he is writing.

It takes more than just putting words on paper to create an academic paper. In fact, some scholars may contend that the writing is among the simpler elements! Their ability to write well depends on the chores they do before they start writing.

One must arrange his ideas, materials, and the actions he wants to do before submitting his essay. Todoist can help with this.

We can use Todoist to plan, schedule, and create an outline for our chores for work, school, and personal usage. Its portability and basic functionality contribute to its appeal. With excellent collaboration and integration features, it can be used on our phone, tablet, and PC. It might be like always having a personal assistant with us. Todoist is available for free, but the author may choose whether he want to upgrade to a paid version if he requires more project limitations or features like reminders.

3. Evernote

“Evernote” is a wonderful tool to take into consideration if we're seeking for an effective strategy to take notes and organise our study materials.

By setting up a notebook structure to group related notes, one may organise his research. Additionally, he can improve the value of his notes by including texts, pictures and documents.

The built-in recorder's ability to record audio is another useful feature. Without leaving the Evernote app, sharing and discussing our notes and notebooks is simple. Evernote's free, basic edition allows us to write an infinite number of notes, but it only offers 60MB of storage per month. We must upgrade to a paid subscription plan if we want more storage.

4. Grammarly

“Grammarly” is a typing aid that makes use of artificial intelligence to spot any spelling, grammatical, and punctuation mistakes before making a suitable replacement suggestion.

Once installed on a laptop or computer, it will point out any problems in our text and offer a replacement or even ask us to omit specific phrases.

Remember that Grammarly may not understand some technical terms or phrases in our document, which could cause it to flag them as errors. So, before accepting modifications, be careful to review the Grammarly prompts.

In Grammerly, the basic functions like spelling and grammar mistakes are free, a paid versin is also available for a more thorough review of everything you write.

The employment of a Professional Academic Editor can help us introduce academic English conventions to our writing.

5. Ref-n-Write

Research of a high calibre merits appropriate academic writing. An extensive library of words and phrases for academic writing is available with the tool "**Ref-n-Write**". The application uses artificial intelligence to provide information on selecting the appropriate academic word, cross-referencing prior work, suggesting new ideas, and other things.

This application can be useful for non-native English speakers who want to paraphrase their work and practise writing in English. We can sign up for a free trial to try out the referencing, paraphrasing, and phrase bank capabilities.

Lack of language proficiency shouldn't be a barrier to publish our research. This will serve as a reference for more details on how to publish in international journals despite language hurdles.

6. Hemingway Editor

Using the editing tool "**Hemingway Editor**", one can improve his writing by identifying the parts of it that will have an impact on reading. To effectively explain our study to readers, one must write clearly.

This tool also helps sentence-improvement tips for our paper. It draws attention to difficult-to-read sentences, words or phrases with easier alternatives, passive voices, and the quantity of adverbs in our writing.

There is a free version of the Hemingway App, but there is also a commercial edition with more publishing, formatting, and other options.

For assurance concerning the calibre of our article, we can also utilise the phrase "Experts in subject-relevant Editing." They will check our work for spelling, grammar, and other typical language problems.

7. Article and journal templates

In this tool, some free article and journal templates are also available which will help to format our manuscript which will save our time. Our template will assist in accurately formatting our work for submission and ensure that we have the data the target journal requires.

Download the appropriate template, then use it on one's research paper while according to the guidelines given. Keep in mind to adhere to the formatting guidelines provided for our particular research work. A guide to the various varieties of research publications is also available.

"Experts in Academic Formatting" can also be hired to save time by taking care of the manuscript's format.

Conclusion

Finally, writing a research paper requires time, effort, and careful planning. To avoid major errors, we must allow enough time to conduct research and write the paper, select an appropriate thesis statement, support our thesis with adequate research and facts, and ensure our paper is formatted correctly, including properly citing sources within the paper and on the reference page. All these expectations are fulfilled with the usage of these tools. One can rapidly review all he needs to know in order to create a successful paper using these tools. These tools guide crucial details on what constitutes a quality research paper, whether we are writing a paper for an assignment or to submit to a journal and also help to organize our research to write an impactful paper.

IOT BASED EDUCATIONAL TOOL FOR STUDENT IN NEW EDUCATION POLICY

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Abstract

Internet of Things is a technology that has been growing every second and has an impact on various sectors. Internet of Things helps to connect physical objects with each other with the use of internet. In the education sector, internet of things can be used to bridge the gap between the teacher and the student. From lectures and memorization to internet enabled learning to knowledge-producing education to innovative education, educational sector has been developing continuously. Educational sector has reached its fourth revolution, also known as education 4.0. In relation to education sector, some of the latest technologies advancements are interactive whiteboard, 3d printers, eBooks, tablets, augmented reality, attendance tracking system, virtual reality, cloud computing, hologram, biometrics, paper-thin smartphones, multi-touch LCD screen etc. Many students face problems with the traditional way of teaching, such as slow speed of learning and not able to attend school due to family problems. This paper addresses the previous works done in the field of education using Internet of Things to help overcome these problems and proposes an IoT Based Educational Model for Better Teaching-Learning Environment. This model suggests that there should neither be complete digitalization nor complete verbal assistance.

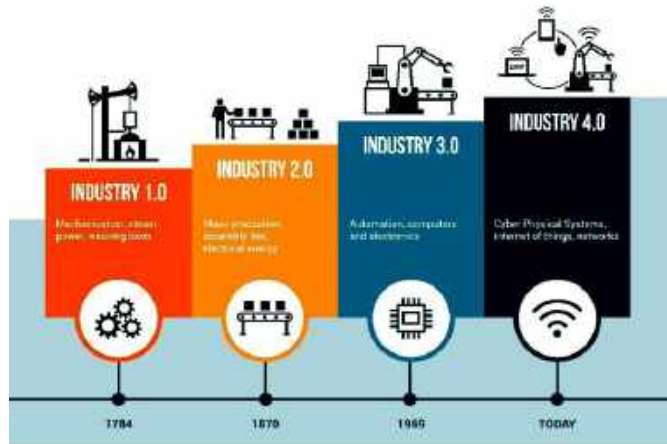
Keywords: Internet of Things (IoT), education 4.0, industry 4.0, RFID, Wireless building lighting control (WBLC).

Introduction

Education is the foundation of any economy. Educating the citizens is the basic requirement to establish a good economy. Education helps citizens to take decisions that will benefit them as well as the economy. To run an economy effectively and efficiently, the citizens in the economy need to be educated and aware about the aspects of economic growth and economic development. Without people being educated, the economy will be left to be doomed. Education is the right of every citizen of the country.

The government provides various initiatives and right to education to every citizen of the country. The industry started with steam engines and went through multiple revolutions – production line, the computer, and now is in its fourth revolution with the internet and connecting computers, also known as industry 4.0. Almost every business is implementing industry 4.0 methodologies to achieve its goals and continue to grow and develop. To keep up with the revolutions happening in the industry, the educational sector also needs to develop.

With the continuously developing technology and industry, students need to be taught and trained accordingly. They don't just need to be taught theoretically in classrooms but also need to be exposed to practical knowledge and experiments. The education sector has experienced various revolutions. It went from lectures and memorization to internet-enabled learning to knowledge-producing education and now is in its fourth revolution of innovative education, also known as education 4.0.



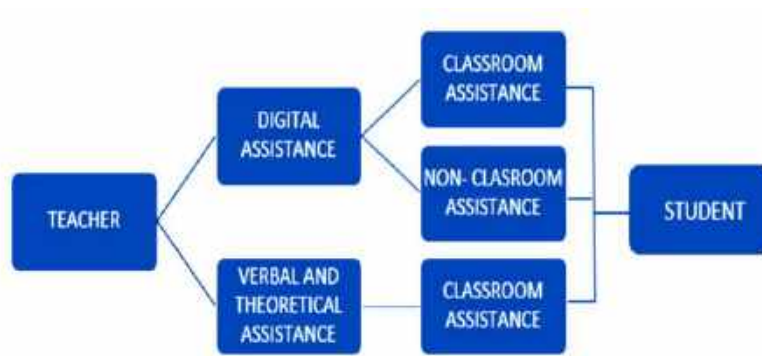
Internet of Things (IoT) is a continuously growing and developing technology that is used to connect physical things with the use of internet. Internet of things helps in collecting data through various sensors and communicates the data to be converted into meaningful information. This information is then analyzed, measured and stored for future use as a means of knowledge. The use of internet of things has simplified day to day activities. It reduces the time and efforts required to carry out any activity and increase the efficiency of the work done.

Internet of things has changed the face of industry as well as the educational sector but the students are still being taught in the traditional way. They sit in the classrooms and learn about things theoretically and have mere exposure to practical experiments. To produce resources that can work with the technologies being developed every day, the educational sector needs to expose students to the technology and practical knowledge [3]. The new strategies need to be developed keeping in mind both categories of students: the ones who attend classes daily and the ones who are not able to attend the classes daily due to various reasons such as healthcare problems, family problems, transportation problems and many more. The rest of the paper is organized as follow: second section covers the literature review of the researches and the work done in the field of educational sector, in the third section an IoT equipped model is proposed for better education and finally, the fourth section covers the conclusion and outcomes of the paper.

Proposed Model

While going through the researches done by various researchers in the field of IoT in education sector and various other sectors, an idea came to mind and it is presented in this paper as an institute model for better education for students.

Complete use of digitization may lead to removal of handwritten work as all the work will be done using the computer and internet so all the data will be in digital form and no handwritten records will be made. Various challenges will be created for teacher as keeping record of students' performance as basic communications or behavioral science. Students will not be able to get their personalities developed as they will only be engaged in digital work. Human to human communication is lost due to all activities being done through system. Cyber bullying may increase as a result of digitization. The more someone learns about a thing, the more he is likely to find loopholes. Open window for cheating will be created for the students. Students can't study and learn things only by visual display, they also need human teachers. Lack of physical activities may lead to health issues. A lot of time of the day is consumed by the computers and students don't get to connect with the environment.



Infrastructure

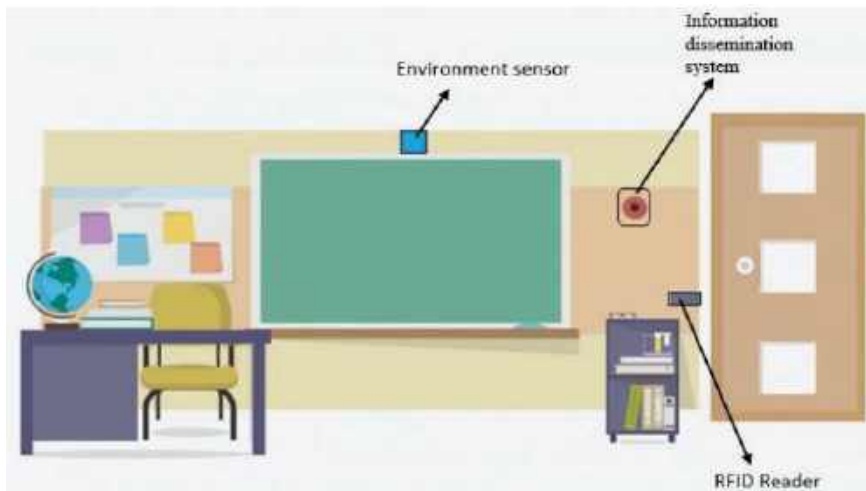
When constructing the institute various sensors are placed in the building for various management purposes. Each sensor has a battery and an alert system that is wireless and helps to transmit data over the network to the maintenance engineer.

Environment management: Among the sensors placed in the building while construction, there are various sensors that collect data related to the environment such as air quality, humidity, temperature, any calamity detection etc. The data collected is transmitted over the network for storage and can be further processed to extract meaningful information.

Garbage management: Cleanliness is one of the major issues and reason for a number of students not being able to attend their classes. To maintain cleanliness and avoid absence of students, smart garbage monitoring system is used. The sensor on the head of the garbage bin sends an alert to the helping station when the garbage bin gets filled up to a specific level. The helpers can then remove the garbage. This helps in taking care that no garbage bin is left unattended.

RFID technology: Students, teachers and other staff members of the institute are provided with ID cards with RFID tags. RFID readers are installed at the entrance of classrooms, library, art room etc. This helps in keeping track of the movement around the institute.

WBLC: Wireless building lighting control system is used to monitor and control the electricity usage. The lights are switched on in the morning at the specified time and switched off after the classes are over. This helps in taking care that all the electric appliances are switched off are working hours and there is no electricity wastage.



Student Management

The data collected through various sensors and technologies implemented are transmitted over the network to the management, who monitor the movements and activities around the institute. All the data collected is uploaded and stored on cloud from where the respective management and teaching staff can access the data for further use.

RFID technology: The students are provided with RFID tag equipped ID cards that they are supposed to have on them all the time in the institute. When entering any room, the RFID reader, present at the entrance, reads it and stores the data. This helps in avoiding the need for the teacher to invest time in taking attendance and helps to track the movement to students around the institute.

Information dissemination system: Sometimes students miss out on the important information provided by the teacher in class due to various types of interruptions. An air freshener sized device is installed in the classroom which is connected to an app. The teacher can upload and update information related to assignments, tests and other important information for the students on the app. When students' devices come in the specified range of this system, they get the information in the form of a notification. This makes sure that no student misses out on any important information.

E-Learning management system: There is an application where the teacher regularly uploads and updates the information related to the topics being covered in the classroom. The students, who are not able to attend any specific class or are unable to understand the topic in the class, can refer to this information to understand the topic and learn. Students can also refer to these for revision before any test or examination.

I-glasses: Smart eye-worn glasses are used to implement virtual and augmented reality in the institute.

Smart benches: The classrooms are equipped with smart benches that have interactive screens which are used for multiple tasks. The system will be unlocked only through students' fingerprint. Students can use this system to share information with each other and can see the presentation or data that the teacher wants the students to see for better understanding.



Conclusion

In this paper, we discuss the various research and study done related to internet of things in educational sector and propose an IoT Based Educational Model for Better Teaching-Learning Environment. The industry is advancing everyday but the students are stuck at the same traditional way of learning. To make students capable of working with the new technologies, there is a need to expose them to the available technologies first and make them learn about how and where to use these technologies. No new architecture or framework can be implemented in just a day; there should be prior planning and preparation done. To effectively and efficiently make use of the new technologies, students need to be taught and trained today, so that when they graduate, they are able to work with any kind of technology without any hesitation.

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A STUDY ON THE USE OF DISRUPTIVE TECHNOLOGIES IN HIGHER EDUCATION

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Abstract

New disruptive technologies are emerging day-by-day. These disruptive technologies have fundamentally changed the way we used to do things. Disruptive technologies in recent education system cannot be denied. Technology transformation in education system provides students a cost effectively scale education. Internet, mobile phones and Virtual Learning Environments (VLEs) are all the examples of disruptive technologies. These technologies are now widely used to support learning and teaching. Use of ICT helps students to reach the resources which they need in their learning process. Online delivery of different courses such as MOOCs at lower cost makes it easy for employees also to combine work and training. Mobile technology is also useful not only for learners but also for teachers to connect with the students from anywhere, anytime that makes learning more collaborative and effective.

Keywords: Online learning, Virtual Learning Environment, Mobile Learning, MOOCs.

Introduction

Education has been a way for students to improve their lives. Before the age of computer and digital communication technology, traditional classroom education has been used for the transfer of knowledge from teacher for the student and high dependency was there on the capabilities of the tutor. Knowledge transformation was also limited in time and space by the resources available to students such as libraries etc. But the scenario is change now. There are many digital technologies are available which have high impact on education system. Also due to globalization, there is a pressure on nations of the world to use new technologies in teaching. The use of ICT is rapidly changing the technological forces that will shape the structure of educational systems of the world. The role of teaching in a classroom is to help students who are slow learner and to catch up them with other students.

But what is about them who are faster at learning? For those students, there are additional courses according to their interests to fulfill their requirements of free elective students. MOOCs is there to enhance online learning with technology. The teachers can post their instructions online to participants through MOOCs, which is helpful to students to know how to complete the course. The integration of online course material can increase interaction among students and between the students and the teacher, for exp. through virtual group work, building an online community for module, discussion questions, instructor participation and so on. A number of institutions offer virtual distance learning which allows teachers and students to interact with each other.

Concept of Disruptive Technologies

The term 'Disruptive technology' is derived from Clayton Christensen's (1997) book, 'The Innovator's Dilemma.' The term is used to denote technologies that are not designed to support learning and teaching but are used by students and lecturers, having found a market and a use value. Disruptive technology follows four key criterias identified by Christensen in 1997; they are smaller, cheaper, simpler, and convenient. Disruptive technologies often start with a small number of users but growing over time to extent that they replace the previously dominant and incumbent technology. Disruptive Innovation caters to the needs of those who cannot attend college because of finances, work conflicts, or family obligations. There are amazing disruptive innovators in the world like in social media; Larry Page of Google, Mark Zuckerberg of Facebook, Jack Dorsy of Twitter etc.

Disruption is one of the most overused catchwords in education today. Mobile technologies, Open Educational Resources (OER), MOOC's (Massive Open Online Course), Cloud computing and Analytics (big data) have now become part of education at all levels.

Disruptive Technologies in Higher Education
The personal computer (PC) supersedes the typewriter and totally changed the way we work.
Email forever transformed the way we communicate, supersedes letter-writing and disrupting the greeting cards and postal industries.
Cell phones enabled the people to call anywhere and disrupted the telecom industry.
The laptop computer and Mobile computing replaced desktops in many industries and organisations. Laptops made it possible for people to collaborate from anywhere in the world.
Smartphones replaced cell phones and PDAs (Personal Digital Assistance) because of having different functions, smartphones disrupted pocket cameras, MP3 players, calculators and GPS devices.
Cloud computing has been an enormously disruptive technology in the industrial world. It is the combination of hardware and software to deliver the content over the internet. We can access the content and files from any device that can access the internet.
Social networking has disrupted landlines, cell phones, email, instant messaging etc. It has changed the way we communicate with others.
Campus wi-fi: with the campus WiFi, students can study effectively. They can collectively share notes and prepare for their exams. One of the basic uses of WiFi on campus is for students to keep up-to-date of their assigned work. They can log in to their portfolio thereby can monitor their own grades and keep themselves updated.
Small Private Online Courses (SPOCs): MOOCs are free and useful. The main aim of the MOOCs is to have unlimited participation and open access via web. There are no restrictions on the attendance; students can access the content any time during the day, week or month. But the main thing is to complete the hours limit given by particular course. These are widely researched in distance education and appeared as popular mode of learning in 2012.

YouTube: Now almost every university has its own YouTube channel. The content of the course is uploaded in the form of educational videos on you tube channel of particular department or university.

E-books: E-books have displaced the printed books thereby students can access to the books over the web. Earlier the students purchase the books from the market but now they can read it online.

Disruptive Technologies in Education

Online learning

Online learning offers new opportunities both for students and educators. This disruptive technology can involve those people that don't have access to traditional forms of education due to some reasons. Since online learning is easily accessible, parents, fully-employed people, and people with disabilities can use this opportunity to get an education without leaving their homes.

MOOCs

It was started in 2008 and is the short name of massive opening online courses, which can use for unlimited participation and open access is the world wide. It was introduced for students who are learning from distance. In these courses, the material is by educational institutions, who have license of these courses for completions. MOOCs will disrupt different educational institutions in different ways.

LMS

It comes from learning management systems. It have different features such as student teacher interactions, courses collaboration, delivery content, master courses, practical and exams, connecting programmes, online assignments of students etc. It can enhance the learning experience of students with the help of video recordings and presentations with recorded audios. It can create a different kind of continuous learning experience which is not restricted by a single lecture but by repeating the reading material.

MOOCS as Disruptive Technology

Nowadays, the disruptive technology that has become the topic of interest to society is Massive Open Online Courses (MOOCs). MOOCs are simple, free and convenient to use. They are flexible online learning which is aimed for unlimited participation. There is no formal academic credit is available. There are no fees or entry requirements in MOOCs. We can access to the course material free of cost. It provides certificate at the completion of the course at a cost. Some MOOCs provides certificate at free of cost. MOOCs have attracted the attention of both the media and the educational community because there are differences in teacher/student ratio. But most importantly MOOCs have entered the education system at that time when education, specifically at university level, is required to make changes to meet the demands of the society. It makes the education accessible to all at any stage of their life. MOOC is an online course aimed at mass participation and

open access via the web. MOOCs provide interactive user forums for the students, professors, and Teaching Assistants. Moreover, it provides traditional course materials such as videos, readings, and assignments etc.

A massive open online course (MOOC) is a model for delivering learning content online to any person who wants to take a course, with no limit on attendance. MOOC integrates both the traditional and modern course materials for learning such as videos, readings, projects, assignments and many more.

The major MOOC platform providers are Coursera, edX, Canvas and FutureLearn and in addition to these platforms, there are small MOOC platforms. Each platform has its own technical infrastructure, for example; some platforms align themselves with institutions, whereas others allow more freedom to individual educators.

Websites that Offer MOOCs

MOOCs provider	Websites
Coursera	https://www.coursera.org/
Iversity	https://iversity.org/
EdX	https://www.edx.org/
ALISON	http://alison.com/
CanvasNetwork	http://www.instructure.com/
Open Learning	https://www.openlearning.com/
Academic Earth	http://academicearth.org/
Future Learn	https://www.futurelearn.com/
Peer to Peer University	https://p2pu.org/en/
Saylor. Org	http://www.saylor.org/
Udemy	https://www.udemy.com/

Types OF MOOCs

xMOOCs:

An xMOOC transfer the knowledge didactically i.e., it is fairly close to the traditional pedagogical model used in lecture halls. In an xMOOC, learning content is offered in small units which are easy to understand usually 12–20 minutes duration. The medium to transfer the content is video instead of text. Other means are online tests, exercises and games. Under this short videos and exercises go side by side. Moreover, forums and wiki pages are used to give social learning experience to participants.

cMOOCs:

A cMOOC is a connectivity course. This highlights the interactive nature of the learning experience. Under this, knowledge is partly self-generated and the coherence of the course constructed by the participants. In a connectivist MOOC, the discussions and interactions between all participants are important rather than content and activities. cMOOCs provide opportunities for disrupting traditional forms of teaching and provides learner-centred pedagogy so that students can learn from each other.

Role of MOOCs in Higher Education

The MOOC movement plays a fundamental role in transforming the quality of higher education. MOOC courses are designed for large numbers of users. These courses can be accessed online without entry requirements and limit on attendance. It provides complete course experience for free of cost. The impact of MOOC is dubious due to long history of revolutionary potential in Open Distance Learning as expressed by the “hope, hype and disappointment”. As more and more initiatives are taken by millions of people to participate in MOOCs through a small but growing diversity of courses; and they attract a lot of people from various educational institutions, politicians, policy-makers and media houses. The main point is stakeholders have quite different reasons for encouraging MOOCs and therefore the opening up of education agenda must be seen alongside powerful forces that view online learning as a means of intellectual development, enhancement in self-esteem, increasing competition between institutions, introducing new business models with reduced public funding for universities, and the creation of a global higher education digital marketplace. However, MOOCs have potential to meet the growing demand for higher education, mainly in developing countries where it is not possible for traditional institutions to cope up with the large number of potential students. Daniel (2012) advocated that the MOOC movement is really a game changer, as it has potential for life-long learning, address main gaps in skill development, and eventually enhance the quality of life for millions of people. In India, there is some hope that the MOOCs may be able to close the inequality gap of literacy and reduce the unemployment of youth. The national institutes of India like IIMs and IITs also have started MOOCs. The Government of India has also decided to start 350 online courses through SWAYAM (Budget 2017-18). There is a need to create a firm systematic structure for the validation and recognition of the courses from online sources as Coursera, Edx and SWAYAM, UGC, and other educational authorities which seeks cooperation between these institutions.

Conclusion

The technology needs to be kept in perspective, as a tool to enhance learning. Teachers felt that roll of the institution is to deliver more than mere academic facts, students need to develop their interpersonal skills. For this reasons, teachers need to make every effort to ensure that students are able to use the technology intelligently and critically in order to succeed in today's online global workplace. The use of disruptive technologies has implications for higher education; students can access learning material by means other than through their university. Moreover, free access to learning materials made available through disruptive technologies poses a great threat to the high-fees offering universities. Now the big challenge for the universities is to understand and manage the disruptive technologies not only to safeguard academic standards but also to make disruptive use of ICTs to enhance learning.

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ONE - DAY NATIONAL SEMINAR ON RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT

(SPONSORED BY ICSSR)
PAPER PUBLICATION

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Abstract:

The connection between Youth and national integration is self-evident. This relationship is not only mutually beneficial, but it is also entirely dependent on the other in order to exist. As a result, it's impossible to overstate the importance of young people for the advancement of a country. The ability of a country's young people to produce and innovate is crucial to its future development. Any society's progress and development is powered by its youth, who supply the labour force necessary to put goods and services on the market.

People actions and inactions have the power to either strengthen or weaken the hegemony/fabrics of their own societies. Unexpectedly, a society's ability to form and develop is directly correlated to how smoothly it passes from one generation to the next. Because of this, a society that teaches young people for the sake of their future aspirations will not guarantee just future growth. However, the challenge of national healing and growth will be prepared for her next generation of leaders. As a result, the importance of the role of youth in national development cannot be overstated. In order for society to be revitalised, it must begin with the next generation. The aim of the study is to analyse the role of youth in nation building.

Keywords : Rural women empowerment, Skill development, National integration, Self evident

Introduction:

The role of Youth in nation-building or development is very important, and this is because the development of any nation lies in the future generation. Democracy, economy, technology and the improvement of medical science all lie in hands of the Youth. Poverty, unemployment, global warming, and pollution of many types are the problems that the world is facing today. The answer to solving all these problems lie with the next generation.

History is evident that the next generation has been the answer to solve future problems. As time passes by, it is required to adapt to the changes and bring a change in society. The Youth is capable of doing so; we can bring a change in society. So what is the role of the Youth for better tomorrow? What are qualities that are required to bring a change in society? These two questions are very important, and all the students should know the answer to them.

The role of youth in nation building:

- The youth mind is filled up with talents and creativity
- If they raise their voice on any issue, are successful in bringing the transformation.
- Youth are considered to be the voice of the nation.
- The Youths are like raw material or resources to the nation.
- The way they are shaped, they are likely to emerge in the same manner.
- Different opportunities and empowering youth procedures must be adopted by the nation, which will enable the Youth to make career-oriented in various stream and fields.
- They Need guidance and support, so that, they can be smart enough to pave their own path to success.
- Youth comprise that sphere of the societies, who are yet the developing buds and are fate changers for a nation.

Importance of youth our society:

The world is changing faster than ever before, and it is becoming increasingly clear that

The young people of today will play a critical role in shaping the future. As the population of the world continues to grow, it is estimated that by 2030, there will be more than two billion people aged 15-24 –making up around 20% of the global population. This group represents a huge potential force for change and development, and their involvement is essential for achieving sustainable economic growth.

There are many reasons why youth are so important for economic growth. Firstly, they are the key to driving innovation and creativity. Youth people are often more open to new ideas and willing to take risks, which is essential for coming up with groundbreaking solutions to problems. Secondly, they have the energy and enthusiasm to work hard and make things happen. They are also generally more tech-savvy than older generations, giving them an important edge in today's digital economy.

Youth's roles and responsibilities in today's Era:

Youth and life indeed itself flashes by, in the blink of an eye. That is why you need to ask yourselves what you can do for society and the country. God has vested all power in the hands of the youth so that he can perform his duties effectively. They should start thinking positively and creatively. They must develop the spirit to refute what is wrong in society. They must realize that now is time to take action.

Youth should not seek an easy, comfortable path. No one develops in a pampered environment. These are some key responsibilities that the Young generation must inculcate in them:

- Value of time: It is the responsibility of youth to understand the importance of time. Every moment is crucial for them to take action so punctuality is a must.
- Discipline: Youth has to understand the necessity of discipline in life. Youth is full of passion. Without discipline, the youngsters cannot work passionately.
- Thinking Before Taking Action: Youth must not be impulsive. It is very important

to think before taking action. This is how the Youth will be able to create a thoughtful society.

- Character Driver: Character builds up a nation. The young people need to be morally strong, reflective individual and dedicated which will drive them to take corrective actions for the nation.
- Fearless: The youth must be courageous in taking action. Fearless youth can fight injustice.
- Goal-oriented: The youth needs to be focused on the goal that he wants to accomplish. When the young generation is goal-oriented, then their vision and mission become very clear.
- Zealous: Youth has to be energized, full of vitality. With the attribute of zealousness, the youth can help to protect the national security and interest of a country and ideological position.

Challenges:

- The Qualification Packs defined for a given job role are sometimes too vague or generic.
- Teachers / Trainers have limited or no industry exposure.
- SSCs – Industry linkage is still not established well.
- SSCs do not have the expertise to guide us in implementing the skill course.
- Fee for every SSC activity –Affiliation, QP NOS Alignment , TOT , Assessment is exorbitant
- Industry participation in skilling is still very low.

Outcomes:

- To great extent we will have graduates who are ready for job Market. The employment figure will improve .
- Hence crime rates will come down.
- Companies or employers do not have to spend much time on training the new recruits. Hence productivity and economy will improve.
- Students will be more focused and interested in studies. Student and Teacher interactions will improve.

Conclusion:

Youth Men and Women are the reservoirs of unbounded energy and enthusiasm. Youth should be put to best use; otherwise, they will get involved in wrong activities and waste their energy in doing negative things which can harm the nation. To keep them in the right direction, their energies, skills and talents have to be properly harnessed, channelized and should be used for the common good of the country.

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IOT WITH 5G NETWORK: THE NEW ERA OF TECHNOLOGY AND RISKS

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Abstract

With the advent and growth of 5G networks, a new era of inter-connectivity will become a reality with the Internet of Things (IoT). This communication between multiple devices also opens them to vulnerabilities from outside influence, attacks or an unknown software bug. Even the world's most used browser supported by Google, Chrome was found to have serious bugs. 5G architecture is comparatively new in the industry and requires a lot of research to find loopholes to make the system secure from external attack. Every step of the 5G network might bring a plethora of network attacks that we might not be aware of. Here manufacturers need to be very strict in building sophisticated 5G hardware and software to control data breaches. According to the GSM (Global System for Mobile Communications) Association, the number of 5G networks will reach 1.8 billion by 2025. The 5G IoT market was valued at USD 1.5 billion in 2020 and is anticipated to grow at a Rate of 72.9% between 2021 and 2026 to reach USD 40 billion. Globally, wireless technology has been expanding quickly. Fifth generation, or 5G, technology has emerged as the most difficult and intriguing subject in cellular technology. IoT in the 5G system will alter the game. It will make way for innovative wireless design and intelligent services. The paper also seeks to shed light on potential future research avenues leading to the development of secure and privacy-conscious 5G systems.

Keywords: Data integrity, confidentiality, authentication, access control, trust, privacy

Introduction

IoT with 5G

There is a big difference between a 5G implementation and IoT implementation. This is essentially around the standards that are available for either of the architecture. 5G is highly regulated and is built upon a recognized set of standards which have been issued by industry groups such as the Third Generation Partnership Project and the United Nations International Telecommunications Union. IoT devices are largely unregulated and have no generic standards that they can follow.

With the concept of edge computing, processing has moved closer to where the data is. Instead of having to send the data across the network into the cloud and then do the processing and then send it right back, you will be able to shift the whole control plane and allow the data to move between the IoT devices. But this of course has changed the cybersecurity landscape and it has now become a decentralized model. An IoT device is made up of sensors, hardware that connects the sensors and a layer of software. The software does the computing and managing of hardware and the sensor data. Then there is a communication interface, which allow connection to the 5G network.

Creating a generic security architecture is very difficult as there are so many ways to design, build and use an IoT device. Some of the models that have been proposed include the Industrial Internet Reference Architecture, Cisco's Internet of Things reference model etc.

Security risks associated with an IoT system

Current risk methodologies and risk assessments are not designed or fit for the purpose of identifying the IoT related risks, in a thorough and repeatable way. These devices will be connected to the 5G network and will be pervasive and 'on' all the time. The kind of attacks that they'll be vulnerable towards are still pretty much standard ones that affect ordinary on-promise networks – eavesdropping, impersonation, man in the middle attacks, denial of service, replay, repudiation etc. So, if we examine a smart home implementation, where there is a voice activated device that's connected to an IoT connected lock on the front door.

You need not get up and open the door, instead you do that with a voice command. But it also means that the thief or burglar who has identified that you have left the house, can come up to the front door, open the letterbox, and shout the same command and get free access to your home. So, the issue here is a lack of authentication at the IoT device and that device not necessarily having the ability to recognize only the homeowner's voice.

5G will still suffer from the 4G vulnerabilities. It is not possible now to roll out a dedicated 5G network all at once. At someplace 5G is partially implemented side by side a 4G hardware and software components, for an extended period. So, to achieve a strong IoT security baseline it will take a multi layered approach.

Going Forward

Security teams will need to understand how 5G works and where the computing power will happen and how the computing decisions are made. The very nature of 5G networks means that the volumes of data will be order of magnitude greater than what they are now. The traditional approaches, that lot of organizations, now have is not going to work going forward. The volume of data is going to be so vast and the ability to triage that data cannot be done by human operators.

So, you must start thinking around what techniques can be put in place within the IoT, 5G environment in an automatic repeatable and reliable way. Strategies need to be thought about how you're going to securely manage these IoT devices. Another key thing that needs to be thought about is a risk management framework, that will incorporate fully the IoT and 5G environment.

The 4G technology will not be sufficient and efficient to meet the demands for –

- Multi device connectivity
- High data rate
- More bandwidth
- Low latency
- Quality of service
- Low interference.

The internet of things or IoT, is on the rise. The number of connected devices is set to increase from 700 million to 3.2 billion by 2023. While there are several factors contributing to this rise, the most important will be the development of 5G networks. 5G networks will go a long way in improving the performance and reliability of these connected devices & data transfer speeds. The commercial success of any IoT device is ultimately tied to its performance. It is dependent of how quickly it can communicate with other IoT devices, smartphones, tablets, software in the form of app or website and more.

According to reports, 5G will be 10 times faster than current LTE networks. When it comes to smart home devices, this increase in speed helps to reduce lag and improve overall speed in which connected devices send and receive data and notifications. Besides smart home devices, all IoT devices will enjoy greater speeds including those with healthcare and industry applications.



5G – The fifth-generation mobile network offers

- Multi-Gbps peak data speeds
- Ultra-low latency
- More reliability
- Massive network capacity
- Increased availability
- More uniform user experience

5G is a new global wireless standard. It delivers a new kind of network and is designed to connect almost everyone and everything together. When combining 5G with IoT, it should enhance the operational capabilities of these devices. But it also introduces new risks.

As society enters the information age's next phase, recent advancements have given rise to faster wireless data exchange, including:

- Artificial intelligence (AI)
- Data processing
- Cellular communications

4G tops out at speeds around 2 Gbps. 5G technology pushes mobile performance from 2.4 Gbps (LTE Category 20) to reach nearly 20 Gbps by the arrival of 5G-Advanced (3GPP Release 18). Thus, 5G adds a viable high-speed data networking alternative to wired fiber optic networks. Internet of Things (IoT) solutions will connect more than 30 billion devices by 2025. While 5G rolls out at neck-breaking speed, the resulting evolution in communications will bring the world a faster, smarter future.

What Is 5G IoT?

Advancements in wireless broadband and 5G enable increased transmission speeds for corporate networks. 5G is the current cellular communication system generation. As an evolutionary standard, it is being rolled out in phases.

In Phase 1, 5G operates non-stand-alone (NSA) with evolved 4G radio and core networks.

In Phase 2, the 5G New Radio (5G NR) framework and new core network aim to set the foundation for a new era of wireless connections worldwide. It includes multiple access for connectivity technologies like satellites, Wi-Fi, fixed-line and cellular (as standardized by 3GPP).

With IoT-enabled devices in mind, 5G connects a higher density of devices at higher speeds and makes things lag nearly non-existent. As a result, 5G creates an excellent user experience irrespective of what application, device or service you touch.

Massive cellular IoT technologies are characterized as low-cost, low-power consumption solutions. They thrive on deep and broad coverage indoors and outdoors. Massive cellular IoT delivers:

- Secure connectivity and authentication
- Ease of deployment
- Full-scope scalability and capacity upgrades

5G's adaptability enables businesses and industrial organizations to connect more devices with better capability for less.

Mobile IoT Systems Are Paving the Way for 5G

As proposed by GSMA, mobile IoT refers to cellular low-power wide-area (LPWA) technologies using licensed spectrum bands. 3GPP narrowband IoT (NB-IoT) and Long-Term Evolution machine-type communication (LTE-M) technologies are 5G-era bearers of low-power, low-data IoT applications. Cellular LPWA paves the path to 5G with undisrupted information flow. These 4G technologies continue under full support in 5G networks for many years and releases.

3GPP technologies like 4G LTE and 5G help businesses expand the reach of their IT and OT networks across hard-to-reach areas. They require an easily scalable deployment strategy and architecture. Think of smart utility solutions in water and gas grids. Managers must remotely monitor environmental conditions from thousands of sensors and control valves and regulators to support consumer usage.

In addition, they must prevent or mitigate line breaks and other failure conditions across multiple sites. Managers must react in milliseconds to avert disaster and loss of life. IoT enables all the tools and resources managers need. Cellular networks are adapting to the need to service billions of new devices. These devices require connectivity solutions that make the grade in business dimensions and technically.

Enterprises deploying either NB-IoT or LTE-M are future-proofing their IoT projects. As 5G becomes commonplace, these mobile IoT standards continue to integrate into upcoming 5G releases.

Current Applications of 5G IoT

Early 5G IoT use cases focused on:

- Enterprise and high-speed industrial networking
- Customer premise equipment (CPE)
- Mobile computing
- Video broadcasting
- Fixed wireless access (FWA)

As adoption grows, they will evolve and use public and private networks to stream virtual and augmented reality and 3D video (which requires high bandwidth). Moreover, 5G applications will be used for critical communications like factory automation, uncrewed aerial vehicles (UAVs) and more. 5G IoT will improve everyday life from personal applications to changing how we work and live. With 5G IoT, facilities will continue improving to send critical upgrades to networks without freezing functionality or overloading servers.

Current industries that will continue benefiting from these 5G IoT enhancements include:

- Automotive and transportation
- Smart factories
- Smart buildings
- Smart cities
- Smart utilities
- Security and surveillance
- Agriculture
- Retail
- Health care

Future 5G Use Cases

Smart homes, synced watch-and-phone IoT devices and fitness apps are commonplace. They will grow with the speed and performance capabilities of 5G. With a heavy reliance on mobile IoT on such a grand scale today, in the next 20 years, the 5G future will look completely different. We will see large-scale autonomous vehicle deployments and utility service automations like waste management. We will also see energy production through

smart grids and smart environmental monitoring to reduce greenhouse gases and pollution.

Imagine being able to park a smart car in a parking garage and gaining wireless charging through the city grid while you work. Then you can message your vehicle to drive from the parking garage to your office door. Farmers will be able to monitor and track crops, livestock and machinery through drones and super-dense sensor networks. Home users will be able to fully integrate the COVID-led work-from-home paradigm, which looks likely to survive the pandemic as a new corporate norm. In addition, home users will be capable of optimizing power usage and streaming their favorite entertainment from anywhere. Society will be more efficient, smart cities will live up to their name, and users can expect personalized streams of information catered to their liking.

5G Applications and use cases for the IoT

Developers have imagined a new digital world

- Where doctors can treat patients in rural areas remotely, even performing remote surgery,
- Where workers present media-rich presentations from home without interruption,
- Where autonomous driving has the potential to reduce accidents and traffic jams,
- Where smart grids eliminate brown and blackouts worldwide,
- Where ubiquitous connected sensors assist vehicle parking and avoid collisions, monitor electrical systems, alert for conditions that could lead to fires, and monitor patient health from afar.

These innovations could help prevent devastating fires, improve health outcomes for patients lacking access to traditional healthcare and change auto travel. Enterprises will be able to manage their data with network slicing for private networks, opening up new secure ways of data management, integrity and access. The power of the new 5G networks being rolled out today will enable these innovations and more, giving so many industries a leap forward in productivity and efficiency.

The challenge

However, tens of billions of connected devices can expose an overwhelming number of vulnerabilities. Connecting cars, water meters, appliances, and critical infrastructure like the electricity grid is different from connecting today's smartphones. The staggering amount of data requires worldwide regulations and secure data protection to ensure these future solutions do not present new threats. Some applications require low bandwidth and coverage in challenging installation situations, others ultra-high bandwidth.

Many solutions are designed to be in the field for decades and battery-powered, often required to withstand harsh environments. The right technology partners will be critical to leveraging 5G.



- **CONNECT** and manage devices on the 5G network with resilient solutions and certified, reliable services.
- **PROTECT** devices, identity and data. Building a secure 5G network that guarantees privacy.
- **PREDICT** industry needs to build a resilient 5G network. Future-proof solutions to leverage today and prepare for tomorrow.
- **MV31 Modem Card** – Designed to optimise 5G enhanced Mobile Broadband (eMBB), Thales's award-winning Cinterion® MV31-W IoT modem card is ideal for industrial IoT applications.
- **Hardware Security Modules (HSM)** – Thales offers a dedicated crypto processor specifically designed to protect the crypto key lifecycle. Hardware security modules act as trust anchors to protect the crypto infrastructure, which is used in some of the world's most security-conscious organisations, in a hardened, tamper-resistant device.
- **High-Speed Encryption (HSE) solutions** – As data is always in motion, securing it requires proven network encryption solutions. Thales provides a single platform to secure data in motion – from network traffic between data centres and headquarters to backup and recovery sites, on the physical premises or in the cloud.
- **5G SIM products** – The only solution to secure 5G networks, the Thales 5G SIM is tamper-proof, secure, and explicitly designed to enhance mobile broadband, massive IoT applications and critical communications.
- **SIM Over-The-Air (OTA) platform** – Thales Cloud OTA enables remote and secure management of SIMs and eSIMs for seamless connectivity and services. Designed for optimum efficiency and the best MNO experience across all networks and channels (SMS, HTTP, NAS), the platform is built on open standards and is fully interoperable.
- **CipherTrust Manager key management** – an industry-leading enterprise key management solution, Thales enables organisations to centrally manage encryption keys, provide granular access control and configure security policies.

Conclusion

The Internet of Things (IoT) began with simple remote monitoring of things like vending machines and first-generation smart refrigerators. Today it has moved on to fully connected cars, smart grids that span entire cities and countries, and telehealth for a new age of healthcare and wellness. By 2025, forecasts suggest as many as 75 billion IoT connected devices, nearly 3x the number in 2019. And new 5G networks are giving way to transformative IoT applications for many industries with plenty of innovative IoT use cases. Low latency and expanded networks mean 5G can reach 10 times more devices per square kilometre than 4G. Improved speeds are ten times faster than 4G. It's not just a better network; it's an entirely NEW "cloud-native" network built from the ground up. And while the IoT stands to benefit massively from this erupting technology, there is no denying that 5G capabilities demand solid groundwork and preparation for device makers.

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INFORMATION AND COMMUNICATION TECHNOLOGY IN EDUCATION

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Abstract

To use information technology to improve learning processes, the pedagogical assumptions underlying the design of information technology for educational purposes must be understood. This paper reviews different models of learning, surfaces assumptions of electronic teaching technology, and relates those assumptions to the differing models of learning. Our analysis suggests that initial attempts to bring information technology to management education follow a classic story of automating rather than transforming. IT is primarily used to automate the information delivery function in classrooms. In the absence of fundamental changes to the teaching and learning process, such classrooms may do little but speed up ineffective processes and methods of teaching.

Keywords: Education technology, Classroom technology, Electronic classrooms, Learning instructions.

Introduction

Globalization and technological change—processes that have accelerated in tandem over the past fifteen years—have created a new global economy “powered by technology, fueled by information and driven by knowledge.” [1] The emergence of this new global economy has serious implications for the nature and purpose of educational institutions. As the half-life of information continues to shrink and access to information continues to grow exponentially, schools cannot remain mere venues for the transmission of a prescribed set of information from teacher to student over a fixed period of time. Rather, schools must promote “learning to learn

Information and communication technologies (ICTs)—which include radio and television, as well as newer digital technologies such as computers and the Internet—have been touted as potentially powerful enabling tools for educational change and reform. When used appropriately, different ICTs are said to help expand access to education, strengthen the relevance of education to the increasingly digital workplace, and raise educational quality by, among others, helping make teaching and learning into an engaging, active process connected to real life.

However, the experience of introducing different ICTs in the classroom and other educational settings all over the world over the past several decades suggests that the full

realization of the potential educational benefits of ICTs is not automatic. The effective integration of ICTs into the educational system is a complex, multifaceted process that involves not just technology—indeed, given enough initial capital, getting the technology is the easiest part!—but also curriculum and pedagogy, institutional readiness, teacher competencies, and long-term financing, among others.

AIMS

- To provide an international forum for educators to discuss research and practice in:
 - teaching informatics
 - educational uses of communication and information technologies (ICT)
- To establish models for informatics curricula, training programs, and teaching methodologies.
- To consider the relationship of informatics in other curriculum areas.
- To promote the ongoing education of ICT professionals and those in the workforce whose employment involves the use of information and communication technologies.
- To examine the impact of information and communication technologies on the whole educational environment:
 - teaching and learning
 - administration and management of the educational enterprise
 - local, national and regional policy-making and collaboration.

Scope

It-Professional and Vocational Education in Information Technology

Focus is on the area of professional and vocational education rather than on specific computing curricula in primary, secondary or tertiary educational institutions.

Distance Learning

To consider what is necessary to prepare the whole society for living in the information age, using a distance learning system

Lifelong Learning

All aspects of the interactive role of informatics and resulting technologies in lifelong learning.

Research on Education Applications of Information Technologies

To provide a forum to identify issues and priorities for research and to map research policies arising from the differing cultures in IFIP Member countries.

Information and Communication Technologies in Elementary Education

The role of Information and Communication Technologies (ICT) in elementary education (age range from pre-school to 13 years).

Informatics and ICT in Secondary Education

The role of both informatics and resulting Information and Communication Technologies (ICT) in secondary education (age range from 11 to 18 years).

Informatics and ICT at the Level Of Higher Education

The role of both informatics and resulting Information and Communication Technologies (ICT) in higher education.

Information Technology in Educational Management

Focus is on use of Information technology within the educational management of educational institutions, educational authorities and educational system networks, to enhance educational effectiveness and development.

Role of Information & Communication Technology in Education

Information and communication technology has quickly become a key part of the infrastructure of classrooms and schools. From preschool to higher education, computers, laptops, smartphones, smart boards and tablets are powerful mediums through which to get information and communicate. In the 21st century, technology plays a role in every facet of education as students, teachers and administrators turn to their computers to access information, create and express themselves, communicate and collaborate, and track the achievement of learning outcomes.

Information Access

Technology plays a central role to both students and teachers searching for information. Online reference material, such as Encyclopedia Britannica Online, offer vast amounts of content supplemented by engaging multimedia and interactive links. EBook collections offer thousands of texts, and the sheer amount of online articles and journals devoted to every imaginable topic make research efficient and highly rewarding. Teachers looking to engage their students have access to thousands of images, diagrams, videos, maps, animation, games and a host of other options to appeal to the varied learning styles of their individual students. Today's broad access to educational resources encourages students to inquire more and follow pathways of information according to their own interests. Information technology thus plays a key role in the development of the autonomous learner.

Creativity and Self-Expression

Information and communication technology also plays a role in how students express themselves and reflect on their learning. Aided by the digital recording functions integrated into smartphones, tablets and other electronic devices, students are able to index the world the way they see it and add their own perspective to already existing bodies of knowledge to create original work. With audio, photo and video editing software and the various ways to post self-created media on the Web, students not only access information but contribute to its creation. The ability for students to be active members of the learning

community, whether on the small scale of a school's social media site or on the larger canvas of the entire World Wide Web, gives their work broader significance and affirmation.

Communication and Collaboration

Information and communication technology provides students and teachers more opportunities to communicate and collaborate. With Learning Management Systems such as Blackboard and Moodle, many courses have an online space to participate in discussion threads and forums, chats, and video conferences. Collaborative functions in office applications allow students and teachers to view revisions and add comments in real time, making the process of relaying feedback more efficient. Technology further transcends traditional brick-and-mortar settings by providing working adults and parents taking care of children, geographically-isolated students, and the underprivileged the opportunity to connect and interact with learning communities through online schools and educational networks

Student Achievement and Learning Outcomes

Information and communication technology also plays a role in how administrators assess the achievement of student learning outcomes. Various assessment tools such as standardized tests, student portfolios, rubrics, and surveys yield data that can be collaboratively analyzed by an educational institution to find areas in which to improve. As the data is entered into databases and statistics, charts and graphs are generated, and administrators identify patterns and make decisions involving changes in the curriculum and budget allocations. Technology has a prominent role in assessment and evaluation and helps direct curricula to the greater achievement of students.

Need

- Education is a life long process therefore anytime anywhere access to it is the need
- Information explosion is an ever increasing phenomena therefore there is need to get access to this information
- Education should meet the needs of variety of learners and therefore IT is important in meeting this need
- It is a requirement of the society that the individuals should posses technological literacy
- We need to increase access and bring down the cost of education to meet the challenges of illiteracy and poverty-IT is the answer

Importance

- access to variety of learning resources
- immediacy to information
- anytime learning
- anywhere learning

- collaborative learning
- multimedia approach to education
- authentic and up to date information
- access to online libraries
- teaching of different subjects made interesting
- educational data storage
- distance education
- access to the source of information
- multiple communication channels-e-mail,chat,forum,blogs,etc.
- access to open courseware
- better accesses to children with disabilities
- reduces time on many routine tasks

Advantages

- students can use ICT to organise their work and make it more clear
- ICT can support different teaching methods, this varies the way students can learn
- some computer programmes such as teaching programmes provide immediate feedback on work completed by students
- some applications can save time and effort such as programs that teach french vocab, these are quicker and more effective than using paper
- encourages collaborative work, so students can work together

Disadvantages

- ICT equipment is expensive and needs trained staff to maintain it correctly
- hardware can be unreliable leading to breakdowns which cause frustration
- using ICT means children can become dependent on computers and technology and not learn how to do things by hand
- internet can lead to children accessing unsuitable sites
- plagiarism has increased as students find pre written work online leading to students gaining unfair results on coursework

Conclusion

Information and communication technology (ict) has become, within a short time, one of the basic building blocks of modern society. Many countries now regard understanding ICT and mastering the basic skills and concepts of Ict as part of the core of education, alongside reading, writing and numeracy.

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INNOVATIVE ICT PEDAGOGIES

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Abstract

The role of ICT in enhancing the quality and accessibility of secondary education in Nigeria cannot be glossed over. New and emerging technologies challenge the traditional process of teaching and learning, and the way education is managed. Easy worldwide communication provides instant access to a vast array of data, challenging assimilation and assessment skills. In developing countries like Nigeria, effective use of ICT for the purpose of education has the potential to bridge the 'digital divide'. This paper therefore gives a conceptual insight into the whole web of ICT and secondary education. Obstacles to ICT are identified and then specific effort is devoted to the ways ICT contribute to the enhancement of quality and access in secondary education.

Information and Communications Technology is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning. ICTs are often spoken of in a particular context, such as ICTs in education, health care or library.

Key words: ICT, Teaching, Learning, Technology

Introduction

Information and communications technology (ICT) engineers are developing and creating a virtual world offering new services and new applications to help people both in their work and their daily lives. Nevertheless, ICT engineers are almost always constrained in their project development by the intrinsic hardware performances of calculators, storage systems, and communication systems. The monitoring and measurement of physical ICT system performances are crucial to assess the computer processing unit (CPU) load, the available memory, the used bandwidth, and so on to guarantee the ICT-based services correctly work regarding their expected use.

Objective of the Study

- To sort out the importance of ICT Education
- To list out the approaches of ICT Education

Importance of Ict Education

1. Increased access to educational resources

- ICT enabled the learners to access wide range of online educational resources through internet
- These resources include online textbooks, e-books, videos, and educational software that can be accessed from anywhere and at any time.
- Learners may not be able to access all these resources through traditional teaching methods

2. Enhancing teaching and learning processes

- ICT tools make teaching and learning more interactive, engaging and effective.
- These tools include interactive whiteboards, educational apps and learning management systems.
- This can improve the learning outcomes and teacher effectiveness

3. Personalization of learning

- ICT can be used to personalize learning
- It can provide personalized learning paths, feedback, and recommendations.
- This approach can provide the individual needs of learners.

4. Collaborative learning

- ICT enables learners to work together on group projects and activities, even if they are in different geographical locations.
- This can help to improve collaboration skills and expose learners to a variety of perspectives and ideas.

5. Improved communication

- ICT can improve communication between, teachers, students, and parents.
- It allows teachers to communicate with their students through email, online discussion forums, and instant messaging.
- Parents can keep track of their children's progress through online portals

6. Convenience

With the use of ICT, learners can study at their own pace and at their own time, allowing them to balance their learning with other activities or work

Five Pedagogical Approaches

1. The Constructivist Approach

The constructivist approach is based on the concept of constructivism. This is the belief that learners create their own understanding of the world around them, and this understanding is based on experience through their everyday lives as they grow. Using specific experiences, people transform information they've accumulated into knowledge

and understanding. This approach is handy for allowing learners to take a more active role in the learning process, as it encourages them to use their previous knowledge as a foundation for understanding new concepts, as opposed to passively receiving information.

2. The Collaborative Approach

The collaborative approach puts a big emphasis on collaborative learning, which is the idea that learners work together to gain a greater understanding of the information they've been presented with. The strength of this approach is that learners can capitalise on each other's understanding of the information, and even their unique skills and resources.

This process allows for learners to create an environment where people can interact with each other by sharing experiences and knowledge. This can be done in a variety of ways, including exchanging ideas and information, and even evaluating or monitoring somebody else's work.

3. The Reflective Approach

The reflective approach focuses primarily on analysing what the teacher and learners are doing in the classroom. It encourages thinking about teaching practices and figuring out ways to improve them in an attempt to make learning processes more effective for a class of learners. This can be done through processes such as self-evaluation and self-reflection, used as ways to essentially learn more about your own practice, improve a certain practice (like small groups and cooperative learning) or to focus on a problem learners are having.

Some specific forms of assessment that anyone can use in a reflective capacity are diary presentations and journals.

4. The Integrative Approach

The integrative approach differs from the other teaching approaches in the sense that it tries to provide learners with an environment where they can make connections between the current topic they're learning about and other topics they'll come across at different stages of the curriculum. This means that it tends to focus on specific connections between different bits of information, rather than facts in isolation.

While this approach is more commonly used in higher education, it can still be quite useful at other stages of education too, as it can help learners gain a broader understanding of the world around them by linking together bits of related information. Studies have shown that this kind of approach can help learners stay engaged on the topics they're learning about.

5. The Inquiry-Based Approach

The inquiry-based approach is unique in the sense that it encourages learners to engage in exploration, investigation, research and study. It begins with presenting questions,

scenarios or problems that require critical thinking to solve, which is vastly different from other approaches where facts are presented in simple manner.

This approach requires more than just simply giving the correct answers to questions and encourages more thoughtful and engaged participation from learners. This makes it incredibly effective when teaching science, as many science topics are more easily learned through an understanding of processes rather than isolated facts.

Conclusion

The way students learn is being redefined by the intervention of information and communication technology. It is making learning easier and more effective for both students and teachers.

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ICT USAGE IN HIGHER EDUCATION: A CASE STUDY ON PRESERVICE TEACHERS AND INSTRUCTORS

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Abstract

The utilization of technology to access information and communicate is known as Information and Communication Technology (ICT). This research concentrates on the impact of ICT on higher education, particularly the integration of online education. The authors conducted an analysis of relevant literature and discovered that incorporating ICT into the classroom has prompted educators and institutions to reevaluate their teaching methods. However, the lack of legislative provisions, infrastructure, and teacher/student competencies pose significant challenges to delivering excellent education for learners. Despite these obstacles, the surging popularity of ICT is driving a revolution in both the organizational framework and instructional methods of classrooms. It is imperative to enhance and expand the current digital platform and continue ICT-based educational efforts to guarantee that all students have access to high-quality education both now and in the future.

Keywords: Technology, Internet, Distance Learning, and Advanced Study

Introduction

The impact of technology on our lives has been nothing short of revolutionary, and this has led to an increased demand for educational institutions to adapt their programs and classrooms accordingly. To bridge the gap between current and future teaching and learning technology, institutions must effectively integrate technology into their existing contexts to promote meaningful learning, enhance productivity, and provide learners with knowledge in specific subject areas. Unfortunately, recent research has shown that many institutions are falling short in this regard. Despite possessing the necessary skills, innovation, and problem-solving abilities, teachers are failing to consistently integrate technology into their teaching and learning practices. There is a clear need for further research on how ICT can improve education, and this is especially true given the ongoing problems that teachers encounter in adopting it. While Turkey has made some innovative attempts to increase ICT use among teachers, such as building ICT classrooms and providing laptops for projects, the extent and nature of ICT usage in Turkish educational institutions remain limited and varied. In the end, the key to effective usage lies in the instructor, regardless of the quantity of technology present in the classroom.

It is imperative that teachers possess the necessary skills and competencies to effectively integrate technology into their teaching. Simply using technology on its own does not indicate successful integration. Therefore, it is crucial for teacher educators to focus on integrating instructional technology education into the context of teachers' work in the classroom. Wang, Ertmer, and Newby (2004) found that as teachers become more confident in their ability to use technology, meaningful technology use will become more common in K-12 classrooms. To effectively use technology in the classroom, teachers must

develop broader skills for using tools, focus on the power of technology, and shift traditional patterns of classroom interaction through the use of technology, as identified by Deaney, Ruthven, and Hennessy (2003).

Institutions of higher education must prioritize technology use to prepare teachers for 21st-century classrooms. Understanding how instructors and pre-service teachers in education programs view technology is crucial in successfully integrating technology into their programs. By examining the factors that contribute to successful technology integration, we can educate technology-competent teachers. The purpose of this study is to provide recommendations for effective technology utilization and ensure that teachers possess the necessary skills and competencies for the successful integration of technology into their teaching.

The Significance of ICT

Theories abound on why some countries are more developed than others. Despite lacking natural resources, colonial history, or a favorable geopolitical environment, some developed nations still thrive, thanks to their advancements in technology and science. Measuring technological advancement is best done through the proliferation of information and communication technology (ICT). ICT is a primary indicator of technical and economic growth and advancement, with its impact on society and businesses worth investigating academically because it brings both opportunities and challenges. Globalization of the economy, culture, and other aspects of modernization is impossible without ICT. It has shifted economies from being manufacturing-dependent to being centred on information and research. In India, ICT mainly refers to digital technologies like computers and the Internet, but the reasons and methods of usage are not well-discussed. Schools and universities invest heavily in technology, but without proper education and training for educators, it is ineffective. Therefore, it is critical to persuade educators of the value of ICT for it to be effective in promoting growth and development.

ICT'S Role in Higher Education

The integration of information and communication technologies (ICT) in higher education has profound implications for the entire educational process. ICT-based applications provide organizations with a competitive edge by expanding services, driving efficiency, and enhancing learning experiences while managing access, equity, effectiveness, quality, and research and development.

To address the shortage of professors in higher education, the Educational Satellite will utilize ICT to share expertise through modular programs, build a knowledge library of diverse disciplines, network institutions, construct virtual labs, build databases, access lectures by industry experts, and incorporate technology advancements. Traditional teaching methods like chalk and talk may be replaced with modern approaches like animated presentations, simulations, and video clips, paving the way for future advancements.

In educational administration, the use of ICT is crucial for effective resource utilization and streamlined administrative tasks through electronic record keeping. In research, ICT enables global connections, fosters online communities, and improves the quality of work while saving time, money, and effort.

As India's higher education system faces increased complexity, new approaches to managing institutions must be explored. Instruction supports knowledge creation, and learning is an active process of producing knowledge. E-administration focuses on efficient resource use, and technology-enabled learning shifts the emphasis from instructors to students, with instructors taking on new roles as coaches, mentors, and facilitators.

Universities play a significant role in national income and social progress by teaching, researching, and fostering innovation. Collaboration between academia, business, and government fuels economic expansion. It is imperative that we adopt these technologies to stay ahead of the curve and ensure our continued success in higher education.

Method

In order for educational institutions to effectively integrate technology into their teaching activities, it is important for teachers to be competent in technology and know how to use it effectively. A study was conducted to gain an understanding of how instructors and pre-service teachers in a faculty of education perceive the role of technology in higher education. The study aimed to answer the following research questions:

1. What technology is currently being used by both instructors and pre-service teachers?
2. What technologies and activities do pre-service teachers require?
3. What do pre-service teachers think about the computer and technology facilities provided to them?
4. How do instructors perceive the use of technology in teaching activities?
5. What obstacles do instructors face during the technology integration process?

This study includes all the willing members of the Faculty of Education who were accessible. The number of accessible participants and their percentages are listed in Table-1.

Table - 1 Accessed participants of the Faculty of Education

	Total Number of Participants	Accessed Number of Participants	%
Administrators	8	8	100
Instructors	28	27	96
Students	558	304	55

For the purpose of gathering data, two questionnaires were developed - one for academic staff and another for preservice teachers. The questionnaire for academic staff consisted of 71 items, including 26 questions related to ICT usage, 8 questions about factors encouraging technology usage, 21 questions regarding obstacles, and 18 questions about self-perceived competencies. The questionnaire for preservice teachers had 46 items, with 22 questions about preferred technologies and frequency of ICT usage, and 19 questions using a 5-point Likert scale to seek their views on ICT. Descriptive statistical techniques, such as frequency (f), percent (%), and mean (X), were used to analyze the data.

Difficulties of ICT

The adoption of ICT in higher education faces numerous obstacles, despite the government's good intentions. One of the most significant challenges is the lack of resources available to schools to fully utilize ICT. Fast internet access is also essential for integrating ICT into classrooms, but the quality of connectivity is often insufficient. The scarcity of funding and technology-supported infrastructure hinders effective use of ICT.

Effective technology integration into educational institutions requires substantial investment in ICT-related equipment, software, internet, audiovisual aids, instructional aids, and other peripherals. Unfortunately, not all parties involved can afford to cover these expenses, leading to inadequate resources as another obstacle.

The biggest challenge to utilizing ICT in classrooms in poor countries is the lack of political will among those in positions of power. Government officials must support the technology for it to thrive, but priorities shift after a change in central government, indicating a shift in the government's vision and goal.

Teachers' attitudes are crucial in determining the utilization of instructional technology. The integration of ICT-based learning depends on their attitudes. Teachers require a "conceptual change about their ideas about the nature of learning, the function of the student, and their position as teacher" to use and integrate computers successfully.

Instructors' knowledge and abilities are essential for educational progress. Both industrialized and developing nations struggle to employ ICT in education due to teachers' lack of knowledge and abilities. Technology integration necessitates topic knowledge, student learning, and technical skills.

Limited available class time is a major barrier to integrating ICT into classroom instruction. Teachers require adequate training and planning time, as well as time to collaborate with colleagues before they can effectively use these new technologies. Additionally, teachers need time to learn how to use technology effectively in the classroom. Educators' comfort levels and willingness to use technological strategies in the classroom vary.

Findings

Demographics

The demographic at a about accessed academic staff and preservice students is below.

According to departments, the percentages of preservice teachers were as follows:

At the Faculty of Education, the distribution of students across different departments is as follows: Computer and Instructional Technology Department has 18.1%, Elementary School Mathematics Teaching Department has 15.5%, Turkish Language Teaching Department has 8.6%, Foreign Language Department has 24%, Elementary Education Department has 17.8%, and Preschool Education Department has 13.5%.

For grade distribution under the Elementary Education Department, 39.5% of students are in 1st grade, 35.5% are in 2nd grade, 16.4% are in 3rd grade, and 7.6% are in 4th grade.

It is noteworthy that 80.3% of the students are female, while 15.5% are male. Also, 81.6% of students own personal computers, and 54.9% have internet connections.

Regarding computer usage, 35.5% of the surveyed subjects reported using the computer for less than an hour daily, 15.5% used it for 1-3 hours, and only 4.6% used it for more than 5 hours per day.

In terms of computer experience, 17.4% of participants reported using a computer for less than a year, 25% used it for 1-3 years, 18.8% used it for 3-5 years, and 33.6% used it for over 5 years.

Perceptions of Preservice Teachers

Effective incorporation of technology into the classroom requires one computer for every six students. However, the current reality is that there is only one computer available for every twelve students. Despite the availability of educational software, traditional tools such as boards, printed materials, and overhead projectors are still commonly used in the classroom.

According to a survey of preservice teachers, only 25% believed that instructional media were being efficiently used in their educational courses. The majority of academic staff relied on traditional tools such as boards (99%), overhead projectors (93%), and printed materials (93%) during instruction. Preservice teachers expressed a strong desire for increased use of computers (85%), TV and video (70%), and overhead projectors (60%) during instruction.

Despite 87% of preservice teachers expressing interest in using electronic media to communicate with classmates and academic staff, only 48% had access to such technology. When it comes to their preferred technologies to use in the classroom, 27.3% chose "Computer Assisted Education," 16.1% preferred Internet/Web, 14.8% selected "Computer and Projector System," and 13.5% favored "Multimedia Computer."

As for software preferences, presentation software was the most favored (25.3%), followed by Internet Browsers (13.2%), educational software (12.5%), and animations software (8.6%). Refer to Table-2 for further thoughts and opinions from preservice teachers.

Table -2 The Percentages of Responses of Preservice Teachers for Technology Usage

Technology Usage Levels	Always %	Rarely %	Never %
The faculty effectively utilizes technology in their courses.	11,5	70,4	17,1
Students should be equipped with the necessary skills to use any technology before they graduate.	11,2	61,5	26,0
The courses offered by the faculty equip us with fundamental skills and knowledge to effectively use computer applications.	36,5	48,7	13,5
Our academic staff provides guidance on utilizing supplementary materials for our courses.	34,2	48,0	16,4

Of the preservice teachers surveyed, a mere 44% reported receiving basic knowledge and skills for effective use of computer applications. This is inadequate! A quarter of students also indicated that instructional technologies had been effectively used in their faculty of Education courses. This is unacceptable! It's time for computer-related courses to better meet the needs of students' computer usage. It's also crucial that students feel they have adequate skills for using instructional technologies in their future profession.

It's encouraging to note that the vast majority of students, 92%, expressed a desire to take courses taught by academic staff who extensively use instructional technologies. However, it's concerning that only 30% of students felt they had adequate skills for using instructional technologies in their future profession.

When it comes to computer and educational software, it's alarming to see that 86% of students had never used a database, and 68% had never used educational software. This needs to change! While word-processing (72%) and internet browsers (62%) are popular, it's crucial that students gain experience with other software like electronic presentations (68%), animation software (66%), web page development software (54%), and educational software (51%).

Outside of courses, students preferred to use supportive materials like web pages, computer-assisted applications, the internet, and online tutors. However, it's imperative that students are given opportunities to use a variety of software to develop their skills and be better equipped for their future profession.

Perceptions of Instructors

Classrooms equipped with a range of ICT tools, including computers, projectors, TVs, videos, overhead projectors, and the internet are essential for effective teaching, according to the academic staff. Standardizing technology across all classrooms, including special classrooms with high-tech facilities, is necessary to meet their expectations.

Dedicated laboratories in language, mathematics education, multimedia, research, and motor skills instruction are also required, with academic staff members recommending an increase in the number of tools per student to enhance effectiveness. They frequently use overhead projectors, printed materials, the internet, and computers to prepare and conduct courses.

Academic staff primarily use computers for communication, preparing examinations and course materials, researching on the internet, and making presentations. They are willing to participate in any course, seminar, or workshop about technology usage, although a busy schedule and a lack of staff often present obstacles. Professional support and information on technology usage for research activities are necessary.

87% of academic staff recognize computers as a supportive tool for instruction and other activities, with 49% believing that they can be easily integrated into the curriculum as an instructional medium. The factors that encourage technology usage among instructors were rated by them, with the "Existence of plans and strategies of the faculty in order to diffuse instructional technologies" as the most important.

The academic staff faces challenges in using technology due to a lack of time and resources. Continuous development schemes are needed to enhance their technology usage. They also suggested that they need to be informed about the integration of technology into the curriculum and use it efficiently through in-service education activities such as seminars and workshops. Additionally, they recommend supplementing informative materials about technology usage and innovation.

Academic staff members are willing to use technology effectively in their courses and expect more support in terms of infrastructure and in-service training. However, with more work and effort, effective integration of technology can be achieved.

Discussion and Conclusion

The study uncovered a positive attitude towards integrating technology among preservice teachers and instructors in both in-class and out-of-class activities. This willingness to incorporate technology is an essential initial step towards achieving effective implementation. In fact, almost all academic staff expressed a strong desire to participate in technology-related courses, seminars, and workshops, highlighting the critical need for professional development. However, a common issue that arose was the lack of electronic classrooms. With technology rapidly evolving and becoming increasingly integral to society and science, both preservice teachers and instructors strive to incorporate it into all aspects of their lives, including their teaching careers.

Preservice teachers consider "Computer Aided Instruction" and electronic presentation as their preferred technology and software, respectively. The expectations of preservice teachers are vital, as technology has been shown to enhance student learning, but this relationship is influenced by student characteristics. Despite their readiness to use technology, preservice teachers felt that it was rarely employed in classrooms, and their expectations were not met. They also expressed a need for lessons to teach them the necessary skills to become technology-competent teachers. Instructors also acknowledged the inadequacy of computer literacy courses provided to students in the faculty, both in terms of quantity and quality.

The Higher Education Council oversees higher education in Turkey. They recently updated the curriculum for all departments in the faculties of education to meet the needs of students and instructors. This updated curriculum, set to be implemented in the 2005-

2006 term, aims to train teachers in technology skills and improve overall teaching effectiveness. However, further research is necessary to determine the specific effects of these changes.

Creating learning environments that support technology use is essential. Every classroom should have an overhead projector and computer projector system to facilitate effective technology use. Professors should model technology competencies and receive in-service training to improve their skills.

To integrate technology into teaching and learning effectively, we must increase the quantity and quality of lessons addressing technology, provide teachers with qualified in-service training, and equip learning environments with the necessary technological tools. Unfortunately, limited infrastructure support and challenges in infusing internet use into the curriculum prevent realizing the potential benefits of using the internet as a learning tool. Successful technology integration requires teacher leadership, alignment with the curriculum, and recognition of the role of technology in education. Infrastructure and teacher competencies are critical for the successful implementation of technology in the classroom.

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ICT FOR PROFESSIONAL DEVELOPMENT

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Abstract

Information and communication technology (ICT) has brought revolutionary changes to enhance professional development of teachers. At present several ICT related instructional devices like computers, smart phones, laptops, tablets, LCD, multimedia and projectors are used in classrooms for making more attractive and productive teaching and learning process. With the advancement of Information Communication Technologies (ICTs) and their uses in teaching learning process and in teacher training, the nature, scope and opportunities for professional development of teachers have changed.

Keywords: Professional development, personal development, communication, information.

Introduction

ICT Stands for Information and communication technology/technologies. There is no universal definition, ICT refers to all devices networking components, applications and systems that facilitate interaction with the digital world. Sometimes ICT is used interchangeably with IT or Information technology. But ICT is more comprehensive including more components related to computers and digital technologies components include data, internet access, cloud computing, software, hardware, transactions and communications technology. But more importantly ICT encompasses combinations and applications of those components. ICT has drastically changed how people work, communicate, learn and live and continues to revolutionize all parts of the human experience from computers to robots, and ICT contributes greatly to our economic development. Some have labeled it the 4th industrial revolution. Within the ICT market advancement of ICT capabilities has made the development and delivery of various technologies cheaper for vendors and the customer also providing new market opportunities for businesses. Advances within ICT have brought a slew of cost saving opportunities and conveniences, ranging from highly automated cost cutting business process, to the big data revolution that leads new insights products and services, to ICT driven transactions like online shopping, telemedicine and social media. However, ICT is

not without its downsides. The digitization of data led to new levels of crime, automation tools and robots that can displace workers, and many believe ICT has stifled human interaction.

What is professional development?

Process of improving and increasing capabilities of staff through access to education and training opportunities in the workplace, through outside organization, or through watching others to perform the job. Professional development helps to build and maintain morale of staff members, and is thought to attract higher quality staff to an organization. Also called staff development. Professional development is learning to earn or maintain professional credentials such as academic degrees.

Professional Development Cycle:



Personal Development through Ict

Enriching knowledge:

Through ICT our knowledge is enhanced modified developed improved which leads to the boosting of our memory as well as thinking capacity. Teacher knowledge is enhanced by more availability of content which leads him/her acquiring more information which is enriched in quality and leads to healthy and beneficial learning-process.

Acquiring new skills:

Skills can be gained through practice, in active state of mind where one is enable to differentiate, generate, develop. Students acquire skills by observing how one can work on excel, how one can communicate with each other how to search on internet whenever facing difficulty regarding studies, how to share their problems with their colleagues, peers, teachers and families.

During lessons at primary level we note that the use of Internet has facilitated the development of effective learning skills, self- assessment, adaptation to new technologies, and development of volitional capacity, cognitive and even emotional capacity.

Other skills like negotiation, crisis management and resolution, assessment and measurement of both personal results and group results, decision making, assuming roles and responsibilities, planning and organizing working time, tasks, personal work and team work, in groups or pairs

Boosts our productivity:

When the things are done in less span of time which influences the teacher students, whosoever is in touch with ICT not only with the passage of time it also increases the outcomes, this leads to more productive work by the user this leads to increase our working capacity that is the part of our personality.

Master communication:

We all know that communication is a process by which one shares their ideas, thoughts, emotions etc, with each other. At the earlier stage we were not able to communicate with the people who were living far but now in 21 century it is easy to communicate with the person of different country. In a short period of time without difficulty this is because of ICT.

Growth:

Growth is one of the vital process in personality development. We all are aware that growth takes place when there is modification in personality and that modification can occur when we will learn something new that modify us in all aspects.

Socialization:

Man is a social animal, he/she needs to socialize in order to fulfill their needs through interaction. As per today's condition we are all connected to social networking sites where we communicate via commenting, liking, sharing their post this leads to let people in touch with each other. In the same the teacher and student are also connected this led in development of strong bonding.

A focus study:

That develops teacher's abilities to use specific ICT tools, such as online platforms.

A delivery system:

Providing teachers with information to improve pedagogy and content mastery.

A catalyst for news forms of teaching and learning:

Such as inquiry-based learning, collaborative learning, and other forms of learner centred pedagogy.

Professional Development

Facilitating learning:

The students are encouraged to take more control of their learning process, the trainers role became that of a facilitator and organizer providing resources and support to learners.

Inclusive classrooms:

It is instrumental in creating and maintaining a learning environment in which all participants are fully engaged and respected, and in which all participants are open to ideas, perspectives, and ways of thinking that are distinct from their own.

School management:

ICT highlights the application of innovative and effective management and leadership strategies to equip the educational administrators with the knowledge skills and attitudes to transform educational institutions into efficient and effective learning organizations.

Blog:

Following a blog written by others in the profession is a good way for one's professional development. Since, blog also provides opportunity to interact asynchronously, there is a possibility of social learning, since interaction is asynchronous, responses would be more reflective rather than spontaneous.

WIKI:

WIKI is another technology where teacher could contribute and hence engage in professional development, this helps the groups to collaborate on the creation of web based information.

Podcast:

Podcast are another technologies that are useful for teachers since the archives of resources are always available for use, podcasts became very handy when they are in need. Since, the audio format can be played on mobile phones, they are available for teachers for convenient professional development.

Web-conference:

It allows us to connect and communicate in real time with people in different locations through internet web conferencing.

Teacher portfolio:

We can assemble records, documents and details of our teaching and their result in a very creative and systematic way. These documented details give us an opportunity to look at them at a different point of time. Thus teaching can be seen as an ongoing process of inquiry, experimentation and reflection.

E-Portfolio:

Teacher portfolios maintained in digital form are called electronic portfolio, e-portfolio in short. E-portfolios have advantage over other forms of documentation like Accessibility, Multimedia, Non linear presentation.

E-Publications:

Professional writing is one of the professional development activities which has been explored to the least extent. Writing, even of a paragraph, requires organizing ideas and presenting them in a coherent way. Hence the writer need to understand the idea even before writing, writing leads to higher level of understanding.

Tele conferencing:

Teleconference refers to an arrangement of reaching out to multiple centers from a central place thorough satellite connectivity. The centers could have audio and video outputs or only audio output. The experts located at the central position interact with participants located at various centers through video or dedicated telephone connection.

Conclusion

ICT has a great impact in our daily lives. For example, we can read our local newspaper using the online newspaper. Another example is we still can get connected with our family, relatives, or colleagues even if we are abroad by using the electronic mail, yahoo messenger, call conference, or video conference.

By the use of Internet in education students become involved in learning tasks to search, select, identify useful information on certain topics and use this information in various contexts for solving new problems, comparatively analyzing individual performances against those of colleagues or other authors of electronic publications and publish their own websites.

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ARTIFICIAL INTELLIGENCE ON EDUCATION

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Abstract

Digital revolution has paved the path for E-payment This revolution has emerged with e-banking, e-registration, e-shopping, e-payment, e-learning, e-library, etc. E-payment system is a payment system in which monetary value is digitally transmitted between two entities. An entity can be a bank, business, government or a consumer. In general context enabling net based technological innovations and e communication networks can be termed as e-payment. In order to satisfy our needs with ease of time, comfort and convenience the users must be tech savvy. Today the situation has transformed from one factor authorization to two factor authorizations in order to ensure safety and security. Now-a-days world is becoming digitalize in every field and one of the best examples of this is various countries in the world are moving towards becoming a cashless society. A cashless society is the one which doesn't use cash for any of its transactions, instead all the transactions are done digitally. There are various countries in the world which have more than 50% of their transactions through cashless methods.

Keywords : *Digital Payment, Machine learning, Review, Computer version*

Digital Payment

Digital payments are transactions that take place via digital or internet modalities, with no physical exchange of money involved. This means that both parties, the payer and the payee, use electronic media to trade money. The Government of India has been implementing many efforts to promote and support digital payments in the country. As part of the 'Digital India' program, the government has the ambition to establish a 'digitally empowered' economy that is 'Faceless, Paperless, Cashless' usage of payments.

Role of Technology in Digital Payment System

The pace of digital innovation in payments is driving a reduction in expenses expected to double compound the annual growth rate. It is resulting in new business models and a more competitive environment as new companies emerge.

- **Contact less Payments** – This digital payment option is rising in popularity due to its friction-less experience. A secure payment mechanism using a debit, credit, or smart card enabled by Radio frequency Identification (RFID) or near-field communication (NFC).
- **Open Application Programming Interfaces (API)** – API s provide programmatic access to proprietary applications and online services. New suppliers can develop services by using open API s. These techniques lower barriers to entry for new financial technology firms, supporting innovation and seamless payment systems for the end-user.
- **QR Codes** – Quick Response bar codes or square-shaped codes with two dimensions convey data. As a quick way to communicate information and minimize payment acceptance expenses, it has gained popularity. An account code is scanned with a digital gadget to complete the payment.

Types of Digital Payment Methods in India

Banking Cards are one of the most extensively used digital payment methods, offering a variety of features and benefits such as payment security, convenience, and so on. Debit/credit or prepaid banking cards have the advantage of being used for various sources of digital payments. Customers can keep card information in digital payment apps or mobile wallets to make a cashless payment. Among others, Visa, Ru-pay, and MasterCard are some of the most reputable and well-known card payment systems. Banking cards can be used for online shopping, digital payment apps, pointlessness machines, and internet transactions, among other things. These banking cards contain the card number, card holder's name, smart chips, expiration date, card holder's signature and the security code, i.e., the CVV. Indians often utilize Banking cards, debit/credit cards, or prepaid cards, as an alternative to cash payments. Andhra Bank created the first credit card in India in 1981. Digital payment trends Consumers are digitizing the payments they make in-store and online bringing new tech innovations to the mainstream. Maturing mobile P2P will enhance the opportunity and need for providers to monetize their product, since a bump in volume has put the industry in a better position than ever to begin capturing revenues from the services. And the growth trends of cross-border payments and Real time non-card payments are increasingly becoming a barometer for overall industry changes

Percentage Analysis

Number of respondent distribution shows the number of frequencies in various class which help some preliminary ideas with respect to the objectives under study. Therefore, as a first step, number of respondent distribution for various variables under their study is constructed to interpret the results comprehensively percentage value are computed to following formula. Number of respondent Percentage analysis = $X / 100$

Review of Literature

Lei -da Chen and Ravi Nath (2008):

This study examined the factors that influence consumer Payment adoption in the United States. The data was collected from 299 respondents and analyzed using Confirmatory 02 Factor Analysis and ANOVA. The results suggested that higher transaction speed, transaction convenience, compatibility perceptions would lead to high propensity to adopt digital payment while greater security and privacy concerns would lead to lower propensity to adopt digital payment. Among all the constructs, Compatibility has the highest correlation with intention to adopt.

Kevin Foster, Scott Schuh, and Hanbing Zhang (2010):

They examined the consumer payment methods with respect to cash holdings and withdrawals which was decreasing since 2010. There was an increase in card payment system with respect to 2009 in the year 2010, which resulted in less usage of paper currency. Since 2010 there was an increase in usage of debit and credit card compare to cash transaction which slowly took a decline giving rise to prepaid payments.

Rakesh H M & Ramya T J (2014):

In the research paper titled “A Study on Factors Influencing Consumer Adoption of Internet Banking in India” tried to examine the factors that influence internet banking adoption. It is found that internet banking is influenced by its perceived reliability, Perceived ease of use and Perceived usefulness. In the process of internet banking services expert should emphasize the benefits its adoption provides and awareness can also be improved to attract consumers’ attention to internet banking services.

Sanaz Zarrin Kafsh (2015):

The study made on “Developing Consumer Adoption Model on Mobile wallets in Canada”, in the study convenience sampling from where 530 respondents were selected and there after the Partial least square model was used to test the data. As per the analysis the result perceived usage, perceived ease of use and perceived security is related to each for forecasting the adoption of digital payment.

Bappaditya Mukhopadhyaya Y (2016):

Aimed to analyse the growth of various non cash methods. For getting the estimation of cashless transactions that are prevailing in India, the study used data from World Bank’s Global F index from the surveys that were conducted in year 2011. And it also used data from the household and enterprise surveys which were conducted in year 2009-2010. The study revealed that an extremely small correlation exists between cashless payments and education level as well as between cashless payments and income earned. It also revealed that a very high positive correlation exists between the people who collect the payments in their bank accounts and of those who are engaged in cashless payments. Prepaid cards and mobile payments showed maximum growth.

Dr. M Sumathy and Vipin KP (2017):

The research aimed to study the determinants of safety perception and the attitude, awareness level of people towards digital payments. The data was collected from 100 urban respondents in Kerala using Convenient sampling survey. And the tools which were used for analysis were Percentage analysis, one-way Anova, independent sample t-test, etc. Level of awareness, gender, education level and attitude towards digital payment were found. There found to be no significant difference between level of awareness towards digital payment systems between male and female. Also, no relationship existed between education of the respondents and their level of awareness towards digital payment systems.

Pandey and Rathore (2018):

This study discussed the impact of digital payment system. Due to modernization and globalization, it was very important for the people to accept the modern method of payment. The study is based on secondary data and various literateurs from past papers and government data. All data collected has been analyzed and used to find the impact and adoption of digital payments by the people.

Shivathanu B. (2019):

In this study adoption of digital payment system in the era of demonetization emphasized on how the digital payment system was used by the people or accepted by the people during demonetization. It was based on a conceptual framework where the sample size was 766. The data analyzed suggested that behavioral intentions and innovation resistance had an impact on the actual usage.

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ICT EQUIPMENT IN TEACHING - GAINING KNOWLEDGE OF THE MANNER

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Abstract

Information and communication technology (ICT) equipment makes contributions to exceptional instructions in view that they can grow students' motivation, join college students to many statistics resources, guide active in-magnificence, and out-class getting-to-know environments. and, permit instructors to allocate greater time for facilitation. Therefore, the principle reason for this look is to research ICT tools utilized in coaching-mastering procedures by instructors.

ICT allows self-paced mastering via diverse equipment together with assignments, computer systems, and so on as a result of this the teaching-mastering employer has grown to be greater effective and meaningful. ICT allows facilitates the transaction between manufacturers and users by way of preserving the students up to date and enhancing the instructor's capacity and capacity fostering live contact between the teacher and the student thru email, chalk consultation, e-learning, web-based getting to know to consist of internet, intranet, extranet, CD-ROM, television audio-videotape. These days, ICT is gaining considerable splendor in overseas language coaching and mastering as extra educators are embracing it.

Key phrases: ITC, learning, coaching, training improvement, online lessons, ITC tools

Advent:

ICT equipment is the set of presently advanced technology that allows more green conversation of information, which has modified the way of gaining access to understanding and, in turn, human family members. It's far an extensive period of time for the records era (IT) which in particular focuses on the position of unified communications and included telecommunications which incorporates phone lines & wireless alerts and computer systems. It additionally incorporates all of the software, audio, visual, middleware, and storage that enables customers to shop, transmit, get the right of entry to, and recognize data and manage it in keeping with their wishes. ICT also consists of the merger of telephonic conversation, audio, and visual networks with computer device networks by way of the use of a single cable or any hyperlink gadget. ICT is a broader term

that consists of all the communicational gadgets, cell phones, radio, tv, and computer together with satellite tv for pc systems. Diverse services and appliances inclusive of video conferencing and distance getting-to-know programs also are blanketed in ICT with analog technology.

Information verbal exchange generation gear is digital infrastructures along with; computer systems, laptops, desktops, information projectors, software programs, printers scanners, and Interactive coaching boxes. A set of technological tools used, for instance, to save, manipulate or speak records.

Meaning:

ICT is the technology that helps activities involving records. Such activities consist of accumulating, processing, storing, and providing facts. Increasingly those sports additionally involve collaboration and conversation. Therefore IT has turned out to be ICT: records, and conversation technology.

Definition:

ICT stands for facts and communications technology. ICT is the infrastructure and additives that assist to permit modern computing structures. ICT includes both the net in addition to mobile connections that are related by WI-FI networks. It also includes all of the antiquated technology such as landline telephones, tv, and radio. Those technologies are widely used all around the world. Other than that cutting-edge technologies such as synthetic intelligence (AI) and robotics are the advancement in ICT.

Additives OF ICT:

The important additives of the ICT system are as follows:

- Software
- Hardware
- Cloud Computing
- Transaction
- Records
- Net
- Conversation technology

ICT tools for coaching and learning :

- Google lecture room
- Spreadsheet
- Interactive whiteboard
- Trello
- Microsoft PowerPoint
- Getting to know the control system
- Google forms
- laptop
- digital camera

ICT Characteristics

- Efficiency (faster, less expensive, Fewer steps, fewer human beings)
- Effectiveness (maximum interactive, Fewer mistakes, customized, personalized)
- Innovation (New merchandise, New era)

Benefits of ICT in training:

- Progressed learning performance
- Lessen the weight on instructors
- Simplified data sharing
- Elevated student motivation:

Progressed Learning Performance

Using a terminal reduces the burden of writing on the board by transcribing right into a pocketbook. It's far less complicated to concentrate on elegance due to the fact writing on the board is not necessary. Even students who do now not like to be the center of interest can without difficulty express their evaluations and questions thru the system. Advanced excellent teaching because teachers can speedy get entry to information at their terminals.

Lessen the weight on instructors:

Print materials are utilized in magnificence, reducing the effort and time of writing on the board. Reuse substances and board content material to reduce preparation and workload.

Simplified data sharing:

Sharing lesson content amongst instructors makes it less complicated to stabilize the fine of teaching. Visualizing the development of training makes it simpler for instructors to collaborate with every other.

Elevated student motivation:

ICT allows proactive and cooperative coaching instead of passive teaching.

Use of pictures and video to help grow student interest and engagement. The fun and freshness of the usage of virtual systems make it less complicated to inspire students to study.

Improve IT literacy of college students:

Collect know-how and abilities in IT devices, consisting of running computers and tablet devices. Expected to be powerful in growing the potential to pick and utilize important records.

Positive aspects of ICT:

ICT techniques and ideas are developing every day, right here are some advantages of ICT

- Cost-effective: ICT has added to the world collectively thru the method of video conferencing and it has decreased the charges of journeying and lodging. It has enabled the worldwide economic system to develop and act independently.
- Bridging the cultural divide: getting the right of entry to the era has aided in bridging the cultural divide by way of allowing them to connect to each different via a means of verbal exchange. You can effortlessly exchange ideas and narratives constructively.
- Training: education has turned out to be interactive and modern thru the development of statistics and communication generation. It has enabled the students with computer systems and internet offerings. Teachers can use ICT to explain complex structures.
- Automation: It has supported corporations to be automated, engaging the clients to access exclusive websites 24 hours an afternoon.

Negative aspects of ICT:

ICT also has a few demerits

- Risk of Hacking: occasionally facts or private information receives hacked with the aid of hackers unethically which stays a fundamental problem in ICT.
- pricey: computer systems and net connectivity are costly for human beings to have enough money on occasion, consequently they could not avail of the facilities, in particular in the village or rural regions.
- Misleading records: The net maximum of the time gives deceptive or incorrect information to human beings.
- No longer available anywhere: There are locations wherein due to bad connectivity humans face problems getting related through the net and hence it restrains their daily sports.

ICT -a focus ON newbies:

- Motivating, attractive to the Learner
- Imparting private processes to gain knowledge of
- Unleashing creativity in mastering

ICT -a focus ON teachers:

- Saves time in lesson planning & administration
- Gives a greater comprehensive approach to evaluation
- Reduces bureaucratic burden on instructors

ICT Literacy levels

- Preliminary – stage 1
- Developing – stage 2
- Talented – stage 3

ICT Creates Opportunity

- ICT can make a massive contribution to coaching and learning throughout all subjects.
- ICT is a central skill that is essential for participation in today's society and economy.
- ICT can be a device for school improvement.
- The powerful and systematic use of ICT is fundamental to the wider instructional method to bring about additional upgrades in coaching.

Conclusion

ICT does not routinely add pleasant to teaching and gaining knowledge for all. ICT programs can accelerate and improve learning (basic abilities, trouble-fixing, records management, concept development). ICT gives a way of accumulating, connecting, and analyzing data about teaching and mastering. ICT has a sizeable effect on the excellent amount of teaching-mastering techniques. In concrete phrases, ICT can beautify coaching-getting to know via its dynamic, interactive, and attractive content material; and it can provide actual opportunities for individualized training. The modern school room surroundings have changed loads more than the preceding-traditional surroundings because of generation.

Statistics and communication technology (ICTs) can notably beautify poor human's human and social capabilities and feature a positive effect on their properly-being.

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ICT TOOLS IN TEACHING - LEARNING PROCESS

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Abstract

Information Communication Technology (ICT) tools contribute to high quality lessons since they have potential to increase students' motivation, connect students to many information sources, support active in-class and out-class learning environments, and let instructors to allocate more time for facilitation. Therefore, the main purpose of this study is to analyze ICT tools used in Teaching – Learning Process by teachers.

ICT enables self-paced learning through various tools such as assignment, computer etc as a result of this the teaching learning enterprise has become more productive and meaningful. ICT helps facilitate the transaction between producers and users by keeping the students updated and enhancing teachers capacity and ability fostering a live contact between the teacher and the student through e-mail, chalk session, e-learning, web-based learning including internet, intranet, extranet, CD-ROM, TV audio-videotape. Nowadays, ICT is gaining a vast attractiveness in foreign language teaching and learning as more educators are embracing it.

Keywords: ITC, learning, Teaching, Education development, Online classes, ITC Tools

Introduction

ICT tools are the set of currently developed technologies that allow more efficient communication of information, which have modified the way of accessing knowledge and, in turn, human relations. It is an extensional term for information technology (IT) which mainly focuses on the role of unified communications and integrated with telecommunications which includes telephone lines & wireless signals and computers. It also comprises all the software, audio, visual, middleware and storage that helps users to store, transmit, access and understand information and manipulate it according to their needs. ICT also includes the merger of telephonic communication, audio and visual networks with computer system networks by the use of a single cable or any link system. ICT is a broader term that includes all the communicational devices, cell phones, radio, television, and computer along with satellite systems. Various services and appliances such as video conferencing and distance learning programmes are also included in ICT with analogue technology.

Information Communication Technology tools are digital infrastructures such as; computers, laptops, desktops, data projector, software programs, printers scanners and Interactive teaching box. A set of technological tools used, for example, to store, manage or communicate information.

Meaning

ICT is technology that supports activities involving information. Such activities include gathering, processing, storing and presenting data. Increasingly these activities also involve collaboration and communication. Hence IT has become ICT: information and communication technology.

Definition

ICT stands for information and communications technology. ICT is the infrastructure and components that help to enable modern computing systems. ICT consists of both the internet as well as the mobile connected which are connected by wireless networks. It also includes all the antiquated technologies such as landline telephones, television and radio. These technologies are widely used all over the world. Apart from that cutting edge technologies such as artificial intelligence (AI) and robotics are the advancement in ICT.

Components of ICT:

The major components of the ICT system are as follows:

- Software
- Hardware
- Cloud Computing
- Transaction
- Data
- Internet
- Communication Technologies

ICT Tools for Teaching and Learning :

- Google Classroom
- Spreadsheet
- Interactive whiteboard
- Trello
- Microsoft PowerPoint
- Learning management system
- Google Forms
- Laptop
- Digital camera

ICT Characteristics

- Efficiency(Faster,Cheaper,Fewersteps,Less people)
- Effectiveness(Most interactive, Fewer errors, Customized, Personalised)
- Innovation(New products, New Technology)

Benefits of ICT in Education:

- Improved learning efficiency.
- Reduce the burden on teachers.
- Simplified information sharing.
- Increased student motivation.
- Improve IT literacy of students.

Improved Learning Efficiency

Using a terminal reduces the burden of writing on the board by transcribing into a notebook.It is easier to concentrate in class because writing on the board is no longer necessary.Even students who do not like to be the center of attention can easily express their opinions and questions through the system.Improved quality of teaching because teachers can quickly access information at their terminals.

Reduce the Burden on Teachers

Prints materials used in class, reducing the time and effort of writing on the board.Reuse materials and board content to reduce preparation and workload.

Simplified Information Sharing

Sharing lesson content among teachers makes it easier to stabilize the quality of teaching.Visualizing the progress of classes makes it easier for teachers to collaborate with each other.

Increased Student Motivation

Facilitates proactive and cooperative teaching rather than passive teaching. Use of images and video to help increase student interest and engagement.The fun and freshness of using digital equipment makes it easier to motivate students to learn.

Improve IT Literacy of Students

Acquire knowledge and skills in IT equipment, such as operating computers and tablet devices.Expected to be effective in developing the ability to select and utilize necessary information.

Advantages of ICT

ICT methods and concepts are growing day by day, here are some advantages of ICT

- **Cost-Effective:** ICT has brought the world together through the means of video conferencing and it has reduced the expenses of travelling and accommodation. It has enabled the global economy to grow and act independently.

- **Bridging the cultural divide:** Access to technology has aided in bridging the cultural divide by allowing them to connect with each other through the means of communication. One can easily exchange ideas and narratives constructively.
- **Education:** Education has become interactive and innovative through the advancement of information and communication technology. It has enabled the students with computers and internet services. Teachers can use ICT to explain complex structures.
- **Automation:** It has supported businesses to be automated, engaging the clients to access different websites 24 hours a day.

Disadvantages of ICT

ICT also have a few demerits

- **Risk of Hacking:** Sometimes data or personal data gets hacked by hackers unethically which remains the major problem in ICT.
- **Expensive:** Computers and internet connectivity are expensive for people to afford sometimes, hence they could not avail the facilities, especially in the village or rural areas.
- **Misleading information:** The Internet most of the time provides misleading or wrong information to people.
- **Not accessible everywhere:** There are places where due to poor connectivity people face problems getting connected through the internet and hence it restrains their daily activities.

ICT -a Focus on Learners

- Motivating , Engaging the Learner
- Offering personal approaches to learning
- Unleashing creativity in learning

ICT -A focus on Teachers

- Saves time in lesson planning & administration
- Offers a more comprehensive approach to assessment
- Reduces bureaucratic burden on teachers

ICT Literacy Levels

- Initial – level 1
- Developing – level 2
- Proficient – level 3

ICT Creates Opportunity

- ICT can make significant contribution to teaching and learning across all subjects .
- ICT is a core skill which is essential for participations in today's society and economy.

- ICT can be a tool for school improvement .
- The effective and systematic use of ICT is integral to the wider educational strategy to bring about further improvements in teaching.

Conclusion

ICT doesn't automatically add quality to teaching and learning. ICT application can accelerate and improve learning (basic skills, problem solving, information management, concept development). ICT provides means of gathering, connecting and analysing data about teaching and learning. ICT has its noticeable impact on the quality and quantity of teaching-learning process. In concrete terms, ICT can enhance teaching and learning through its dynamic, interactive, and engaging content; and it can provide real opportunities for individualized instruction . The modern classroom environment has changes a lot than the previous-traditional environment due to technology.

Information and communication technologies (ICTs) can significantly enhance poor people's human and social capabilities and have a positive impact on their well-being.

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ICT TOOLS IN TEACHING AND LEARNING PROCESS

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Abstract

Information and communications Technology (ICT) can impact student learning when teachers are digitally literate and understand how to integrate it into curriculum. In this digital era, ICT use in classroom is important for giving students opportunities to learn and apply the required 21st century skills. Hence studying the issues and challenges related to ICT use in teaching and learning can assist teacher in overcome the obstacles and become successfully technology users. Main tools are computer, laptops, desktop, data projector, software program, printer scanner and interactive teaching box. ICT helps facilitate the transaction between producers and users by keeping the students updated and enhancing teacher capacity

Keyword: *ICT, Moodle, Blended learning platform, Smart teaching platform*

Introduction

Information and communications technology (ICT) is an important part of most organizations these days. Computers began to be used in schools in the early 1980s, and several scholars suggest that ICT will be an important part of education for the next generation (Bransford, Brown & Cocking, 2000; Grimus, 2000; Yelland, 2001). Up-to-date technology offers many methods of enhancing classroom teaching and learning. New technology has the potential to upkeep education across the curriculum and deliver opportunities for efficient student-teacher communication in ways not possible before. ICT in education has the potential to transform teaching. However, this potential may not easily be realized.

Information and Communications Technology (ICT)

Meaning

Information and communications technology can impact student learning when teachers are digitally literate and understand how to integrate it into curriculum. Schools use a diverse set of ICT tools to communicate, create, disseminate, store, and manage information.

ITC in Schools

Schools use a diverse set of ICT tools to communicate, create, disseminate, store, and manage information. ICT has also become integral to the teaching-learning interaction, through such approaches as replacing chalkboards with interactive digital whiteboards, using students' own smartphones or other devices for learning during class time, and the "flipped classroom" model where students watch lectures at home on the computer and use classroom time for more interactive exercises.

Benefits While Using ITC in Schools

When teachers are digitally literate and trained to use ITC, these approaches can lead to higher order thinking skills, provide creative and individualized options for students to express their understandings, and leave students better prepared to deal with ongoing technological change in social and the work place.

Learning Management System

- Moodle stands for Modular object-oriented dynamic learning environment and statistics. Moodle is free software, a learning management system providing a platform for e-learning and it helps the various teachers considerably in conceptualizing the various courses, course structures and curriculum thus facilitating Interaction with online students.
- It is a very useful platform to share all learning resources, videos, sharing webpage. Moodle supports a range of media to present or link to learning materials, support the students and to assess their learning. It is able to provide automated assessment in the form of quiz, and give immediate detailed feedback to the students. The messaging system allows learners and teachers to communicate easily.

Google Classroom – Blended Learning Platform

Google Classroom is a free, blended learning platform that offers a variety of benefits for both students and teachers. Google Classroom enhances the productivity and takes workflow management to the next level. It keeps track of assignments coming in with a simple glance making it very easy to know everyone's status and to follow up with students who are missing work. Everything is time stamped, so late work is easily identifiable. Since Google Classroom saves automatically and is accessible from any device. With the app, both students and teachers can enjoy the full functionality of Google Classroom on a mobile device. Students receive notifications on their phone when assignments and announcements are posted, making it easy for students to stay on top of classroom happenings. As a teacher, the app enables you to post from your phone either right from the app or using share-sheet support.

Google Forms

Google Forms allows to conduct MCQ quizzes online. The information is stored as a spreadsheet automatically records the answers. The spreadsheet then populates the

responses from the quiz or survey in real time. google forms can be used to give feedback to and receive feedback from students and parents.

Video Conferencing Platforms

During covid pandemic when the world shifted to online mode for teaching learning various free videoconferencing platform like google meet, zoom and cisco Webex were used conduct online classes. All these have varying needs and features. zoom allows the facility of using its feature using a browser also without the need to download the application, the app download is mandatory in case of the other two software.

Virtual Labs

The virtual labs provides remote-access to simulation-based labs in various disciplines of science and engineering. this student-centric approach facilitates the absorption of basic and advanced concepts through simulation-based experimentation. internet-based experimentation further permits use of additional web-resources, video-lectures, animated demonstrations and self evaluation. virtual labs are any place, any pace, any-time, any-type labs. it is a paradigm shift in student-centric, online education. virtual labs sessions available on virtual labs an MOE government of India initiative for physical pharmaceuticals, organic chemistry and inorganic chemistry subjects as well as virtual labs sessions from amrita lab portals for microbiology, organic chemistry and inorganic chemistry practicals provide helpful tool to teacher during online teaching process.

Education Videos and Animation

Various valuable educational videos of pharmacy subjects available on internet, you tube provide additional help in better understanding of subject knowledge.

Smart Classroom

Classroom integrated with smartboards internet connection provides enhanced and interactive learning and teaching opportunities for student and teachers. The internet-connected to system in smart classes is stored with abundant information. It is accessible anytime for their teaching and learning process. Teachers can access information from various educational sources for teaching purposes. It helps in easy access to online resources. Smart Classrooms helps in developing critical thinking and problem-solving skills in students.

E-Resource

E-journals from proquest pharma and DELNET were available for students to access remotely in online mode and enhances their learning experience. e- book were on MOODEL and Google Classroom.

KMPLOT

Kmplot is a mathematical function plotter for the KDE-Desktop. You can plot different functions simultaneously and combine their function to build new functions. Kmplot supports function with parameters in polar coordinates. Plots may be printed with high precision in the correct scale. All teachers, students from higher and senior secondary or graduate, research anywhere in the world. It's very close to the Geogebra applet or Grapy monkey to tract graphs for different functions.

Marble

Marble is a virtual Globble application which permits the client to pick among the Earth, the Moon, Venus, Mars and different planets to show as a 3-D model. It is free programming under the details of the GNU LGPL, created by KDE for use on PCs and Mobile phones. It is written in C++ and utilizes Qt. Marble is expected to be entirely adaptable past its cross-stage plan, the center parts can undoubtedly be coordinated into different projects.

Socrative:

Socrative is a formative assessment tool that helps teacher and learners to assess understanding and progress in real time in class through the use of quizzes, question and reflection question.

Google Earth

Google Earth, formerly known as keyhole Earth viewer, provides a 3D representation of Earth based primarily on satellite imagery. This program maps the Earth by superimposing satellite image, aerial photography and GIS data onto a 3D globe, allowing users to see cities and landscapes from various angles. Users can explore the globe by entering addresses and coordinates of the places of their inters.

Google Maps

Google Maps is a web mapping platform and consumer application offered by Google. It Satellite imagery, aerial photography, street maps, 360° interactive panoramic views of streets, real-time traffic conditions and route planning for traveling by foot, car, air and public transportation.

Ict Tools for Teaching Learning and Assessment

- To make ICT teaching and learning more in interactive, various platforms and tools have been created and updated over the period of time. Innovative ICT tools used in classroom teaching which helps teachers to integrate in their subject, for teaching-learning and assessment. The are numerous subject specific free/ no cost ICT tools available on online and offline platforms which can be used for teaching, learning and assessment.

- Avogadro is Free and Opensource software which helps to construct, edit and view the molecules in 3D. Though the Avogadro database one can explore numerous molecules and see the bond length, bond angle and dihedral angle in a molecule. By using the tool, the learners can benefit from energy minimization to obtain conformations.

Kalzium

Kalzium is an application which will show information about the periodic system of the elements. Kalzium is an opensource chemistry Application for school and college students. This software contains information about chemicals-mass, charge, picture discovery information, chemical and energy data and model of the atoms.

ICT Importance

- The need for ICT in education is to create a learning environment that focuses on students. ICT tools address the gap between teacher and learner-centers environments. As ICT gives access to a wide range of information, all student unique educational requirements are met.
- Teachers can assess the use of such information through quizzes and exams. Teachers can find adequate supplementary material off the internet for students who require extra attention. Using ICT teacher can share those materials or either with the entire classroom or with individual learners. Either way every student has a personalized learning experience due to ICT.
- ICT is making it possible to adopt new teaching techniques in institutes. One such technique is the "Flipped classroom", where student learn their lessons at home and practice them through practical activities in class. Through ICT, student can effectively learn at home using videos, while at school, ICT engages them in fun learning activities. Teachers can also experiment with different learning techniques and directly check their impact by tracking student's grades through ICT.

Advantages

- Enhances interaction and increased student engagement
- Learning is accessible any time, any place
- Offers new learning techniques as classroom tools are constantly evolving
- Decreases teacher paperwork improving work-life balance
- Improving parent-teacher interaction.

Disadvantage

- Limited accessibility and network connection
- School with limited technical support
- Misleading and misguiding information
- A risk to the traditional book and handwriting methods
- Managing courses online is difficult.

Conclusion

The intervention of information and communication technology is redefining the way students learn. It is making the process of learning more efficient and effective for students and teachers. ICT in education improves engagement and knowledge retention: when ICT is integrated into lessons, students become more engaged in their work. This is because technology provides different opportunities to make it more fun and enjoyable in terms of teaching the same things in different ways.

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ICT FOR PROFESSIONAL DEVELOPMENT

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Abstract

ICT and the Internet have become dependable forms of communication in recent years. The Internet, in contrast to broadcast media, can make it easier for the periphery to participate in a discourse that is eminently democratic, which can be empowering (Bowes, 2003). And if appropriately applied, quality issues that were previously exclusive to the haves due to economic and power considerations can now be accessed by everyone (Collis & Jung, 2003). Information and communication technology (ICT) is not a magic bullet for all issues in education, but it is an indispensable part of teaching and learning today (Capper (Ed.), 2011). Teachers require views of the technologies' potential, opportunities to apply them, training, just-in-time assistance, and time to experiment to use them effectively and efficiently. then and only can instructors be informed and confident in their use of new technologies.

Introduction

In our society today, when knowledge is developing quickly and much of it is accessible to both students and teachers at the same time, teaching is quickly becoming one of the most difficult professions (Perraton, Robinson, & Creed, 2001). When it is suitable, teachers should include technology in their wide range of teaching techniques in the classroom. Technology can be used to reach students from a variety of backgrounds in addition to serving as an information management tool (Torres, 2006). Teachers are now required to support learning and make it relevant for each learner rather than just impart knowledge and skills as new notions of learning have emerged. Technology use can aid educators in connecting with today's media-savvy kids.

Recognizing this potential, promoting universal access, facilitating participatory forums, and creating communities and interest groups are therefore urgently needed (Policy Perspectives in Teacher Education: Critique and documentation, 1998). The reach will undoubtedly be constrained if left to market forces alone. For ongoing, on-demand teacher training and assistance, research and material repositories, value-added distance learning, and online campuses focused on boosting access, equity, and educational quality, the Internet can be a wise investment (Fontaine, 2000). Modern advancements in cutting-edge information and communication technology (ICT) have opened up new career opportunities for teachers while also increasing the demands on them to become proficient in the use of new ICT in the classroom (Robinson & Latchem, 2003).

Because of the rapid development of ICT, particularly the Internet, traditional initial teacher training institutions as well as in-service continued training institutions worldwide are experiencing a rapid change in the structure and content of their training and the delivery methods of their courses (Pacey, 1999). There has been growing evidence that ICT may be able to provide more flexible and effective ways for lifelong professional development for today's teachers. However, both basic teacher preparation and in-service training institutes find it challenging to integrate new technologies with good pedagogy. The delivery of teaching, as well as the actual learning process, can both be facilitated by a range of ICT today (Teacher Education Guidelines: Using Open and Distance Learning, 2002). Additionally, ICT can encourage global networking and collaboration in education and professional development. There's a range of ICT options – from video conferencing through multimedia delivery to websites - which can be used to meet the challenges teachers face today.

ICT full form in education?

When teachers are digitally savvy and know how to incorporate it into the curriculum, information and communications technology (ICT) can affect student learning. Schools employ a wide range of ICT tools to manage, create, distribute, and store information.

The term "ICT tools" refers to digital tools such as computers, laptops, printers, scanners, software, data projectors, and interactive instructional devices.

How ICT is used in education?

To help pupils understand concepts more easily, teachers can use a variety of ICT resources, including computers, laptops, and other devices. It helps them put various strategies into practice in the classroom setting to enhance learning outcomes.

Example of ICT in Education?



Electronic textbooks, instructional software, email, chat, and distance learning programs are also examples of ICT

ICT Use as Main Content Focus of Teacher's Training

ICT use was a major component of the majority of the early ICT teacher training programs in the 1990s (Collis & Jung, 2003). This strategy places a strong emphasis on teacher education regarding how to assist students in using those technologies, the use of ICT to encourage learning activities, the creation of new techniques for promoting learning and assessing student performance, and so forth. Depending on the ICT infrastructure at the school, the trainee is expected to use ICT while teaching. The ICT curriculum The learning, thinking, and efficient use of instructional technologies in the classroom, instructional planning models, the choice, creation, evaluation, and integration of instructional technologies and resource materials, the encouragement of creativity and complex thought through ICT project work activities, and the management of instructional activities should all be covered in teacher training.

ICT Use as Part of Teaching Methods

This strategy incorporates ICT into teacher preparation to streamline some training components. The following two examples demonstrate how various ICT is incorporated into efficient training techniques. In these situations, teachers are given examples of how ICT-pedagogy integration is incorporated during the training process. It gives them "examples of real educators and learners using successful practices of technology to support instruction and learning in their classrooms." Focus groups of teachers watch video clips and then talk about methods for managing the classroom, assessing students, etc. In this particular instance, teachers acquire the skills necessary to use ICT in their classrooms by actively participating in ICT-integrated training.

ICT as Core Technology for Delivering Teacher's Training

In this method, ICT is primarily employed to deliver teacher training learning experiences, and digital technology frequently replaces analog technology as the mainstay of ICT teacher training. This method's content instead focuses on a variety of ICT applications rather than necessarily on ICT expertise itself. Recent developments in online teacher education have been shown to offer teachers a flexible and engaging learning environment (Jung, 2003). However, in most parts of the world, costs associated with online training cannot be disregarded, and viable online training pedagogies for ICT teacher training have not yet been investigated.

ICT Used to Facilitate Teachers' Professional Development and Networking

While there are few instances where ICT is utilized as the primary tool for delivering teacher training, there are numerous instances where ICT, particularly the Internet and Web-based communication technologies, are used to support teachers' ongoing professional growth and networking. Based on the idea that professional development should be an integral part of daily practice for all teachers and that using the Internet would enhance ongoing professional development activities of teachers by connecting teachers to larger teaching communities and enabling interaction with expert groups,

many countries have developed a website or websites to provide online resources for teachers and facilitate teachers' networking.

The provision of ICT-based training environments where on-demand access to materials, peers, and networks of experts where expertise and advice can be obtained and active discussion can take place about technology or pedagogy is one of the best ways to develop teachers' ICT skills and promote ICT-pedagogy integration in their teaching. As long as organized support is offered, the strategy of using ICT to support teachers' ongoing professional development and networking can be quite successful in this regard.

How Will the Use of ICTs be Helpful in Prospective Teachers' Professional Development?

Especially during a period of educational expansion, improving the caliber of teacher education and teacher training is a crucial concern (Passi, 2000). ICT-based teacher professional development (TPD) at the in-service level ought to be lengthy, teacher-directed, and as adaptable as possible. Effective adoption of ICTs depends on providing ongoing chances for people to learn what they need to learn based on their unique experiences and circumstances, when they have the time to study it. This is especially true for many underqualified, overworked, and underpaid teachers in developing nations. It is also crucial to provide instructors with institutionalized incentives and support so they can undertake ICT-based TPD. Promotions for teachers who use ICTs in the classroom innovatively (as opposed to merely using them) or simply ensuring that teachers have the resources they need to do their jobs.

Motivating to Learn

ICTs can be utilized to deliver challenging and authentic content that will involve the student in the learning process, such as videos, television, and multimedia computer software that combines text, sound, and vibrant, moving graphics. The pupils are also motivated by interactive radio, which employs sound effects, songs, dramatizations, comedic skits, and other performance standards.

Facilitating the Acquisition of Basic Skills

Through drill and practice, ICTs can aid in the transmission of fundamental knowledge and skills that serve as the basis for creativity and higher-order thinking abilities (Freeman, 1997). The alphabet, numbers, colors, forms, and other fundamental concepts are taught through repetition and reinforcement in educational television programs like Gyan Wani (Joshi, 2011). The majority of computer-based learning, also known as computer-assisted education, which emphasized mastering skills and knowledge through repetition and reinforcement, was employed with computers in the early days (Web-based Education Commission).

Enhancing Teacher Training

ICTs have also been utilized to enhance both the availability and caliber of teacher preparation programs. For instance, organizations like the Cyber Teacher Training Centre (CTTC) in industrialized nations are utilizing the Internet to give in-service teachers improved possibilities for professional development. For elementary and secondary school teachers, the government-funded CTTC, founded in 1997, offers self-directed, self-paced Web-based courses (Web-based Education Commission, 2011). There are classes in "Education Reform," "Computers in the Information Society," and "Future Society and Education." In addition to face-to-face sessions occasionally required for some courses, online tutorials are also available (Freeman, 1997). To train 910 primary school teachers and facilitators from 20 countries in 1996, Indira Gandhi National Open University used satellite-based one-way video and two-way audio-conferencing, in addition to print materials and recorded film.

What Skills Needed in the Workplace of Prospective Teachers

In our society today, when knowledge is developing quickly and much of it is accessible to both students and teachers at the same time, teaching is quickly becoming one of the most difficult professions (Perraton, Robinson, & Creed, 2001). The following competencies are essential for modern instructors to have in the classroom.

Digital Age Literacy

Applied literacy Visual literacy is the capacity to interpret meaning and communicate ideas in a variety of media, including the use of images, graphics, video, charts, and graphs. scientific knowledge knowledge of science, mathematics, and both their theoretical and practical applications technical competence the ability to use information and communication technology with proficiency education in information the capacity to locate, assess, and apply information effectively, especially through the use of ICTs cultural sensitivity respect for the variety of civilizations worldwide awareness knowledge of the connections between countries, businesses, and communities around the world.

Inventive Thinking

Adaptability aptitude for managing and adapting in a complex, interdependent world Curiosity a need to know Creativity the capacity to come up with new ideas Capacity for taking calculated risks.

Higher-Order Thinking

Rationality and inventive problem-solving that lead to good judgment.

Working Ability in Interdisciplinary Teams

Ability to work in a multidisciplinary team Collaboration and efficient interpersonal communication and working with others' talents both private and public. Networked computers with Internet access have the potential to motivate learners more than any other

type of ICT because they combine the media diversity and interaction of other ICTs with the chance to interact with real people and take part in actual activities.

Effective Communication

The way people use ICTs affects their capacity to work in interdisciplinary teams, and learning to use ICTs responsibly for the common good is part of that process. Interactional dialogue is the ability to access, transmit, communicate, and comprehend information. Extremely productive with the capacity to organize, plan, and oversee projects and programs to produce the required results. Ability to use what they learn in the classroom in real-world situations to produce useful, high-quality goods to pay attention to and participate in the lessons being taught.

Will ICTs Replace the Teacher?

NO is the resounding response! The importance of the teacher's involvement in the learning process is increased with the use of ICTs in the classroom. The type of role that the instructor plays is something that can and should alter. In turn, the role of students also grows. Additionally, the community can take on a new role in the classroom because of ICTs' ability to open it up to the outside world. Less the primary source of authority and more the facilitator, mentor, and coach as learning moves from the "teacher-centered model" to a "learner-centered model," the teacher transitions from "sage on the stage" to "guide on the side." The teacher's main responsibility now is to educate the pupils on how to pose problems, establish hypotheses, and ask questions.

Keys to Effective Use of ICT in Prospective Teachers' Professional Development:

Several elements are thought to be essential for the efficient use of ICT in the professional development of future teachers. Which are:

- Incentives and assistance with teacher education
- Teacher-led instruction
- Enough technology access
- Community collaborations
- Opportunity for ongoing informal support and training
- Teachers and teacher trainers using technology in education
- Technology-Based Production Methods for Instructional Media
- Utilizing Cutting-Edge Technology to Improve Education

Desired ICT Competencies for Prospective Teachers

The basic teacher training curriculum suggests the following as desirable ICT competencies for teachers:

1. Positivity regarding ICT
2. Knowledge of ICT's educational potential
3. A variety of ICT skills, notably in audio, video, print, and computers.
4. ICT teaching capabilities for a variety of subjects

5. Effectiveness of using ICT in the Curriculum
6. ICT classroom management skills
7. The capacity to assess ICT use
8. Ability to guarantee distinctiveness and advancement
9. Additional technical abilities

Suggestions for the Effective Use of ICT in Prospective Teachers' Professional Development

The national telecommunications and information infrastructure is built on top of the educational technology infrastructure of a nation. Before the start of any ICT-based program, policymakers and planners must carefully take the following into account:

Ensure that the House of Technology has the required spaces or structures available. In nations with a large number of outdated school buildings, considerable retrofitting would be required to guarantee correct electrical wiring, heating/cooling and ventilation, safety, and security.

Make sure that there is phone service and electricity available. Large portions of poor nations continue to lack a consistent electrical source, and the closest phones are located far away.

To ensure computer-based or online learning, make sure there is access to computers in classrooms, communities, and homes, as well as reasonably priced Internet connectivity. Make sure technology is utilized fairly and democratically.

Future Perspectives

It is anticipated that as a result of globalization, developing nations would face greater pressure to make investments in their telecommunications and internet infrastructure. There will probably be more money invested in Internet-based educational apps as a result. This could specifically imply that open and flexible learning systems will increasingly incorporate technology utilization by both teachers and students. Although the use of ICT in education and teacher training will expand faster than anticipated, older technologies will coexist with newer ones. This is due to how much money would be required to bridge the digital gap. However, the divide will be bridged significantly with the help of coordinated initiatives from international organizations and countries. ICT in teacher preparation has the following potential for the future:

Conclusion

ICT in teaching and education. The national ICT use in education vision has frequently been incorporated into the teacher training process. The study's methods for teacher education demonstrate that, in many instances, ICT is included in the training process as an integrated training environment rather than merely as training material, allowing instructors to engage in ICT-based learning. According to an analysis of ICT-based professional development strategies for aspiring teachers, integrating ICT into teacher education and development presents both opportunities and difficulties. There is no set

formula for figuring out the ideal level of ICT integration in the educational system, even though there are many valuable lessons to be gained from best practices around the globe. In general, authorities and organizations that train teachers appear to be the importance of integrating pedagogies. In general, governments and institutions that train teachers appear to understand how important integrating pedagogies is. Consequently, one may conclude that different methods of ICT-pedagogy integration in teacher preparation exist. The author makes an effort to demonstrate through a range of examples that ICT use is not just a matter of new possibilities, but that it also has new ramifications and new obstacles. Education policy and planning, infrastructure, language and content, capacity building, and financing are important concerns that politicians and planners, educators, education administrators, and other stakeholders need to take into consideration.

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ENHANCING LEARNING AND ENGAGEMENT BY INTEGRATING ICT TOOLS IN BIOLOGICAL SCIENCE

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Abstract

The integration of Information and Communication Technology (ICT) tools in educational settings has revolutionized the way biological science is taught and learned. This article explores the various ICT tools that can be employed in biological science teaching to enhance students' learning experiences, foster critical thinking, and promote active engagement in the subject. Additionally, the article discusses the potential benefits and challenges associated with the implementation of these tools. Through an examination of relevant research studies and practical examples, this article emphasizes the importance of effectively utilizing ICT tools to nurture the next generation of biologists and scientific thinkers. This article explores the integration of Information and Communication Technology (ICT) tools in the field of Biological Science education. It highlights the benefits of incorporating ICT tools in the classroom, such as improving student engagement, enhancing data analysis skills, and fostering collaborative learning. The article also discusses some of the popular ICT tools used in biological science teaching, along with real-world examples of their successful implementation. The integration of ICT in education is seen as a promising approach to create a more dynamic and interactive learning environment for students pursuing biological science studies.

Keywords: ICT tools, Bioinformatics, Data bases, education

Introduction

As technology continues to shape our world, the field of education has embraced ICT tools to create dynamic and interactive learning environments. In the realm of biological science, incorporating these tools into teaching practices opens new avenues for educators to impart knowledge effectively and engage students in deeper explorations of living organisms and their intricate processes. The field of Biological Science is continuously evolving, with new discoveries and breakthroughs shaping our understanding of life (Johnson et al. 2019). As educators strive to provide students with the latest knowledge and skills, integrating ICT tools in the teaching process has emerged as an innovative and effective approach. ICT tools offer opportunities to engage students, facilitate interactive learning experiences, and empower them to explore complex biological concepts in practical and exciting ways.

ICT Tools in Biological Science Teaching

Virtual Laboratories and Simulations: Virtual labs and simulations offer an immersive experience for students to conduct experiments without the need for physical lab setups. This hands-on approach enables learners to explore complex biological phenomena, such as DNA replication and cellular processes, in a safe and interactive manner. Bioinformatics

Software which Introduces bioinformatics tools that allows students to analyze genetic sequences, perform phylogenetic analyses, and study protein structures (Gilani, et al, 2019). These tools provide valuable insights into molecular biology and genomics, encouraging students to think critically and develop problem-solving skills.

Interactive Multimedia Content: Interactive multimedia content, including videos, animations, and 3D models, makes abstract biological concepts more tangible and easier to comprehend. Such visual aids aid in visualizing complex processes and foster a deeper understanding of biological phenomena.

Online Collaborative Platforms: Virtual classrooms and collaboration platforms enable students to participate actively in group discussions, peer-to-peer learning, and scientific debates. This fosters a sense of community among learners and encourages knowledge-sharing beyond the boundaries of a traditional classroom.

Benefits of ICT Integration

Enhanced Learning Outcomes: By catering to different learning styles and preferences, ICT tools facilitate personalized learning experiences, leading to improved learning outcomes for diverse student populations. The Real-world Relevance using ICT tools bring real-world biological research and applications into the classroom, bridging the gap between theoretical knowledge and practical applications.

Student Engagement must be Interactive and dynamic learning environments promote student engagement, curiosity, and a deeper appreciation for the complexities of the natural world. The student assessment may improve ICT tools allow for formative and summative assessments that provide instant feedback, helping educators identify and address students' strengths and weaknesses effectively.

Benefits of ICT Tools in Biological Science Teaching

Enhanced Data Analysis enable students to analyze large datasets, such as genetic sequences and ecological data, using specialized software and online platforms. This allows students to develop critical data analysis skills, preparing them for future research and scientific careers.

Virtual Laboratories and Simulations by incorporating virtual laboratories and simulations, students can engage in hands-on experiments without the limitations of physical resources. They can manipulate variables, observe outcomes, and draw conclusions, promoting a deeper understanding of biological principles. Multimedia Educational Resources ICT tools offer access to multimedia resources, such as interactive textbooks, 3D models, and video lectures. These resources cater to diverse learning styles and foster a more immersive learning experience.

Collaboration and Global Connections: ICT tools enable students to collaborate with peers and researchers from different parts of the world. This promotes cross-cultural learning and exposes students to diverse perspectives in the biological sciences.

Important ICT Tools in Biological Science Teaching

BioInteractive (HHMI): Developed by the Howard Hughes Medical Institute, BioInteractive offers a vast collection of virtual labs, interactive activities, and multimedia resources for teaching various biological concepts, from molecular biology to ecology.

BLAST (Basic Local Alignment Search Tool): BLAST is a widely-used bioinformatics tool that allows students to compare genetic sequences and identify similarities among different organisms.

Foldit: Foldit is an online game that engages students in protein folding puzzles, contributing to real scientific research and fostering an understanding of protein structure and function.

Visible Body: Visible Body provides 3D anatomical models and animations, enabling students to explore the human body's intricate systems and structures in a dynamic and interactive manner.

Challenges and Considerations of using ICT Tools that ensuring equitable access to ICT tools and a reliable internet connection for all students remains a challenge, particularly in underserved areas (Smetana and Bell, 2012). Educators need adequate training to effectively integrate ICT tools into their teaching practices and maximize their benefits. Protecting students' personal information and ensuring data security are essential considerations when using online platforms and tools.

Conclusion

The incorporation of ICT tools in biological science teaching has the potential to revolutionize how students perceive and engage with the subject. By fostering interactive learning experiences, promoting critical thinking, and enabling access to cutting-edge research tools, educators can inspire the next generation of biologists and scientific leaders. Embracing these technologies responsibly and addressing associated challenges will pave the way for a more enriched and effective biological science education. The integration of ICT tools in biological science teaching has the potential to revolutionize the learning experience for students. Through enhanced data analysis, virtual simulations, and interactive resources, students can develop a deeper understanding of biological concepts and prepare for careers in scientific research. With ongoing advancements in technology, educators must continue to embrace and explore innovative ways to leverage ICT tools in their classrooms, ultimately fostering a new generation of skilled and passionate biological scientists.

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THE IMPACT OF LITERATURE ON WOMEN EMPOWERMENT

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Abstract

"A voice is a human gift; it should be cherished and used, to utter fully human speech as much as possible. Powerlessness and silence go together."-Margaret Atwood

Women empowerment is something that starts with individuals. It's a complex issue that is influenced by education, the economy, and many other factors. Even today, the conversation around worldwide empowerment of women is ongoing and many people have voiced their opinions on the matter. The impact of women's empowerment on society has been significant. Women are the mentors of generations and the entire community benefits from their energy and determination.

When it comes to the topic of women empowerment, there are many factors that come into play. While it's true that empowering women can lead to a higher status for individuals, there are still many cultural, racial, traditional, and societal views that prevent this word from being fully embraced. On a political level, women have made great strides worldwide, but when it comes to their own homes and families, there can still be interrogative attitudes. Despite these contradictions, there is still much room for positivity and progress.

Literature is a wonderful medium for exploring the human experience, and authors have the ability to portray this experience in a variety of ways. Whether it's the style of expression or the technique used, the beauty of literature is just as important as the message it conveys. Literature played a role in women's empowerment in many ways. This paper will discuss the impact of literature on Women's Empowerment.

Keywords: Women's Empowerment, Role of Literature, Significant, Women Writers.

Introduction

Literature serves as a reflection of life, much like a mirror. It captures the truth of an image, reflects reality, and corrects mistakes seamlessly. In the same way, literature acts as a mirror to society, providing insight into the human experience. We completely agree that women empowerment is a critical issue that requires a collective effort from all women. It is only when women come together and decide to self-empower themselves that we can create a movement for women's emancipation. This movement needs to gain momentum, so that we can create a society where women are strong and independent. We need to stop being the others and start being the strong beings that we are capable of being. Together, we can achieve anything we set our minds to, and create a better future for ourselves and for generations to come.

Significant of the Concept

The concept of women empowerment has gained significant attention in social science literature and policy research over the past few decades. This process is a foundation of several public practices in social, economic, political spheres. Women empowerment is a highly complex and much-contested complex, but it is universally recognized that the idea

of empowerment in the context of women can be considered as a relationship between women and society that is based on the values of freedom, rights, and equality. The main elements of this relationship include removing historical and structural discrimination against women in personal and public domains, providing equal treatment and opportunities for women in all spheres of life, ensuring equality of rights and equal protection of women's rights, and pursuing strategies to promote substantive equality for women.

Empowerment is all about treating a woman as fully human, giving her the power to assert her humanness. According to the United National Development Fund for Women, women's empowerment involves acquiring knowledge and understanding of gender relations, developing a sense of self-worth, a belief in women's ability to bring about desired changes, and securing a woman's right to control her own life. Empowered women would have greater choices and bargaining power to influence decisions concerning them. The idea and actions concerning women's empowerment aim to accomplish justice in the national and international order.

Impact of Literature

The importance of literature and writing in the empowerment of women and achievement of gender justice cannot be overstated. Over the years, literature has been deeply influenced by feminist struggles all over the world, as it reflects and advances concerns of gender justice and women's empowerment. Women's literature is a reflection and continuation of society's quest for women's equality and rights. The recognition of women's writings as a powerful site for investigating patriarchal social structures has been acknowledged by 20th-century literary criticism. However, women have not created as much volume of literature as it is expected from nearly half of the human society. For centuries, human experiences have been synonymous with masculine experiences, making it incomplete and one-sided. As a result, the powerful currents of feminism that have swept the literary world during the past one and half centuries have caused many women to assert their identity through literature. Literature can become a site for women's empowerment in various ways.

Literary writing is one of the most effective ways of learning about the socio-psychological realm of women and their expectations from society. Women's purposive engagement with literature would help enrich and transform the spiritual and intellectual domains of their existence and expand their consciousness. Writing can become a silent but powerful form of activism for women. It could provide them with an opportunity to think critically about issues of gender and sexuality in the context of interpersonal and social relations. Literature helps explore women's experiences in a historical, psychological and societal context. Such exploration would challenge us to uncover the irony and complexity of human emotion and present us with a world that is not the same that we are living in. Literature will empower women by giving new visions for their progress.

Women's literature helps us to understand the social construction of men's and women's traditional and modern roles as also of the responses to these roles and the

conflicts generated by them. This understanding can form the basis of the policies and actions meant for women's empowerment in the practical domains. Finally, the reading-writing process inherent in literary activity would qualitatively and subtly transform women. Writing in literature can be cathartic for them. It would help them to overcome ingrained emotions of fear or debility. The experience of literary reading and writing would also transform and empower women in social and political spheres.

Indian Women Writers

The issue of Women's Empowerment in India is an important one that has been neglected for centuries. Women have been pushed to the margins, despite strict laws and constitutional rights. They face rape, torture, domestic violence, and other forms of oppression. However, real empowerment can only come through awareness, education, financial independence, and a change in attitude. Literature and society are closely linked, with both influencing each other. Indian women writers have risen to the occasion and are reflecting the condition of women and their hopes and aspirations in their work. Their writing is playing a vital role in formulating and moulding contemporary social consciousness. Winds of change are already blowing, with Indian women across all classes coming out of traditional roles and marching on the path of progress alongside their male counterparts. Gratitude to the efforts of these writers, women are asserting their individuality by challenging taboos and degrading social norms.

Feminist literature is an incredibly powerful. It presents role models for women and sheds light on the oppression and suppression that women face in our society. It's inspiring to see women who display personal courage in a world that is already tilted in favour of men. The message from women writers is clear: we must fight against discrimination, violence, hypocrisy, and exploitation, and assert our own identities. Particularly, fascinated by the prominent Indian women writers who write in English. Their work is not only important for women, but for everyone to understand and appreciate.

Bama is a remarkable writer who has dedicated her life to advocating for the rights of Dalits. Through her personal experiences, she has learned invaluable lessons about the importance of perseverance, empathy, and compassion. Despite facing many challenges along the way, she remained committed to her dreams and pursued a career as a school teacher instead of becoming a nun. With the support and encouragement of her friends, she was able to publish her experiences in a book called "Karukku" in 1992. Her work continues to inspire and empower countless young women today.

Conclusion

It is important to recognize that women empowerment cannot be achieved without women taking the initiative to self-empower themselves. To achieve this, reducing feminized poverty, promoting education for women, and preventing and eliminating violence against women are crucial. Female authors in India have made significant contributions to the field of women empowerment. Their techniques and thematic works

can help the present world understand women's issues and feminine concepts in different circumstances. It's disheartening to see that despite the efforts of powerful writers and leaders who have spoken out about women's empowerment since the first wave of feminism, slavery still occurs in many parts of the world.

Unfortunately, India has been in the news recently due to several incidents that showcase a disturbing mindset towards women. It's important that we continue to raise awareness and fight for the rights of all individuals, regardless of gender. It is important for men to understand and respect the female gender. Women should be seen as equals in all aspects of life, including work, education, and relationships. It is crucial to break down gender stereotypes and biases, and recognize the unique strengths and abilities that women bring to the table. By treating women with the same level of respect and consideration as men, we create a more inclusive and fair society for all. It starts with changing our mindset and acknowledging the value of women in our lives.

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ARTIFICIAL INTELLIGENCE IN EDUCATION

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Abstract

Artificial Intelligence (AI) has the potential to address some of the biggest challenges in education today, innovate teaching and learning practices, and accelerate progress towards SDG 4. However, rapid technological developments inevitably bring multiple risks and challenges, which have so far outpaced policy debates and regulatory frameworks. UNESCO is committed to supporting Member States to harness the potential of AI technologies for achieving the Education 2030 Agenda, while ensuring that its application in educational contexts is guided by the core principles of inclusion and equity. UNESCO's mandate calls inherently for a human-centred approach to AI. It aims to shift the conversation to include AI's role in addressing current inequalities regarding access to knowledge, research and the diversity of cultural expressions and to ensure AI does not widen the technological divides within and between countries. The promise of "AI for all" must be that everyone can take advantage of the technological revolution under way and access its fruits, notably in terms of innovation and knowledge¹. Hence the paper will give idea on the application of Artificial Intelligence in Education.

Keywords : AI on Eudcation, Modern Education Pedagogy, Innovative ICT Pedagogy, Modern Teaching Learning Process

Introduction

Artificial Intelligence (AI) has the potential to address some of the biggest challenges in education today, innovate teaching and learning practices, and accelerate progress towards SDG 4. However, rapid technological developments inevitably bring multiple risks and challenges, which have so far outpaced policy debates and regulatory frameworks. UNESCO is committed to supporting Member States to harness the potential of AI technologies for achieving the Education 2030 Agenda, while ensuring that its application in educational contexts is guided by the core principles of inclusion and equity. UNESCO's mandate calls inherently for a human-centred approach to AI. It aims to shift the conversation to include AI's role in addressing current inequalities regarding access to knowledge, research and the diversity of cultural expressions and to ensure AI does not widen the technological divides within and between countries. The promise of "AI for all" must be that everyone can take advantage of the technological revolution under way and access its fruits, notably in terms of innovation and knowledge¹. Hence the paper will give idea on the application of Artificial Intelligence in Education.

Tools and Technologies with Artificial Intelligence

Technology has always played an important role in education, but its current use is more prevalent than ever thanks to the increased availability of smart devices and web-based curriculum. With the rise of Artificial Intelligence in education, there are many different ways it is being used to help students learn. Here are a few technologies with AI²

Chatbots

Chatbots are one example of AI educational apps that students might use soon. These are being increasingly implemented into classrooms where kids use iPads or laptops to chat with bots designed to help them understand specific topics such as math or reading comprehension. It's possible chatbot tutors could do more than just help students learn new concepts; there may even come whenever the analysis is needed. Chatbots are the future of all technical roots. It reduces the cycle of tasks assigned to teachers. Chatbots used in classrooms could also replace email communication between teachers and parents while parents meet also.

Voice Assistants

Voice assistants are an engaging and convenient way to bring learning at home while also helping users schedule study calendars, listen to coaching instructions while on the go, and give instant answers to students' basic questions in class. The benefits of voice assistants in education include: Efficient saving of time for students and teachers and Providing community learning opportunities&Providing personalized education within seconds³

Gamification

AI-powered gamification can make learning more engaging and enjoyable by using game elements such as points, badges, and leaderboards. Gamification can motivate students to learn and help them to develop important skills such as problem-solving and critical thinking.

Virtual Reality (VR)

One recent innovation in education is virtual reality, which is being used for everything from teaching history to helping students with math skills. Virtual Reality is a three-dimensional computer-generated environment that people can explore and interact with. VR educators are finding new ways to integrate experiential learning into their classrooms, truly shaping what it means to be a student. VR is a great way to help students feel connected to each other. When they are indifferent classrooms but using the same virtual reality program, they can communicate safely while still being separated by distance. With Virtual Reality, students can explore things that they may never have the opportunity to see or learn about in real life. The same goes for teachers. Teachers can find much more engaging ways of teaching their students. Anybody who has tried VR will know that it feels much more immersive than sitting in front of a screen or being inside a computer-generated environment. Increased engagement and deep understanding are just two benefits for students and teachers.

Learning Management System (LMS)

In this age of technology, one of the most important things is to stay up-to-date with advancements in education. One of these advancements is the use of Learning Management Systems. A learning management system provides a centralised, intuitive system for managing all of a school's online activities.

Smart Content Creation

AI and ML in education also help teachers and research experts create innovative content for convenient preaching and learning. Here are a few examples of AI smart content creation.⁴

Robotics

Robotics with Artificial Intelligence in education has increased over the last few years. It is now being used for both teachers and students to help in education, which can be seen to improve student engagement and safety. With AI's current development, robotics in education is inevitable. Robots can be an excellent resource for learning for both students and teachers – a way to explore a topic in-depth without getting bored. For teachers, this means robots can provide a way to have more one-on-one time with students who need additional help. It also allows them to experiment with new ways of teaching, which is essential when trying to reach different types of learners. For students, it's a chance to teach themselves something new without the pressure of being the only person in class or having their peers judge them for making mistakes.

Conclusion

AI will benefit parents who are always concerned about their children's social life. AI technology allows them to monitor their child's interaction online more closely than ever before. Schools use software that analyses data points such as how well different students comprehend material; then groups kids accordingly based on what they need. AI brings the ability to have 24/hr access to teachers and lessons anytime, anywhere. AI can be used as an educational tool that guides students towards their goals by providing personalised feedback on homework, quizzes etc., based on AI algorithms. Artificial Intelligence has the potential to make everyone's life easier through automation as it can do menial tasks, so you don't need to spend time doing mundane activities like organising emails or finding files. The future of education is here! AI is a crucial driver for change in education.

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EMERGING DISRUPTIVE TECHNOLOGIES IN EDUCATION

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Abstract

Development in the field of education is considered to be much important in today's competitive world. As technology continues to advance rapidly, there is a growing need to improve education to better prepare students for their future. There are numerous methods to bring about advancements worldwide. Disruptive technology, in contrast, displaces outdated content and introduces fresh, innovative ideas that can potentially initiate a superior and higher-quality revolution in the realm of education.

Keywords: Disruptive Technology, technology development, education field, revolutionaries, Student's development, innovative ideas.

Introduction

Before the implementation of digital classrooms, only traditional teaching methods were utilized. In the past, students relied solely on their teachers for knowledge, with the library being the only other source available to them. Disruptive technologies are widely available, and as they continue to develop, there is a responsibility to incorporate these changes into the realm of education. Many individuals are experiencing scheduling issues due to their occupations. However, disruptive technologies offer an opportunity to enhance their knowledge and skills.

With the emergence of creative ideas from various individuals, numerous new educational technologies have been developed. These technologies comprise of: Gamified Learning, Cloud computing, Immersive Learning, Personalized learning, AI (Artificial Intelligence), Big Data, and Analytics.

Emergence with the Implications of Gamified Learning

The concept of gamified learning is becoming increasingly popular. It involves incorporating game-like elements into educational programs to make them more engaging and interactive for students. By doing so, it is believed that students will be more motivated to learn and retain the information better. This approach has the potential to revolutionize the way we approach education and could lead to better academic outcomes for students.

The use of gamified learning in the education system has a positive effect on students. It enhances their learning levels by improving specific skills and optimizing their overall learning experience. Moreover, it offers intrinsic rewards and motivation to keep them engaged and driven.

There are two types of gamified learning: structural and altered methods. Structural gamified learning involves no changes to the subject matter, while the Altered method involves adding elements to the subject matter to make it more fun, such as incorporating games.

Cloud Computing

Cloud computing is a technology that allows users to access software, storage, and processing power over the internet, instead of relying on local hardware and infrastructure. It offers many benefits such as flexibility, scalability, cost-effectiveness, and improved collaboration.

One of the benefits of Cloud Computing is that professors can provide students with notes quickly and at any time, without the need for heavy bags or outdated textbooks.

Immersive Learning

Immersive Learning is a practical training method that utilizes Virtual Reality (VR), Augmented reality (AR), and Mixed Reality (MR) technology. This method exposes students to real-world scenarios, allowing them to react accordingly and develop skills for performing in virtual work environments.

It helps in eliminating barriers with a distraction-free environment by which experiences are customized.

Immersive learning utilizes one or more of the following technologies:

Virtual Reality (VR) - fully immerses you in a virtual world with the use of a headset

Augmented Reality (AR) - enhances your real-world view by adding digital elements to it

Mixed reality (MR) - digital and physical objects co-exist and interact in real-time using a combination of VR and AR.

Simulation learning - 3D visualizations and simulations provide a semi-immersive experience.

Personalized Learning

Personalized learning helps in creating customized learning methods for each student based on their strength, skill, needs, interest, and aspirations.

A learning plan is being created based on their capacity of understanding what they are best at. Doing so keeps them motivated and activated throughout the process.

This tool assists in creating profiles for learners, designing personalized learning paths, tracking individual mastery, and providing a flexible learning environment. Students have various options available to them, and they do not encounter any timing or environmental obstacles during the learning process.

Artificial Intelligence (AI)

The use of Artificial Intelligence (AI) can improve the learning experience for individuals and support teachers. It represents a significant advancement in computer and robotics technology, allowing for the possibility of replacing human intervention in the teaching process.

AI offers numerous advantages that can be utilized to enhance the field of education.

Personalization: This program allows for customization to cater to each student's individual needs.

Tutoring: Through AI-powered tutoring, students can receive ample information that aids in the development of their intelligence quotient.

Grading: AI assists in evaluating students' test papers and grades them using answer keys provided to it. This makes it easier to obtain the results.

Feedback on course quality: When it comes to course quality feedback, the AI system will provide relevant information to students who answer questions incorrectly. This will enable them to correct their mistakes in a formal manner.

Data and learning analytics: Education administrators are utilizing AI technology to analyze data and make informed decisions more efficiently. This helps improve decision-making processes.

Big Data and Analytics

The field of education generates vast amounts of data, and organizing it can be a challenge. The use of Big Data in education has proven to be beneficial in addressing these issues, prompting us to reconsider our methods, bridge the gaps in knowledge, and enhance the learning system.

The following is the concept of Big Data and Analytics in education:

1. Gaining Valuable Understanding
2. Up-to-the-minute Information
3. Revolutionizing Education
4. Tailored Learning Experience

Usage of 5g Technologies in Education

The fifth generation of wireless technology is known as 5G. It offers high-speed and low-latency wireless technology for any user. This unique innovation is particularly beneficial for students as it allows for quick downloading of information and easy access to resources.

There have been suggestions to introduce the special feature of 5G technology in education by the end of 2023. This could enhance student engagement during distance learning and provide them with opportunities to gain virtual reality learning experiences.

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AN EYEVUEW ON DIGITAL LITERACY IN 21ST CENTURY

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Abstract

Digital literacy encompasses a range of competencies that enable individuals to use digital tools, devices, and information effectively and responsibly. These competencies include basic digital skills, such as using computers and the internet, as well as more advanced abilities like critical thinking, media literacy, information evaluation, and data analysis. In the 21st century, digital literacy is closely intertwined with traditional literacy skills, fostering communication, collaboration, creativity, and critical thinking among individuals across different age groups and backgrounds. As digital technologies continue to shape our lives, the development of comprehensive digital literacy skills becomes an essential endeavor for individuals and society at large. Embracing digital literacy equips people with the tools they need to harness the vast potential of technology while navigating its challenges responsibly, ensuring an inclusive and prosperous digital future. The paper aims to explore the overview of digital literacy and its relationship to 21st-century skills, which are crucial for navigating the complexities of the modern world.

Keywords: Technology, Communication, ICT skills, Knowledge, Tools,

Introduction

Digital literacy is an individual's ability to find, evaluate, and communicate information by utilizing typing or digital media platforms. It is a combination of both technical and cognitive abilities in using information and communication technologies to create, evaluate, and share information. The origin of the word literacy refers to the ability to read and write. Early descriptions of computer-related literacies also focus on the acquisition of sets of rules and technical capabilities. However, by the end of the 20th century, this definition had expanded considerably. While digital literacy initially focused on digital skills and stand-alone computers, the advent of the internet and the use of social media has resulted in a shift in some of its focus to mobile devices. Similar to other evolving definitions of literacy that recognize the cultural and historical ways of making meaning, digital literacy does not replace traditional methods of interpreting information, but rather extends the foundational skills of these traditional literacies. Digital literacy should be considered a part of the path towards acquiring knowledge.

Components of Digital Literacy

ICT literacy refers to a set of user skills that enable active participation in a society where services and cultural offerings are computer-supported and distributed on the internet. Technological literacy (previously called computer literacy) entails a deeper understanding of digital technology and comprises both user and technical computing skills.

Information literacy focuses on one of the key aspects of our Knowledge Society: the ability to locate, identify, retrieve, process and use digital information optimally. There are many of them with direct relevance to digital literacy – ICT skills, civic skills, learning to learn skills, participation of adults in lifelong learning. High values in these targeted areas certainly require the development of digital competence. Other indicators also may involve ICT skills. For example, cross-national mobility of students in higher education is made possible through blended learning courses that involve travelling students staying in touch with the learning process of their peers at home. Professional development of teachers and trainers, another key indicator, is mostly achieved through blended or e-learning courses in which new methodological skills are acquired and then applied in the workplace. These examples illustrate the importance of digital literacy for the achievement of Information Society goals.

Digital literacy is a life skill because it targets all areas of contemporary existence. In seven out of the sixteen literacy indicators, digital literacy plays a central role. In the last century, the shift from the manufacture of goods to the provision of services has resulted in an economy based on information and knowledge. Computers substitute for workers who perform routine physical and cognitive tasks, but they complement workers who perform non-routine problemsolving tasks. Modern organizations and companies have been facing a restructuring of work, which means flatter organizational structures, decentralized decision making, widely shared information, flexible work arrangements and collaboration in project teams.

Importance of Digital Literacy Skills for Students

As technology continues to become more and more ingrained in daily life, the importance of learning digital literacy skills is becoming increasingly apparent. Below are five reasons students should learn digital literacy skills.

Support Educational Progress

One of the first reasons digital literacy skills are important is because of the increased use of technology in education. The use of technology as a learning tool has grown in the past 15 years, with technology platforms such as computers, tablets and the internet becoming increasingly prominent in K-12 schools and universities.

Students with digital literacy skills will be more comfortable and confident in these learning platforms, while those without digital literacy skills may have their progress stymied by an inability to or lack of confidence in navigating the related technology. In addition, with the majority of standardized state assessments being administered online,

it's increasingly important that students have the confidence to focus on the material in question instead of being slowed or distracted by using technology for the test.

Increase Online Safety

Online risks are complex and ever-changing, with nefarious individuals or groups continually discovering and creating new ways to take advantage of others. While digital literacy cannot prevent students from facing safety challenges online, it can empower them with important knowledge, tools, processes and resources to help protect their safety and privacy as much as possible.

Understand Digital Responsibility

Along with online safety, digital literacy also teaches digital responsibility, which is the ability to consume and communicate information ethically online. Increased technology dependence exposes students to challenges related to copyright and plagiarism, cyberbullying, vetting informational resources, and interacting responsibly with others. Digital literacy skills help students master their ability to understand and effectively navigate these challenges, making them more responsible digital citizens.

Improves Social Opportunities

Digital Literacy plays a role on being able to socialize with people outside of immediate territory. Where friendships and even familial relationships used to depend on slow-communication, the use of technology eliminates the barriers of location when it comes to socialization. However, this opened world of social opportunities also exposes people—especially young people—to dangerous social scenarios. Mastering digital literacy skills allows students to connect with others online while protecting their information and safety.

Improve Digital Equity

Digital equity also helps to bridge the digital divide. Even with the proliferation of technology in households and educational institutions, there remains a disproportionate number of minority workers with limited digital literacy skills. By making digital literacy a priority in K-12 education, institutions can help to improve digital literacy among underrepresented groups, helping to upskill these students so they may have increased career opportunities in the future.

Supports Lifelong Skills

While technology is ever-changing, digital literacy foundations empower students with base knowledge and skills that can be applied to various types of technology now as well as in the future. For instance, learning basic concepts such as input/output, application operation, discerning hardware devices and how to use them, etc., can provide basic transferable knowledge that can be applied to new and emerging technologies.

1. Critical Thinking

It is learning how to solve problem. It teaches students not to accept immediately claims without seeking the truth.

2. Creativity

Requires student to think outside of the box and to take pride in what uniquely theirs.

3. Communication

Makes students express their ideas in the clearest and organized manner.

4. Collaboration

Happens when students know how to work well with others to accomplish a given task or solve a problem

Major Concerns about Digital Literacy in India

- We need to keep track of the young digital citizens and guide them to consume content thoughtfully and be creative.
- Though there have been some efforts to impart digital education to teachers, there is a dearth of computer teachers in rural areas. A certain village in Odisha has 18 computers, but only 10% of population is computer literate as there is no teacher there.
- Many children have the privilege of getting exposed to digital media, and they tend to learn using it without formal training. In the process, they may harm themselves
- The digital divide is a major concern in the Indian scenario where there is a wide disparity in economic conditions.

After reviewing the status of India's digital literacy rate we can conclude that we have a long way to go, none the less we cannot forget our achievements and see the other side of the picture. Our education system has been revamped, and Information technology has been introduced as an important subject. Computers have been made available to many underprivileged schools to make our rural population digitally literate. To make this development forward, we need to focus on making our teachers digitally literature.

Benefits of Digital Literacy in the Classroom

Digital literacy addresses the growing need for critical analysis of digital content, teaching students to assess its source, credibility, and quality. Digital literacy instruction engages students' cognitive abilities, asking them to apply critical thinking skills to their actions, behaviour, and social engagement on digital platforms. Social media's explosive growth has made information literacy and digital citizenship increasingly important components of digital literacy.

Analysis of online news and advertising teaches critical thinking skills and prepares students to identify credible information sources. Lessons in responsible digital communication and ethical use of digital resources. Privacy and security are also

components of digital literacy. Teaching students to understand their digital footprints – personal information actively and inadvertently shared online – makes them less likely to fall victim to criminal behaviour, such as cyber bullying and identity theft.

Digital Literacy for Employability

Digital literacy improves employability because it is a gate skill, demanded by many employers when they first evaluate a job application. It also works as a catalyst because it enables the acquisition of other important life skills. Companies applying these changes in organizational structures and business practices require new skills, as well as an increased role of ICT in the work place for communication, information sharing, and simulation of business processes. Routine cognitive and manual tasks in the economy decline, and non-routine analytic and interactive tasks rise. Resulting new hiring practices demand workers with the ability to respond flexibly to complex problems, communicate effectively, manage information, work in teams, use technology, and produce new knowledge. These capabilities are rarely taught in schools or measured on typical assessments. The challenge school systems face today is to embed digital literacy in all levels of the educational system as well as in the professional development of teachers and trainers.

Challenges of Digital Literacy

Lack of Access to and Knowledge of Technology

One of the most challenging aspects of digital literacy is the requirement for a certain level of technical expertise and understanding. Not everyone has access to cutting-edge technology and tools or has been properly trained to use them, which can result in a digital divide in which certain people lag in digital skills and knowledge. This can have severe consequences for access to school, employment, and social and civic participation.

Trouble in Finding the Right Resource

Another barrier to digital literacy is the lack of capability to find the right resource from the billions that are available online. With so much information at your fingertips, it can be difficult to identify which sources are genuine and trustworthy. Critical thinking and analytical skills are needed to evaluate the quality of material found online and discern between facts and opinions, biases, disinformation and propaganda. This necessitates a critical approach with experience, awareness and knowledge.

Lack of Guidance

Concerns about privacy and security are amplified when we talk about digital literacy. Many people are unaware of the potential dangers of the internet and lack supervision from a digital expert. With a lack of information about digital literacy, trainers and practitioners, it is a topic that needs greater attention than we think.

Lack of Awareness & Interest in Digital Technology

Another challenge is the lack of awareness and interest in digital technology among certain sections of the population, particularly older adults and women. Nearly half of the

world's population is still not online. While Asia has the highest number of people without access, Africa tops the world in the percentage of the population without connection at 88 per cent. Furthermore, in digitally connected countries, male internet users outnumber their female counterparts in every region of the world. This 'digital divide' does not just signify those who have access to the internet and those who do not. The gap also encompasses several other discrepancies, including the quality of digital infrastructure in rural communities, the speed of connectivity in remote areas, and the training and skills required to navigate such technology.

Lack of Emphasis on Digital Literacy in Education

There is a lack of emphasis on making individuals digitally literate. Despite the growing importance of digital skills in the job market, many schools and colleges worldwide do not offer adequate training in digital literacy. This results in a lack of digital skills among young people, which can hinder their employment prospects in the future.

Conclusion

In the rapidly evolving digital landscape of the 21st century, digital literacy has emerged as a crucial skill set that individuals must possess to thrive in both personal and professional spheres. This paper has explored the multifaceted nature of digital literacy and its significance in various aspects of modern life. The findings reveal that digital literacy encompasses not only technical proficiency but also critical thinking, ethical decision-making, and information evaluation. Embracing digital literacy as a foundational skill in education and the workforce is pivotal to building an inclusive, innovative, and digitally empowered future. By promoting digital literacy, we equip ourselves and future generations to leverage the vast potential of technology responsibly and ethically.

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INNOVATIVE ICT PEDAGOGIES

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Abstract

Information and Communication Technology (ICT) is a vehicle to enhance the quality of the education. As the world is moving rapidly into digital media and information, the role of ICT in education is becoming more important in the 21st century. The opportunities for education arising from developments in information and communication technology are very promising. In recent years, increased computing power, improved wireless and user-friendly technology, and reduced telecommunication costs have contributed to lowering barriers to information access and exchange. Changes in the economic and social fundamentals call for transformation in the skills, capabilities and attitudes of the masses. This requires a shift in the delivery and pedagogy used in the current education system. ICT increases the flexibility of delivery of education so that learners can access knowledge anytime and anywhere. It can influence the way students are taught and how they learn as now the processes are learner driven and not by teachers. The purpose of this paper is to analyze the integration of Information and Communication Technologies in higher education for imparting easily accessible, affordable and quality higher education leading to the uplift of India. The focus of the paper is on the benefits that ICT integration in education can provide, right from breaking time and distance barriers to facilitating collaboration and knowledge sharing among geographically distributed students and the paper reports on the changing trends in use of ICTs for instruction in higher education institutions (HEIs).

Index Terms - Education System, Information and Communication Technology, Innovative Classroom Practices, Technological and Pedagogical Changes

Introduction

ICT in the Creative learning

Technology moves on very quickly and schemes of work often don't reflect changing technologies, times and contexts. We are in a position to personalize the curriculum in what children learn, how they learn, where they learn, with whom and with what resources. As children develop their skills using ICT both inside and outside school with innovations such as the internet, broadband, games consoles, Wiis, Nintendo DSs, iPods, iPads etc, children could be in the position where they use more technology outside school than in the classroom and perhaps even 'dumb down' as far as their achievements and their understanding of what technology can do. The knowledge, skills and understanding of our children varies greatly depending on their experiences with technology outside school.

In order, to utilize the skills that the children already have, in school we encourage teachers to allow the children to choose when it is appropriate to use technology (and when not). We also suggest teachers don't teach children a set of skills as a whole class but teach skills as and when it's appropriate. Teaching a skill at that point of need key to children remembering it and using it again. To encourage a more flexible use of computers, we have asked schools to reevaluate traditional ICT suites in favor of having the technology on hand in the classroom as and when they need the use of ICT suites and timetabled lessons can limit student access to IT. The ability of students to make creative use of ICT as and when their learning requires can be inhibited if ICT is delivered as a standalone subject. One example would be, edit these sentences adding capital letters when necessary using the shift key. It would be better to teach the usage of the shift key at a time when the children are typing letters, addressing envelopes, postcards linked to a geography topic, letters to a pen pal or a thank you note.

The skill they need to be taught needn't wait until their timetabled lesson later in the week or term but when they are asking for the answers. Having the freedom to choose how the children learn under the direction of the teacher and what technology and software they use, enables teachers to support children with different learning styles, personalizing learning and addressing multiple intelligences. Traditionally, ICT has focused on supporting children whose strengths lie in linguistic and logical (mathematical) intelligences. There should be one aspects of ICT teaching:

Through ICT supporting learning in other subjects; applying skills in real contexts, using AFL should identify the next steps in their learning in both the above.

School may have designed activities, identified skills and non-negotiable items for you to incorporate into your planning. In addition, most schools allow teachers a freedom to look at a themed topic and decide upon what applications or other ICT activities will enhance children's learning in that area. If possible, teachers should look at a range of activities over the school year that builds on the children's prior learning. In ICT, an established assessment for learning (AFL) strategy can transform the rate at which the children adopt technology. In many cases, children learn skills from their peers (and from their mistakes!) before their teachers. CT has the potential to transform learning. Too often schools substitute paper based activities for computer based ones. This undermines the capacity of technology and is wasteful of resources. A vast range of solutions, information, examples and perspectives can be offered only through the use of ICT.

Support Pedagogical Innovations with New Tools

Encouraging experimentation: Innovations in the process of learning and teaching emerge from different actors, both learners and teachers. Policies should aim to empower educational actors and institutions in their local contexts to develop innovative approaches to learning with added value in their environment, (e.g. with different local languages, or by using digital tools and media creatively for specific learning topics).

Networking and best practice exchanges: Teachers should be encouraged and supported to document and share the innovative practices they have developed and

encountered in their teaching, as knowledge of practical applications for new approaches in different environments is scarce. Incentives for the objective assessment of enabling and disabling factors should be implemented.

Teacher Training and Support: ICT and social computing can improve the effectiveness of learning and the learning outcomes, but results depend on the approaches used. Hence, initial and in-service teacher training should disseminate insights and best practices with new innovative approaches, encouraging teachers to experiment with digital and media technologies and to reflect on the learning impacts of their own teaching practices. Establishing and participating in teacher networks and following innovative practice development of the field should become part of teacher training.

Open and networked institutions: Policies should encourage institutions to embrace the networking opportunities available. By opening their learning materials (open educational resources), institutions can attract learners and also support informal learning outside institutions. Networking between institutions can enrich the curricula provided for students and transfer subject-related knowledge between practitioners. Institutions should promote collaborative networks between teachers, researchers, and professional networks, in order to support the emergence and sharing of learning innovations

Develop and support favourable culture for ICT innovation and learning: Using new tools for old processes does not create change or innovation. Institutions should facilitate emergence of innovative learning approaches by (i) ensuring that learners, teachers, managers and parents are aware of their potential and (ii) by supporting them in curricula, teaching guidelines, and teacher training. Institutions should acknowledge and encourage innovations coming from actors on different levels and develop their practices accordingly, thereby becoming reflective, learning organizations.

Research on ICT impacts on learning: More research is needed for finding evidence on how technology can enhance learning. Together, tool developers and educational researchers should study and develop models for embedding new tools such as computer-based assessment in teaching and learning approaches. This would provide institutions and teachers with proven practical models that support the take up of innovative tools.

Impact of ICT on the Teaching Process

- ICT Has an edit effect in terms of quality of student work and practical examples through visualization.
- ICT Improves poor handwriting and languages skills through word processing.
- ICT Equalizes individual differences and has particularly dramatic effects for students with special needs.
- ICT Facilitates self-pacing with increased capacities to deal with individual learning styles as students can work at the pace and intensity suitable to their needs.
- ICT Enables collaborative learning with little indication of the isolated learner.
- ICT Encourages use of peer coaching and peer reviews.
- ICT Develops communication skills and awareness of different audiences.
- ICT Has impact on resource-based learning and access to real world information through the Web.

- ICT Increases information reliability and accuracy adding to authenticity of learning tasks, with realistic and up-to-date information.
- ICT Increases student motivation through hands-on activity, visual representations and improved modes of presentation.
- ICT Encourages independent learning and individual preferences for process, layout, style and format.
- ICT Gives students more control.
- ICT Allows students to produce high quality multimedia products.
- ICT Changes teacher practices, planning tools and assessment rubrics.
- ICT Increases opportunities for classes to evolve and for student experiences to shape outcomes.
- ICT Has motivated students to commit to learn and to participate in learning activities.
- ICT Has improved students' quality of work and has given them the confidence to perform enhanced learning tasks. ICT Has allowed students to learn independently, which has enabled more work to be completed. ICT has a profound impact in classrooms. It adds complexity to a non-linear system. This complexity needs a major change in organization. Downs (2001) differentiates four levels of use of ICT in the classroom:

Level 1: ICT skills are added into the school programmed through a separate ICT subject, while teacher practices in other subjects remain unchanged;

Level 2: ICT skills are integrated into teachers' daily work with some teachers' pedagogical practices and classroom behavior remaining the same, while the practices of others change more radically;

Level 3: ICT is transformative at the classroom level as it changes content as well as pedagogy (what students learn as well as how they learn it);

Level 4: ICT is transformative at the system level leading to changes in the organisational and structural features of school learning.

The New Trend of ICT

ICT is based on individual access, personal mobile phones, personal computers etc. as well as the new trend for personalization of the Web. This implies that the needs and the competencies of students are quite different, and since ICT allows one-to-one learning, a more personalized learning may constitute the future trend of higher education. Better achievement of students is easier to obtain since the learning is personalized and customized. However, this implies a huge change in the format, in the organization of the classrooms and in the competencies and availability of teachers. This may explain the differences observed in the impact of ICT on the performance of students. Wherever the introduction of ICT is associated with a personalized service for students, performance increases.

The Outcomes of Higher Education

The impact of ICT on the learning process seems to be more important and requires more than looking only to curricula. Improved student outcomes are observed, with regard to: motivation, enjoying learning; self-esteem; ICT skills; collaborative skills; subject knowledge; information handling skills; meta-cognitive skills, etc. In European higher education institutions, while students and teachers seem to be using the new available technologies more and more intensively, organizational designs are changing slowly. The lack of a strategy regarding organizational change, as several studies have shown, leads to a weak impact of the use of ICT on student performance.

Conclusion

In order to conclude we will try to proceed to synthesize from a general viewpoint the results obtained, taking into consideration the relevant aspects of the literature. The results provided by both the quantitative and qualitative analysis of the literature obtained will be exposed especially regarding those aspects which are related to ICTs for Education and ICTs in Education. ICTs for education refers to the development of information and communications technology specifically for teaching/learning purposes, while the ICTs in education involves the adoption of general components of information and communication technologies in the teaching learning process.

The adoption and use of ICTs in education have a positive impact on teaching, learning, and research. ICT can affect the delivery of education and enable wider access to the same. In addition, it will increase flexibility so that learners can access the education regardless of time and geographical barriers. It can influence the way students are taught and how they learn. It would provide the rich environment and motivation for teaching learning process which seems to have a profound impact on the process of learning in education by offering new possibilities for learners and teachers. These possibilities can have an impact on student performance and achievement. Similarly wider availability of best practices and best course material in education, which can be shared by means of ICT, can foster better teaching and improved academic achievement of students. The overall literature suggests that successful ICT integration in education.

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ICT TOOLS IN TEACHING LEARNING PROCESS

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Abstract

Information communication technology is a general term that refers to the technologies used to collect, store, edit and communicate information in various forms. ICT is the use of computer-based technology is used in education is an educational system that uses information and communication technology to support, enhance and enhance the delivery of information. Adapting to these new technologies is a slow process, but it allows many teachers to improve the quality of teaching. Global research has shown that ICT can lead to improved student learning and better teaching methods to make information and communication services widely available to users. E-learning can be termed a network-enabled transfer of skills and knowledge. While teaching can be based in or out of the classrooms, the use of computers and the Internet forms the major component of E-learning. Many institutions of higher education and universities are resorting to E-Learning. Many corporate companies are also deeply investing in E-learning and setting up interactive classrooms activity. Technology has taken over our entire life and education is no exception to it, technological advancement has a great effect on how learning is imparted and also consumed.

Keywords: *ICT Tools-E-Learning-Digital Platform-Satisfaction*

Introduction

Information technology (IT) is defined as the study or use of electronic equipment's, especially computers for storing, analyzing and sending out information. Communication technology is the process of sending, receiving and exchanging information. ICTS can be defined as "diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information." These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony. The use of e-learning in education improves the quality of practical education and a better understanding of the subject. Indira Gandhi National Open University (IGNOU), the world's largest Open University launched a 24x7 E-learning satellite channel called GyanDarshan. E-learning gives the advantage of 24x7 and 365 days a year-round access as compared to Instructor-Led Training, which is a one-time class that must be scheduled. Undoubtedly, one lecture can teach more students wide geographic area by responding to e-learning technology. In general, this review provides important information to increase the knowledge base of various performance educational methods. In the future, there is still a need to develop and evaluate such methods education among higher education students. It is important that these studies are conducted show effectiveness, and they should also focus on outcomes at different levels.

Statement of Problem

The purpose of this research is that the government introduces many new technologies in the country to suit the people's society in order to fulfill the objective of development of the country. A project like Digital transformation in education. E-learning level perception, culture and satisfaction varies from person to person due to many factors such as gender, education etc.

Objective of the Study

- To study the awareness level of people towards ICT tools
- To apply critical thinking skills to their students action, behavior and social engagement on digital platform.
- To identify the satisfaction towards e-learning.

Review of literature

Sahlam et-al (2021) made a study on "The effects of modes of test administration on test scores: A study in an Indonesian school ". The main objectives of this study the effect of gender and the interaction effect between gender and mode of testing on test scores were significant. The primary and secondary data were used for this study. 234 respondents were collected for this study by using simple Random sampling method. The statistical tools like simple percentage will be used to analysis the data. The study revealed that indicated that neither gender, mode of test administration nor the interaction between gender and mode students anxiety levels. **Noreen & Malik, (2020)**. It is found that, teachers also require the necessary infrastructure, hardware and software, reliable high-speed internet connectivity, continuous professional development and the support of administrators. **Muhammad Hafeez (2021)** discovered that Teaching-Learning Process and ICT Tools- A Review and found that usage of modern ICT tools in teaching- learning process successfully improved the teaching-learning process and the traditional lecture learning does not improve the cognitive and communication skills of the learners. **Dr. Pranjal Grover et-al (2021)** made a study on "Efficiency of online pre-Recorded practical demonstrations and live Streamed practical demonstrations in third year physiotherapy students during the COVID-19 pandemic-a survey ".The main objective of this study is to understand the efficacy of online pre-recorded practical demonstrations. The primary data were used for this study. 44 respondents were collected for this study by using a complete enumeration sampling method. Statistical tools like simple percentages will be used.

Table 1

Variable	Number of respondents	Percentage
Age:		
Below 20 years	68	55.76
21- 30 years	87	43.58
31-40 years	1	0.66
Total	156	100

Area:		
Rural	98	62.82
Semi -urban	13	28.84
Urban	45	8.33
Total	156	100
Gender:		
Male	37	23.71
Female	119	76.28
Total	156	100
Marital status:		
Married	12	7.69
Unmarried	144	92.30
Total	156	100
Educational qualification:		
up to HSC	11	53.20
UG	83	37.17
PG	58	7.05
Others	4	0.64
Total	156	100
Occupation :		
Agriculture	22	73.07
Salaried Person	16	13.46
Labour	5	10.25
Business	113	3.20
Total	156	100
Digital Platforms tools used		
Yes	125	80
No	31	20
Total	156	100

Data: primary data

From the above table shows that Majority of the respondents are age group between 21-30 years. Most of the respondents are rural area. Majority (76.28%) of the respondents are gender in female. Majority (92.30%) of the respondents are marital status in unmarried. Majority (53.20%) of the respondents are Educational qualifications UG level. Majority (73.07%) of the respondents are Occupation level in Students.

Chi Square Test**Chi square value 5% @Satisfaction onlevel of people****Table 2**

S.No	Particulars	D.F	Chi square Value	Table value	Result
1	Age	4	10.316	9.488	Rejected
2	Area	2	9.375	5.991	Rejected
3	Education qualification	6	11.069	12.592	Accepted

Source: Primary data

From the above table found that respondents calculated chi-square is higher than table value at five percent level, there are significant association between the demographic variables and level of satisfaction. Null hypothesis rejected.

Conclusion

Digitization of legacy and vintage structures has replaced conventional operations with new technology and fashions. Due to that technology the instructional part has additionally got a big change and has changed the conventional training version to a brand new technology based smart version. By digitizing the learning experience, both college students and instructors can hone their skills and create a lively instructional process. Digital transformation can be implemented in many aspects within the academic quarter, including new student recruitment, online knowledge acquisition, scholarly assessments, personalized knowledge of experiences and exams. Generational penetration within the instructional quarter has promised dynamic participation and proposed new methods of training and mastering methods

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"UNLEASHING CREATIVE POTENTIAL: RECONNOITERING THE POWER OF BRAINSTORMING IN EDUCATION AND RESEARCH"

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Abstract

Unleashing creativity and ingenuity, brainstorming ignites a torrent of ideas and a symphony of perspectives in order to surmount intricate business or technical quandaries. This method cultivates unbridled ideation among participants, propelling them into the exhilarating realm of boundless possibilities. During collaborative brainstorming sessions, individuals spontaneously proffer their insights, as the collective energy crackles with a sense of urgency and inspiration. These ideas are then meticulously classified, assessed, and accorded a hierarchical arrangement, culminating in decisive determinations regarding their subsequent pursuit. Pedagogical approaches meander from traditional explanatory methods to avant-garde constructive teaching techniques. The selection of a fitting method can diverge depending on the course, subject, topic, and context. Studies reveal that the brainstorming method of teaching shines as exceedingly fitting for bridging the chasm between a learner's present stance and their coveted learning outcome. Remarkably potent at the primary education level, notably in language instruction, this method showcases amplified effectiveness. The purpose of this inquiry is to unravel the core of brainstorming, delve into its underlying philosophy within the realm of education, and explore its implementation through the utilization of brainstorming tools in research endeavors. The paper solely depends on various secondary data.

Keywords: Brain storming, Education, Tools, Research

Introduction

Brainstorming electrifies and collaborates, igniting a whirlwind of imaginative ideas and inventive solutions to diverse challenges. Rooted in the philosophy of liberating thought, brainstorming evokes an unbridled exchange of thoughts and concepts within a group's embrace. By suspending judgment and embracing a non-critical atmosphere, participants can embark on a journey through diverse perspectives, unorthodox viewpoints, and unexplored realms of creativity. Originally conceived by advertising visionary Alex Osborn and further refined by subsequent researchers, brainstorming has

permeated fields as varied as business, education, research, and problem-solving. This method empowers individuals to shatter conventional thought patterns, giving rise to fresh insights and visionary solutions to intricate problems.

Review of Literature

A literature review serves as a basis for knowledge on a particular subject, identifies areas of prior scholarship, uncovers contradictions and gaps in the research, supports the need for more research, shows how one work is related to other works, and situates one's own work within the body of existing literature. There are a lot of reviews on this subject, but only the most current and pertinent ones are chosen.

In their groundbreaking research paper entitled "Unleashing the Potential: The Brainstorming Revolution in Nurturing Mathematical Connection and Metacognition Skills among Pesantren Students" (2023), **RosidBahar, SudjiMunadi, and RadenRosnawati** plunge deep into the transformative power of the Brainstorming method within the educational realm. Their study ventures into uncharted territories, unraveling the untapped potential of the Brainstorming technique to invigorate students' Mathematical connection skills and unriddle the enigmatic correlation between these skills and metacognition. By meticulously scrutinizing a sample of 60 daring participants, the researchers unearth a plethora of revelatory findings. This research magnifies the indomitable force of Brainstorming in cultivating heightened learning outcomes and interweaving cognitive capabilities in the intricate tapestry of mathematics education. In a study conducted by **Virginia Cruz and Nicolas Gaudron** in 2010 they explored the use of ended objects, as a tool for brainstorming. They introduced the concept of HCL workshop ended object sessions, which proved to be quite promising. These objects allowed participants to engage with each other emotionally and sensorially leading to the generation of ideas that had not been previously explored within their research program. By creating a shared experience that went beyond language barriers the brainstorming sessions were able to transcend expert discussions and fostered exchanges among participants, from backgrounds. In 2016 **Rafidah Abd Karim** conducted a research study titled "Brainstorming approach and mind mapping, in writing activity". The study delved into the utilization of mind maps for generating, visualizing, structuring and categorizing ideas. By engaging in brainstorming exercises students can be guided to overcome challenges encountered during writing tasks. This paper examines the significance of brainstorming and mind mapping as approaches that assist students throughout their writing process. Additionally, it explores the integration of technology to facilitate brainstorming and mind mapping activities. Research conducted by **Binita Goswami et.al.** in 2017 they investigated the effectiveness of using brainstorming sessions as a teaching learning tool, for medical biochemistry students. The findings indicated that the students showed an understanding of concepts as demonstrated by improved scores in posttests and their ability to solve clinical problems during the brainstorming sessions. Moreover, the students expressed their contentment with the organization timing and discussion of problems, during these sessions. **Ida Bagus Nyoman Mantra et al., (2022)** conducted a

study entitled on “explored that the reading comprehensions of the students improved Significantly Therefore, the BARA (Brainstorming, Activating, Reinforcing, Applying) strategy is considered very effective for teaching reading comprehension. This study implies that teachers should consider using BARA strategy to improve students’ Reading comprehension.

Objective of the Study

- To understand the concept of brainstorming and Philosophy behind Use of Brainstorming Method in the Field of Education
- To Familiarise different types perspective tools for brainstorming.
- To explore usage of brainstorming tools inresearch.

Data Base and Research Methodology

This qualitative study is a secondary analysis of data collected from a variety of sources, including journals, articles, theses, magazines, books, and the internet.

Concept of Brainstorming and its Philosophy in the Field of Education

Advertising mogul Alex Osborn, celebrated for his groundbreaking 1953 masterpiece "Applied Imagination," spearheaded this technique, subsequently honed and expanded upon by a multitude of researchers from various domains, including academia. In the realm of instruction and acquisition, this approach subtly deviates from Osborn's original notion, seeking to reshape students' conventional learning methodologies into vibrant perspectives. Within the educational milieu, brainstorming engenders ingenious cogitation by provoking the serendipitous generation of ideas pertaining to the subject matter. In stark contrast to mundane classroom practices, this methodology nurtures a dynamic and emancipated mindset among learners. It facilitates the transition from familiar knowledge to uncharted territories and encourages students to showcase their erudition in front of their peers. Whether conducted within a solitary session or spanning several, this technique, necessitating only rudimentary supplies like chalk and a board, compels students to rupture established cognitive patterns and embark upon unexplored avenues of thought, particularly in contemporary cutting-edge classrooms. Delving into the intricate realm of language classes, the art of brainstorming emerges as an alluring and potent instrument. With its magnetic allure, it propels students towards mastery, transforming them into nimble and astute learners. Moreover, this vibrant activity bestows upon them a euphoric delight, saturating their souls with unbridled joy.

In a vast framework, the pedagogical strategy known as brainstorming in education entails provoking students to unleash a deluge of ideas, thoughts, expertise, and facts to tackle distinct predicaments, subjects, or dilemmas. In the conventional domain of language instruction, this approach unfurls as the instructor strides into the classroom and initiates a preliminary conversation, frequently employing inquiries. The culmination of this inaugural dialogue signals the commencement of the lesson's focal theme. Subsequently, the lesson advances through diverse phases encompassing the instructor's

exposition, student involvement, practice, extraction of significance, elucidations, and recapitulation. During the cognitive tempest technique, the instructor wields it throughout the complete pedagogical procedure via the subsequent measures.

Students sits around the round table

At the commencement, the professor commands the pupils to orchestrate their seating in a spiral or U-shaped formation. This arrangement may encompass an elliptical table or the chairs being harmoniously positioned. The seating disposition endeavors to guarantee that every student possesses a lucid line of sight towards each other, the whiteboard, and the instructor, thus fostering unmediated interaction and involvement.

Present the Specific Problem or Topic

Having established an optimal seating configuration, enabling every student to visually connect with their peers, the board, and the instructor, the subsequent phase entails unveiling the particular quandary, subject matter, or matter of concern in the form of an interrogative. This endeavor may be instigated by either the pedagogue or a pupil.

- **Clarification and explanation of the problem:**Before initiating the mind-melting session, the teacher bestows an elucidation of the enigma and tackles any inquiries the students might harbor concerning the forthcoming venture. For instance, when instructing about fruit appellations, the teacher might exclaim, "Beloved pupils, you are well-acquainted with myriad fruits. Kindly divulge the nomenclature of fruits in either your mother tongue or the desired lingua franca.
- **Brain storming starts:**After the intricate elucidation and dispelling of uncertainties, the mind-mapping session kicks off, endowing all students with the chance to vocalize their musings. Remarkably, students frequently showcase remarkable fervor when proffering their retorts to the presented predicament.
- **Drawing-out as many ideas as possible:**The utmost aim is to extract an abundance of ideas. Students must be granted abundant chance and time to ponder and retort as elaborately as they are able.
- **Record all the generated ideas:**Either the instructor or a learner should meticulously inscribe all the concepts on the blackboard, utilizing succinct keywords and phrases. This methodology has evidenced that exhibiting concepts on the board in full view of the learners nurtures a vibrant mental progression, thereby stimulating them to proffer supplementary notions.
- **Assessment of ideas:** Engaging with notions launches students into a realm of abstraction. The educator proceeds to ponder over each notion individually. Likewise, every entry in the catalog requires thorough examination, refinement, amplification, and all-encompassing dialogue. Ultimately, a definitive catalog is crafted on the chalkboard. This approach equips students with a conclusive inventory, which they subsequently transcribe into their notes for ensuing exercises.

6. Perspective tools for Brainstorming

- **Six thinking hats** - It was developed by Edward de Bono. Six thinking hats refers six different perspectives, allowing you to reduce bias in your brainstorming. It is especially useful when search ideas for research papers or projects. It functions as a team-based approach to brainstorming and problem solving that may be used to examine issues from many angles in order to find solutions that might otherwise go unnoticed.
- **Gap analysis** - A gap analysis helps to identify the gaps between the current performance and the expected performance. Gap analysis in education is the process of determining the difference between a child's current level of learning and where they ought to be at any particular point in their schooling. We call this a learning gap. A gap analysis template may be used to put strategies in place to help the kid catch up to where they need to be when a learning gap has been detected.
- **Concept map** - A concept map consists of data elements and information that allow you to visualize the data and information flow in your concept. Concept maps can be utilized to illustrate and comprehend the interrelationships between data in existing literature. Creating concept maps can be a helpful way to visualize the concept you are researching and studying. We can use sticky notes to create a type of mind map, or you can utilize one of the many online brainstorming tools available.
- **Reverse brainstorming canvas** - The reverse brainstorming canvas model is a powerful tool for problem-solving, especially when you need a new perspective. It helps to stimulate creative thinking and idea generation by looking at the issue from a different angle.
- **Problem statement** - Problem statement is the one of the most important brainstorming tools in research. A problem statement is a succinct and clear description of the issue that you are attempting to address in your research. This model assists you in breaking down the LARGE problem that you are attempting to solve into more manageable parts by posing specific questions.
- **SCAMPER** - SCAMPER is an acronym for seven creative problem-solving techniques: Substitute, Combine, Adapt, Modify, Put to Another Use, Eliminate, and Reverse. This method is known for being straightforward and easy to use. It is based on the concept that innovation is achieved by making changes to existing ideas and objects.
- **Mind mapping** - Mind mapping is a technique for visually organizing information around a central concept. It is similar to a tree, with related ideas branching out from the main point. This type of layout allows for the exploration of patterns and structure in a variety of materials, making it a useful tool for organizing thoughts, studying, and approaching projects.
- **Random word technique** - Random word brainstorming can be a great way to come up with creative solutions to your problems. This technique encourages you to think outside the box and explore ideas that you may not have considered

before. It can help you access the parts of your brain that are usually dormant, allowing you to come up with innovative solutions that are not limited by any structures or rules.

- **Provocation-Based Technique** - Techniques based on provocation involve asking difficult questions or making statements to encourage creative thinking and generate new ideas. These can be in the form of "What If?" questions, outlandish statements, or contradictory assumptions. Provocations break away from traditional thought processes and motivate people to think outside the box.
- **Analogies** - Analogies involve making connections between unrelated topics, scenarios, or areas. By taking the principles or qualities of one domain and applying them to another, new ideas and understandings can be created. Analogies motivate people to look at different angles and transfer knowledge from one situation to another.
- **Role playing** - Role play involves taking on different characters or identities related to the issue or task at hand. By embodying a different point of view, people can come up with ideas from that particular angle. Role play increases understanding, promotes creative thinking, and allows for the examination of various perspectives.
- **Round robin brainstorming** - Round-robin brainstorming is a structured approach to idea-sharing in which each person contributes one thought before passing it on to the next participant. This method ensures that everyone has an equal opportunity to contribute and that no one voice is more powerful than another. It also encourages a variety of perspectives and helps to generate a multitude of ideas in research and learning.

Brainstorming in Research

In the dominion of investigation, ideating serves as a vibrant and potent technique to nurture inventiveness and spawn a plethora of notions that greatly enrich diverse stages of the research process. Researchers convene to embark on untrammelled and boundless exploration of potential research topics, hypotheses, methodologies, and avant-garde approaches. This collaborative ideation process not only facilitates the refinement of research questions but also aids in the detection of potential hurdles and the formulation of imaginative resolutions to surmount them. Furthermore, ideating assumes a pivotal role in amplifying the configuration of research studies by inspiring collaboration and assimilating cross-disciplinary perspectives. Moreover, the act of ideating proves immeasurable in the interpretation of discoveries, the contemplation of constraints, and the conception of forthcoming research trajectories. By encouraging unreserved discourse and embracing diverse perspectives, ideating enhances the entire expedition of inquiry, propelling towards more profound revelations and resilient achievements. It nurtures a feeling of communal responsibility and involvement among investigators, empowering them to harness their collective expertise and exploits to propel the frontiers of knowledge and ingenuity. Ultimately, ideating acts as a catalyst for engendering novel concepts, igniting ingenuity, and guaranteeing that the research process remains vibrant and consequential.

Conclusion

To wrap up, our research had two primary aims: to unravel the essence of brainstorming and the underlying philosophy that propels its application in the realm of education, and to acquaint ourselves with a myriad of perspective tools that can be employed for brainstorming. Additionally, we sought to delve into the potential utilization of these brainstorming tools in the domain of research. Through our investigation, we have acquired a profound comprehension of the commanding potential of brainstorming as a dynamic technique that kindles the fires of creativity and begets a wealth of ideas. We have acknowledged its pivotal role in the research process, as it aids in refining research inquiries, unveiling potential hurdles, and devising groundbreaking approaches. Moreover, brainstorming has proven to be instrumental in enriching the design of research studies by fostering collaboration and eliciting cross-disciplinary perspectives.

In conclusion, this research has underscored the momentousness of brainstorming in the realm of education and its potential for elevating research endeavors. By embracing the philosophy that lies at the heart of brainstorming and harnessing the varied tools at our disposal, researchers can unleash their creativity, foster collaboration, and ultimately contribute to the advancement of knowledge in their respective fields.

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ICT TOOLS USED IN TEACHING LEARNING PROCESS

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Abstract

If we teach today as we taught yesterday, we rob our children of tomorrow. The world has witnessed a sudden change in the teaching-learning processes due to the ongoing pandemic of COVID-19. The worldwide compulsive lockdown for ensuring the preventive measures to stop the spread of this infection has equally affected education sector as other business sectors. ICT tools are best remedy that were taken by teachers to start learning process for their students. This study is focused to know the usage of ICT tools in teachers learning process. to analyze this secondary data were taken from various magazines, newspapers, articles, social media and through internet. The result of the study is ICT tools were very useful in teaching and it is a time saver but at the same time there is high lack of internet problem faced by teachers and students. So more remedies must be taken for proper internet facilities in colleges, and students must be trained to attend class properly through online tools.

Keywords: ICT tools, Teachers, Students, Internet, Online

Introduction

Information and communications technology (ICT) is an important part of most organizations these days. Computers began to be used in schools in the early 1980s, and several scholars suggest that ICT will be an important part of education for the next generation. Up- to- date technology offers many methods of enhancing classroom teaching and learning. Dawes(2001)stated that new technologies have the potential to upkeep education across the curriculum and deliver opportunities for efficient student- teacher communication in ways not possible before. ICT in education has the potential to transform teaching. However, this potential may not easily be realized, as Dawes (2001) underlined when he stated, “problems arise when teachers are expected to implement changes in what may well be adverse circumstances”. A constant development of information and communication technologies, including their introduction into the education, place more and more demands on teachers who have to be prepared to work with modern ICT tools and to create suitable educational materials for the needs of teaching designed in this fashion. This need does not emerge only from the educational practice, but also from the necessity to accept modern educational paradigm whose flagship is the constructivism which perceives the importance of inner preconditions of a pupil

for learning, but also their contacts or interactions with the environment. In this modern educational paradigm, the ICT tools are a suitable means to improve the effectivity of the educational process: from the perspective of both a pupil and a teacher.

The vast amount of information being now generated in our society has prompted its designation as the knowledge-based society. Some scholars go further and call it the digital society or the information society in their attempt to connect it with technology; however, both concepts carry the idea of living in an age where accumulation of information provides a boost for social interactions and dynamics. (Aguilar 2012). Krüger (2006) defines the knowledge-based society as the social transformation occurring in modern society and provides a view of the future of the different sciences. Andalia (n.d., as cited in Rodriguez, n.d.) states that a difference exists between what is known as the knowledge-based society and the information society. He views the latter as a media-based digital revolution being disseminated through Information and Communication Technologies (ICT), whilst knowledge-based society bases its conception on conveying and stimulating its resources through the use of technological tools, generating faster and more effective products.

Usage of ICT Tools

Today ICT is being used as a tool of improving the quality of life. Its use is increasing in such a way in recent years. Different language institutions in all over the globe have already realized the importance of ICT in teaching-learning process. However, ICT plays the lion role in communicating, establishing and managing information. ICT has proved effective in delivering learning to all over the world and to those people who are unable to move from their places and cannot move their limb and hardly utter words. It becomes possible for them to enhance education due to ICT. There are many different ICT tools that can be used in teaching and learning. These tools can be applied in different education fields.

ICT Enhances the Teaching Process

To add value, manage our classroom, or improve the planning, we can use the Internet. We want to teach using the Internet because we want to change, improve, add a new dimension to our teaching, or vary the types and increase the quality of activities assigned to students [11]. The students need a bit of motivation in learning. Allowing them to use the Internet in their learning is a motivational push to those who are bothered by traditional methods of delivering information, thereby accelerating the transfer of information from short-term memory to long-term memory. The Internet allows us to motivate some of the students lost in the class, thereby speeding up the assimilation process.

Research around the world has shown that ICT can lead to improved learning and better teaching methods for students. For example, a study from the National Institute of Multimedia Education in Japan showed that an increase in student exposure to educational ICT through curriculum integration has a significant and positive impact on student achievement, particularly in subject areas such as mathematics, science, and social

studies[12]. Addressing students' needs to access technology supporting their learning, meeting teacher technology requirements, and offering digital resources within the budget could be a daunting job. When teachers are digitally literate and qualified to use ICT, their knowledge will contribute to higher-order thinking skills, provide students with innovative and individualized opportunities to communicate their understandings, and leave students better prepared to cope with ongoing technological change in society and the workplace.

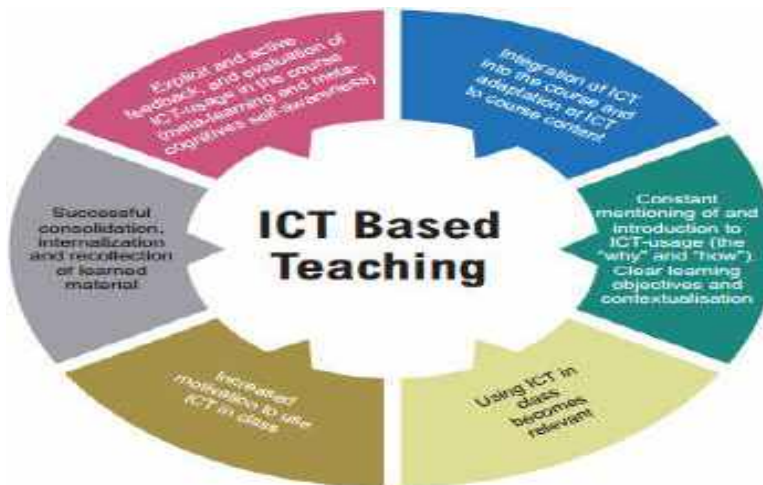
Contribution of Digital Learning Tools

ICT is especially suitable for providing individual differentiation (hereafter, individualization) with its algorithms that enable individual paths of learning. Incorporating the differences in level, interest, and learning styles between students has been shown to boost the motivation of students (Tomlinson, 2004), and neglecting these differences may lead to decreased performance in some students (Tomlinson & Kalbfleisch, 1998) [13], [12]. However, the effects on mathematics and language seem very different, and variations in effects are seen in development-to-development studies versus developing countries, as Bulman and Fairlie (2015) indicate in their overview report. Overall, they think that the evidence of educational impact is at best mixed. They conclude that studies with stronger methodological approaches (such as Randomized Control Trials (RCTs)) generally find minimal or null effects, while studies with lower-quality methodological approaches (such as multivariate and IV approaches) have greater and generally positive effects [13]. They conclude that studies in developing countries and studies that address mathematics rather than language are the only two places where meaningful and statistically relevant effects are observed. However, considerably more studies are included in this overview study than my inclusion criteria would allow, as they also include noncausal studies, where it is unclear how much of the found result is attributable to ICT. Moreover, from their summary, some more recent studies are lacking. All related experimental and quasi-experimental studies below will therefore be briefly listed separately concerning mathematics, language, and other cognitive and noncognitive abilities. In general, there are slightly more studies on secondary than primary education concerning the education sectors, but studies on vocational education are underrepresented. The division of studies between Western and Non-Western countries appears to be equal, so representativeness from this aspect is also available.

ICT Enhancing Teaching and Learning Process

The field of education has been affected by ICTs, which have undoubtedly affected teaching, learning and research (Yusuf, 2005). ICTs have the potential to accelerate, enrich, and deepen skills, to motivate and engage students, to help relate school experience to work practices, create economic viability for tomorrow's workers, as well as strengthening teaching and helping schools change (Davis and Tearle, 1999; Lemke and Coughlin, 1998; cited by Yusuf, 2005). In a rapidly changing world, basic education is essential for an individual be able to access and apply information. Such ability must find include ICTs in

the global village. Conventional teaching has emphasized content. For many years course have been written around textbooks. Teachers have taught through lectures and presentations interspersed with tutorials and learning activities designed to consolidate and rehearse the content. Contemporary settings are now favouring curricula that promote competency and performance. Curricula are starting to emphasize capabilities and to be concerned more with how the information will be used than with what the information is. Contemporary ICTs are able to provide strong support for all these requirements and there are now many outstanding examples of world class settings for competency and performance-based curricula that make sound use of the affordances of these technologies (Oliver, 2000).



The integration of information and communication technologies can help revitalize teachers and students. This can help to improve and develop the quality of education by providing curricular support in difficult subject areas. To achieve these objectives, teachers need to be involved in collaborative projects and development of intervention change strategies, which would include teaching partnerships with ICT as a tool. According to Zhao and Cziko (2001) three conditions are necessary for teachers to introduce ICT into their classrooms: teachers should believe in the effectiveness of technology, teachers should believe that the use of technology will not cause any disturbances, and finally teachers should believe that they have control over technology. However, research studies show that most teachers do not make use of the potential of ICT to contribute to the quality of learning environments, although they value this potential quite significantly (Smeets, 2005). Harris (2002) conducted case studies in three primary and three secondary schools, which focused on innovative pedagogical practices involving ICT. Harris (2002) concludes that the benefits of ICT will be gained "...when confident teachers are willing to explore new opportunities for changing their classroom practices by using ICT. As a consequence, the use of ICT will not only enhance learning environments but also prepare next generation for future lives and careers (Wheeler, 2001). Changed pool of teachers will come changed responsibilities and skill sets for future teaching involving high levels of ICT and the need for more facilitative than didactic teaching roles.

Difficulties in Implementing Online Teaching Learning

There exist some difficulties felt while implementing the change in the educational system after Covid-19 crisis and some of these difficulties are associated with innovative outlook in the education and the complexities in implementing technology for learning. With positivity among teachers, they used various social media applications like WhatsApp, Facebook, Twitter, etc., and it helped for the smooth conduct of online classes using various platforms such as ZOOM, Google Meet, etc. It is identified that some of the teachers need considerable resources and training to implement online teaching and learning effectively. There are various barriers which hinders the teachers to integrate ICT tools in their online classrooms.

Conclusion

The key benefits of using ICT are providing student direct and immediate input, enhancing student efficiency, reducing the teacher's time and effort, reducing the institution's expense, and promoting high-order thought, which is one of the educational objectives. ICTs faced some difficulties in education, such as inadequate technological infrastructure and inexperienced computer students. And also teachers are facing technical difficulties in using online platforms for delivery of instruction as well as in creating e-content. The survey results also indicate that Internet connectivity and low bandwidth is a bottleneck in online teaching and teachers are finding it difficult to deliver online lectures on low bandwidth. So more remedies must be taken for proper internet facilities in colleges, and students must be trained to attend class properly through online tools.

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TEACHING PRACTISES THROUGH ICT TOOLS

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Abstract

Information and communication technology (ICT) currently affects every aspect of modern life. The manner that students are learning now has changed as a result of the integration of information and communication in the classroom. With the use of ICT tools, teachers in India are also experimenting with creative teaching methods. They use a variety of digital platforms to organize their lectures, deliver them virtually or in a traditional classroom setting, and carry out assessments. With the use of educational technology, it is now possible to communicate with various learner types and provide several avenues for understanding assessment. One of the key elements in the effectiveness of technology-based teaching and learning is teachers who are well-prepared with ICT resources. The Indian government supports technology-driven innovations in the educational field and support educators in embracing and integrating ICT. This paper will discuss how technology has changed teaching methods as well as instructors' attitudes towards using technology in the classroom and professional development.

Keywords: ICT Resources, Learning, Teaching, Educational Technology, Understanding.

Introduction

ICTs are making dynamic changes in society. They are influencing all aspects of life. The influences are felt more and more at schools. Because ICTs provide both students and teachers with more opportunities in adapting learning and teaching to individual needs, society is, forcing schools aptly respond to this technical innovation. Tinio (2002), states the potentials of ICTs in increasing access and improving relevance and quality of education in developing countries. Tinio further states the potentials of ICT as follows: ICTs greatly facilitate the acquisition and absorption of knowledge, offering developing countries unprecedented opportunities to enhance educational systems.

Objectives

1. This study aims to analyze whether using ICT tools would be more beneficial for students than Chalk board teaching.
2. It also aims to assess the effectiveness of ICT tools in helping the students in understanding and retaining the information.

Advantages of Using ICT Tools in Teaching Learning Process

Teaching Makes Easier

Teachers are the people with one of highly benefited of having ICT in education. Through the use of it, it makes the teaching easier. When a teacher teaches the student on a new lesson it makes for them easy to inform and to evaluate what they want them to know. Creating documents files, pdf files or power point presentation through the use of computer or laptop for them to show the topics that they will going to tackle is a great way for teaching.

Lesson can be seen and Heard

The advantage of information communication technology is the lessons can be seen and be heard. Unlike on the books you can just see it, seeing those pages with paragraphs and full of text and sometime we can see the pictures. Sound coming from the videos or music that being used will be played over and over again that makes it to remember well.

Easier to Understand

When the students see pictures appearing on the white screen using a projector they understand it easily what it really means.

Improves Communication

Having a technology in the school discussion improves communication. Because through that medium the teacher as well as the student learn more and more vocabulary words. The proper way of saying a word or words, the correct grammar and the meaning of the words improves.

Enjoying While Learning

Images, music and videos are one of the source of entertainment. When people see that they are happy and enjoy it. Unlike from the articles that just compose of full of text it is boring. Through the colorful images, students enjoy listening to the music and imagine what it really means.

Students Perform Better

What is good and importance of ICT in teaching and learning is the students perform better. When a teacher teach in front of the class and start to have a visual aid like projector, the students are attract. Xiao, Y., & Watson, M. (2019) represents pictures project on the screen and the student will see what that is. The students perform better when it is attractive.

Know More Information

The internet is one of the fastest way of getting information because just one touch, can get what is needed. In education the more we search and read the more information we will get. The teacher and the students both get more information by the way they use it.

Improves Visual Skill

When students are learning with the use of pictures, or videos their visual skill improves. Some teachers use riddles using photos that will improve their thinking skill and cognitive skill. And because of that students are enjoying the lesson.

ICT in daily life

ICT makes buying and selling easier. Computers are used by customers to connect On-line with Suppliers. Computers are used to keep record of transaction. ICT is applied as a means of communication between customers and the producers.

Frequently used ICT Tools

The ICT devices are the latest tools, concepts and techniques used in student-to-teacher, student-to-student interaction for example: - Youtube, mobile applications, smart classroom for information and communication technology.

Powerpoint Presentation

PowerPoint is well utilized to create a slideshow of valuable information through charts, and images for a presentation. It is commonly practiced in business and school presentations. It is an absolute presentation graphics package that gives you everything needed to create a professional-looking presentation. Amare, N. (2006) suggests that using PowerPoint makes it easy for us to integrate graphics and animations into our slides which can illustrate key points and processes for our students. Preparing a presentation helps the teacher to provide good structure and maintain flow of the subject matter. Szabo, A.; Hastings, N. (2000) suggests that powerPoint can be an effective tool to present material in the classroom and encourage student learning. We can use PowerPoint to project visuals that would otherwise be difficult to bring to class.

Educational Videos and animations (YouTube and Internet)

Various valuable educational videos of various subjects available on internet also have a great impact. YouTube provide additional help in better understanding of subject knowledge. Using videos for education benefits both teachers and students. Türel, Y. K., & Johnson, T. E. (2012) adds that video content can help students understand lessons better, while it can help teachers focus on quality. Video and animations can help students visualize the lessons and process them better.

Smart Classroom

Classroom integrated with Smart boards and internet connections provides enhanced and interactive learning and teaching opportunities for students and teachers. The internet-connected to systems in smart classes is stored with abundant information. It is accessible anytime for their teaching and learning process. Tissenbaum, M., & Slotta, J. D. (2019) says that teachers can access information from various educational sources for teaching purposes. It helps in easy access to online resources. Smart Classrooms helps in developing critical thinking and problem-solving skills in students. There are many more ICT tools that facilitate innovative teaching learning process.

Disadvantages of ICT Tools

Some of the disadvantages of ICT Tools are Unemployment, Lack of security/privacy, Cyber bullying, Reliance on technology, Social media and Preparation time.

Conclusion

ICT tools are very powerful in teaching and learning. ICT tools empower both teachers and learners. They transform the teaching and learning processes from being highly teacher dominated to becoming student-centric and this transformation results in increased

learning gains for students, creating and allowing for opportunities for learners. In addition, they are cost efficient and eliminate the usage of paper. Alongside minimizing cost, they also save time during class lectures enabling swift and dynamic transmission of content. They provide access to dynamic teaching and learning methods and facilitate easy student management. ICT is a powerful tool for educational change and reform. Appropriate use of ICT has helped the college raise the interest levels amongst the students and has helped connect learning to real-life situations. Students enjoy while learning and perform better.

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WOMEN EMPOWERMENT

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Absract

The topic of "Women Empowerment" is one that is hotly debated throughout the world in this essay. The issues of "women's empowerment" and "equality with men" are global. Women's empowerment is the process of enabling women to act independently for both their own interests and those of society as a whole. Women's empowerment is the process of enhancing and improving the social, economic, political, and legal power of women in order to ensure their equality and give them the self-assurance they need to assert their rights, including the freedom to live their lives with a sense of self-worth, respect, and dignity, total control over their lives inside and outside of the home and workplace, the ability to make their own decisions, and the same rights as men.

Introduction

Women's empowerment mostly refers to the act of making women independently they may manage their life without interference from their families or society. Simply put, it gives women the right to be in command of their own personal growth. The major goal of women's empowerment is to assist them stand on an equal footing with men because women have historically been the downtrodden group in patriarchal societies. It is an essential first step in ensuring the prosperous development of both a family and a nation. By empowering women, the world will undoubtedly see gender equality and enable women from all social classes to stand independently and Scope of live their lives as they see fit.

Women Empowerment

- "Women empowerment" is the term used to describe the liberation of women from the socioeconomic chains of reliance. The term "empowerment of women" refers to the authority or power granted to women who enjoy equal rights.
- "Indian civilization has kept women on level with the rest of the population ever since its inception. In some places, customary laws specified or imposed restrictions on women. These recommendations were entirely based on the biology and mentality of women, but tragically, society has turned them into taboos and exploited them as instruments to oppress women over the years.
- 50% of the population of the country are women, and the majority of them are still economically reliant and unemployed. Only a small percentage of Indian women today, in the era of feminism, are free to express their free will and to live their lives as they see fit. However, a sizable percentage of women in this nation require encouragement. In many areas of India, women are still not allowed to receive a

basic education and are never permitted to seek higher education even when they have the necessary skills.

- The process of educating others about the rights and potential of women begins with their empower
- Barriers of women empowerment:
- women their proper place in society is a key component of empowering women. Women, who have been repressed, oppressed, and mistreated for generations, are finally coming forward to establish their own identities. They require support and encouragement as they embark on their new endeavor. Unfortunately, some segments of Indian culture are opposed to the newfound freedom enjoyed by women. There are many obstacles to womenempowerment in India because of the harsh rules of our patriarchal society.
- The prevailing attitude of our culture, according to which women are expected to take care of their families and home tasks, is one of the main obstacles to women's empowerment. Only if a woman maintains her virginity is she deemed virtue
- Women encounter numerous obstacles including gender-based discrimination in the workplace in every nation on earth. The discrimination starts young—from the type of education girls receive or till what age, through the type of profession women are directed toward. Due to cultural preconceptions and assumptions, women experience occupational segregation, various hurdles, and gender-based violence in both the public and private spheres. These barriers include lack of access to land, capital, financial resources, and technology. It is more difficult for women to achieve equality with men in the workplace as a result of these barriers. Gender Inequality is further exacerbated by legal restrictions.

I'm not going to limit myself just because people won't accept the fact that I can do something else." -Dolly parton.



Each time a woman stands up for herself knowing it possibly, without claiming it, she stands up for all women."-Maya Angelou.

Women Empowerment Rules

- Equal employment.
- Right to vote.
- Property rights.
- Freedom of movement.
- Informing women about their legal rights.
- Discrimination.
- Right to health.

Rural Women Empowerment



The initiative also engages with governments to develop and implement laws and policies that promote equal rights, opportunities and participation so that rural women can benefit from trade and finance, market their goods and make a strong contribution to inclusive economic growth. The transformational economic, environmental, and social transformations necessary for sustainable development are mostly being driven by rural women. But among the other difficulties they encounter—many of which are made worse by the world food and economic crises and climate change—are limited access to financing, health care, and education. Given the significant proportion of women working in agriculture around the world, empowering them is essential for the welfare of people, families, and rural communities as well as for overall economic production.

Women Strength

- Women are great listeners.
- Women have a lot of love to give.
- Women are brave.
- Women are natural-born nurturers.

- Women are hard workers.
- Women are problem-solvers.
- Women are good communicators.
- Women are empathetic.

Conclusion

By increasing women's literacy, education, training, and awareness, women's empowerment enhances their status. Women's empowerment also refers to the capacity for strategic life decision-making that was previously out of reach for them. The current top development priority is the empowerment of women.

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EMERGING TECHNOLOGIES FOR TRANSFORMING TEACHING AND LEARNING

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Abstract

The landscape of education is undergoing a profound transformation due to the rapid advancement of Information and Communication Technologies (ICT). These emerging technologies have the potential to revolutionize teaching and learning methodologies, fostering more personalized, engaging, and effective educational experiences. This paper explores some of the most promising ICT technologies and their implications for reshaping education. From Artificial Intelligence (AI) and Virtual Reality (VR) to Gamification and Learning Analytics, each technology's unique contributions to the educational sphere are examined.

Artificial Intelligence (AI) is revolutionizing the way students learn by providing personalized learning pathways. AI-powered educational tools can analyze individual learning patterns, identify strengths and weaknesses, and offer tailor-made content and assessments. Virtual Reality (VR) and Augmented Reality (AR) create immersive and interactive learning environments, enabling students to explore virtual worlds and conduct simulated experiments. Gamification, through its use of game elements, motivates and engages learners, making the learning process enjoyable and rewarding.

Internet of Things (IoT) devices in smart classrooms streamline administrative tasks and enable data-driven decision-making for educators. Blockchain technology ensures data security and transparency, particularly in credentialing and certification processes. Mobile Learning (m-Learning) enables flexible access to educational content anytime and anywhere, empowering learners with continuous access to knowledge.

Collaborative tools facilitate group projects and peer-to-peer learning, promoting critical thinking and teamwork skills. Learning Analytics, with its data-driven insights, helps educators identify areas of improvement and provide timely support to struggling students. Cloud Computing enhances accessibility to educational resources and facilitates seamless collaboration.

While these emerging technologies hold great potential for transforming education, their successful integration requires addressing challenges such as digital equity, data privacy, and teacher professional development. Striking a balance between technological innovation and preserving the human connection in education is vital. By harnessing the power of ICT responsibly, educators and learners can collaboratively create dynamic and inclusive learning environments, equipping students with the skills they need to thrive in the digital age.

Keywords: Artificial Intelligence, Virtual Reality, Information and Communication Technologies (ICT), Augmented Reality, Internet of Things (IoT)

Introduction

In recent years, the world has witnessed rapid advancements in Information and Communication Technologies (ICT). These innovations have profoundly impacted various sectors, and education is no exception. As traditional teaching methods are gradually being supplemented and transformed, educators and learners are exploring the potential of

emerging ICT technologies to enhance the teaching and learning experience. This paper explores some of the most promising ICT technologies that are reshaping the education landscape and their potential implications for future educational practices.

1. Artificial Intelligence (AI) in Education

AI is revolutionizing the education sector by offering personalized learning experiences to students. With the ability to analyze vast amounts of data, AI-powered educational tools can identify individual strengths and weaknesses, adapt content to meet specific learning needs, and provide real-time feedback. AI-driven virtual tutors and chatbots are becoming more prevalent, helping students with queries and guiding them through their learning journey. Moreover, AI-based assessment systems can accurately evaluate student performance, enabling educators to tailor their instruction accordingly.

2. Virtual and Augmented Reality (VR/AR)

Virtual and augmented reality technologies have opened up new possibilities for experiential learning. By immersing students in interactive and simulated environments, VR/AR can facilitate a deeper understanding of complex subjects. From exploring historical events to conducting virtual science experiments, these technologies bring abstract concepts to life and make learning more engaging and memorable. Additionally, VR/AR can support remote learning, allowing students to collaborate in virtual classrooms and access resources from anywhere in the world.

3. Gamification

Gamification is leveraging game elements, such as rewards, points, and challenges, in educational contexts. By integrating playful elements into the learning process, gamification can enhance student motivation, engagement, and retention. Students are encouraged to progress through levels, earning rewards and recognition along the way. Gamified learning platforms transform traditional content into interactive and enjoyable experiences, making education more enjoyable and fostering a sense of accomplishment among students.

4. Internet of Things (IoT)

The Internet of Things offers the potential to create smart, connected learning environments. IoT-enabled devices can automate routine tasks, such as attendance tracking and classroom management, freeing up educators to focus on teaching. Smart classrooms equipped with IoT devices can also collect data on student behavior, interactions, and preferences, providing insights to optimize the learning process. Moreover, wearable IoT devices can monitor students' physiological responses to learning, helping educators adjust their instructional strategies accordingly.

5. Blockchain in Education

Blockchain technology ensures data security, integrity, and transparency. In the context of education, blockchain can revolutionize credentialing and certification processes.

Academic records, certificates, and diplomas can be securely stored on a decentralized ledger, eliminating the risk of fraudulent credentials. This not only simplifies the verification process for employers and academic institutions but also empowers students to have greater control over their educational achievements.

6. Mobile Learning (m-Learning)

With the widespread adoption of smartphones and tablets, mobile learning has gained significant traction. Mobile apps and platforms enable learners to access educational content on-the-go, fostering a culture of continuous learning. Whether it's watching educational videos during a commute or completing quizzes during breaks, m-Learning provides flexibility and accessibility, making education more inclusive and learner-centric.

7. Collaborative Tools

Collaborative tools and platforms facilitate group projects and peer-to-peer learning, promoting active engagement and social interaction. Online collaboration spaces enable students to work together on assignments, share ideas, and provide feedback to one another, regardless of their physical location. This fosters teamwork, communication, and critical thinking skills, all of which are essential for success in the 21st-century workforce.

8. Learning Analytics

Learning analytics involves the collection and analysis of data on students' learning behaviors and performance. By leveraging this data, educators can gain valuable insights into student progress, identify areas of improvement, and adapt instructional strategies accordingly. Learning analytics can also help detect early signs of academic struggle, enabling timely intervention to support struggling students and improve overall learning outcomes.

9. Cloud Computing

Cloud-based services have transformed the way educational resources are stored, accessed, and shared. Cloud computing offers scalability, cost-effectiveness, and ease of collaboration. Educational materials can be uploaded to the cloud, making them accessible to students and educators from any device with an internet connection. Cloud-based learning management systems (LMS) facilitate seamless course administration, communication, and grading.

10. Natural Language Processing (NLP)

NLP technology enables computers to understand and process human language. In the realm of education, NLP can be used for language learning, automated essay grading, and language translation. Language learning apps with NLP capabilities can provide personalized language lessons; while automated essay grading systems can save educators valuable time and ensure fair and consistent assessment.

Conclusion

Emerging ICT technologies have the potential to revolutionize education by personalizing learning experiences, fostering engagement, and improving learning outcomes. While these technologies offer exciting opportunities, their successful integration into educational practices depends on various factors, including infrastructure, teacher training, data privacy, and ethical considerations. As we continue to explore and adopt these technologies, it is essential to strike a balance between innovation and maintaining the human connection that is at the heart of education. By harnessing the power of ICT in a thoughtful and responsible manner, we can create a more inclusive, dynamic, and effective learning ecosystem for generations to come.

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ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN RURAL EDUCATION (INDIA)

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Abstract

Information and Communication technology (ICT) plays vital role in Rural Education. It provides a wide range of resources and techniques that can close the educational divide between urban and rural areas. The Indian Constitution's Article 45 mandates that all children up to the age of fourteen receive a minimally adequate elementary education. Due to a lack of infrastructure and facilities for rural education, certain Indian states still struggle to achieve universal enrolment, retention, and high-quality education. As of now, just 20% of rural Indians have access to the internet, compared to 65% of urban Indians. India's policy makers have concentrated on removing obstacles to accessing rural India. However, access to ICT devices and the internet is only one aspect of the issue when it comes to the issue of digital inclusion with regard to education in rural India. ICTs are playing a more and wider part in education as the world rapidly switches to digital information, and this role will only get more and more significant in the twenty-first century. This research article gives an idea to develop the rural education system through the information and communication technology (ICT) and it's important in rural education.

Keywords: ICT, ICT in Education, Rural Education, Students.

Introduction

ICT resources bridge the divide between learner- and teacher-centered settings. The ability of ICT to revolutionize education is one of the most important fields in which this is possible. Particularly, the use of ICT in rural education has the potential to close the gap between urban and rural learning environments, opening up a world of opportunities for students in isolated and poor locations. Information and communication technology (ICT) is one of the technological areas in the global civilization that is developing quickly. Rural education has historically struggled with a variety of issues, from insufficient access to sufficient amenities and educational resources to a teacher shortage. However, the development of ICT has given rise to new confidence for overcoming these timeless problems. ICT includes a wide range of digital technology, such as computers, the internet, mobile phones, instructional software, online learning environments, and interactive digital material. The use of these tools in rural classrooms has the potential to alter the educational experience for kids there by making it more engaging, accessible, and personalized for students in these remote areas.

There is no doubt that ICTs will play a major role in future growth. Rural residents, particularly the poorest of the poor, continue to live with a minimum of ICT facilities despite the fact that benefits of ICTs have not yet reached the projected level in these places. Governments, educational institutions, and stakeholders must work together to invest in infrastructure, digital resources, teacher preparation, and community participation for ICT to have a significant influence.

Adopting ICT in rural education is a leap toward a more inclusive and equitable educational environment as well as a step toward digital growth. ICT has an excellent future in the classroom. In the upcoming years, it is anticipated that ICT will contribute significantly more to teaching and learning. ICT can support the personalization, engagement, and effectiveness of education. Additionally, it might lead to wider access to education.

ICT Enabled Education Overview

Information and communication technology (ICT) enabled education, commonly referred to as e-learning or digital learning, and is the process of using technology into educational practices to improve the quality of teaching and learning. It includes the transmission, administration, and maintenance of educational content using various digital tools, hardware, and software programs. Digital educational resources such as interactive multimedia, e-books, video lectures, online tests, and simulations can be produced and distributed because of ICT. With the help of these resources, students may result in excitement while studying. ICT tools make communication and collaboration between students, teachers, and parents effortless. Continuous contact outside of the classroom is made possible by discussion boards, instant messaging, and email.

People in the modern information society have a right to utilize ICT to access knowledge in order to stay up to date with the latest advancements. In such a situation, education, which is always crucial to the economic and social development of a nation, assumes even more significance. Education boosts a person's earning potential in addition to their creative abilities. It improves their social interaction, allows them access to better health, and offers various other elusive benefits. Additionally, it enhances their level of wellbeing and increases their ability to accept new concepts. In this era of rapid change, students can be trained to participate in the growth process through education and the incorporation of ICT into the classroom.

Review of Literature

1. **Dr. Niva Bara, Dr. BK Jha** in their study Due to the daily, increased usage of ICT tools, education quality has increased dramatically. Online and practical learning approaches have replaced prior conventional or traditional ones. The educational system in our nation has undergone significant changes as a result of the integration of ICT.
2. **Niraj Kumar Roy** according to his study to increase connectivity in the areas of education, governance, social inclusion, access to the internet, and disaster mitigation and control in order to increase access to fundamental information in rural schools. The emphasis is mostly placed on raising the educational bar in rural communities via ICT. I want to emphasize that when implementing the national ICT for education policy, policymakers gave more consideration to rural areas and their students' educational standards.
3. **Sushmita Mukherjee** on his study ICT can undoubtedly bridge the gap between

the technologically advanced and economically backward classes. The government machinery now has easy access to technology in a far more affordable and practical way because to India's IT boom. A revolution in rural development can undoubtedly be sparked by proper training and the application of ICT programs in a straightforward manner and language that the rural population can easily grasp.

Objectives of the Study

1. To know the importance of the ICT in rural Education.
2. To study the role of ICT in rural education development.

Research Methodology

The study is descriptive in nature. The present study is based upon the secondary sources of data; the secondary data was collected through the literature, Books, research papers, research articles, and various other publications. The main objective of this study is to bring out the understanding of the ICT's important in rural education and what role ICT has playing in the Indian rural education and development.

Important of ICT in Rural Education

Information and communication technology (ICT) is essential for the growth of rural education and benefits students, instructors, and communities in a number of ways. Rural schooling is still in a poor condition today. Few government schools exist in certain villages, requiring children to travel great distances to access them, and the majority of schools there do not offer technology based education. Utilizing a variety of technologies, ICT enables users to stay updated with emerging trends. ICT plays a significant role in advancing rural education and has made a significant contribution to its growth.

a. Access to Quality of Education:

This can provide remote and underdeveloped locations with high-quality educational resources. It gives teachers and students access to contemporary educational resources, online classes, and engaging instructional content that might not be accessible locally.

b. Flexible Learning Options:

It enables a variety of flexible learning alternatives, including online and distance learning. This is crucial in rural areas where students may have to travel long for access to schools or higher education facilities.

c. Empowerment and Digital Literacy:

ICT integration in rural education equips students with digital literacy abilities, which are becoming more and more important in the current employment market. Rural adolescents who possess digital literacy can take advantage of new opportunities and participate actively in the global economy.

e. Connectivity and Communication

ICT can help students, teachers, and parents communicate better. Stakeholders can stay connected and involved in the educational process with the help of tools like email, messaging applications, and video conferencing.

d. Collaboration and Resource Sharing:

Collaboration and resource exchange between schools and educational institutions are made possible by ICT. Sharing knowledge, experiences, and educational resources can help rural schools, which will ultimately improve educational outcomes.

e. Innovation and Creativity:

Students in remote locations might be encouraged to be innovative and creative by having access to ICT tools. They can experiment with new concepts, take part in online contests, and work on initiatives that use technology to promote social and economic growth.

Role of ICT in Rural Education Development

The use of ICT in the classroom has been shown to boost students' motivation, enthusiasm, and involvement in the subjects they are studying.

- Access to a wide range of educational resources, such as textbooks, online courses, digital libraries, and instructional films, has been made possible by ICT.
- Rural students have access to high-quality educational resources that would not be accessible locally, balancing the playing field and enhancing their knowledge. If we assure communication in local languages, so that rural students can grasp easily, we can stimulate and increase learning and their skills in rural students.
- ICTs have a broad range of applications and have the potential to be extremely important to society and rural student's development.
- ICT makes it possible for students in remote areas to collaborate more actively while also learning new technology skills. It also makes it possible to employ cutting-edge educational resources and reimagine instructional techniques.
- Rural schools can embrace e-learning tools and online learning platforms with the help of ICT, enabling students to learn at their own pace, interact with interactive information, and take part in virtual classes.
- ICT enables remote learning and virtual field trips for students in rural locations, exposing them to settings and circumstances they might not otherwise have access to.
- ICT teaches digital literacy to rural students, which is crucial for the modern workforce. Their familiarity with technology assists in bridging the digital divide between rural and urban communities and positions them for future employment prospects.
- To provide employment-related education through computer technology to students in grades 8th through 12th.

In India, notable efforts integrating the use of ICT in education include:

1. Indira Gandhi National Open University (IGNOU) makes use of radio, television, and the internet.
2. The UGC initiated the "ICT for teaching and learning process" scheme to achieve quality and distinction in colleges and universities.
3. SWAYAM -Massive Open Online Courses (MOOCs)
4. e- PG pathshalaE-book gateway up to PG
5. SODHGANGA – Access Indian Institute Scholars' Research Theses.
6. e-Yantra – Initiatives for students.
7. The FOSSEE (Free/Libre and Open Source Software for Education) project supports the use of FLOSS tools to improve educational quality in our country.
8. Spoken Tutorial - It has won numerous awards for its educational material portal. Here, one can learn various Free and Open Source Software on their own.

Conclusion

While ICT provides several benefits to rural education, it also plays an important role in rural education. Policymakers, educational institutions, and technology suppliers must collaborate to promote fair access and successful use of ICT in rural education. The incorporation of ICT in rural education has the potential to transform the way students learn and teachers educate. We can bridge the gap between urban and rural education by harnessing technology and giving equitable chances for all learners, regardless of geographical location. However, for ICT to have a significant influence, governments, educational institutions, and stakeholders must work together to invest in infrastructure, digital resources, teacher training, and community participation. Embracing ICT in rural education is a step toward a more inclusive and fair educational landscape, not only a step toward digital growth. To summarize, ICT plays an essential role in rural educational development because it bridges the educational gap, empowers students and instructors, improves learning experiences, and promotes overall growth in rural communities.

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THE ROLE OF ICT IN CURRICULUM TRANSACTIONS

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Abstract

An information and communication technology (ICT) has turn out to be regular entities in all aspects of human activities. In recent times the use of ICT has primarily changed the practices and procedures of nearly all forms of endeavor within educational institution, industry, research, media and governance. In the field of education sector, ICT has begun to have a presence but the impact has not been as extensive as in other fields. The use of ICT in education lends itself to more studentcentered learning settings and often this creates some tensions for some teachers and students. The objective of the article is to look at the role of ICT in higher education in Nagaland. It emphasizes computer technology and media because of their availability in educational institutional and their great impact on teaching and learning processes and highlight some changes ICT might have on the role of the teacher in the classroom. The present paper focuses on incorporation of ICTs in educational system in Nagaland and highlights on present educational scenario. The results show that 74.5 per cent of teaching faculties emphasize the need to expand educational opportunities for students in terms of contented interaction and satisfaction in the process of educational activity. This paper is an attempt to draw attention on policies implementation regarding ICT integration and effectiveness of teaching-learning environment. Keywords: Information and communication technology, e-learning and motives

Keywords: Curriculum transaction, Information and communication technology, manipulation, transmission

Introduction

Information and communication technologies (ICT) are an umbrella term that includes all technologies for the management and communication of information (Basargekar and Singhavi, 2015; Mou, 2016; Pulkkinen, 2007; Wood, 1995; Koehler and Mishra, 2009; Hathaway, 1995; Kumar, 1996). ICT considers all the uses of digital technology that already exists to help government, research institute, education, individuals, business and organization. ICT is concern with the storage, repossession, manipulation, broadcast or receipt of digital data (Balanskat et.al, 2006; Owston, 2006; Richardson, 2011). The addition of ICT issues in the curriculum and provision of these telematics in colleges have raised many issues of concern to educators, parents, researchers, policy makers and politicians. Some of the most noteworthy issues are the function of the information technology in the curriculum, and how these issues should be addressed in the curriculum, and most importantly how they impact teaching and learning (Dagdilelis, Satratzemi, and Evangelidis, 2004; Narula, 2008; McConnell, 2001). The other issue of concern is the

repercussions of these technologies in terms of increasing access to high quality education. If one was to compare such fields as medicine, tourism, business, law, banking, insurance etc., the impact of ICT across the past two or three decades has been vast (Rastogi and Malhotra, 2013; Tomei, 2007; Pelgrum, 2001; Williams, 2006; Barak, 2006). A number of people have attempted to discover this lack of action and influence. These have included such determinants as a lack of financial support to purchase ICT technology, require training among the teachers, a lack of motivation among teachers to adopt ICT as teaching tools in class room teaching and demonstration (Collis, 2002). But in recent times, factors have emerged which have strengthened and positive moves to adopt ICTs into classrooms and learning settings.

Objectives

- To Know the ICT in curriculum development.
- To Study the curriculum transactions through ICT skills.
- To Find out the effective use of ICT.

ICT in Learning - Once a Choice, Now a Necessity

The usage of ICT in the teaching process was a recommendation and an opportunity to innovate and actualize it until only a few months ago. The inevitable change caused by the unexpected circumstances triggered by Covid-19 brought all teachers into a situation where there was no room for consideration and no option to avoid the use of modern technology for learning and teaching purposes. Taking into account current situation that indicates the need for integration ICT into the teaching process, the aim of this paper was to analyze the relevant research, to point out the inevitability of providing additional support to teachers for the use of ICT in teaching. Accordingly, the research objectives was: pedagogical significance and contribution of ICT integration in the teaching process, the importance of the role of teachers in the process of ICT integration in teaching, as well as potential obstacles and difficulties that teachers may face in using ICT in teaching process. The obtained results can contribute to a more comprehensive view of the problems that teachers could face in the implementation of ICT in teaching, which would allow the determination of directions that would affect changes in their opinion related to acceptance and promotion of learning in ICT environment, as well as advantages to innovate teaching process by using ICT in teaching.

The Importance of ICT in Learning

One of the most critical questions asked by educators is: What is the long term impact of the introduction of ICT in the curriculum? Computers, in particular, have positive effects on learning and are motivating for learners (Reeves, 1998). They are accepted by more teachers than other technologies and are widely supported by administrators, parents, politicians, and the public in general. Reeves argue that computers increase equity of access, and reduce the time needed to accomplish a given set of objectives. One of the goals of the Ministry of Education is equity of access to quality education for all; hence this

technology is essential if we are to achieve this goal. According to Reeves (1998) computer-based cognitive tools such as databases, spreadsheets, communication software, etc., have been intellectually developed to function as intellectual partners to enable and facilitate critical thinking and higher order learning when using these tools learners are able to represent and express what they know. They function as designers using the tools for analyzing the world, accessing and interpreting information, organizing their personal knowledge, and representing what they know to others. Hunt (2004) argues that because of the phenomenal rate at which the volume of available information increases, and access to an increasing range of sources, it is becoming clearer than ever that the ability to find appropriate information and use it effectively is of greater value than being able to remember facts. The skills of locating, evaluating and using information effectively from a range of sources constitute the Information Skills which are needed for people to become Information Literate, enabling them to engage in effective decision making, problem-solving and research. Therefore the importance of ICT cannot be over emphasized as it offers the education process one of the most potentially powerful learning tools available. Not only can computers support learning across the whole curriculum, but communication networks also provide the learner with fast and searchable access to vast amounts of information. It also supports a wide range of broader educational objectives including independent learning, collaboration with others and communication skills (Hunt, 2004). It is thus of vital importance that all children in schools have adequate access to ICT and that they develop the necessary skills, taking advantage of the learning capabilities that ICT offers. Primary schools on the other hand are ill-equipped with computers and other important technologies. Computers that are found in some schools were donations and are only used for administrative purposes. The Ministry of Communications, Science and Technology together with the Ministry of Education are embarking on a project of refurbishing obsolete and donating these to primary schools. Although this is a positive move towards providing quality education to pupils at this level, there are challenges in this endeavor. These are:

Physical barriers such as remoteness and lack of: electricity supply: Some primary schools are in very remote areas far away from the power lines. Computers, photocopiers, fax machines, etc. need electricity. The Ministry would have to find ways of providing these with power. One way is equipping such schools with generators. Generators which can supply enough power for these technologies are very expensive! Therefore a lot of money running into a couple of millions would be needed.

Lack of funds: Especially for maintenance

Lack of ICT skills for staff: Primary school teachers have no skills whatsoever in ICT, let alone having basic training in computers. The challenge facing the Ministry if it were to include ICT issues in the primary school curriculum is to address lack of ICT skills by teachers. Insufficient and inappropriate software: Suitable software will have to be acquired if desired skills which are in line with curriculum needs are to be developed.

Effective Pedagogical Practices

It is one thing to provide schools with ICTs, and yet another to implement these, that is, uses them effectively in teaching and learning to realize their impact. Teachers require more knowledge of, and confidence with ICT, and a better understanding of its potential to help pupils' learn. This suggests that further substantial support for continuing professional development is necessary in order that teachers integrate these technologies and infuse ICT issues in the teaching to improve pupil's attainment (Cox et al., 2003).

The pedagogical practices of teachers using ICT can range from only small enhancements of practices using what are essentially traditional methods, to more fundamental changes in their approach to teaching. According to Cox et al (2003) the most effective uses of ICT are those in which the teacher and the software can challenge pupils' understanding and thinking, either through whole-class discussions using an interactive whiteboard or through individual or paired work on a computer. If the teacher has the skills to organize and stimulate the ICT-based activity, then both whole-class and individual work can be equally effective. To effectively infuse and integrate ICT into teaching and learning teachers need to use a range of practices that are essential pedagogical frameworks (Cox et al., 2003). These are: Understanding the relationship between a range of ICT resources and the concepts, processes and skills in their subject using their subject expertise to select appropriate ICTresources which will help them meet the specific learning objectives; this includes subject-specific software as well as more generic resources being aware of the potential of ICT resources both interms of their contribution to pupils' presentation skills, and their role in challenging pupils' thinking and extending their learning in a subject developing confidence in using a range of ICTresources, via frequent practice and use beyond one or two familiar applications appreciating that some uses of ICT will change theways in which knowledge is represented, and the way the subject is presented to and engages pupils knowing how to prepare and plan lessons where ICT is used in ways which will challenge pupils' understanding and promote greater thinking and reflection Recognizing which kinds of class organization will bemost effective for particular learning tasks with ICT, for example, when pupils should work on their own, how working in pairs and groups should be organized, and when to use ICT for whole-class teaching.

Use of ICT in Teaching

Teaching at School as well as Higher Education, mostly, concentrates on giving information which is not the sole objective of Teaching. Along with giving information, the other objectives are: developing understanding and application of the concepts developing expression power developing reasoning and thinking power development of judgment and decision making ability improving comprehension, speed and vocabulary developing self-concept and value clarification developing proper study habits Developing tolerance and ambiguity, risk taking capacity, scientific temper, etc.

With the present infrastructure, class size, availability of teachers, quality of teachers, training of teachers, etc., it is difficult to achieve all the objectives. Further, most of the

teachers use Lecture Method which does not have potentiality of achieving majority of above mentioned objectives. The objectives are multi-dimensional in nature, so for their achievement multiple methods should be used in an integrated fashion. At present ICT may be of some use. It is a well-known fact that not a single teacher is capable of giving up to date and complete information in his own subject. The ICT can fill this gap because it can provide access to different sources of information. It will provide correct information as comprehensive as possible in different formats with different examples. ICT provides online interaction facility. Students and teachers can exchange their ideas and views, and get clarification on any topic from different experts, practitioners, etc. It helps learners to broaden the information base. ICT provides variety in the presentation of content which helps learners in concentration, better understanding, and long retention of information which is not possible otherwise. The learners can get opportunity to work on any live project with learners and experts from other countries. The super highway and cyber space also help in qualitative improvement of Teaching – Learning Process. ICT provides flexibility to learners which are denied by the traditional process and method. Flexibility is a must for mastery learning and quality learning. On INTERNET many websites are available freely which may be utilized by teachers and students for understanding different concepts, improving vocabulary, developing Reasoning & Thinking, etc. ICT can help in preparing students for SAT, GRE, TOEFL, etc.

Curriculum Transaction

Curriculum transaction is effective implementation of lesson plans in classrooms. A lot of thought goes in planning and preparing the lesson plans. Children will benefit only if the implementation is strong, whether it be circle time, project work, subject time or music time; a teacher's effort should be to reach out effectively to each child in the group. Lesson plans are prepared much in advance and usually there is a gap between preparation and implementation. Children listen to some teachers and are receptive, while the same group of children could respond differently to another teacher. This is also to do with meaningfully engaging children and stimulating their thought processes.

Amongst the information technology computers are the most favored because they have positive effects on learning and are motivating to learners. It also supports a wide range of broader educational objectives including independent learning, collaboration with others and communication skills. The government policy says ICT should be incorporated across the curriculum so as to develop learners ICT capability and provide them with a range of knowledge, skills and attitudes applicable across the curriculum (Pegu, 2014). This paper argues that in order for teacher to effectively integrate ICT into teaching and learning they need to understand the relationship between a range of ICT resources and the concepts, processes and skills in their subject; use their subject expertise to select appropriate ICT resources; develop confidence in using arrange of ICT resources; and know how to prepare and plan lessons where ICT is used in ways which will challenge pupils understanding and promote greater thinking and reflection. It has been found that one of the worst hit by the COVID-19 pandemic has been the education sector. The closure

of schools, colleges and universities around the world has affected over 87% of the students globally, according to a UNESCO report. In the meantime, ICT/digital education has emerged as a clear winner during this pandemic around the world (Emami, 2020; Wootton et.al, 2020).

ICT in Evaluation

The introduction of Information and Communication Technologies (ICTs) in mainstream societies affects the way in which the societies interact, communicate, produce, assess, adapt and access vast amount of information at reduced costs. ICTs are not just about technologies, they are more about information transfer and communication. While poor countries grapple with the problem of high investment costs, it is widely acknowledged that convergence of 'old' and 'new' ICTs is still relevant to poor communities, which lack basic infrastructure such as road, water, electricity and telephones. However, there are arguments that with the rapid expansion of these technologies in the western world, the gap between the poor and the rich is widening. It is also recognized that even within the 'information poor' countries, the poor are further marginalized. Despite these arguments, attempts are being made at a global level to empower poor people with access to ICTs and enable them to cope up with the new challenges posed by the increasing competition through globalization. Small and medium enterprises (SMEs) have demonstrated their capabilities to use ICTs to advance their businesses in the recent years. Since the experience of the SMEs is relatively new, it becomes very difficult for them to distance themselves from the ICTs and to study their impact in their day-to-day lives. Impact studies are often based on a simplistic comparison between the pre- and the post- situations of any intervention. The 'before-after' approach can be effective only when impact assessment methodologies are set with correct objectives. The approach otherwise will simply tell us the changes that occurred due to the introduction of the ICTs, but will not tell us how they have occurred and why. These reasons are very important if the impact assessment exercise is to inform policy formulation and decision making processes surrounding new projects involving ICTs. Thorough impact studies will help in devising new strategies for enhancing the role of ICTs in reducing poverty.

Conclusions

It has been found that ICT has a significant role to play in improving the standards in higher education hence its enclosure in the curriculum is a step in the right direction. Both teachers and students in college should acquire ICT knowledge, skills, and awareness if they are to be successful in their futures (Karasavvidis, 2009). As discussed in this paper telematics tools has the potential of promoting employment and entrepreneurship, reducing gender gaps, and raising the standard of living of the state as a whole (Jamir, 2020; Jamir and Ezung, 2017b; Jamir and Ezung 2017a). Therefore, the policy suggest that successful implementation of ICT is more important in influencing and empowering teachers and supporting them in their commitment with students in learning rather than acquiring computer skills and obtaining software and equipment (Jhurree, 2005).

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ENHANCING LEARNING AND ENGAGEMENT BY INTEGRATING ICT TOOLS IN BIOLOGICAL SCIENCE

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Abstract:

The integration of Information and Communication Technology (ICT) tools in educational settings has revolutionized the way biological science is taught and learned. This article explores the various ICT tools that can be employed in biological science teaching to enhance students' learning experiences, foster critical thinking, and promote active engagement in the subject. Additionally, the article discusses the potential benefits and challenges associated with the implementation of these tools. Through an examination of relevant research studies and practical examples, this article emphasizes the importance of effectively utilizing ICT tools to nurture the next generation of biologists and scientific thinkers. This article explores the integration of Information and Communication Technology (ICT) tools in the field of Biological Science education. It highlights the benefits of incorporating ICT tools in the classroom, such as improving student engagement, enhancing data analysis skills, and fostering collaborative learning. The article also discusses some of the popular ICT tools used in biological science teaching, along with real-world examples of their successful implementation. The integration of ICT in education is seen as a promising approach to create a more dynamic and interactive learning environment for students pursuing biological science studies.

Keywords: ICT tools, Bioinformatics, Data bases, education

Introduction

As technology continues to shape our world, the field of education has embraced ICT tools to create dynamic and interactive learning environments. In the realm of biological science, incorporating these tools into teaching practices opens new avenues for educators to impart knowledge effectively and engage students in deeper explorations of living organisms and their intricate processes. The field of Biological Science is continuously evolving, with new discoveries and breakthroughs shaping our understanding of life (Johnson et al. 2019). As educators strive to provide students with the latest knowledge and skills, integrating ICT tools in the teaching process has emerged as an innovative and effective approach. ICT tools offer opportunities to engage students, facilitate interactive learning experiences, and empower them to explore complex biological concepts in practical and exciting ways.

ICT Tools in Biological Science Teaching

Virtual Laboratories and Simulations: Virtual labs and simulations offer an immersive experience for students to conduct experiments without the need for physical lab setups. This hands-on approach enables learners to explore complex biological phenomena, such as DNA replication and cellular processes, in a safe and interactive manner. Bioinformatics

Software which Introduces bioinformatics tools that allows students to analyze genetic sequences, perform phylogenetic analyses, and study protein structures (Gilani, et al, 2019). These tools provide valuable insights into molecular biology and genomics, encouraging students to think critically and develop problem-solving skills.

Interactive Multimedia Content: Interactive multimedia content, including videos, animations, and 3D models, makes abstract biological concepts more tangible and easier to comprehend. Such visual aids aid in visualizing complex processes and foster a deeper understanding of biological phenomena.

Online Collaborative Platforms: Virtual classrooms and collaboration platforms enable students to participate actively in group discussions, peer-to-peer learning, and scientific debates. This fosters a sense of community among learners and encourages knowledge-sharing beyond the boundaries of a traditional classroom.

Benefits of ICT Integration

Enhanced Learning Outcomes: By catering to different learning styles and preferences, ICT tools facilitate personalized learning experiences, leading to improved learning outcomes for diverse student populations. The Real-world Relevance using ICT tools bring real-world biological research and applications into the classroom, bridging the gap between theoretical knowledge and practical applications.

Student Engagement must be Interactive and dynamic learning environments promote student engagement, curiosity, and a deeper appreciation for the complexities of the natural world. The student assessment may improve ICT tools allow for formative and summative assessments that provide instant feedback, helping educators identify and address students' strengths and weaknesses effectively.

Benefits of ICT Tools in Biological Science Teaching

Enhanced Data Analysis enable students to analyze large datasets, such as genetic sequences and ecological data, using specialized software and online platforms. This allows students to develop critical data analysis skills, preparing them for future research and scientific careers.

Virtual Laboratories and Simulations by incorporating virtual laboratories and simulations, students can engage in hands-on experiments without the limitations of physical resources. They can manipulate variables, observe outcomes, and draw conclusions, promoting a deeper understanding of biological principles. **Multimedia Educational Resources** ICT tools offer access to multimedia resources, such as interactive textbooks, 3D models, and video lectures. These resources cater to diverse learning styles and foster a more immersive learning experience.

Collaboration and Global Connections: ICT tools enable students to collaborate with peers and researchers from different parts of the world. This promotes cross-cultural learning and exposes students to diverse perspectives in the biological sciences.

Important ICT Tools in Biological Science Teaching

BioInteractive (HHMI): Developed by the Howard Hughes Medical Institute, BioInteractive offers a vast collection of virtual labs, interactive activities, and multimedia resources for teaching various biological concepts, from molecular biology to ecology.

BLAST (Basic Local Alignment Search Tool): BLAST is a widely-used bioinformatics tool that allows students to compare genetic sequences and identify similarities among different organisms.

Foldit: Foldit is an online game that engages students in protein folding puzzles, contributing to real scientific research and fostering an understanding of protein structure and function.

Visible Body: Visible Body provides 3D anatomical models and animations, enabling students to explore the human body's intricate systems and structures in a dynamic and interactive manner.

Challenges and Considerations of using ICT Tools that ensuring equitable access to ICT tools and a reliable internet connection for all students remains a challenge, particularly in underserved areas (Smetana and Bell, 2012). Educators need adequate training to effectively integrate ICT tools into their teaching practices and maximize their benefits. Protecting students' personal information and ensuring data security are essential considerations when using online platforms and tools.

Conclusion

The incorporation of ICT tools in biological science teaching has the potential to revolutionize how students perceive and engage with the subject. By fostering interactive learning experiences, promoting critical thinking, and enabling access to cutting-edge research tools, educators can inspire the next generation of biologists and scientific leaders. Embracing these technologies responsibly and addressing associated challenges will pave the way for a more enriched and effective biological science education. The integration of ICT tools in biological science teaching has the potential to revolutionize the learning experience for students. Through enhanced data analysis, virtual simulations, and interactive resources, students can develop a deeper understanding of biological concepts and prepare for careers in scientific research. With ongoing advancements in technology, educators must continue to embrace and explore innovative ways to leverage ICT tools in their classrooms, ultimately fostering a new generation of skilled and passionate biological scientists.

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EMERGING DISRUPTIVE TECHNOLOGY IN EDUCATION

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Introduction

Before the age of computer and digital communication technology, traditional classroom education has been used for the transfer of knowledge from teacher for the student and high dependency was there on the capabilities of the tutor. Knowledge transformation was also limited in time and space by there sources available to students such as libraries etc. But the scenario is change now. There are many digital technologies are available which have high impact on education system. Also due to globalization, there is a pressure on nations of the world to use new technologies in teaching.

There are many technologies have disrupted both our every day lives and commerce. Many disruptive technologies in education are also introduced and the students (according to their needs and teachers can use different technologies controlled by different higher education institutions to support and entire their learning and teaching. The use of ICT is rapidly changing the technological forces that will shape the structure of educational systems of the world.

The role of teaching in a classroom is to help students who are slow learner and to catch up them with other students. But what is about them who are faster at learning? For those students, there are additional courses according to their interests to fulfill their requirements of free elective students. MOOCs is there to enhance online learning with technology.

The teachers can post their instructions online to participants through MOOCs, which is helpful to students to know how to complete the course. The integration of online course material can increase interaction among students and between the students and the teacher, for exp. through virtual group work, building an online community for module, discussion questions, instructor participation and so on. A number of institutions offer virtual distance learning which allows teachers and students to interact with each other.

Digital technology thus provide the potential for establishing communities of inquiry in which elements of social presence and teaching presence interact to create an education experience. Disruptive technologies are also provide an opportunity to those students who can't not come to traditional institutions due to scheduling issues. There are other disruptive technologies also which are useful in education such as cloud learning, mobile learning, e learning, artificial intelligence etc. And are mentioned in the next section of this paper.

Objectives

1. To provide education in the use of Information and Communication Technology or ICT.
2. To encourage higher-level thinking and creativity through ICT.
3. To deliver students with a learning experience in instructional technology.
4. To promote computer-based educational resources.
5. To make students aware of Information Technology.
6. To determine the practical use of technology integration.

Disruptive Technology in Education

1. Online Learning Platforms

- Accessible Education: Online learning platforms provide access to education for learners worldwide, overcoming geographical limitations.
- Flexibility and Convenience: Students can learn at their own pace and access resources anytime and anywhere, accommodating various schedules and obligations.
- Diverse Course Offerings: Online platforms offer a vast range of courses and subjects, allowing learners to explore diverse areas of interest.

2. Artificial Intelligence (AI) in Education

- Personalized Learning: AI can analyze student data and adapt learning materials to individual needs, offering personalized learning experiences.
- Real-time Feedback: AI-powered systems can provide immediate feedback and suggestions to students, aiding in their understanding and progress.
- Administrative Efficiency: AI can automate administrative tasks, freeing up teachers' time for more instructional activities.

3. Virtual and Augmented Reality

- Immersive Learning: VR and AR technologies offer immersive simulations, allowing students to experience complex concepts and scenarios.
- Active Learning and Critical Thinking: VR and AR foster active learning by engaging students and encouraging critical thinking and problem-solving skills.
- Inclusive Learning Experiences

4. Blockchain in Education

- Secure and Transparent Credentialing: Blockchain provides secure systems for storing and sharing educational records and credentials, reducing fraud and increasing transparency.
- Self-Verification: Individuals have control over their educational qualifications, allowing them to easily verify and share their credentials.

- **Reliable Digital Records:** Blockchain ensures the tamper-proof nature of educational achievements, providing individuals with a digital, reliable record of their qualifications.

Conclusion

The technology needs to be kept in perspective, as a tool to enhance learning. Teachers felt that roll of the institution is to deliver more than mere academic facts, students need to develop their interpersonal skills. For this reasons, teachers need to make every effort to ensure that students are able to use the technology intelligently and critically in order to succeed in today's online global workplace. Teachers maintain that technology is not to be considered as a finite entity, it need to be carefully integrated in to the culture of the institution. Above all, technology enhanced learning needs to be approached with caution, in order to not lose sight of the basic fundamentals of higher education. Give sufficient training to teachers to use the technology and to be able to pass those skills on the students.

TEACHING AND LEARNING WITH ICT TOOLS: ISSUES AND CHALLENGES FROM TEACHERS' PERCEPTIONS

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Introduction

Due to ICT's importance in society as well as in the future of education, identifying the possible challenges to integrating these technologies in schools would be an important step in improving the quality of teaching and learning. Balanskat, Blamire, and Kefala (2006) argue that although teachers appear to acknowledge the value of ICT in schools, they continue encountering obstacles during the processes of adopting these technologies into their teaching and learning.

Therefore, the main objectives of this study are as follow:

1. To identify school teachers' perceptions in implementing ICT tools in teaching and learning in classroom.
2. To determine the challenges of using ICT tools in teaching and learning in the classroom among school teachers.
3. To identify that to what extent do teachers use ICT tools in teaching and learning in the classroom.

Theoretical Framework

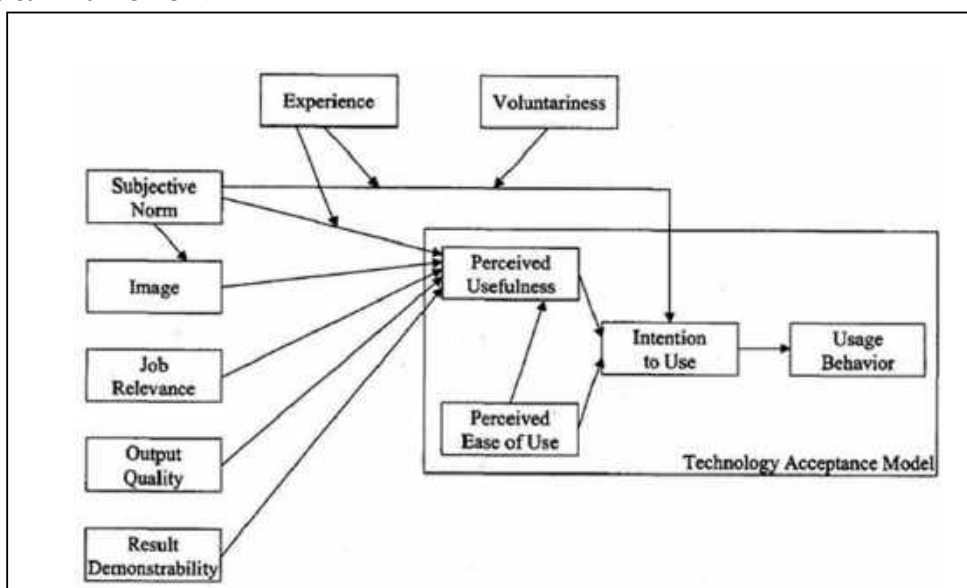


Figure 1 A theoretical extension of the technology acceptance model

External Variables – It represents the challenges that teachers face that come from outside their sphere of control when integrating a new technology in their teaching and learning process. These challenges include:

- Limited accessibility and network connection
- Schools with limited ICT facilities
- Lack of effective training
- Limited time
- Lack of teachers' competency

Perceived usefulness(PU)–It represents the degree to which they believe that using a particular technology would enhance their job performance. If teachers feel there is no need to question or change their professional practice then, according to studies, they are unlikely to adopt the use of ICT tools. However, if they perceive ICT to be useful to them, their teaching and their pupils' learning, then according to the empirical evidence of previous studies (Cox, Preston & Cox, 1999) they are more likely to have a positive attitude to using ICT in the classroom. The following factors have been identified as key elements to teachers' perceived usefulness of ICT tools:

- Work more quickly
- Job performance
- Increased productivity
- Effectiveness
- Useful

Perceived ease-of-use(PEOU)–It represents the degree to which they believe that using a particular system would be free from effort. Previous studies have identified a number of factors relating to the perceived ease of use of ICT, in study on experienced practicing ICT users. The Impact project(Watson, 1993) and other studies identified a wide range of skills and competencies which teachers felt they needed in order to find ICT easy to use. Some of these are:

- Easy to learn
- Clear and understandable
- Easy to use
- Controllable
- Easy to remember

Attitude toward use – teacher's positive or negative feeling about performing the target behavior(e.g., using a system). Basically, teachers' attitudes too many of these factors will depend upon how easy they perceive using ICT tools to be on a personal level as well as for teaching in the classroom.

Behavioral intention - The degree to which the teacher has formulated conscious plans to perform or not perform some specified future behavior.

Social influence processes -(subjective norm, voluntariness, and image) and cognitive instrumental processes (job relevance, output quality, result demonstrability, and perceived ease of use) as determinants of perceived usefulness and usage intentions.

Literature Review

Challenges in using ICT in teaching and learning

Integrating ICT into teaching and learning is a complex process and one that may encounter a number of difficulties. These difficulties are known as “challenges”. A challenge is defined as “any condition that makes it difficult to make progress or to achieve an objective”. The following are some of the key challenges that have been identified in the literature regarding teachers’ use of ICT tools in classroom.

i) Limited accessibility and network connection

Several research studies indicate that lack of access to resources, including home access, is another complex challenge that prevent teachers from integrating new technologies into education.

Various research studies indicated several reasons for the lack of access to technology. In Sicilia’s study teachers complained about how difficult it was to always have access to computers. The author gave reasons like “computers had to be booked in advance and the teachers would forget to do so, or they could not book them for several periods in a row when they wanted to work on several projects with the students”(p. 50). In other words, a teacher would have no access to ICT materials because most of these were shared with other teachers. According to Becta, the inaccessibility of ICT resources is not always merely due to the non-availability of the hardware and software or other ICT materials within the school. It may be the result of one of a number of factors such as poor resource organization, poor quality hardware, inappropriate software, or lack of personal access for teachers

The challenges related to the accessibility of new technologies for teachers are wide spread and differ from country to country. Empiric’s European study found that lack of access is the largest barrier and that different challenges to using ICT in teaching were reported by teachers, for example a lack of computers and a lack of adequate material. Similarly, Korte and Hüsing found that in European schools there are some infrastructure barriers such as broadband access not yet being available. They concluded that one third of European schools still lack broadband Internet access. Pelgrum (2001) explored practitioners’ views from 26 countries on the main obstacles to ICT implementation in schools. He concluded that four of the top ten barriers were related to the accessibility of ICT. These barriers were insufficient unit of computers, insufficient peripherals, insufficient numbers of copies of software, and insufficient immediate Internet access. Toprakci (2006) found that low numbers of computers, oldness or slowness of ICT systems, and scarcity of educational software in the school were barriers to the successful ICT implementation in Turkish schools. Similarly, Al-Alwani (2005) found that having no access to the Internet during the school day and lack of hardware were hampering technology integration in Saudi schools. Recent research on Syrian schools indicated that insufficient computer resources were one of the great impediments to technology integration in the classroom.

ii) School with limit ed technical support

Without both good technical support in the classroom and whole-school resources, teachers can not bee expected too overcome the obstacles preventing them from using ICT(Lewis,2003). Pelgrum(2001)found that in the view of primary and secondary teachers, one of the top barriers to ICT use in education was lack of technical assistance.

In Sicilia's study (2005), technical problems were found to be a major barrier for teachers. These technical barriers included waiting for websites to open, failing to connect to the Internet, printers not printing, malfunctioning computers, and teachers having to work on old computers. "Technical barriers impeded the smooth delivery of the lesson or the natural flow of the classroom activity"(Sicilia,2005,p.43).

Korteand Hüsing (2007) argued that ICT support or maintenance contracts in schools help teachers to use ICT in teaching without losing time fixing software and hardware problems. The Becta (2004) report stated "if there is a lack of technical support available in a school, then it is likely that technical maintenance will not be carried out regularly, resulting in a higher risk of technical breakdowns" (p. 16). Many of the respondents to Becta's survey (2004) indicated that technical faults might discourage them from using ICT in their teaching because of the fear of equipment breaking down during a lesson. In teaching, several studies indicated that lack of technical support is a main barrier to using technologies. According to Gomes (2005), ICT integration in teaching needs a technician and if one is unavailable the lack of technical support can be an obstacle. In Turkey, Toprakci (2006) found that the lack of technical support was one of two significant barriers to ICT integration in science education in schools and might be considered "serious". In Saudi Arabia, science teachers would agree to introduce computers into teaching, except that they believe they will encounter problems such as technical service or hardware problems (Almohaissin, 2006). Sicilia (2005) argued that whatever kind of technical support and access teaching staff have and whether they have twenty years of experience or are novices to the profession, technical problems generate barriers to the smooth less on delivery by teachers.

iii) Lack of effective training

The challenge most frequently referred to in the literature is lack of effective training (Albirini,2006; Balanskat et al., 2006; Beggs, 2000; Özden, 2007; Schoepp, 2005; Sicilia, 2005; Toprakci, 2006; Ghavifekr &Wan Athirah, 2015). One finding of Pelgrum's (2001) study was that there were not enough raining opportunities for teachers in using ICTs in a classroom environment. Similarly, Beggs (2000) found that one of the top three barriers to teachers' use of ICT in teaching was the lack of training. Recent research in Turkey found that the main problem with implementing new ICT in education was the insufficient amount of in-service training for teachers (Özden, 2007), and Toprakci (2006) concluded that limited teacher training in ICT usein Turkish schools is an obstacle.

According to Becta (2004) , the issue of training is certainly complex because it is important to consider several components to ensure training effectiveness. These were time for training, pedagogical training, skills training, and an ICT use in initial teacher training.

Correspondingly, recent research by Gomes (2005) relating to various subjects concluded that lack of training in digital literacy, lack of pedagogic and didactic training in how to use ICT in the classroom and lack of training concerning technology use in specific subject are as were obstacles to using new technologies in classroom practice. Some of the Saudi Arabian studies reported similar reasons for failures in using educational technology: the weakness of teacher training in the use of computers, the use of a "delivery" teaching style instead of investment in modern technology (Alhamd, Alotaibi, Motwaly, & Zyadah, 2004), as well as the shortage of teachers qualified to use the technology confidently (Sager, 2001).

Providing pedagogical training for teachers, rather than simply training them to use ICT tools, is an important issue (Becta, 2004). Cox et al. (1999a) argue that if teachers are to be convinced of the value of using ICT in their teaching, their training should focus on the pedagogical issues. The results of the research by Cox et al. (1999a) showed that after teachers had attended professional development courses in ICT they still did not know how to use ICT in their classrooms; instead they just knew how to run a computer and setup a printer. They explained that this is because the courses only focused on teachers acquiring basic ICT skills and did not often teach teachers how to develop the pedagogical aspects of ICT. In line with their search by Cox et al. (1999a), Balanskat et al. (2006) indicated that inappropriate teacher training is not helping teachers to use ICT in their classrooms and in preparing lessons. They assert that this is because training programs do not focus on teachers' pedagogical practices in relation to ICT but on developing ICT skills.

Fundamentally, when there are new tools and approaches to teaching, teacher training is essential (Osborne & Hennessy, 2003) if they are to integrate these into their teaching. However, according to Balanskat et al. (2006), inadequate or inappropriate training leads to teachers being neither sufficiently prepared nor sufficiently confident to carry out full integration of ICT in the classroom. Newhouse (2002) stated "teachers need to not only be computer literate but they also need to develop skills in integrating computer use in to their teaching/learning programmes" (p. 45).

iv) Limited time

Several recent studies indicate that many teachers have competence and confidence in using computers in the classroom, but they still make little use of technologies because they lack the time. A significant number of researchers identified time limitations and the difficulty in scheduling enough computer time for classes as a barrier to teachers' use of ICT in their teaching (Al-Alwani, 2005; Becta, 2004; Beggs, 2000; Schoepp, 2005; Sicilia, 2005). According to Sicilia (2005), the most common challenge reported by all the teachers was the lack of time they had to plan technology lessons, explore the different Internet sites, or look at various aspects of educational software.

Becta's study (2004) found that the problem of lack of time exists for teachers in many aspects of their work as it affects their ability to complete tasks, with some of the participant teachers specifically stating which aspects of ICT require more time. These include the time needed to locate Internet advice, prepare lessons, explore and practise using the technology, deal with technical problems, and receive adequate training.

V) Lack of teachers' competency

Another challenge directly related to teacher confidence is teachers' competence in integrating ICT into pedagogical practice (Becta, 2004). In Australian research, Newhouse (2002) found that many teachers lacked the knowledge and skills to use computers and were unenthusiastic about the changes and integration of supplementary learning associated with bringing computers in to their teaching practices. Current research has shown that the level of this barrier differs from country to country. In the developing countries, research reported that teachers' lack of technological competence is a main barrier to their acceptance and adoption of ICT (Pelgrum, 2001; Al-Oteawi, 2002). In Syria, for example, teachers' lack of technological competence has been cited as the main barrier (Albirini, 2006). Likewise, in Saudi Arabia, a lack of ICT skills is a serious obstacle to integration of technologies into science education (Al-Alwani, 2005; Almohaissin, 2006). Empirical (2006) produced are proton ICT use in European schools. The data used for the report came from the Head Teachers and Classroom Teachers Survey carried out in 27 European countries. The findings show that teachers who do not use computers in classrooms claim that "lack of skills" are constraining factor preventing them from using ICT for teaching. Another worldwide survey conducted by Pelgrum (2001), of nationally representative samples of schools from 26 countries, found that teachers' lack of knowledge and skills is a serious obstacle to using ICT in primary and secondary schools. The results of a study conducted by Balanskat et al. (2006) have shown that "in Denmark ... many teachers still chose not to use ICT and median teaching situations because of their lack of ICT skills rather than for pedagogical/did actics reasons" while "in the Netherlands... teachers' ICT knowledge and skills is not regarded any more as the main barrier to ICT use" (p.50). Hence, lack of teacher competence may be one of the strong barriers to integration of technology into education. It may also be one of the factors involved in resistance to change.

Methodology

Research Design

In this research, quantitative methodology was used to collect and analyze the data obtained from all the respondents. A questionnaire was self-developed and finalized by their searchers before being distributed to the targeted group of respondents. The questionnaire was designed specifically to address research objectives with regard to teachers' perception on use of ICT tools in public secondary schools in Melaka.

Instrumentation & Sampling

A self-developed cross-sectional survey questionnaire consisting of 7 sections and 114 items was test deeming respondents. The questionnaire was based on 5-point Likert Scale ranging from: 5 =always, 4 often, 3 = sometimes, 2 = rarely and 1 = never. A total of 100 secondary school teachers in the state of Melaka were selected randomly as the sample for the study. The sample responded to the statements given and chose their answers based on their perceptions. The survey was distributed by hand to the respondents. The various

sections of the questionnaire included:(A)Personal Details,(B)Experience with ICT for Teaching,(C) ICT access for teaching, (D) Support for teachers for ICT use, (E) Challenges of using ICT tools in teaching and learning,(F)Teachers' ICT skills, (G) Teachers' opinion about ICT use impact on students' learning outcome.

Data Collection Procedures

Data collection defines the procedure for collecting data by the researcher. The questionnaire has been distributed to 120 teachers randomly. They were given one week to fill in the questionnaire and return it to the researcher. All of the participants volunteered themselves in the research. Some questionnaires were with missing information that the details could not be used as a contribution in this research. Finally 100 questionnaires were returned to the researchers for data analysis.

Data Analysis Process

The data collected from the respondents were gathered together to be analyzed using the Statistical Packages for the Social Sciences (SPSS) version 22. The analysis includes both descriptive and inferential analysis. The researchers used descriptive analysis to analyze the frequency and percentage of the overall population in the demographic background. Besides, it is also used to determine the mean, standard deviation, frequency and percentage. Inferential statistics (t-test) were also used to analyze the research findings.

Validity & Reliability

Internal consistency is measured in this research using the Cronbach's coefficient alpha (α). This method is used to identify the correlation between scores of each item in the test and the total score for all items in the test or is known as test index score. Items with high correlation with the test index score have high reliability, and those with low correlation values with the test index score have low reliability and will be deleted from the test. Based on the findings, the Cronbach's alpha value for this study shows .817 which is satisfactory (between .65 – .95). The alpha value shows that the instrument is reliable. In fact, all items in the instrument have α level of more than .7. The highest alpha level is .847 and the lowest is .799.

Findings

Demographic Factors of the Respondents

The following Table1 give the demographic background of the research participants.

Table1 shows the demographic finding where the age category under 25 is frequency 4 and percentage is 4%, age 26-35 is frequency 64 and percentage is 64%, age 36-45 is frequency 27 and percentage is 27%, age 46-55 is frequency 3 and percentage is 3%, and age 55+ is frequency 2 and percentage is 2%.

The gender findings how small as frequency 25 and percentage is 25% and female is frequency 75 and percentage is 75%. The experience based on the years of experience by the sample is less than 1 year frequency is 5 and the percentage is 5%, 1-4 years frequency

is 25 and the percentage is 25%, 5-10 years frequency is 16 and the percentage is 16%, 10-20 years frequency is 16 and the percentage is 16%, and 20+ years frequency is 1 and the percentage is 1%.

Ethnicity analysis shows that Malay frequency is 37(37%), Chinese frequency is 19 and the percentage is 19%, Indian frequency is 44 and the percentage is 44% and Others frequency is 0. The subjects taught by the respondents are: Language (frequency is 38 and percentage is 38%), Mathematics (f=36 or 36%), Science subjects (f = 22 or 22%) and Other (f = 4 or percentage 4%). Based on the data obtained, most of the participants in this research are aged between 36-45 years, the majority are female and have 5-10 years of experience.

Discussion & Conclusion

This study is more related to identifying the perceptions in implementing ICT tools in teaching and learning in the classroom among school teachers. Furthermore, it examines the challenges of using ICT tools in teaching and learning in the classroom among school teachers and recognizes the effectiveness of the extent of ICT tools in supporting classroom teaching and learning. Based on the study the findings indicate that average level of the perceptions in implementing ICT tools in teaching and learning in the classroom among school teachers, high level of challenges of using ICT tools in teaching and learning in the classroom among school teachers and recognizing the effectiveness of the extent of ICT tools in supporting teaching and learning in the classroom.

With the advent of Information and Communications Technologies (ICT) in education, teachers form their own beliefs about the role of ICT as a teaching tool, the value of ICT for student learning outcomes and their own personal confidence and competency (Prestridge, 2007). Barriers exist in integrating ICT in teaching and learning (Ertmer, 2005). The barriers are extrinsic to the teacher and include lack of resources, time, access and technical support. Findings of this research suggest that teachers were still giving comment on the barriers in implementing ICT tool at school in teaching and learning.

Results of the Cachia and Ferrari (2010) study showed that teachers do combine different resources in their teaching, as well as utilizing various modes of ICT with almost two-thirds claiming to use technologies (63%) and website (62%). Anyway, it is also evident that textbooks are still considered fundamental in the educational systems. Nearly two thirds of our respondents (64%) always or often follow textbooks in their teaching.

Important technologies for learning such as computers (98%) and educational software (93%) were ranked as the top technologies by the respondents of Cachia and Ferrari's (2010) research. On the other hand, our research showed that the rate of ICT use among teachers in school is average. However, the finding shows that more teachers used computer with teaching software in the classroom to present or demonstrate examples to students. They also like to use the computer to access students' results and keep track of their progress.

Despite the current efforts in ICT integration in schools, many families specifically in rural areas still do not know how to use ICT tools in their daily life. They even did not know how to check their children's results in the existing systems. Not all houses have

computers and Internet facilities to use daily. In this regard, the main challenge is to provide appropriate ICT tools to both urban and rural areas efficiently.

This study will offer priceless information to the school administration as well as to educational policy makers regarding the nature of ICT contribution to the teaching-learning process. Since the attitude and perceptions of the teachers are critical to how effectively an innovation is implemented, it is important to gauge how teachers perceive this innovation and its efficacy as a tool for enhanced teaching and learning. It is also hoped that this study will contribute to the growing knowledge base and 21st century generation regarding the use of ICT in education in Malaysia.

In future studies more focus should be given on management strategies and policies to address the barriers faced by teachers in using ICT tools in teaching and learning. If the barriers faced by teachers can be overcome, it is a step forward to enhance our students' learning outcome. The studies done with the same gender distribution could give more appropriate analysis where by the gender perceptions could be analyzed.

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GLOBAL BLENDED LEARNING METHODOLOGIES

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Introduction

How does blended learning work? What advantages does a blended learning strategy offer? Which approach can you use to start? By outlining the components of an efficient, learner-centered "blend" derived from research and evidence-based practices, this guide assists instructors in responding to these questions. The guide also provides additional references and resources, as well as questions that instructors can consider before creating their course.

On this Page:

- What is Blended Learning?
- Why "Blend" Learning?
- Elements of an Effective, Learner-Centered "Blend"
- How Do I Get Started?
- Recommended Resources to Design Your Blended Approach
- References
- Resources
- Footnotes

What is Blended Learning?

The goal of blended learning is to support the intended learning objectives by integrating complementary face-to-face (synchronous) and online learning (asynchronous) experiences. While some definitions of blended learning place a greater emphasis on the amount of time spent in each mode of delivery by comparing the proportion of content delivered face-to-face vs. online (Hew & Cheung, 2014; for example, according to Allen and Seaman, 2007, blended learning would have 30 to 79% of content delivered online), the emphasis here is on using an intentional "blend" of online and face-to-face instruction that is best suited to enhancing learning for all students.

Instead of "adding on" online learning experiences to a traditional face-to-face course (known as the "course-and-a-half phenomenon," which increases workload for both the instructor and the student), blended learning involves carefully deciding which parts of learning should take place in person or in a group under the guidance of the instructor and which can be completed online at the learner's convenience. To see the differences between conventional in-person learning, web-enhanced learning, and blended/hybrid learning, see Table 1 below.

Table 1: Content Delivery and Modes of Learning

(1) Traditional in-person learning	(2) Web-enhanced learning	(3) Blended / Hybrid Learning
• All course content and learning experiences are delivered in a face-to-face format in writing or orally through lectures, discussions, labs, or other learning activities. • No web-based technology is used.	• Includes all the elements of a traditional course but uses web-based technology to facilitate learning. • E.g., using Courseworks (Canvas) to post course materials – textbook information, a syllabus, and readings.	• Blend in-person and online learning experiences. • Online learning not an “add-on” but integrated into the course and replaces a portion of class time. • Web-based technologies to deliver content and maximize learning through activities (e.g, online discussions; quizzes, etc.).

Adapted from Allen, Seaman, and Garrett, 2007; and Allen & Seaman, 2007; Mayadas, Miller & Sene, 2015.

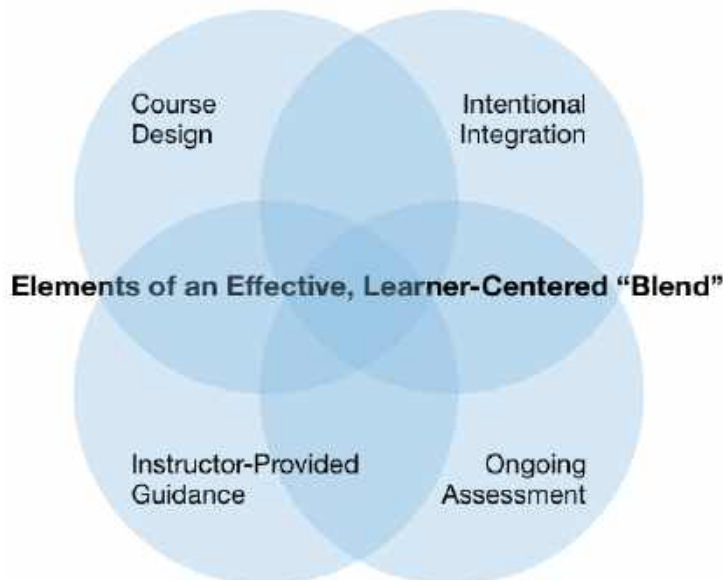
Why “Blend” Learning?

In a well-designed blended approach, instructors leverage the strengths of face-to-face and online modalities to achieve desired student learning outcomes and improve learning. Benefits of blended learning include:

- **Deeper, more meaningful learning.** Higher opportunities for students to learn course material, practise higher-order skills (such as critical thinking, inquiry, and reflection), and integrate their learning are provided by the combination of sequential online experiences and in-class guidance from the instructor. Students now have more opportunities to get feedback on their academic progress.
- **Increased student engagement inside and outside of the classroom.** Students can interact with the course material, other students, and their own thinking through instructor-facilitated in-class activities (such as role plays, problem sets, demos, and debates). These hands-on learning opportunities allow students to show their understanding while enhancing online learning activities that encourage participation from all students.
- **Meeting the needs of diverse learners.** Utilising web-based technologies can increase accessibility to learning opportunities and resources for support, give flexibility, and benefit all learners. Students use the course materials and learning resources at their own pace, location, and time, which lessens cognitive load and improves accessibility. They can regularly practise skills and go over information. The data produced by online platforms and technologies can be used by instructors to assess student learning and their course, making necessary adjustments.
- **Promote student ownership of learning.** An instructor-curated collection of learning experiences and resources can be used in a variety of ways by students thanks to a blended learning approach. To achieve this, instructors must create their

courses in a way that encourages students to develop their metacognition. As they improve their ability to learn independently, students gain from instructor guidance.

- **More opportunities to develop a learning community in the course.** Activities involving peer collaboration can be done during class time. In the classroom and online, students have the chance to communicate and work together. As students have more time to reflect on the material and make more significant contributions and connections across the course, instructors are more likely to achieve 100% participation through online components. Ingredients of a Successful, Learner-Centered "Blend"
- **Course design** in which in-class activities and instructions and out-of-class independent learning and online activities are integrated.
- **Intentional integration** of educational technologies to help students achieve learning outcomes.
- **Instructor provides guidance** on how students learn in a blended course, helping students develop their self-directed learning skills.
- **Assessment** that is ongoing and provides students with multiple opportunities to demonstrate their learning. As well as an evaluation plan to know what aspects of your blended approach were impactful on your students' learning and what are areas for improvement.



How Do I Get Started?

Being different from a conventional course design, a blended approach necessitates reevaluating instructional design. It necessitates considering how to use both face-to-face and online learning formats that meet the needs of your students, as well as selecting the right resources and techniques to promote student learning. Note that this is a highly

reflective process for instructors who are preparing a blended approach. Making time to reflect on your teaching, your students, and the science of learning is necessary. You should also use the research on successful blended learning strategies to guide your practice. It can take six months to successfully integrate into an entire course.

Components to reflect on as you approach your blend:

Your course context:

- How will you blend the courses? A new course or a redesign of the current one?
- Which students do you have? What educational needs do they have? How prepared are they for a blended strategy?
- What makes you unique as a teacher? What level of readiness do you have for teaching in a blended learning environment?
- What combination is best for your students, your course, and you as the teacher?

Your Course Design

- What educational goals must be accomplished? What skills and knowledge ought students to have after completing the course?
- Which components of your course—in-class activities, extracurricular activities, and assignments—will you combine? Why? Think about what subject matter your students might benefit from a deeper understanding of.
- How will you combine the benefits of online and face-to-face learning?
- How could you make better use of class time? What changes could be made to the course structure, such as switching face-to-face meetings for online ones?
- How could you use technological advancements in education? What platforms will you employ to organise your curriculum and enable your blend? (For instance, Zoom, Course Works, etc.)
- How will the learning in your blended course be evaluated?
- Which educational activities will you combine?
- How will you explain the blend to your students (along with goals and methods to promote learning)?
- Create a communication plan to remind students of crucial actions and due dates for passing your course.

Your resources and support needs:

- What materials are available for use in your blended course? Investigate the already-available resources, such as Lynda.com (an online learning platform accessible through an LMS that provides you and your students with access to a video tutorial library), YouTube, TEDEd (which enables you to build a lesson around a TED-Ed, TED Talk, or YouTube video), Khan Academy, MIT Open Courseware, and open educational resource websites like OER Commons. See if your coworkers have any videos or learning resources you can share.
- What materials will you have to produce to achieve your blend?

- Utilizing the software and hardware you have access to, create new media resources. Check out the CTL website's Teaching with Do-It-Yourself Video guide.
- What tools and assistance are going to be necessary for you to get the "blend" you want?

Your Evaluation Strategy

- How will you measure the effectiveness of your blended learning strategy? What information will you gather, and how will you make use of it to evaluate the learning of your students and your blended course teaching? Think about diagnostics, midterm and final assessments, reflective essays, diaries, discussion posts, tests, papers, etc.
- How will you make use of the data you've gathered to enhance the blend?

Recommended Resources to Design Your Blended Approach

- Caulfield and Aycock. (2012). *How to Design and Teach a Hybrid Course: Achieving Student-Centered Learning through Blended Classroom, Online and Experiential Activities*. Stylus Publishing.
- Linder, K. (2016). *The Blended Course Design Workbook: A Practical Guide*. Stylus Publishing. Use the handouts from the book to design your course.

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IMPLEMENTATION OF EMERGING ICT TOOLS IN TEACHING BY HIGHER EDUCATION TEACHERS

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Abstract

Information & Communication Technology (ICT) has become one of the basic building blocks of modern society. There is a wide spread belief that ICTs have an important role to play in changing and modernizing educational systems and ways of learning. ICT can provide more flexible and effective ways for professional development for teachers, improve pre- & in-service teacher training and connect teachers to the global teacher community. Teaching is becoming one of the most challenging professions in our society where knowledge is expanding rapidly and modern technologies are demanding teachers to learn how to use these technologies in their teaching. This topic mainly focuses on different areas such as educator's pedagogy influencing the effective use of computers for teaching purposes, Impact of training and experience in using ICT by in-service teachers, Impact of ICT diffusion, participatory development of teaching and learning, the effectiveness of using internet as a principal information resource in teaching and learning activity in higher educational institutions, teacher educators' ICT competencies, usage, and perceptions, Computer based technology and its pedagogical utility, ICT usage in Teacher Education, ICT adoption among secondary school teachers, ICT In initial teacher education, Teachers' incorporation of ICT in classroom teaching, Computer and Internet awareness in school going students, e- Training the future world of education, Utilization of computer technology in remedial instruction and modern ICT trends in teaching technology and other related areas.

Keywords: Information & Communication Technology (ICT) and Higher Education Teachers

Introduction

Today's technologies are essential tools for teaching and learning. A variety of Information and Communication Technology (ICT) can facilitate not only delivery of instruction but also learning process itself. Moreover, ICT can promote international collaboration and networking in education and lifelong professional development for today's teacher. There's a range of ICT options – from videoconferencing through multimedia delivery to websites – which can be used to meet the challenges teachers face today. ICT can change the way teachers teach and that it is essential useful in supporting more student centered approaches to instruction and in developing the higher order skills and promoting collaborative activities. To use these tools effectively and efficiently, teachers need visions of the technologies' potential, opportunities to apply them, training

and just-in- time support and time to experiment. Only then can teachers be informed and confident in their use of new technologies.

Teaching is becoming one of the most challenging professions in our society where knowledge is expanding rapidly and much of it is available to students as well as teachers at the same time. As new concepts of learning have evolved, teachers are expected to facilitate learning and make it meaningful to individuals learners rather than just to provide knowledge and skills. Modern developments of innovative technologies have provided new possibilities to teaching professions, but at the same time have placed more demands on teachers to learn how to use these new technologies in their teaching. These challenges ask teachers to continuously retain themselves and acquire new knowledge and skills while maintaining there their jobs.

ICTs give a new perspective on social and economic profile of the general people. The information access and the other digital services improve the educational standard. Many scholars have reflected many problems of taking about ICT, also they have stated that invention and diffusion are but means to an ultimate end, the consequences that result from adoption of an innovation. Change agents generally give little attention to consequences. They often assume that adoption of a given innovation will produce mainly beneficial results for adopters. This expression is one of the pro-innovation will produce mainly beneficial results for adopters. This expression is one of the pro-innovation biases. Change agents should recognize their responsibility for the consequences of innovations that they introduce. Ideally, they should be able to predict the advantages and disadvantages of an innovation before introducing it to their clients. This is seldom done and often it cannot be done. So, it is imperative that the consequences (effects or influences or impacts) of these initiatives be studied from the audience's perspective.

These generations of learners are witnessing the changing scenario of education. 21st century is full of innovations and exploration in the education. Every aspect of educational system has been changed due to ICT and new technologies in Education. In previous education system teacher was the central figure of entire activities but now student is the central figure of this process. But due to emergence of Information and Communication Technology now learning opportunities knocks at the door of learner. Gradually

ICT tools are taking the place of conventional tools i.e. black board, charts etc. Literary meaning of information is that which can be communicated and can be understand, Communication means exchanging the views and ideas and Technology means process of using scientific material and human resources in order to meet human need or purpose. So it can be infer that use of diverse set of technology in education is ICT.

However, this does not mean that the presence in a higher educational institution of modern means of ICT will lead to the growth of professional skills of teachers and quality of education. The involvement of teachers in the process of informatization of the educational space cannot catch up with the tightening of requirements for professional competence and skills of academic staff. In this context, it is impossible to ignore the so-called "internal," or the psychological, aspect of the use of ICT by teachers in their educational activity. We should pay attention to the importance of values and motivation of the use of electronic educational resources by teachers.

Review of Related Literature

Niyaz Ahmad (2011): In his paper “Effective Educational Management: An Implementation of ICT in Administration of Higher Education Institutions” states that the use of ICT in educational management will benefit for analyzing the data quickly and accurately quick, decision making, provides the power to the Administrators for efficient management of education and institution, reduces the burden of Teachers, available at lowest total cost of ownership, provides information at the door steps and reduces the Right to Information Applications.

Meenakumari & Krishnaveni (2011): In “Transforming Higher educational institution administration through ICT” has identified a comprehensive set of functional areas of e-administration. The study revealed that demographic factors do not have a major impact on e-administration in higher education institutions. It is also evident from this study that integration of ICT into knowledge administration for the teaching-learning process is more in comparison with Research Methodology Computers can be used extensively for educational administration.

Ariho Twinomujuni (2012): In his study of “Problems in ICT implementation in selected Institutions of Higher Learning in Kabale District” identified variables as cost of ICT training materials, skills development in ICT and administrative support in relation to ICT implementation. He found that that there is a statistically insignificant relationship between the cost of ICT training materials and ICT implementation variables. Cost of ICT training materials negatively affected ICT implementation. In respect to skills development in ICT and ICT implementation, he found that there was a statistically significant relationship between the two variables. Skills development in ICT positively affected ICT implementation.

The investigator had taken up the research gap for the present study is, “Implementation of Ict Tools In Teaching By Higher Education Teachers

Objectives of the Study

The main objectives of the study are as follows:

- To define ICT Based Learning.
- To describe the different aspects of ICT in Higher Education.
- To acquire knowledge of the approaches of ICT in Higher Education.
- To study of the emerging trends in Higher Education through ICT.
- To find out need and importance of ICT in Higher Education.
- To explain the scope of ICT in Higher Education.
- To analysis the applications of ICT in Higher Education.
- To interpret the suggestions about ICT for further development in Higher Education.

Significance of the Study

- The investigation like this will be relevant to the field of higher education.
- This investigation will grow more interest among the teachers’ in ICT based teaching approaches.

- This investigation will have a way for the students who are choosing ICT based subject.

Methodology of the Study

The investigator attempt to study Information and Communication Technology (ICT): New Approaches in Higher Education. In this paper, the investigation was based on different secondary data like abstract, journal, research paper and also different types of books. And also study of questions is used for analysis of data.

Analysis and Interpretations

1. What is ICT Based Learning?

ICT is technology that supports activities involving information. Such activities include gathering, processing, storing and presenting data. Increasingly these activities also involve collaboration and communication. Hence IT has become ICT: information and communication technology. ICT stand for information and communication technologies and is defined, as a diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information. ICT implies the technology which consists of electronic devices and associated human interactive materials that enable the user to employ them for a wide range of teaching - learning processes in addition to personal use. ICT is that technology which uses the information to meet human need or purposes including processing and exchanging. Information and communications technology (ICT) in education is the processing of information and its communications facilities and features that variously support teaching, learning and a range of activities in education.

According to UNESCO "Information Technology is a scientific, technological and engineering discipline and management technique used in handing the information, it's application and association with social, economic and cultural matters".

Darnton and Giacoletto defines IT as "Information technology is a systemic study of artifacts that can be used to give form to facts in order to provide meaning for decision making, and artifacts that can be used for organization, processing, communication and application of information."

From the above discussion we can conclude that information technology refers to the information processing of the software application on operating systems or hardware applications that includes computers, videos, telephones and related equipment of telecommunications, tapes, CDs etc.

2. What are the different Aspects of ICT in Higher Education?

The ICT Policy in higher education aims at preparing youth to participate creatively in the establishment, sustenance and growth of a knowledge society leading to all round socio- economic development of the nation and global competitiveness. The introduction of ICT in the higher education has profound implications for the whole education process ranging from investment to the use of technologies in dealing with key issues of access, equity, management, efficiency, pedagogy and quality.

- **Student-centered Learning:** ICT provides a technology that has the capacity to promote and encourage the transformation of education from a teacher directed enterprise towards student-centered models. As more and more students use computers as information sources and cognitive tools, the influence of the technology will increase to support their studies.
- **Supporting Knowledge Construction:** Learning approaches using contemporary ICTs provide many opportunities for constructivist learning and support for resource-based, student centered settings by enabling learning to be related to context and to practice.
- **Anyplace Learning:** With the help of ICT, educational institutions can offer programs at a distance mode. Today many students can use this facility through technology-facilitated learning settings.
- **Anytime Learning:** Technology-facilitated educational programs remove the geographical barriers. Students are able to undertake education anywhere, anytime and at any place. This flexibility has provided learning opportunities for many more learners who previously were constrained by other commitments.
- **Information Literacy:** The growing use of ICT as tools of everyday life have seen the pool of generic skills expanded in recent years to include information literacy. It is highly probable that due to the future developments and growth in technology, it will help further for information literacy.
- **Computer in the classroom:** Having a computer in the classroom is an asset to any teacher. With a computer in the classroom, teachers are able to demonstrate a new lesson, present new material, illustrate how to use new programs, and show new websites.
- **Class website:** An easy way to display your student's work is to create a web page designed for your class. Once a web page is designed, teachers can post homework assignments, student work, famous quotes, trivia games, and so much more. In today's society, children know how to use the computer and navigate their way through a website, so why not give them one where they can be a published author.
- **Class blogs and wikis:** There are a variety of Web 2.0 tools that are currently being implemented in the classroom. Blogs allow for students to maintain a running dialogue, such as a journal, thoughts, ideas, and assignments that also provide for student comment and reflection. Wikis are more group focused to allow multiple members of the group to edit a single document and create a truly collaborative and carefully edited finished product.
- **Wireless classroom microphones:** Noisy classrooms are a daily occurrence, and with the help of microphones, students are able to hear their teachers more clearly. Children learn better when they hear the teacher clearly. The benefit for teachers is that they no longer lose their voices at the end of the day.
- **Mobile devices:** Mobile devices such as clickers or smart phone can be used to enhance the experience in the classroom by providing the possibility for professors to get feedback.

- **Interactive Whiteboards:** An interactive whiteboard that provides touch control of computer applications. These enhance the experience in the classroom by showing anything that can be on a computer screen. This not only aids in visual learning, but it is interactive so the students can draw, write, or manipulate images on the interactive whiteboard.
- **Online media:** Streamed video websites can be utilized to enhance a classroom lesson (e.g. United Streaming, Teacher Tube, etc.).
- **Digital Games:** The field of educational games and serious games has been growing significantly over the last few years. The digital games are being provided as tools for the classroom and have a lot of positive feedback including higher motivation for students. There are many other tools being utilized depending on the local school board and funds available. These may include: digital cameras, video cameras, interactive whiteboard tools, document cameras, or LCD projectors.

The inculcation of technology-based learning in Higher education needs to be improved with the help of following steps.

- Up gradation of course structure.
- Examination reforms.
- Proper use of technology in education: Overhead projector, Slide-projector, TV (Audio-visual cassettes and aids)
- Technical training to In-service/Pre-service.
- Online teacher education.
- XPDITTE.
- Education through satellite.
- EDUSAT OR GASAT-3

3. What are the Approaches of ICT in Higher Education?

Studies of ICT development in both developed and developing countries identify at least four broad approaches through which educational systems and individual schools proceed in their adoption and use of ICT. These four approaches, termed emerging, applying, infusing, and transforming.



- **The emerging approach:**

Higher institution at the beginning stages of ICT development demonstrates the emerging approach. Such schools begin to purchase, or have had donated, some computing equipment and software. In this initial phase, administrators and teachers are just starting to explore the possibilities and consequences of using ICT for higher

institution management and adding ICT to the curriculum. Higher institution at this emerging phase is still firmly grounded in traditional, teacher-centred practice. The curriculum reflects an increase in basic skills but there is an awareness of the uses of ICT. This curriculum assists movement to the next approach if so desired.

- **The applying approach:**

Those higher institution in which a new understanding of the contribution of ICT to learning has developed exemplify the applying approach. In this secondary phase, administrators and teachers use ICT for tasks already carried out in higher institution management and in the curriculum. Teachers largely dominate the learning environment. Schools at the applying approach phase adapt the curriculum in order to increase the use of ICT in various subject areas with specific tools and software. This curriculum assists movement to the next approach if so desired.

- **The infusing approach:**

At the next stage, the infusing approach involves integrating or embedding ICT across the curriculum, and is seen in those schools that now employ a range of computer-based technologies in laboratories, classrooms, and administrative offices. Teachers explore new ways in which ICT changes their personal productivity and professional practice. The curriculum begins to merge subject areas to reflect real-world applications.

- **The transforming approach:**

Higher institutions that use ICT to rethink and renew school organization in creative ways are at the transforming approach. ICT becomes an integral though invisible part of daily personal productivity and professional practice. The focus of the curriculum is now learner-centred and integrates subject areas in real-world applications. ICT is taught as a separate subject at the professional level and is incorporated into all vocational areas. Higher institution has become centers of learning for their communities.

4. What are the Emerging Trends in Higher Education through ICT?

Due to ICT some new and student centered trends comes in existence. Some of them are following-

E- Learning:	E-learning is a learning program that makes use of an information network- such as the internet, an intranet (LAN) or extranet (WAN) whether wholly or in part, for course delivery, interaction and/or facilitation. Web-based learning is a subset of e learning and refers to learning using an internet browser such as the moodle, blackboard or internet explorer.
Blended Learning:	Blended learning refers to learning models that combines the face-to-face classroom practice with e-learning solutions. For example, a teacher may facilitate student learning in class contact and uses the MOODLE (modular object oriented dynamic learning environment) to

	facilitate out of class learning.
Constructivism:	Constructivism is a paradigm of learning that assumes learning as a process individuals “construct” meaning or new knowledge based on their prior knowledge and experience (Johassen, 1991). Educators also call it the emerging pedagogy in contrast to the long existing behaviorism view of learning.
Active Learning:	ICT-enhanced learning mobilizes tools for examination, calculation and analysis of information in order to provide a platform for student inquiry, analysis and construction of new information. The learners therefore, learn as they do and, whenever appropriate work on real-life problems in-depth. Moreover, ICT makes the learning less abstract and more relevant to their life situations.
Collaborative Learning:	ICT-supported learning encourages interaction and cooperation among students, teachers, and experts regardless of where they are. Apart from modelling real world interactions, ICT- supported learning provides opportunity to work with students from different cultures, thereby helping to enhance learners teaming and communication skills as well as their global awareness. It models learning done throughout the learner’s lifetime by expanding the learning pace to include not just peers but also mentors and experts from different fields.
Creative Learning:	ICT-supported learning promotes the manipulation of existing information and the creation of real-world products rather than the duplication of received information.
Integrative Learning:	ICT-enhanced learning promotes a thematic integrative approach to teaching and learning. This approach eliminates the artificial separation between the different disciplines and between theory and practice, which characterizes the traditional approach.
Evaluative Learning:	ICT-enhanced learning is student-directed and diagnostic. Unlike static, text or print-based education, ICT-enhanced learning recognizes the presence of different learning pathways to explore and discover rather than merely listen and remember.

5. What is Need and Importance of ICT in Higher Education?

ICT can facilitate learning of learners. Various ICTs have been used to support learning, which include traditional media and electronic media. Technology such as online/Internet is available 24 hours a day. With the use of Internet and World Wide Web, a wealth of learning materials in almost every subject can be accessed from anywhere at any time by an unlimited number of learners. Computer and Internet are the tools for learning and developing skills. Hayes indicates that “vision of the teacher’s role needs to shift from that of the information provider to one of the catalyst, model, coach, innovator, researcher, and collaborator with the learner throughout the learning process”. Need of

ICT in education can be pointed out as below –

- To store, spread and improvement of knowledge
- Making conducive and creative environment in class
- Expanding educational opportunities
- Increase efficiency
- Enhancing quality of learning
- Enhancing quality of teaching
- Facilitating skill formation
- Sustaining lifelong learning
- Improving policy planning and management
- Advancing community linkages
- Cost effectiveness

6. What is the Scope of ICT in Higher Education?

Technology is an increasingly influential factor in education. Computers and mobile phones are used in developed countries both to complement established education practices and develop new ways of learning such as online education. This gives students the opportunity to choose what they are interested in learning. Technology offers powerful learning tools that demand new skills and understanding of students. ICT brings vast and rapid changes in the almost every aspect of teaching, training and learning. Day by day scenario is being change by these tools. Following is the scope of ICT in education.

- **In Teaching learning process:** In teaching learning process, tools of ICT helps teacher in classroom. Traditional tools are now a matter of old days. Interactive Board, LCD projector, online class, tele-conferencing are new tools for the teacher to make their class conducive and creative. Due to these tools now teachers overcomes the problems of class i.e. individual differences of students, language problem, and effective interaction. Because use of ICT tools class becomes interactive and conducive so knowledge receive by student become stable. Many complex and hazardous experiments now can be perform in classroom by virtual laboratory. This is quite safe and effective without any problems. All these things leads students to become a lifelong learner and to healthy reading habits.
- **In Publication:** In ancient time invention of printing change entire system of education. Due to printing now it was very easy to store and to disseminate the knowledge. Now due to ICT this become more and more easy and accessible. In higher education publication is important activity. Use of Internet readability become more comprehensive. Many Net based services providing many opportunities for researcher and writers to share their thoughts.
- **In Evaluation:** Evaluation is the most important aspect of any process. All efforts may go in waste if there is a faulty evaluative system. Due to invasion of ICT tools in education evaluation becomes very fast and reliable. Online exam become a boon for the students who are unable to attend a formal system. New technologies is very quick in publication and in preparing results. Results can be published online

without any delay. Formative and summative evaluation techniques is possible because of ICT.

- **In Research:** Research is the heart of educational system. Research become more and more comprehensive due to emergence of ICT. Now data collection become very easier. Anyone can collect data online from a wide range of population. Different statistical packages prepare results multidimensional for an effective presentation. For study purpose now there is no need to go every university's libraries. Now a researcher can access not only domestic but also foreign university's library with the help of Internet.
- **In Administration:** Administration is just like a skeleton. From the advertisement of admission to publishing the results and distribution of certificates, at every steps tools of ICT helps much more. Online admission, online payment of fee, online registration, online class, and online evaluation and at last online certificate, ICT performs an unbelievable responsibility. Easy in management, Cost effectiveness, Time savings.

7. What are the Applications of ICT in Higher Education?

- **Simulation and Good Practice:** New technologies, both computer and web-based allow for simulation of specific skills through mini and micro lessons that can be watched, manipulated and tested.
- **Saving in Time and Expenses:** With in the short span of time we can teach huge masses thus saving money and time.
- **Training (and learning) on Demand:** ICT allows teacher education to take place any time, any place. ICTs (Videos, CD- ROMS, Internet and Software) allow teachers to learn things on demand-when they feel the need for that.
- **Professional and Peer-Support:** ICTs can break the professional isolation by permitting among educators, communication, and exchange of information, chat rooms, bulletin boards, discussion forums, and virtual conferences.

8. What are the Suggestions about ICT for further development in Higher Education?

- **Arranging proper training and regular workshops on ICT for the teachers:** Teachers should be properly trained to use the ICT facility in their schools. Regular workshops on the use of latest technology in teaching are needed also.
- **Proper implementation of ICT infrastructure:** All schools should have internet connection and computer facility for the learners. There should be no disparity between the rural and urban institutions in this concern. There should be adequate e-enabled learning contents in every institution.
- **Support from the higher authority:** Higher authority should encourage English teachers to use ICT in their teaching. Many teachers complain about the lack of support from the higher authority.
- **Using flexible e-enabled learning content for the weaker learners:** There should be enough space for the weaker section of learners in teaching. Arranging flexible e-

enabled learning contents for them will be useful.

- **Use of audio-visual aids:** In teaching, use of audio-visual aids will develop listening and pronunciation skills. It will also help the better understanding of the language.
- **Group work method through ICT:** To develop the communication, ICT enabled tasks can be given in groups, such as creating any power point presentation of any grammatical lesson. This will also help to increase the socialization process.

Conclusion

Today, there is an emphasis placed on technology based learning that supports the active construction of knowledge and skills. That is a shift from educational environment, which supports the passive acquisition of isolated facts, to environment in which the learner actively explores the world and constructs their own models of understanding. Although the lens to future is clouded, must be filtered through the past and present, the ability to stand back and think about the impact of technologies on students learning and teacher education will undergrad research in technology for education of students, children's and youths and adults in the 21st century. We must view the coming change, and they will be massive, from the perspective that technology provides access to learning but doesn't control it, that technologies are not the content of education a rather, they provide a Cornucopia of tools for learning.

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ROLE OF ICT IN PROFESSIONAL DEVELOPMENT OF TEACHERS

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Abstract

Information and communication technology (ICT) has brought revolutionary changes to enhance professional development of teachers. At present several ICT related instructional devices like computers, smart phones, laptops, tablets, LCD, multimedia and projectors are used in classrooms for making more attractive and productive teaching and learning process.. Teacher is considered to be the architect of the nation. In other words, the future of the nation lies in the hands of teacher. This shows the importance of teacher. One can realize how important education is which makes one a teacher. Most Inspiring innovation in the field of education is the integration of Information and Communication technology in education. The teachers should cope with the increasing demand for information and skills. Chalk and talk method become very old method. To survive in the changing, developing world one could update themselves. Teachers must be flexible and willing to renew their vision of teaching and learning if they are to fully realize the potential of educational technology. ICT is extremely useful for professional development of teachers.

Keywords: *ICT, Professional development, Teachers*

Role of ICT in Professional Development of Teachers

Professional Development of Teacher is any type of continuing education effort for educators. It's one way teachers can improve their skills and, in turn, boost student outcomes. Learning can take place in formal or informal settings. Formal settings include conferences, courses, seminars, and workshops. Informal opportunities for teacher professional development include independent research or investigation, peer learning initiatives.

The introduction of ICT in the real m of education unleashes a Plenty of possibilities in the process of learning. Teachers can make use of different ICT tools like computers, laptops etc, to make conceptual comprehension easier for students. It aids them in implementing a variety of strategies in the classroom environment to improve learning

outcomes. They can effectively present ideas to the students using ICT and leave a long-lasting impact on them. For the learning process to be effective, it has to be a two-way process. ICT makes this possible. It enables students to refine their soft skills along with their technical skills. ICT tools provide students with the opportunity to speak up their minds through discussion forums. Performance analytics provided by different software assist teachers in understanding their students in a better way. Analytics reports of students help teachers to check for understanding of the students.

Teachers are the national builders responsible to train future generation to be able for facing challenges of present era, but this is not possible without having full command in utilization of ICT instructional devices properly. It is a fact that knowledge of ICT helps teachers to keep knowledge updated to use modern instructional technology in classrooms. Recently, ICT has become a basic need of human life across the world and no field can work effectively without its support. In education and training, it plays vital role to uplift teaching and learning process. The use of ICT facilities in teacher training programs has become necessary in classrooms and teachers are considering it most important pillar for better students learning.

ICT is extremely useful for professional development of teachers and helps the teacher in many ways.

ICTs can be used to reinforce existing pedagogical practices as well as to change the way teachers and students interact.

Effective ICT use in education increases teachers' training and professional development needs. However, ICTs can be important tools to help meet such increased needs, by helping to provide access to more and better educational content, aid in routine administrative tasks, provide models and simulations of effective teaching practices, and enable learner support networks, both in face to face and distance learning environments.

Effective teacher professional development should approximate the classroom environment as much as possible. "Hands-on" instruction on ICT use is necessary where ICTs are deemed to be vital components of the teaching and learning process.

Professional development activities should model effective practices and behaviors and encourage and support collaboration between teachers.

ICT enriches teaching by enhancing the initial preparation by providing good teaching and training materials, recording and feedback mechanisms.

ICT has removed the barriers of space, time and place between teacher and learner. It has established a healthy and interactive relationship between teachers and students.

ICT provides lifelong professional development by providing courses in a virtual situation, training in demand, orientation and refresher courses through video conferencing and online.

By the exchange of materials through virtual communities, sharing of ideas and experiences and collaborating on projects the ICT can revolutionize the whole teaching profession.

Conclusion

Due to the latest developments in the information and communication technology the role of teacher in the process of teaching and learning has increased many fold and has become more complex as such teachers are to equip themselves with latest technology then only they can cope up the new challenges in the field.

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WOMEN EMPOWERMENT THROUGH WOMEN ENTREPRENEURSHIP IN MSME SECTOR

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Abstract

The role of women is most intimately related to the goal of comprehensive socio-economic development. Investing in women capabilities and empowering them in all respects is the surest way of contributing to sustainable economic growth. The development of entrepreneurship among women has become an important aspect of the overall economic development. The MSME development programmes can contribute much to the development of women folk of an economy because micro and small enterprises are easily accessible to women as they are less capital intensive. But there are many factors which prevent them from utilizing the benefits of the entrepreneurial development initiatives. The study focused on the role of entrepreneurial development programmes under the MSME sector. The extent of success attained on the entrepreneurial training programmes and the satisfaction level of women entrepreneurs were covered. This paper mainly assessed the economic empowerment of women entrepreneurs who were supported under the programmes. The problems faced by the women entrepreneurs while utilizing the specific schemes for the development were covered.

Keywords: Business Innovation, Socio-Economic development, Women Entrepreneurship, Entrepreneurial Development Programmes, MSME (Micro, Small and Medium Enterprises).

Introduction

An economy's development cannot be gauged solely by looking at its material resources, economic development, and wealth generation. The genuine indication of a society's growth can be found in its people's opportunities and capacities to discover economic resources and enable their best exploitation. Although contributing more than their good portion to society, both at home and outside of the house, and making up half of the adult population, women are usually left out of leadership roles. Hence, women are the most marginalized group in the world and the first victimized group in human history. The most pervasive type of oppression in the world is directed at women, who also have less rights than men. Even though women's economic participation has been rising, there are still significant disparities between men and women in terms of work prospects, rights, pay, and acknowledgement of their economic participation. What men and women do in any community varies greatly over time. Typically, women's work is not as valuable as men's job. If women are traders, trading is sometimes seen as basic and trivial work. Men being traders will be seen as challenging and significant. Due to the perception that males place a lower value on perceived female traits and activities, women are seen as inferior to them. Conceptual back-ground of Women Empowerment and Women Entrepreneurs

Need for Economic Empowerment of Women

For Overall Development of the Economy For the purpose of poverty alleviation, food security, equal access to institutional credit etc economic empowerment is necessary. Economic development of a country can't be fully achieved as long as its women are confined to subordinate positions and their talents remain unexplored or and no country can progress without the empowerment of its womenfolk. It is also true that poverty in both developed and developing countries has a predominantly female face. Hence economic empowerment of women plays a vital role in the progress of their family, community, nation and the world as a whole. Empowerment of women makes development inclusive, sustainable and accessible. Empowerment is a multi-dimensional process that enables individual or a group of individuals to realize their identity and powers in all spheres of life. It creates the ability of greater access to knowledge and resources, greater autonomy in decision making that enable them to have greater ability to enrich their lives, or have greater control over the circumstances that influence their lives and free them from restraints imposed on them by custom, belief and practice.

Women Empowerment

The process through which powerless people become aware of their capacity and make use of that capacity to profit from economic growth is referred to as empowerment. It is "a process of developing capacities and confidence for making decisions about one's own life at both an individual and community level and acquiring control over productive resources." The process of empowerment is made easier by raising one's awareness of their rights and obligations as well as their socioeconomic, educational, and political potential, by learning how to use their resources productively, and by participating in group activities and social life. Enhancing the capacity to build the necessary level of awareness, power resources, autonomy, and participation for starting and continuing the development is included in empowerment. Under India's National Policy of Education from 1986, it is stated that "women gain influence through group discussion and decision-making. Its goals include fostering critical thinking, fostering group cohesion, fostering decision-making and action, ensuring equal participation in the process of bringing about social change, encouraging group action to bring about change in society, and supplying the resources necessary for economic independence". (Venkataravi, Reddy & Venkataramana, 2004)

Women Empowerment through Women Entrepreneurship

In order to address the most pressing issue, unemployment, developing nations like India have given greater importance to the development of entrepreneurship and encouraged the establishment of small scale industries. Entrepreneurship has also been seen as the answer to several socioeconomic issues that the nation is currently facing. Many enterprising, independent people would not reach their full potential in large organisations, but small businesses give their abilities and energies constructive outlets. They act as a breeding ground for creative entrepreneurs and a proving ground for

emerging enterprises. They improve social cohesion, encourage savings among individuals, foster industrial ties, boost rural welfare, and overall increase the amount of public participation in the economy. (Lavanya, 2010) A women-owned business is one that is “managed by one or more women entrepreneurs in proprietary concerns, or in which she/they individually or jointly have a share capital of not less than 51% as partners/shareholders/ Directors of Private Limited Company/Members of Co-operative Society,” according to the Government of India (msme.gov.in).

Women Entrepreneurship Development in India

The National Institute of Small Industry Extension Training programme (NISIET), run in Hyderabad in 1964–1965 under McClelland’s direction, was a trailblazing step in the development of women’s entrepreneurship initiatives. This was followed in 1969–1970 by a scheme for technicians to train technically qualified individuals. a fresh business plan launched by Gujarat Industrial Investment Corporation in 1971. A number of initiatives were launched as part of the declaration of the Decade for Women (1975–1985) to better the status and circumstances of women in the nation, including training programmes under the Small Industries Development Organizations (SIDCO) and the first ever international conference of women entrepreneurs, which was held in 1975 and was organised by the National Alliance of Young Entrepreneurs (NAYE). The National Alliance of Young Entrepreneurs (NAYE) staged the second international conference of women entrepreneurs in 1981, the Bank of India ran entrepreneurship development programmes (EDPs) in 1978, SIDO performed a series of training programmes in women’s entrepreneurship through its Small Industries Service Institutes over a 19-year period for the women who benefited from the government’s TRYSEM programme, and others. The State Government simultaneously set up unique programmes to encourage women’s entrepreneurship skills across the states. Employers Federation of India (EFI), Standing Conference of Public Enterprises (SCOPE), and the All India Organisation of Employers (AIOE) have been taking effective steps to promote women’s entrepreneurial skills. The nationalised banks and other financial institutions offered special consulting services for aspiring women entrepreneurs. The National Institute for Entrepreneurship and Small Business Development (NIESBUD), which was founded in New Delhi, and the Entrepreneurship Development Institute of India (EDII), which was founded in Ahmedabad in 1983, organised a variety of entrepreneurship programmes, including women’s entrepreneurship. In the 1980s, the Industrial Development Bank of India (IDBI) developed and implemented a number of programmes, including Science and Technology Entrepreneurial Parks (STEPS), training and extension services, and refinancing options for organisations providing financial support to women entrepreneurs. In order to provide guidance on the development of women’s entrepreneurship, the government established the National Standing Committee on Women Entrepreneurs in 1986. Other significant efforts of the IDBI launched in 1989–1990 included MahilaUdhyam Nidhi (MUN), which provided seed capital assistance for women entrepreneurs, and Mahila Vikas Nidhi (MVN), which provided aid to NGOs working with women entrepreneurs. In 1990,

government-sponsored and non-governmental organisations (NGOs) rural poor women's entrepreneurship programmes received support from the Norwegian Agency for International Development (NORAD). The New Economic Policy (NEP), a crucial turning point in Indian history, had an impact on women's entrepreneurship as well. The concept of women-owned businesses was altered by the New Economic Policy. Women-owned businesses were previously classified as those in which women made up more than half of both the ownership and control and the workforce. But, according to the NEP, women-owned businesses are those where women hold more than 50% of the ownership and management positions. The employment requirement is no longer in effect.

Institutional set up and Agencies for the Development of Women Entrepreneurship

A large number of institutions were created to promote entrepreneurship in general. Yet, they have placed a greater focus on the creation of programmes to support female entrepreneurs.

- Women Development Corporation
- State Industrial and Development Bank of India (SIDBI)
- Consortium of Women entrepreneurs of India Particularly Indian Institute of Entrepreneurship (IIE)
- The National Institute for Entrepreneurship and Small Business Development (NIESBUD), Noida. The women entrepreneurs are supported by a variety of organisations, including NGOs, self-help groups, institutions, and small businesses from both urban and rural areas.

Programmes/ Schemes Offered by the Government

For the Development of Women Entrepreneurs The Indian government has developed a number of training and development initiatives aimed at creating new jobs, and the bulk of these programmes give women additional support or more flexibility in terms of the rules they must follow when starting their own businesses. The following are a few of the most important initiatives or programmes for the advancement of women business owners:

- Prime Minister Rojgar Yojana and EDPs to develop entrepreneurial qualities among rural women.
- Integrated Rural Development Programs (IRDP)
- Training of Rural youth for Self-employment (TRYSEM)
- Trade Related Entrepreneurship Assistance and Development (TREAD) scheme was launched by Ministry of Small Industries to develop women entrepreneurs in rural, semi-urban and urban areas.
- Swarna Jayanti Gram Swa-Rozgar Yojana and Swarna Jayanti Sakshari Rozgar Yojana
- State Industrial and Development Bank of India (SIDBI)
- Mahila Udyam Nidhi
- Micro Credit Scheme for Women

- Mahila Vikas Nidhi. The following training schemes especially for the self-employment of women are introduced by government:
- Support for Training and Employment Programme of Women (STEP).
- Development of Women and Children in Rural Areas (DWCRA).
- RashtriyaMahilaKosh
- RashtriyaMahilaKosh was set up to grant micro credit to poor women at reasonable rates of interest with very low transaction costs and simple procedures.
- Role of MSME Sector in Women Entrepreneurship and Economic Empowerment of Women

MSME Sector

Micro, small, and medium-sized businesses (MSMEs) are recognised on a global scale as the driving force behind economic expansion and social justice. The sector's employment potential at minimal capital cost is by far its greatest benefit. Compared to large businesses, the MSME sector has a substantially higher labour intensity. In most economies, MSMEs make up over 90% of all businesses, are recognised with creating the fastest rates of employment development, and contribute significantly to both industrial output and exports. MSMEs are essential to India's broader industrial sector and play a significant part in it. Comparing the MSME sector to the entire industrial sector in recent years, the MSME sector has experienced faster development. With its higher operational dynamism, the sector has displayed commendable inventiveness and agility to survive the recent economic slump and recession. Over the past fifty years, the Micro, Small, and Medium-Sized Businesses (MSME) sector has grown to be a very active and dynamic area of the Indian economy. Micro, Small and Medium Enterprises (MSME) sector has emerged as a highly vibrant and dynamic sector of the Indian economy over the last five decades.

Role of MSME Sector in Women Entrepreneurship

There is lot of scope for women entrepreneurship in MSME sector which plays a vital role in providing employment and income for the poor unemployed and marginalized sector of an economy. The Micro, Small and Medium Enterprises can create more opportunities for women entrepreneurs as they are less capital intensive, less labour intensive and easily manageable by them. MSMEs are complementary to large industries as ancillary units and this sector contributes enormously to the socio-economic development of the country. Women Entrepreneurship plays a prime role in industrial development. India has always been a land of entrepreneurs and also occupied a strategic position in the Indian economy. Today the village and MSME units account for about 45 per cent of the total industrial production, 30 per cent of the country exports and estimated to employ 96 million person in over 26 million units throughout the country.

Status of Women Entrepreneurs

Under MSME Sector Even though the status of women in India changed over years, there are several handicaps for them to enter into the business ownership due to the deeply

embedded traditional mindset and stringent values of the Indian society. According to fourth all India census of MSME, it was found that out of the total 15.64 lakh registered enterprises in the MSME sector, 13.49 lakhs (86.28%) were owned and managed by men and only 13.72 per cent (2.15 Lakh) of the enterprises in the registered MSME sector were women enterprises.

Objectives of the Study

1. To evaluate the women entrepreneurial programme of Ministry of Micro, Small and Medium Enterprises (MSME)
2. To assess the economic empowerment of women entrepreneurs under the support programmes.

Methodology

To get a holistic view of the research problem, the study adopts multiple secondary data sources like books, newspapers, academic journals, and websites. Since this type of study focuses more on concepts and application, relevant quantitative and qualitative data have been included. A systematic review of existing literature has been conducted to identify variables which could help women entrepreneurs who are contributing tremendously to small enterprises.

Literature Review

The Indian economy is at a crucial juncture, on the one hand, the optimists are talking of India being among the top five economies of the world by 2050 and on the other is the presence of 260 million poor forming 26 per cent of the total population. The enormity of the task can be gauged from the above numbers and if India is to stand among the comity of developed nations, there is no denying the fact that poverty alleviation and reduction of income inequalities have to be the top most priority. (Shukla & Jain, 2014) The programmes which are focusing on the development of women can only give better results in inclusive development from the bottom of the economy. Welfare of the world is not possible unless the condition of women is improved. It is not possible for a bird to fly on only one wing," said swami Vivekananda. (Bairagi, 2014) When women have economic power- defined as control of income and capital (land, livestock etc.) they gain more equality and control over their own lives, while contributing directly to their children's development (nutrition health and education) and thereby indirectly to their nation's income growth. (Gaur, 2014) When women are empowered, a society with stability is assured. Gone are the days when women were considered subservient or secondary, in almost all walks of life compared to men. It has now amply been proved that women are capable of executing any job as efficiently as men, if not more so. (Abdulkalam, 2006. p.152). Concentration of economic power, regional imbalances, exploitation by monopolists, and many other giant problems find their solutions in the development of small scale industry which is another name of entrepreneurship in the developing countries. (Arora & Sood, 2009, p.5) Micro, Small and Medium Enterprises (MSME) sector has emerged as a highly vibrant and dynamic sector of

the Indian economy. MSMEs, not only play crucial role in providing large employment opportunities at comparatively lower capital cost than large industries, but also help in industrialization of rural & backward areas, thereby, reducing regional imbalances, assuring more equitable distribution of national income and wealth. MSMEs are complementary to large industries as ancillary units and this sector contributes enormously to the socio-economic development of the country. (Annual Report, M/o MSME, 2015-16)

Limitations of the Study

- The study is based on the perceptions of the women entrepreneurs. Their attitudes may change with the change of times.
- In any case the study does not claim to be the final word in the study of women entrepreneurship.

Major Schemes Identified for the Study

Entrepreneurship Development Programmes

(EDPs) Youth talent is being encouraged through the continuous organisation of entrepreneurship development programmes that educate young people on the various facets of industrial activity needed to establish MSEs. In order to encourage students towards self-employment, EDPs are typically held in ITIs, Polytechnics, and other technical institutes. The course materials of such Entrepreneurship Development Programmes are designed to provide useful information on product/process design, manufacturing practises involved, testing and quality control, selection and usage of appropriate machinery and equipment, project profile preparation, marketing avenues/techniques, product/service pricing, and export opportunities.

2.2 Entrepreneurship Skill Development Programme (ESDP) The Ministry of MSME is dedicated to preparing young people for the workforce. The National Small Industries Corporation Ltd. (NSIC), National Institute for Micro, Small and Medium Businesses (NI-MSME), and Central Tool Room are the main institutions that provide the training (CTR). The Plan calls for financial support for the establishment of new institutions (EDIs), strengthening the infrastructure of the current EDIs, and promoting entrepreneurship and skill-building initiatives. The scheme's main goals include encouraging self-employment in rural and urban areas, continuing to expand the entrepreneurial base, and developing indigenous entrepreneurship from all walks of life. To accomplish these goals, first generation entrepreneurs are given guidance and assistance with business setup.

2.3 Credit Guarantee Fund Scheme for Micro and Small Enterprises (CGT-MSE) The Credit Guarantee Fund Plan was created with the intention of offering significant guarantees for loan facilities to borrowers in Micro and Small Businesses. To the first generation of entrepreneurs, the availability of bank loans without the hassles of collateral or third-party guarantees would be a vital source of help in realising their dream of founding a Micro and Small Company (MSE). In order to strengthen the credit delivery system and facilitate the flow of credit to the MSE sector, the Ministry of Micro, Small & Medium Businesses (MSME), Government of India, developed

the Credit Guarantee Scheme (CGS) with this goal in mind. The Credit Guarantee Fund Trust for Micro and Small Businesses was established by the Government of India and SIDBI to make the programme operational (CGTMSE). The programme went into effect on August 1st, 2000. Credit Guarantee Fund Scheme for Small Industries (CGFSI) and Credit Guarantee Fund Trust for Small Industries were the original names of the programme and trust, respectively. The Trust and the Program were renamed as the Credit Guarantee Fund Trust for Micro and Small Businesses and the Credit Guarantee Scheme for Micro and Small Enterprises, respectively, after the passage of the MSMED Act-2006. The Key Components of the Scheme. The lender should place a high priority on the viability of the project and base the credit facility exclusively on the principal security of the financed assets. The borrowers can get working capital and term loans from the same business. 2.4 Trade Related Entrepreneurship Assistance and Development Scheme for Women (TREAD) During the 9th plan period, the Indian government introduced a programme called "Trade Related Entrepreneurship Assistance and Development" (TREAD), which has since undergone minor changes and is now in action. The plan calls for the most marginalised and oppressed group in our nation to gain economic control over resources and access. The programme was created to promote the advancement of women through activities such as trade-related training, informational sessions, and counselling sessions. The programme makes financial loans available through NGOs, which also get GoI grants for capacity building. This support is given to women who want to work for themselves in any type of non-farm activity. Principal Goals of the Plan. To provide trade-related education, advice, and counselling, as well as outreach initiatives including trades, goods, and services, etc., for the economic empowerment of women the provision of credit by NGOs. Make the required information about resources for women's business development available. support for emerging markets. 2.5 Micro & Small Enterprises - Cluster Development Programme (MSE-CDP) The cluster development approach has been adopted by the Ministry of Micro, Small and Medium Enterprises (MSME), Government of India (GoI), as a key strategy for boosting the productivity and competitiveness as well as capacity building of Micro and Small Enterprises (MSEs) and their collectives in the country. Furthermore, clustering of units enables service providers, such as banks and credit agencies, to offer their services more affordably, lowering costs and increasing service accessibility for these businesses. Purposes of the plan. by addressing challenges such the advancement of technology, skills, and quality, access to markets, access to funding, etc., to support the sustainability and expansion of MSEs. to improve associations, develop self-help groups, consortia, and other organisations in order to increase MSME's ability for collectively supportive action. to build or improve infrastructure in MSE clusters and new or existing industrial zones.

Conclusion

The study focused on the effectiveness of programmes for entrepreneurship in the MSME sector. Also covered were the degree of success gained in the entrepreneurial training programmes and the level of happiness among women business owners. The

study concentrated on the function of programmes for entrepreneurship in MSME. The Ministry of MSME's programmes for women entrepreneurs were evaluated based on how well the women entrepreneurs operating under the various schemes were able to advance their economic status. The study primarily evaluated the degree to which programmes supporting women entrepreneurs have empowered them economically. The challenges of women business owners had when utilising particular development programmes were also highlighted. Areas for Further Studies: 1. Women Empowerment and Regulatory Framework for Industrial Operations 2. Women Entrepreneurship and Financial Support for Enterprise Operations

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ICT TOOLS IN TEACHING AND LEARNING

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Abstract

The objective of this research was to study in depth the thoughts, beliefs and opinions of the teachers " attempt towards pedagogical improvement as part of the Smart School Project. Specifically this research examines and describes the teachers implementation of T&LICT in the classroom in terms of the instructional practice, the instructional roles and the instructional environment. A case study research methodology is employed. The case is Sekolah Menengah Bestari (a psuedonym), which is a Smart School in Sabah. Analysis of data from 52 survey questionnaires complemented the qualitative data from the 13 interviews and 3 observations, aswell as document analysis. Findings indicated that hardware and software technology infrastructure were available to support the T&LICT implementation. Nevertheless, the teachers felt it was not enough to implement T&LICT effectively. It was estimated that about half of Sekolah Menengah Bestari staff, mainly Bestari and ETeMS teachers, implemented T&LICT. Findings indicated that teacher practices were little changed. IT was used mainly to support the existing teacher-directed and teacher-centered approach. The role of the teacher extended to that of facilitating without releasing control of lesson to the students.

In relation to the integration of ICT in teaching and learning (T&LICT) is aimed at addressing the need to create a knowledge society and a technology literate workforce for the twenty-first century. Schools have a need to adopt an information-literacy curriculum; and students have a need to develop their ICT and thinking skills and take the responsibility for their own learning. Such needs would be met within a technology-enabled teaching and learning environment that emphasizes student self-direction and self-regulation. The Smart School Project is an example of a major educational change initiative to improve classroom teaching and learning practice within such an environment (Smart School Project Team, 1997). Technology, especially the computer, is seen as a critical tool to support this change in instruction by allowing and supporting inquiry and exploration by student.

Change towards T & L ICT

In the Smart School The Malaysian Smart School was visualized as "a learning institution that has been systemically re-invented in terms of learning-teaching practices and school management in order to prepare children for the Information Age" (Smart School Project Team, 1997, p. 10). The Smart School pedagogy that integrates ICT would see a paradigm shift from the directed to the constructivist teaching and learning.

Changing Instructional Roles

ICT facilitates active learning. It enables the individual learning approach through self-accessed, self-paced and self-directed learning. Consequently, the teacher has to change his role from “a sage on the stage” to “a guide by the side”. The advocated role of the teacher is as a facilitator. There is a shift from a predominantly „teacher-controlled paradigm (Figure 1) to that of empowering students to be more active and more independent learners.

Learning and Teaching in ICT

“We need technology in every classroom and in every student and teacher’s hand, because it is the pen and paper of our time, and it is the lens through which we experience much of our world.” – **David Warlick**.

ICT in Education

ICT or Information and Communications Technology broadly refers to tools and services that handle and communicate information. Some of the most common examples of ICT are mobile phones and televisions.

ICT is widely used in our everyday life, and its need is ever-growing in the education sector. Images, audios, videos, presentations, or a combination of these used for teaching constitute ICT in education. So, ICT in education meaning would be using information and communication to improve the delivery of education in every way.

Technology in education isn’t something new, but not many have **information about ICT in education** industry. This is because ICT comes with several constraints, one of which is ensuring access to electronic devices for every kid. But with more institutes investing in ICT, the problem should soon be resolved.

Useful of ICT

ICT plays the same role in our information and communication process and their outcomes, as played by other technologies in making our life comfortable and purposeful. ICT in education has tremendous potential to serve and help the people connected with the process and product of education in many ways.

ICT can bring the existing educational system in alignment with the knowledge-based, information-rich society by providing services of sophisticated tools, techniques and methods at its disposal.

It will help in transitioning from a broadcast model of learning to interactive learning.

Effectiveness of Teaching and learning

With the development of learning technologies in the late 20th century, education system has changed rapidly. This is due to the capability of technology to provide a proactive, easy access and comprehensive teaching and learning environment. Nowadays, Ministry of education in all over the world has provide a lot of facilities and training in order to enhance the use of advanced technologies in the countries” teaching and learning

process. A high budget has been placed in order to provide the equipment needed by teachers to improve the education system. Despite all the efforts, most of the countries are facing similar problem whereby the teachers are not maximizing the usage of the technology provided (Albirini, 2006). This has become a serious matter as many previous researches have proven the usage of ICT in teaching and learning process could improve students' achievement (Nakayima, 2011, Jamieson-Proctor et al., 2013).

Many, researchers have taken an effort to analyse the factors that affecting teachers' acceptance of ICT usage in the classrooms (Capan, 2012; Virkus, 2008; Zhang, 2013; Dudeney, 2010). It shows that, the major barrier of the implementation was the teachers' belief as the teachers are the person who implements the change in their teaching and learning process. Moreover, previous research (Cassim & Obono, 2011) shows that the correlation of teachers' belief and the use of ICT are high. Teachers' role is getting more important especially in usage of ICT in pedagogy which could increase the achievement of the students, their creativity and thinking skills.

Advantages of ICT in Education

Enhances interaction and increases student engagement:

When integrated effectively into a classroom environment, there's no question that technology can increase student engagement and encourage interaction. Put simply, teachers are able to present long-established ideas in new and innovative ways.

Learning is accessible any time, any place:

The uber-connectivity of smart devices and the emergence of cloud technology means that students have access to their educational ICT tools wherever and whenever they like.

Offers new learning techniques as classroom tools are constantly evolving:

Technology is never one to stand still; it's in a constant state of advancement and evolution -much like the process of teaching and learning! Developers are forever releasing apps and tweaking software to improve the digital learning experience in classrooms – which can only benefit both students and teachers.

Decreases teacher paperwork improving work-life balance:

With the sheer abundance of online resources available to teachers, no longer are their lesson plans bound exclusively to reams of paperwork and printed handouts.

Improves parent-teacher interaction:

Its not just teachers and students that can benefit from the integration of technology into the education system. Parents, too, can establish healthy contact with teachers, thanks to a range of smart parent-teacher interaction apps.

Improves and enhances peer support and collaboration between students:

ICT encourages collaboration amongst students and facilitates them working collectively. Students can hone their powers of teamwork by immersing themselves in various online activities.

Enables teachers to differentiate their teaching:

ICT ensures that educators are given the tools to focus specific resources and delivery systems to suit individual learning levels and styles.

What is the impact of ICT during COVID times:

In order to maintain physical distance during the COVID19 pandemic, ICT platforms originally designed and employed for other distributed uses are repurposed to maintain social connections, provide distributed services, continue to meet business needs, and for virtual education.

Key Points

- BlackBoard. BlackBoard is a popular teaching tool that comes with numerous capabilities.
- Google Classroom.
- Trello.
- Microsoft Teams.
- Online Coding Websites such as DataCamp, HackerRank, Coderbyte. Subject Specific Tools.

Conclusion

Everyone has understanding, resources, and interests on which to build. Learning a topic does not begin from knowing nothing to learning that is based on entirely new information. Many kinds of learning require transforming existing understanding, especially when one's understanding needs to be applied in new situations. Teachers have a critical role in assisting learners to engage their understanding, building on learners' understandings, correcting misconceptions, and observing and engaging with learners during the processes of learning. This view of the interactions of learners with one another and with teachers derives from generalizations about learning mechanisms and the conditions that promote understanding. It begins with the obvious: learning is embedded in many contexts. The most effective learning occurs when learners transport what they have learned to various and diverse new situations. This view of learning also includes the not so obvious: young learners arrive at school with prior knowledge that can facilitate or impede learning. The implications for schooling are many, not the least of which is that teachers must address the multiple levels of knowledge and perspectives of children's prior knowledge, with all of its inaccuracies and misconceptions.

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ICT TOOLS IN TEACHING LEARNING PROCESS

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Abstract

In this digital era, ICT use in the classroom is important for giving students opportunities to learn and apply the required 21st century skills. Hence studying the issues and challenges related to ICT use in teaching and learning can assist teachers in overcoming the obstacles and become successful technology users. Therefore, the main purpose of this study is to analyse teachers' perceptions of the challenges faced in using ICT tools in classrooms. A quantitative research design was used to collect the data randomly from a sample of 100 secondary school teachers in the state of Melaka, Malaysia. Evidence has been collected through distribution of a modified- adopted survey questionnaire. Overall, the key issues and challenges found to be significant in using ICT tools by teachers were: limited accessibility and network connection, limited technical support, lack of effective training, limited time and lack of teachers' competency. Moreover, the results from independent t test show that use of ICT tools by male teachers ($M = 2.08$, $SD = .997$) in the classroom is higher compared to female teachers ($M = 2.04$, $SD = .992$). It is hoped that the outcome of this research provides proper information and recommendation to those responsible for integrating new technologies into the school teaching and learning process.

Keywords: ICT Tools, Teaching & Learning, Technology Issues & Challenges, Education

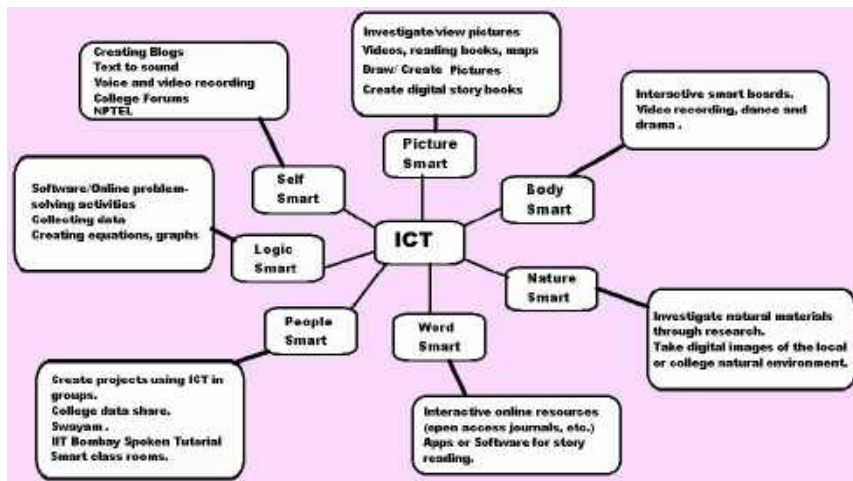
Introduction

Information and communications technology (ICT) is an important part of most organizations these days (Zhang & Aikman, 2007). Computers began to be used in schools in the early 1980s, and several scholars suggest that ICT will be an important part of education for the next generation (Bransford, Brown, & Cocking, 2000; Grimus, 2000; Yelland, 2001). Up- to- date technology offers many methods of enhancing classroom teaching and learning (Ghavifekr et al., 2014; Lefebvre, Deaudelin & Loiselle, 2006). Dawes (2001) stated that new technologies have the potential to upkeep education across the curriculum and deliver opportunities for efficient student- teacher communication in ways not possible before. ICT in education has the potential to transform teaching. However, this potential may not easily be realized, as Dawes (2001) underlined when he stated, "problems arise when teachers are expected to implement changes in what may well be adverse circumstances

Due to ICT's importance in society as well as in the future of education, identifying the possible challenges to integrating these technologies in schools would be an important step in improving the quality of teaching and learning. Balanskat, Blamire, and Kefala (2006) argue that although teachers appear to acknowledge the value of ICT in schools, they continue encountering obstacles during the processes of adopting these technologies into their teaching and learning.

Theoretical Framework

Previously, Davis, Bagozzi and Warshaw (1989) developed a theory of 'action relating to reasons' so called Technology Acceptance Model (TAM). Later based on their work, Venkatesh and Davis (2000) investigated the reasons some people use computers and their attitudes towards them that called TAM 2. The model, shown in Figure 1, links the perceived usefulness and ease of use with attitude towards using ICT and actual use (system use). They tested this model with 107 adult users, who had been using a managerial system for 14 weeks. They found that people's computer use was predicted by their intentions to use the computer and that perceived usefulness was also strongly linked to these intentions.



External Variables – It represents the challenges that teachers face that come from outside their sphere of control when integrating a new technology in their teaching and learning process. These challenges include:

- Limited accessibility and network connection
- Schools with limited ICT facilities
- Lack of effective training
- Limited time o Lack of teachers' competency

Perceived Usefulness (PU)

It represents the degree to which they believe that using a particular technology would enhance their job performance. If teachers feel there is no need to question or change their professional practice then, according to studies, they are unlikely to adopt the use of ICT tools. However, if they perceive ICT to be useful to them, their teaching and their pupils' learning, then according to the empirical evidence of previous studies (Cox, Preston & Cox, 1999) they are more likely to have a positive attitude to using ICT in the classroom. The following factors have been identified as key elements to teachers' perceived usefulness of

ICT tools:

- Work more quickly
- Job performance
- Increased productivity
- Effectiveness
- Useful

Perceived ease of use (PEOU)

It represents the degree to which they believe that using a particular system would be free from effort. Previous studies have identified a number of factors relating to the perceived ease of use of ICT, in study on experienced practicing ICT users. The Impact project (Watson, 1993) and other studies identified a wide range of skills and competencies which teachers felt they needed in order to find ICT easy to use. Some of these are:

- Easy to learn
- Clear and understandable
- Easy to use
- Controllable
- Easy to remember
- Attitude toward use

Teacher's positive or negative feeling about performing the target behaviour (e.g., using a system). Basically, teachers' attitudes too many of these factors will depend upon how easy they perceive using ICT tools to be on a personal level as well as for teaching in the classroom.

Behavioural Intention

The degree to which the teacher has formulated conscious plans to perform or not perform some specified future behaviour.

Social Influence Processes

(Subjective norm, voluntariness, and image) and cognitive instrumental processes (job relevance, output quality, result demonstrability, and perceived ease of use) as determinants of perceived usefulness and usage intentions.

Use of ICT By Faculty

PowerPoint presentations

Faculties are encouraged to use power-point presentations in their teaching by using LCD's and projectors. They are also equipped by digital library, online search engines and websites to prepare effective presentations

Industry Connect

Seminar and Conference room are digitally equipped where guest lectures, expert talks and various competitions are regularly organized for students

Online quiz Faculties prepare online quiz for students after the completion of each unit with the help of GOOGLE FORMS.

Video Conferencing

Students are counseled with the help of Zoom / Google meet applications.

Video Lecture

Recording of video lectures is made available to students for long term learning and future referencing

Literature Review

Challenges in using ICT in teaching and learning

Integrating ICT into teaching and learning is a complex process and one that may encounter a number of difficulties. These difficulties are known as “challenges” (Schoepp, 2005). A challenge is defined as “any condition that makes it difficult to make progress or to achieve an objective” (WordNet, 1997, as cited in Schoepp, 2005, p. 2). The following are some of the key challenges that have been identified in the literature regarding teachers’ use of ICT tools in classroom.

Limited accessibility and network connection

Several research studies indicate that lack of access to resources, including home access, is another complex challenge that prevent teachers from integrating new technologies into education.

Various research studies indicated several reasons for the lack of access to technology. In Sicilia’s study (2005), teachers complained about how difficult it was to always have access to computers. The author gave reasons like “computers had to be booked in advance and the teachers would forget to do so, or they could not book them for several periods in a row when they wanted to work on several projects with the students” (p. 50). In other words, a teacher would have no access to ICT materials because most of these were shared with other teachers. the inaccessibility of ICT resources is not always merely due to the non- availability of the hardware and software or other ICT materials within the school. It may be the result of one of a number of factors such as poor resource organization, poor quality hardware, inappropriate software, or lack of personal access for teachers.

School with limited technical support

Without both good technical support in the classroom and whole- school resources, teachers cannot be expected to overcome the obstacles preventing them from using ICT (Lewis, 2003). Pelgrum (2001) found that in the view of primary and secondary teachers, one of the top barriers to ICT use in education was lack of technical assistance. In Sicilia’s study (2005), technical problems were found to be a major barrier for teachers. These technical barriers included waiting for websites to open, failing to connect to the Internet, printers not printing, malfunctioning computers, and teachers having to work on old computers. “Technical barriers impeded the smooth delivery of the lesson or the natural flow of the classroom activity”

Lack of Effective Training

The challenge most frequently referred to in the literature is lack of effective training study was that there were not enough training opportunities for teachers in using ICTs in a classroom environment. Similarly, Beggs (2000) found that one of the top three barriers to teachers' use of ICT in teaching was the lack of training. Recent research in Turkey found that the main problem with implementing new ICT in education was the insufficient amount of in- service training for teachers.

Limited Time

Several recent studies indicate that many teachers have competence and confidence in using computers in the classroom, but they still make little use of technologies because they lack the time. A significant number of researchers identified time limitations and the difficulty in scheduling enough computer time for classes as a barrier to teachers' use of ICT in their teaching (Al- Alwani, 2005; Becta, 2004; Beggs, 2000; Schoepp, 2005; Sicilia, 2005). According to Sicilia (2005), the most common challenge reported by all the teachers was the lack of time they had to plan technology lessons, explore the different Internet sites, or look at various aspects of educational software.

Lack of Teachers' Competency

Another challenge directly related to teacher confidence is teachers' competence in integrating ICT into pedagogical practice (Becta, 2004). In Australian research, Newhouse (2002) found that many teachers lacked the knowledge and skills to use computers and were unenthusiastic about the changes and integration of supplementary learning associated with bringing computers into their teaching practices.

Methodology

Research Design

In this research, quantitative methodology was used to collect and analyse the data obtained from all the respondents. A questionnaire was self- developed and finalized by the researchers before being distributed to the targeted group of respondents. The questionnaire was designed specifically to address research objectives with regard to teachers' perception on use of ICT tools in public secondary schools.

Data Analysis Process

The data collected from the respondents were gathered together to be analysed using the Statistical Packages for the Social Sciences (SPSS) version 22. The analysis includes both descriptive and inferential analysis. The researchers used descriptive analysis to analyse the frequency and percentage of the overall population in the demographic background. Besides, it is also used to determine the mean, standard deviation, frequency and percentage. Inferential statistics (t- test) were also used to analyse the research findings.

Demographic Factors of the Respondents

Demographic background of the research participants. Demographic finding where the age category under 25 is frequency 4 and percentage is 4%, age 26- 35 is frequency 64 and percentage is 64%, age 36- 45 is frequency 27 and percentage is 27%, age 46- 55 is frequency 3 and percentage is 3%, and age 55+ is frequency 2 and percentage is 2%

The gender finding shows male as frequency 25 and percentage is 25% and female is frequency 75 and percentage is 75%. The experience based on the years of experience by the sample is less than 1 year frequency is 5 and the percentage is 5%, 1- 4 years frequency is 25 and the percentage is 25%, 5- 10 years frequency is 16 and the percentage is 16%, 10- 20years frequency is 16 and the percentage is 16%, and 20+ years frequency is 1 and the percentage is 1%.

Ethnicity analysis shows that Malay frequency is 37 (37%), Chinese frequency is 19 and the percentage is 19%, Indian frequency is 44 and the percentage is 44% and others frequency is 0. The subjects taught by the respondents are: Language (frequency is 38 and percentage is 38%), Mathematics (f = 36 or 36%), Science subjects (f = 22 or 22%) and Other (f = 4 or percentage 4%). Based on the data obtained, most of the participants in this research are aged between 36- 45 years, the majority are female and have 5- 10 years of experience.

Research Questions

What are the perceptions in implementing ICT tools in teaching and learning in the classroom among school teachers?

The following Table shows the descriptive statistics about the perceptions in implementing ICT tools in teaching and learning in the classroom among school teachers.

1. Students concentrate more on their learning	38 (38%)	27 (27%)	30 (30%)	5 (5%)	0 (0%)	2.02	.943
2. Students try harder in what they are learning	40 (40%)	29 (29%)	26 (26%)	5 (5%)	0 (0%)	1.96	.931
Students feel more autonomous in their learning (they can repeat exercises if needed, explore in more detail topics that they are interested in, etc.)	39 (39%)	24 (24%)	30 (30%)	7 (7%)	0 (0%)	2.05	.989
4. Students understand more easily what they learn	26 (26%)	26 (26%)	38 (38%)	10 (10%)	0 (0%)	2.32	.973
5. Students remember more easily what they have learnt	38 (38%)	27 (27%)	30 (30%)	5 (5%)	0 (0%)	2.02	.943
6. ICT facilitates collaborative work between students	32 (32%)	41 (41%)	25 (25%)	2 (2%)	0 (0%)	1.97	.810
7. ICT improves the class climate (students more engaged, less	32 (32%)	41 (41%)	25 (25%)	2 (2%)	0 (0%)	1.97	.810

disturbing)

2) What are the challenges of implementing ICT tools in teaching and learning in the classroom among school teachers?

Table shows the descriptive statistics about the perceptions in implementing ICT tools in teaching and learning in the classroom among school teachers

computers							
1 Insufficient band width or speed	33 (32.7%)	35 (34.7%)	29 (28.7%)	3 (3%)	0 (0%)	2.02	.864
2 Insufficient number of interactive white boards	30 (30%)	32 (32%)	21 (21%)	9 (9%)	8 (8%)	2.33	1.223
3 Insufficient number of laptops/notebooks	0 (0%)	6 (6%)	9 (9%)	51 (51%)	34 (34%)	4.13	.812
4 School computers out of data and/or needing repair	9 (9%)	19 (19%)	22 (22%)	29 (29%)	21 (21%)	3.34	1.257
5 Lack of adequate skills of teachers	1 (1%)	10 (10%)	14 (14%)	43 (43%)	32 (32%)	3.95	.978
6 Insufficient technical support for teachers	30 (30%)	44 (44%)	25 (25%)	1 (1%)	0 (0%)	1.97	.771
7. Insufficient pedagogical support for teachers	25 (25%)	47 (47%)	26 (26%)	2 (2%)	0 (0%)	2.05	.770
8 Lack of adequate content/material for teaching	10 (10%)	15 (15%)	15 (15%)	31 (31%)	29 (29%)	3.54	1.321
9 Lack of content in national language	17 (17%)	31 (31%)	18 (18%)	19 (19%)	15 (15%)	2.84	1.331
10 Too difficult to integrate in ICT use into curriculum	11 (11%)	23 (23%)	16 (16%)	27 (27%)	23 (23%)	3.28	1.341
11 Lack of pedagogical models on how to use ICT for learning	0 (0%)	6 (6%)	9 (9%)	51 (51%)	34 (34%)	4.13	.812
12. School time organization (fixed lesson time, etc.)	11 (11%)	23 (23%)	16 (16%)	27 (27%)	23 (23%)	3.28	1.341
School space organization							
13. (classroom size and furniture etc.)	10 (10%)	15 (15%)	15 (15%)	31 (31%)	29 (29%)	3.54	1.321
14. Pressure to prepare students for exam and tests	10 (10%)	15 (15%)	15 (15%)	31 (31%)	29 (29%)	3.54	1.321
15. Most parents not in favor of using ICT in school	5 (5%)	10 (10%)	11 (11%)	42 (42%)	32 (32%)	3.86	1.128
16. Most teachers not in favor of using ICT in school	10 (10%)	15 (15%)	15 (15%)	31 (31%)	29 (29%)	3.54	1.321
17. Lack of interest in teachers	11	23	16	27	23	3.28	1.341

	(11%)	(23%)	(16%)	(27%)	(23%)		
18 No or unclear benefit to use ICT for teaching	10 (10%)	15 (15%)	15 (15%)	31 (31%)	29 (29%)	3.54	1.321
19. Using ICT in teaching and learning not being a goal inourschool	24 (24%)	50 (50%)	23 (23%)	2 (2%)	1 (1%)	2.06	.802

Discussion & Conclusion

This study is more related to identifying the perceptions in implementing ICT tools in teaching and learning in the classroom among school teachers. Furthermore, it examines the challenges of using ICT tools in teaching and learning in the classroom among school teachers and recognizes the effectiveness of the extent of ICT tools in supporting classroom teaching and learning. Based on the study the findings indicate that average level of the perceptions in implementing ICT tools in teaching and learning in the classroom among school teachers, high level of challenges of using ICT tools in teaching and learning in the classroom among school teachers and recognizing the effectiveness of the extent of ICT tools in supporting teaching and learning in the classroom.

Important technologies for learning such as computers (98%) and educational software (93%) were ranked as the top technologies by the respondents of Cachia and Ferrari's (2010) research. On the other hand, our research showed that the rate of ICT use among teachers in school is average. However, the finding shows that more teachers used computer with teachings of tware in the classroom to present or demonstrate examples to students. They also like to use the computer to access students' results and keep track of their progress

Despite the current efforts in ICT integration in schools, many families specifically in rural areas still do not know how to use ICT tools in their daily life. They even did not know how to check their children's results in the existing systems. Not all houses have computers and Internet facilities to use daily. In this regard, the main challenge is to provide appropriate ICT tools to both urban and rural are as efficiently.

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A STUDY ON IMPACT ON LEARNING HABIT AND ACADEMIC PERFORMANCE OF STUDENTS

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Abstract

Education is essential for providing skilled labour that drives economic growth. Additionally, students must dedicate a significant amount of their time to their studies in order to graduate with high academic standing. A growing number of students commit readmission, indicating that they did not perform well in their academics, and the trend of graduating students is not equal to the growth of enrolled students. Lack of good study habits is the issue that most students experience, which adds to their bad performance on tests and exams. A student needs to develop strong study habits in order to achieve well. Study habit is an action that students routinely and habitually carry out in order to complete the task of learning. Examples include reading, taking notes, and holding study sessions. Depending on how well they benefit the learner, study habits can either be deemed effective or ineffective. Study habits aid students in understanding their coursework and in creating a comfortable and engaging learning environment. Among the many aspects of academic success, academic performance is one. Academic achievement is influenced by a number of variables, including socioeconomic position, student temperament and motivation, peer pressure, and parental support.

Keywords: Learning habits, Academic performance.

Introduction

Study is the process of devoting time and attention to learning new things. Unfortunately, a lot of students lack the skills necessary for effective study habits. The term "study habit" refers to a variety of personal behaviours related to studying that combine study method and competence. In other words, good study habits involve actions and skills that can boost motivation and transform the study process into one that yields high returns and eventually improves learning. In reality, successful study habits vary from person to person and are the key to success. The most crucial indicator of academic achievement is study habits, and studies conducted around the world have shown that study habits have an impact on academic performance.

Academic achievement represents an important component of the constellation of variables influencing student success. It also has a huge impact on education, especially by serving as a practical method to assess students' learning progress. Psychologists and researchers have utilized numerous personality, attitudinal, mindsets, and ability measurements in an effort to understand how individuals differ in how they process, retain, and recollect learning material. The impact of the students' good study habits including doing their assignments, participating fully in class, managing their time, remaining focused, and working hard—has significantly improved their academic achievement.

An important factor in the growth of knowledge and perceptual abilities is study habits. A person's study habits reveal how much they will learn, how far they want to go, and how much money they want to make. All of these could be determined during the course of a person's life with the aid of their study habits.

Objectives

1. To identify the level of academic performance of the students.
2. To examine the correlation between learning habits and academic performance.
3. To determine the factor affecting adult learners.
4. Examine the challenges faced by students in developing learning habit for better academic performance.

Statement of Problem

Study habits are referred to be a person's regular behaviour or habitual activities in order to better study and learn. Finding a quiet place to study, taking breaks, creating goals, and taking practise exams are all examples of good study habits. In order to avoid having problems with time management and poor academic achievement, students should be conscious of time with this problem the following research question raised.

1. What is the relationship between learning habits and academic performance?
2. What is the status of student's academic achievement in terms of academic performance?

Scope of the Study

This study is mainly based on the student's impact on learning habits and academic performance, deals with how they improve their learning habits. It aims to analyse and comprehend the learning habits and academic performance of students.

Review of Literature

Even though studying is the best approach to advance and achieve academic success, it is still a difficult effort that must be completed. Distractions like the internet, television, telephones, and even friends are common, especially in this generation.

According to **Kaur and Pathania (2017)**, College student's study habits were significantly influenced by factors like age, family wealth, and education. The results of their investigation showed a significant correlation between study habits and academic success. It suggests that age, family income, and educational attainment all have an impact on how students develop their learning practises and are connected to their academic success.

According to **Ashish (2013)**, argues that in order to secure academic achievement for the duration of the school year, pupils must give up poor study habits and adopt effective ones. He goes on to say that using good study techniques can be the difference between passing a class with flying colours, barely passing, or worse, failing terribly, regardless of age or academic ability. She acknowledges that despite best efforts and intentions, many of

the most popular study techniques or habits today can result in utter disillusionment.

According to **Marc (2011)**, However, it explains, students with learning difficulties may still have generally poor and inefficient study habits and techniques. Students would better comprehend why they occasionally become irritated with conventional study techniques if they are aware of their learning patterns or styles. He says that as they help ensure a successful academic future, effective study habits are crucial for academic achievement. Having strong study habits can help you get better grades, and better grades will help you get into better colleges and institutions and maybe even get a scholarship. This will then result in a successful career. No matter what degree of education a student has, developing appropriate study habits is essential. It increases pupils' capacity for self-discipline, self-direction, and eventually academic success.

According to **Aquino (2011)**, studied the undergraduate students' positive and negative study habits and attitudes. To assess the respondents' study habits and attitudes, the study used the Survey of Study Habits and Attitudes (SSHA) questionnaire, which was created and standardised by Brown and Holtzman (1969). Students disapprove of teaching strategies, classroom management, and ineffective time management, according to the findings. Additionally, favourable and negative relationships between the study's variables were displayed. Students have their own favourable and desirable study habits, according to this study's findings.

According to **Evans Atsiaya Siah and Julius K. Maiyo (2015)**, "The connection between students' academic success and their study habits. This comparative research study used a survey design. The Spicer Higher Secondary School's 9th graders were among the target demographic. The findings showed a favourable connection between study habits and academic achievement of 0.66. It was evident that neither professors nor students seemed to make an attempt to cultivate good study habits.

Research Methodolgy

The descriptive method of research was utilized in the study to determine the effects on learning habits and academic performance. The study made use of a quantitative research approach in analysing and understanding of 110 responses.

Research Design

The study has been carried out by descriptive type of research. The samples recorded consist of 110 individuals and the period of study is 6 months. The study has been carried out in Coimbatore district.

Data Collection

Primary data involves the data collected through the questionnaire framed for data collection and the Secondary data involves the data collected through journals, books and internet.

Tools Used

1. Percentage Analysis
2. Chi – square
3. Ranking Analysis

Analysis and Interpretation

Percentage Analysis

Table 3.1: Age

Variables	No of responses	Percentage
20years and below	47	42.73
21 - 31	34	30.91
32 - 41	16	14.55
42 - 51	13	11.82
Total	110	100

Out of 110 respondents, the above table shows Age. In the category of 20years and below has the highest respondents with 42.73%, 42 – 51years of age category shows the least respondents with 11.82%, age category 21 – 31years shows the respondents with 30.91% and age category of 32 – 41years shows the respondents of 14.55%

Table 3.2: Gender

Variables	No of responses	Percentage
Male	53	48.18
Female	56	50.91
Total	110	100

Out of 110 respondents, the above table shows Gender. The over table shows 50.91% of the respondents are Female and 48.18% are Male.

Table 3.3: Education Qualification

Variables	No of responses	Percentage
Higher Secondary	19	17.27
UG	52	47.27
PG	23	20.91
Others	16	14.55
Total	110	100

The above table depicts the Educational Qualification of the 110 respondents. It is clear from the above table that 47.27% of the respondents are UG, 20.91% of the respondents are PG, 17.27% of the respondents are Higher Secondary and 14.55% of the respondents are Others.

Table 3.4: Current Employment Status

Variables	No of responses	Percentage
Employed Full Time	30	27.27
Employed Part Time	19	17.27
Seeking Opportunities	8	7.27
Retired	11	10.00
Student	41	37.27
Total	110	100

The above table depicts the Employment status of the 110 respondents, It is clear from the above table that 37.27% of the respondents are Students, 27.27% of the respondents are Employed full time, 17.27% of the respondents are employed part time, 10% of the respondents are Retired, 7.27% of the respondents are Seeking opportunities.

Table 3.5: Locality

Variables	No of responses	Percentage
Rural	17	15.45
Urban	66	60.00
Semi Urban	27	24.55
Total	110	100

The above table depicts the Locality of the 110 respondents. It shows that 60% of the respondents are located in the urban area, 24.55% of the respondents are located in the semi urban area and 15.45% of the respondents are located in the rural area.

Table 3.6: Medium of Study

Variables	No of responses	Percentage
Tamil	18	16.36
English	85	77.27
Others	5	4.55
Total	110	100

The above table shows the Medium of study of the 110 respondents. It shows that 77.27% of the respondents has chosen their medium of study as English, 16.36% of the respondents has chosen as Tamil and 4.55% of the respondents chosen as Others.

Table 3.7: Annual Income

Variables	No of responses	Percentage
Less than 2,50,000	27	24.55
2,50,000 – 5,00,000	24	21.82
5,00,000 – 7,50,000	15	13.64
7,50,000 – 10,00,000	13	11.82

More than 10,00,000	1	0.91
NIL	29	26.36
Total	110	100

The above table shows the Annual income of the 110 respondents. Its shows that 24.55% of the respondents earns the income less than 2,50,000, 21.82% of the respondents earns between 2,50,000 – 5,00,000, 13.64% of the respondents earns between 5,00,000 – 7,50,000, 11.82% of the respondents earns between 7,50,000 – 10,00,000 and 0.91% of the respondent earns more than 10,00,000.

Table 3.8: Family Type

Variables	No of responses	Percentage
Nuclear Family	74	67.27
Joint Family	35	31.82
Total	110	100

The above table shows the family type of the 110 respondents. Its clear that 67.27% of the respondents are nuclear family and 31.82% of the respondents are joint family.

Chi - Square Test

Table 3.9: Age - Learning Habits

factors	x ² values	significance
Student's personalities, School environment and Friends circle.	0.226	NON - SIGNIFICANT
Lack of motivation	0.2	NON - SIGNIFICANT
Lack of interest	0.244	NON - SIGNIFICANT
Mental illness	0.65	NON - SIGNIFICANT
Family economic status	0.004	HIGHLY SIGNIFICANT
Developing strong learning habit	0.42	NON - SIGNIFICANT

The calculated Chi - square value in the above table describes that Age with learning habits. The factor family economic status has highly significant relationship with age. The factors student's personalities, school environment and friends circle, lack of motivation, lack of interest, mental illness, developing strong learning habits has no significant relationship with age.

Table 3.10: Age - Academic Performance

Factors	X ² values	Significance
Family background	0.004	HIGHLY SIGNIFICANT
Performance of students decreased after COVID	0.19	NON - SIGNIFICANT
Poor sleeping habit	0	HIGHLY SIGNIFICANT
Study area is noisy and distractive	0.001	HIGHLY SIGNIFICANT

Lack of participation in the class	0.29	NON - SIGNIFICANT
Consumption of drugs	0.281	NON - SIGNIFICANT
Lack of understanding in subject	0.544	NON - SIGNIFICANT

The calculated Chi – square value in the above table describes that Age with academic performance. The Family background, Poor sleeping and Study area is noisy and distractive has highly significant with age. The performance of students decreased after COVID, lack of participation in the class, consumption of drugs, lack of understanding in subject has no significant relationship with age factor.

Rank Analysis

Table 3.11: Factor Affecting Learning Habits and Academic Performance

Factors	No of responses	Average	Rank
Social Media	86	78.18	1
Electronic gadget	79	71.82	2
Health issues	62	56.36	3
Lack of interest	56	50.91	4
Laziness	44	40.00	5
Lack of self confidence	36	32.73	6
Social environment	34	30.91	7
Wrong friendship	32	29.09	8
Poor family structure	26	23.64	9
Parental issues	25	22.73	10

The above table shows that ranking analysis of factor affecting learning habits and academic performance. From the table it is clear that social media ranks 1, which denotes that it affects the learning habits and academic performance of students highly.

Findings

Percentage Analysis

Out of 110 respondents

1. Majority of the respondents falls under the age category of 20years and below.
2. Majority of the respondents were female.
3. Majority of the respondents were under graduates.
4. Majority of the respondents are Students.
5. Majority of the respondents were living in the urban area.
6. Majority of the respondents selected medium of study as English.
7. Majority of the respondents comes under the annual income Less than 2,50,000.
8. Majority of the respondents were nuclear family.

Chi Square Test

1. There is no significant association between age and student's personalities, school environment and friends circle, lack of motivation, lack of interest, mental illness, and developing strong learning habits. The calculated value is more than the significant value 0.05. Hence it is rejected. Whereas there is significant association between age and family economic status. The calculated value is 0.004, less than the significant value 0.005. Hence it is accepted.
2. There is no significant association between age and student's performance after COVID, lack of participation in class, Consumption of drugs, lack of understanding in subject. The calculated value is more than the significant value 0.005. hence it is rejected. Whereas there is significant association between age and family background, poor sleeping habits, study area is noisy and distractive. The calculated value is less than the significant value 0.005. Hence it is accepted.

Rank Analysis

1. In the rank analysis of factors affecting learning habits and academic performance. Social media ranks 1st, that it is clear that social media affects the most.

Suggestions

The association of demographic: Profile (age) and learning habits by the respondents, It was found that there is significant relation between age and family, economic status.

Conclusion

After conducting a thorough study on the impact of learning habits on academic performance of students, it has been found that there is a significant correlation between the two variables. Students who have good learning habits, such as regular study schedules, active participation in class, keeping up-to-date with course materials, and seeking help when needed, tend to perform better academically than those who lack these habits. It has also been observed that good learning habits are also linked to a positive attitude towards learning, which is essential for academic success. Students who approach their studies with enthusiasm and a growth mindset are more likely to retain information and apply it effectively. In conclusion, fostering good learning habits should be a priority for students, educators, and parents alike, as it provides a strong foundation for academic success and lifelong learning.

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A STUDY ON THE IMPACT OF SOCIAL MEDIA NETWORKS ON ACADEMIC PERFORMANCE OF STUDENTS

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Abstract

India is the third biggest nation for utilizing the web on the planet, with high portable and social clients, it is a platform for the new age. The aim of the study is to examine the impact of social media networks on academic performance of Coimbatore students. A sample of 158 students was selected and Structured questionnaire was used as an instrument for data collection from Coimbatore students on which and data analysis tested by percentages and chi square analysis. Most of the students used social media networks like Instagram (45.6%) and WhatsApp (27.8%); they were browsing sites by using e-gadgets like Smart phone (77.2%) and laptop (17.1%). The results of the survey questionnaire indicate that 34.2% of the sample admitted that they spent 1 hours per day checking social media sites, while 50% spent more than 2 to 3 hours; and only 15.8% spent more than 4 hours on this task. The social media improves the cooperative learning of students and the teachers become easier, in other words social media is very essential for students.

Keywords: Social Media, Academic performance, learning efficiency.

Introduction

The idea that social media are defined simply by their ability to bring people along has been seen as too broad, as this might recommend that essentially different technologies just like the telegraph and telephone are also social media. Social media plays a very important role in each student's life. It is often easier and more convenient to access the data, provide data and communicate via social media. Teachers and students can be connected to each other and can make good use of these platform for learning and teaching. Social media has several positive effects on education together with higher communication, timely information, socializing online, learning, enhancing skills, creating a career among others. But the same has some negative effects which include identity theft, cyber bullying, and social isolation. The use of social media has met an excellent growth since the rise evolution in internet technology. They become very popular and play a very important role in all domains of our lives particularly in education. Students using the social media not just for learning and additionally for the entertainment, social activities, sharing their all information and obtaining career opportunities, etc. By using this social media among the students in academic performance there is an improvement and also lack of improvement in their studies. For a few students using of social media becomes an addiction. Social media networking websites give tools by which people can communicate, sharing data, and make new relationships with any person in this world. This analysis study contains in collecting data regarding the use of social media and its effect in the academic performance.

Statement of Problem

In Getting information, Internet plays a major role in the field. The growing dimensions of social media by students cannot be underestimated. In recent survey says student give more attention and time to spent in social media. It results they fail their examinations if they do not learn. The study was revealed that media use contributes to low self-perceptions and less interest in college-oriented carriers. Academic excellence plays a major role in an individual's life; at social gatherings, at workplace, in an institution or in family. Much emphasis is placed on academic excellence because of the role it plays in an individual's life as far as a successful life and respect is concerned in every part of the world. Studies revealed that social media affects students' while use of English. They used short-handwriting for chatting with friends and get used to it thereby replicating the same errors during examinations. In the use of Social Network Sites (SNS) students at all level of engages especially territory level. This research seeks to investigate the level of engagement in social networking sites and also determine the effect of their use on the academic work in students.

Review of Literature

Domizi (2013) a route is composed in graduate understudies wherein they were advised to utilize Twitter and bit by bit gift tweets all together on increase trades of examine passage. After that students applied Twitter record to interface with their substance and with exceptional understudies. Similarly, understudies having remarks about twitter is that, twitter is important in a bit at the same time as and expertly". To take a gander at this courting the understudies had been parceled into two social affairs, one get-together use twitter and the other get-collectively failed to use twitter account. It was used to steer talks approximately exam fabric, to deal with the evaluation bundles in way, additionally publish the revelations of class, and continue to be in contact with magnificence buddies.

Shambare, R et al. (2012) Conducting a study on social networking habits among students their study shows that such media most frequently used by Youngers and Facebook is most widely used by a large number of communities and has multiple effects on the life of students. High speed and fast internet approach and mobile technology development are the most significant factors behind social networking websites adoption and accessibility and suggest that Social networks improve their awareness level. The short and fast technique to manage web and the improvement of PDA development are most big drivers in the back of the choice and accessibility with character to person correspondence locations and count on that SNS replace their information level.

Ahmad, A (2011) their assessment showed that long range informal correspondence dreams have quantity of primary focuses for his or her customers, it allows the machine to stay in contact with their pals and re-link with old ones and help to find new friends as demonstrated through your eagerness from all over the and a brilliant number of individuals are interfacing with these frameworks. Therefore, the association of online existence is building up comprehensive.

Heeter, (2006) an assessment at college of Michigan kingdom supply data about development use in cutting area schooling, especially in association with paintings force. This study translates teaching and reading inclinations for body of workers components on the net, understudies which may be graduate and student are furthermore ensured. Cycle 65 % of collecting of worker's and understudies each investigation composes however right here representatives for singular certainties turned into nearly sure gotten them. Understudies submit for each informative and man or woman proposes. Collection of labourer's implemented online image sharing undertakings greater than understudies, as an event, Flickr, besides round 50 % of the 2 social affairs used it. Understudies used Face e-book 70 percent simultaneously as workers used underneath 10 stages of both Face virtual book and MySpace. Understudies ship instantaneous message nearly sure.

Objectives of the Study

- To identify the benefits obtained for using the social media.
- To determine the aims of students for the use of social media and their perspectives of education.
- To find which is the best social media that helps to improve the education level among the students.
- To ascertain how the use of social media has influenced the academic work of students.

Research Methodology

The primary data is collected from the well-structured questionnaire and interview with the people using laptop. Secondary data was collected from Books, records, articles, Journals and Magazines. A sample is collected from the respondent is 158 have been analysed and selected.

Sampling

The method of Sampling used to collect data is Convenience Sampling. Convenience is a type of non-probability sampling that involves the sample being drawn from the part of population that is closed to hand. The reason for choosing this sampling is opinion of every students differ from each other according to their needs.

Tools Used

- Percentage
- Chi Square Test
- ANOVA
- Mean Rank
- Standard Deviation

Limitations of the Study

A sum of 158 respondents were identified from different educational institutions in Coimbatore City. Majority of respondents were graduated students in the conducted survey and it was hard to get a diverse opinion for the study.

Table 1 : Demographic Profile of the Respondents

S. No	Demographic Variables		No. of Respondents	Percentage
1.	Age	15 – 20	59	37.3
		21 – 25	81	51.3
		25 – 30	13	8.2
		30 above	5	3.2
2.	Gender	Male	92	58.2
		Female	66	41.8
3.	Family members	Upto 3	18	11.4
		3 – 5	115	72.4
		Above 5	25	15.8
4.	Residential area	Rural	42	26.6
		Urban	73	46.2
		Sub-urban	42	27.2
5.	Education	Below degree	28	17.7
		Degree	110	69.6
		Post-Graduation	15	9.0
		Above PG	5	3.0

From the above table it is analysed that Majority 51.3% of the respondents are belong to the age group of 21-25 years and 58.2% of respondents are male. 72.4% of the respondents have 3-5 members in their family and 46.3% of respondents are living in Urban area. 69.6% of the respondents are having a Degree qualification. These are the demographic profile respondents which are taken for this study.

Table 2 : Usage of the Social Media

S. No	Particulars		No. of Respondents	Percentage
1.	Favourite social media sites	Facebook	17	10.8
		WhatsApp	44	27.8
		Instagram	72	45.6
		Twitter	25	15.8
		Skype	0	0
2.	Time spent on social media site per day	30 minutes to 1 hour	54	34.2
		2 - 3 hours	79	50
		4 - 5 hours	25	15.8
3.	Why students use	Chatting	80	50.6

	social media	Downloading music & Videos	46	29.1
		Academic work	32	20.3
4.	Social media affect students' academic work	Yes	56	35.4
		No	55	34.8
		Not Certain	47	29.7
5.	Improvement in Academic work by social media	Yes	100	63.3
		No	19	12
		Not Certain	39	24.7
6.	Which of the social media you are used more	Facebook	4	2.5
		Instagram	54	34.2
		WhatsApp	37	23.4
		YouTube	49	31
		Twitter	9	5.7
		Google	5	3.2
		LinkedIn	0	0
7.	Which type of e-gadget you are using for social media platform	Smart phone	122	77.2
		Laptop	27	17.1
		Tab	2	1.3
		TV	5	3.2
		Desktop Computer	2	1.3

From the above table it is analysed that 45.6% of the respondent's favourite social media is Instagram and 50% of respondents spent their time in social media is 2-3 hours per day. 50.6% of the students are using the social media for Chatting and 35.4% of the respondents said that social media affects student's academic work. 63.3% of the respondent's opinion is there is an improvement in academic work by using the social media and 34.2% of the respondent's mostly used social media is Instagram. Mostly 77.2% of the respondents are using Smart phone for social media platform.

Table 3: Influence of the Social Media

S. No.	Particulars	Score	Rank
1.	The usage of materials from SMS like Wikipedia for research has helped improve my grades	4.50	II
2.	I use materials obtained from social networking sites to complement what I have been taught in class	4.65	I
3.	Engaging in academic forums on social media increases my understanding of topics discussed in class	4.20	IV
4.	Group discussion on social media yield good results as far as my academic are concerned	4.13	V
5.	I am addicted to social networks and this a challenge that	4.36	III

	affect my academic life		
6.	Online social networks distract me from my studies	4.10	VI
7.	Time spent on social media can never be compared to time spent on my studies	3.87	VII
8.	There is no improvement in my grades since I became engaged into these social networking sites	3.65	VIII

With the help of the primary data, I use materials obtained from social networking sites to complement what I have been taught in class is ranked First. II rank is given to the usage of materials from SMS like Wikipedia for research has helped improve my grades. I am addicted to social networks and this a challenge that affect my academic life are given ranks III.

Table 4 : Student's Aims on Social Media

S. No.	Aims	Mean	Standard Deviation
1.	Messaging (Texting)	3.96	1.722
2.	Following their friends	4.11	1.633
3.	Catching up the news	3.24	1.690
4.	Taking photo or record video and sharing	3.17	1.716
5.	Being aware of the trends	2.68	1.459
6.	Listening to music	3.46	1.645
7.	Following the applications	1.91	.955
8.	Making new friends	2.12	.879
9.	Making checking in	2.41	.958
10.	Downloading new application	1.96	.999

It is inferred from the above table that Messaging is the main aim of students to use social media to communicate.

Table 5: Respondents' Opinion about Social Media

S. No	Particulars		No. of Respondents	Percentage
1.	Devoting specific time to use the social media	Agree	50	31.6
		Neutral	78	49.4
		Disagree	30	19
2.	Use of teachers for the social media during the lecture time for academic purpose	Agree	48	30.4
		Neutral	76	48.1
		Disagree	34	21.5
3.	The use of students for the social media during the lecture time for academic purpose	Agree	64	40.5
		Neutral	69	43.7
		Disagree	25	15.8

4.	Supporting the use of social media during the lecture time	Agree	47	29.7
		Neutral	80	50.6
		Disagree	31	19.6
5.	The communication of the correct information by using the social networks	Agree	70	44.3
		Neutral	69	43.7
		Disagree	19	12
6.	The improvement of student academic performance using the social networks	Agree	79	50
		Neutral	60	38
		Disagree	19	12
7.	Teachers providing to the students their social networking sites	Yes	59	37.3
		To a certain extent	64	40.5
		No	35	22.2
8.	Faculty members activating their social sites with students	Yes	48	30.4
		To a certain extent	60	38
		No	50	31.6
9.	The social networks improve the communication with the faculty member and not the level of study	Yes	78	49.4
		To a certain extent	60	38
		No	20	12.6
10.	Communication between students and teachers using the social networks	Yes	136	86.1
		No	22	13.9

From the above table it is analysed that 49.4% of the respondents are neutral in devoting specific time to use the social media and also 48.1% of the respondents are neutral in use of teachers for the social media during the lecture time for academic purpose. 43.7% of them are neutral in the use of students for the social media during the lecture time for academic purpose. 50.6% of the respondents are neutral in Supporting the use of social media during the lecture time and 44.3% of them are agreed that the communication of the correct information by using the social networks. 50% of the respondents agreed that there is an improvement in student's academic performance using the social networks. 40.5% of the respondents have said that Teachers providing to the students their social networking sites to a certain and also 38% of the respondents have said the Faculty members activating their social sites with students to a certain. 49.4% of them said that the social networks improve the communication with the faculty member and not the level of study. 86.1% of the respondents that there is a Communication between students and teachers using the social networks. 57.6% of the respondent's opinion for the best social network that improves the educational process is WhatsApp.

Chi - Square Tests

Age and Favourite Social Media

H₀: There is no significant relationship between age and favourite social media.

H₁: There is a significant relationship between age and favourite social media.

In the above table shows that, the significant chi-square value is 19.78, which is above the P value 0.05. H₀ accepted. So, there is no significant difference between age of the respondents and favourite social media.

Age and Average Time Spend

H₀: There is no significant relationship between age and average time spend.

H₁: There is a significant relationship between age and average time spend.

In the above table shows that, the significant chi-square value is 7.61, which is above the P value 0.05. H₀ accepted. So, there is no significant difference between age of the respondents and average time spend.

Anova for Age, Gender, Family Members, Residential Area Education and the Social Media Do You Use

	Source of Variation	SS	df	MS	F	P value
Age	Between Groups	150.39	1	150.39	155.19	0.00
	Within Groups	304.29	314	0.97		
	Total	454.68	315			
Gender	Between Groups	239.32	1	239.32	294.14	0.00
	Within Groups	255.47	314	0.81		
	Total	494.79	315			
Family members	Between Groups	98.03	1	98.03	118.51	0.00
	Within Groups	259.73	314	0.83		
	Total	357.76	315			
Residential area	Between Groups	73.11	1	73.11	70.43	0.00
	Within Groups	325.96	314	1.04		
	Total	399.08	315			
Education	Between Groups	113.04	1	113.04	132.04	0.00
	Within Groups	268.82	314	0.86		
	Total	381.86	315			

In the above table shows that, the significant value of one-way ANOVA is more than the P value 0.05 for the chosen variables. H₀ accepted. So, there is no significant difference between the 5 variables of the respondents and their usage of social media.

**Anova for Age, Gender, Family Members, Residential Area
Education and the Usage of E - Gadget for Accessing Social Media**

	Source of Variation	SS	df	MS	F	P value
Age	Between Groups	13.78	1	13.78	23.28	0.00
	Within Groups	185.95	314	0.59		
	Total	199.73	315			
Gender	Between Groups	0.32	1	0.32	0.71	0.40
	Within Groups	140.58	314	0.45		
	Total	140.90	315			
Family members	Between Groups	37.60	1	37.60	81.51	0.00
	Within Groups	144.84	314	0.46		
	Total	182.44	315			
Residential area	Between Groups	55.98	1	55.98	83.28	0.00
	Within Groups	211.07	314	0.67		
	Total	267.05	315			
Education	Between Groups	29.16	1	29.16	59.49	0.00
	Within Groups	153.92	314	0.49		
	Total	183.09	315			

In the above table shows that, the significant value of one-way ANOVA is more than the P value 0.05 for the chosen variables. H₀ accepted. So, there is no significant difference between the 5 variables of the respondents and the usage of e-gadget for accessing social media.

Findings

- 51.3% of the respondents are belong to the age group of 21–25 years.
- 58.2% of respondents are male.
- 72.4% of the respondents have 3-5 members in their family.
- 46.3% of respondents are living in Urban area.
- 69.6% of the respondents are having a Degree qualification.
- 45.6% of the respondent's favourite social media is Instagram
- 50% of respondents spent their time in social media is 2-3 hours per day.
- 50.6% of the students are using the social media for Chatting.
- 35.4% of the respondents said that social media affects student's academic work.
- 63.3% of the respondent's opinion is there is an improvement in academic work by using the social media.
- 34.2% of the respondent's mostly used social media is Instagram.
- 77.2% of the respondents are using Smart phone for social media platform.
- 60.8% of them agreed that the usage of materials from SMS like Wikipedia for research has helped to improve their grades.
- 57.6% of them agreed that they use the materials obtained from social networking sites to complement what they have been taught in class.

- 59.4% of them agreed that engaging in academic forums on social media increases their understanding of topics discussed in class.
- 58.2% of them agreed that group discussion on social media yield good results as far as their academic are concerned.
- 50.6% of the respondents have disagreed that they are not addicted to social networks and it never affected their academic life.
- 45.6% of respondents agreed that social networks distracted them from their studies.
- 43.7% of them are agreed that time spent on social media can never be compared to time spent on their studies.
- 46.8% of them have disagreed for there is no improvement in their grades since they became engaged into these social networking sites.
- 25.3% of the respondent's aim of using social media by students is to Messaging (Texting).
- The social media site that is most used to communicate is WhatsApp for 70.2% of the respondents.
- 49.4% of the respondents are neutral in devoting specific time to use the social media.
- 48.1% of the respondents are neutral in use of teachers for the social media during the lecture time for academic purpose.
- 43.7% of them are neutral in the use of students for the social media during the lecture time for academic purpose.
- 50.6% of the respondents are neutral in Supporting the use of social media during the lecture time.
- 44.3% of them are agreed that the communication of the correct information by using the social networks.
- 50% of the respondents agreed that there is an improvement in student's academic performance using the social networks.
- 40.5% of the respondents have said that Teachers providing to the students their social networking sites to a certain.
- 38% of the respondents have said the Faculty members activating their social sites with students to a certain.
- 49.4% of them said that the social networks improve the communication with the faculty member and not the level of study.
- 86.1% of the respondents that there is a Communication between students and teachers using the social networks.
- 57.6% of the respondent's opinion for the best social network that improves the educational process is WhatsApp.

Suggestions

We should avoid the use of the social media during the lecture time. Students should minimize the time they pay on social media to avoid being obsessed by these sites for unnecessary things. Students with phones having internet facility should be encouraged to either use it to supplement their analysis with in the library instead of the standard chatting with friends all the time. Students should be suggested to limit the time they pay on social media sites per day and encourage them to rather substitute those hours to read novels and relevant academic books to improve their knowledge.

Conclusion

The study is based on responses given by the students in the Coimbatore city and the discussions were made based on this. The main purpose of this study was to analyse the impact of social media on academic performance of students. The study revealed that all the respondents had mobile phones with internet facility and knowledge about the existence of social media sites and also it shows that students are likely affected by the social media networks. Social media is attractive, it not only provides students another world to make friends and also provides a good way to release pressure. We can use the social media in a good way instead of an addiction. As mentioned before if the students handle the social media platform as effectively then it will never affect their academic performance. So, students should think more about the balancing equation of social media and academics.

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ENHANCING SAFETY AND SECURITY: UPI TRANSACTIONS FOR COLLEGE GIRLS

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Abstract

In the era of digital transformation, the Unified Payments Interface (UPI) has emerged as a pivotal tool reshaping financial landscapes. This article delves into the role of UPI in enhancing safety and security for college girls' financial transactions. By seamlessly integrating into their lives, UPI offers a secure alternative to traditional cash handling, mitigating vulnerabilities associated with physical currency. The security features of UPI, including PIN-based protection, two-factor authentication, and real-time alerts, contribute to a safer financial environment. Moreover, UPI's impact goes beyond transactions, promoting financial literacy, reducing parental concerns, and empowering college girls to manage their finances confidently. UPI's convenience and security make it a catalyst for the autonomy and financial empowerment of college girls, fostering a secure and responsible financial future.

Keywords: Digital transformation, Unified Payments Interface, security features of UPI

Introduction

In today's rapidly evolving digital landscape, financial transactions have undergone a paradigm shift, transitioning from traditional methods to modern, technology-driven platforms. One such transformative innovation is the Unified Payments Interface (UPI), a system that has revolutionized the way individuals engage in monetary exchanges. Beyond its inherent convenience, UPI has emerged as a potent tool for enhancing safety and security in financial transactions, especially for a significant demographic - college girls. Mabrouk et.al (2023) found that the digital financial inclusion has become more important during the pandemic, as it has allowed women to have greater economic involvement and decision-making power. This article delves into the profound impact of UPI transactions on college girls, shedding light on how this technology has transformed the way they manage their finances, providing not only convenience but also ensuring their safety and security. In a world marked by digitization, UPI transactions have become a pivotal component in empowering college girls to navigate their financial responsibilities with greater confidence, privacy, and autonomy.

Review of Literature

Durairaj and Joseph (2019) reveal that UPI is considered important in the day-to-day life of its users as it saves time in transferring funds between accounts instantly. UPI is a complex and sophisticated payment infrastructure that uses a unique VPA address for transfers, making it secure and reliable. The government supports UPI by providing incentives and reducing taxes for digital payments, which has increased interest in using UPI. The study reveals that more than 80% of respondents found UPI services convenient

to use, and 90% said they would use UPI in the future. Some challenges with using UPI include server-related issues and occasional application failures during transactions. Shenoy and Nataraj (2019) observed that the cashless transactions are increasing due to their convenience, speed, and safety, with digital payments being the easiest method through payment apps, contributing to financial inclusion by reducing transaction costs and providing convenience. Pawar (2021) discusses the pandemic led to a situation where people were unable to use cash for transactions, leading to an increase in the use of online payment methods. However, there were also issues faced by students in making online payments, including lack of knowledge about digital awareness and frauds by people who take advantage of lack of knowledge about KYC procedure and suggests the need for awareness programs, advisories, and digital literacy to address these issues. Zareen and Chaddha (2021) found the mobile money has the potential to improve financial inclusion in India, but its full potential has not been realized yet. A study focused on college students in Delhi found that although they were aware of mobile money services, they were reluctant to use them for daily transactions. The study investigated the user-friendliness of mobile phones for mobile banking and money transfer and the adoption of mobile money services.

Empowering College Girls: UPI as a Catalyst

Education is a crucial pathway to empowerment, and college life is a pivotal phase in a young person's journey towards independence. UPI has seamlessly integrated itself into the lives of college girls, providing them with an effective means to manage their finances. The digitization of financial transactions has empowered college girls to take control of their money matters, thereby fostering a sense of financial independence and responsibility.

The Digital Transformation of Transactions

The traditional methods of handling financial transactions, often involving cash, are associated with several vulnerabilities. College campuses, being bustling and dynamic environments, can sometimes expose young individuals to risks associated with carrying physical currency. UPI transactions mitigate these concerns by offering a digital alternative that eliminates the need for cash handling.

Security Features of UPI

The security features inherent in UPI transactions contribute significantly to the safety and confidence of college girls. Some key security aspects of UPI transactions include:

- **PIN-based Security:** UPI transactions are protected by personal identification numbers (PINs) known only to the account holder. This layer of security ensures that only authorized individuals can initiate transactions.
- **Two-Factor Authentication (2FA):** UPI transactions require two levels of authentication, typically involving a password or PIN and a secondary factor such as a biometric scan or an OTP (One-Time Password). This process enhances transaction security.
- **Device Authorization:** Transactions are linked to the user's device, ensuring that

transactions can only be initiated from authorized devices. This security measure prevents unauthorized access to the account.

- **Real-time Transaction Alerts:** UPI sends real-time alerts to users for every transaction, allowing them to stay informed about their financial activities and detect any unauthorized transactions promptly.

Reducing Vulnerabilities and Enhancing Privacy

The shift from physical cash to digital transactions through UPI significantly reduces vulnerabilities associated with carrying cash. College girls can avoid being targets of theft or harassment that might occur when handling cash, particularly in public spaces. Additionally, UPI transactions offer greater privacy, allowing individuals to conduct financial transactions discreetly and confidentially.

Safe and Secure Campus Life

The influence of UPI on college girls extends beyond basic financial transactions. It affects various aspects of campus life, including:

- **Tuition and Fees:** UPI facilitates safe and secure payments for tuition fees and other college-related expenses. This eliminates the need for students to carry large sums of cash.
- **Accommodation and Daily Expenses:** UPI transactions simplify payments for accommodation, food, and other daily expenses, ensuring that college girls can manage their finances conveniently and securely.
- **Extracurricular Activities:** College life involves participating in various extracurricular activities, events, and workshops. UPI enables secure payments for registration fees, contributing to a smoother and more organized experience.
- **Study Materials and Online Resources:** UPI transactions enable college girls to purchase study materials, books, and online resources without the hassle of physical cash.

Promoting Financial Literacy and Autonomy

The adoption of UPI among college girls goes beyond just transactional convenience. It serves as a powerful tool for promoting financial literacy and autonomy. By actively engaging with digital transactions, college girls develop a deeper understanding of financial management, budgeting, and responsible spending. These skills are invaluable as they transition to adulthood and take on greater financial responsibilities.

Parental Peace of Mind

For parents, UPI transactions provide a sense of security knowing that their daughters are using a safe and secure digital payment method. UPI's transaction tracking and real-time alerts ensure that parents can monitor their daughters' financial activities and quickly address any unusual transactions.

Conclusion

In the evolving landscape of digital payments, UPI stands as a beacon of safety and security, particularly for college girls. By embracing UPI transactions, college girls can navigate their financial responsibilities with greater ease, security, and confidence. UPI's multifaceted benefits extend beyond convenience to encompass safety, privacy, financial literacy, and empowerment. As UPI continues to evolve, it will undoubtedly play a crucial role in enhancing the financial well-being of college girls, shaping their journey towards a more secure and autonomous future.

Acknowledgment

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ICT TOOLS IN TEACHING AND LEARNING

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Introduction

ICT tools stand for Information Communication Technology tools. The ICT tools means to digital infrastructures like computers, laptops, printers, scanners, software programs, data projectors, and interactive teaching box.

The ICT devices are the latest tools, concepts and techniques used in student-to-teacher, student-to-student interaction for example: - clicker devices, mobile applications, flipped classroom) for information and communication technology.

Every aspect of our lives is driven by technology. We are growing more and more reliant on new developments as technology advances. It not only makes our lives simpler but also more efficient. When we are discussing the role of ICT in our lives, how can we neglect the transformations that are happening with the introduction of ICT in education? This article revolves around ICT in education, how ICT positively affects the way students learn and also the advantages of ICT in education. Before we dive into them, let us look at what is ICT in education.

Ict Enabled Tools for Effective Teaching and Learning Process

Following tools are used in the Teaching learning process in Online- Offline mode of instruction. During lockdown these ICT tools proved to be a boon for making the teaching learning process easy and accessible to all students.

1. Learning Management System (MOODLE and Google Classroom)

Moodle stands for Modular Object-Oriented Dynamic Learning Environment and statistics. Moodle is free software, a learning management system providing a platform for e-learning and it helps the various teachers considerably in conceptualizing the various courses, course structures and curriculum thus facilitating interaction with online students. It is configurable, highly-flexible, and feature-rich. RSCOPR has a self-customized MOODLE developed by Digital Content development team. (<https://lms.jspmrscopr.edu.in/>).

It is a very useful platform to share all learning resources, videos, sharing webpage. Moodle supports a range of media to present or link to learning materials, support the students and to assess their learning. It is able to provide automated assessment in the form of quiz, and give immediate detailed feedback to the students. The messaging system

allows learners and teachers to communicate easily. Teachers can also communicate with groups of learners via course forums either to provide answers to learners' questions or to just get involved in discussions. The uploaded learning resources are available to the students whenever they want them. The MOODLE mobile app makes students access even easier via smartphone or mobile device.

2. Google Classroom - Blended Learning Platform

Google Classroom is a free, blended learning platform that offers a variety of benefits for both students and teachers. Google Classroom enhances the productivity and take workflow management to the next level. It keeps track of assignments coming in with a simple glance making it very easy to know everyone's status and to follow up with students who are missing work. Everything is time stamped, so late work is easily identifiable. Since Google apps are cloud based the work in Google Classroom saves automatically and is accessible from any device. With the app, both students and teachers can enjoy the full functionality of Google Classroom on a mobile device. Students receive notifications on their phone when assignments and announcements are posted, making it easy for students to stay on top of classroom happenings. As a teacher, the app enables to post from the phone either right from the app or using share-sheet support.

3. Google Forms

Google Forms allows to conduct MCQ quizzes online. The information is stored as a spreadsheet automatically record the answers. The spreadsheet then populates the responses from the quiz or survey in real-time. Google forms can be used to give feedback to and receive feedback from students and parents.

4. Videoconferencing Platforms

During COVID pandemic when the world shifted to Online mode for teaching learning various free videoconferencing platforms like Google meet, Zoom and Cisco webex were used to conduct online classes.

All these have varying needs and features. Zoom allows the facility of using its features using a browser also without the need to download the application, the app download is mandatory in case of the other two software. Zoom allows face touch up facility as well which is not present in the other two competing software. Google Meet allows the maximum on-screen chatting time with respect to the others. It has over 60 minute long conferences whereas the time cap of others is only 40 minutes. Zoom has the highest, that is, 49 people that can be viewed on the screen at once.

5. Virtual Labs

The Virtual Labs provides remote-access to simulation-based Labs in various disciplines of science and engineering. This student-centric approach facilitates the absorption of basic and advanced concepts through simulation-based experimentation. Internet-based experimentation further permits use of additional web-resources, video-

lectures, animated demonstrations and self-evaluation. Virtual labs are any place, any pace, any-time, any-type labs. It is a paradigm shift in student-centric, online education. Virtual labs sessions available on Virtual labs an MOE Government of India Initiative for Physical Pharmaceutics, Organic Chemistry and Inorganic chemistry subjects as well as Virtual labs sessions from Amrita Vlab portals for Microbiology, Organic chemistry and Inorganic chemistry practicals provide helpful tool to teacher during online teaching learning process.

6. Educational Videos and Animations (Youtube and Internet)

Various valuable educational videos of pharmacy subjects available on internet, youtube provide additional help in better understanding of subject knowledge.

7. Smart Classroom

Classroom integrated with Smartboards and internet connections provides enhanced and interactive learning and teaching opportunities for students and teachers. The internet-connected to systems in smart classes is stored with abundant information. It is accessible anytime for their teaching and learning process. Teachers can access information from various educational sources for teaching purposes. It helps in easy access to online resources. Smart Classrooms helps in developing critical thinking and problem-solving skills in students.

8. e-Resources

e- journals from Proquest Pharma and DELNET were available for students to access remotely in online mode and enhance their learning experience. e books were uploaded on MOODLE and Google Classroom.

9. Trello

Trello is a collaborative tool that is used widely in IT companies with large teams. Fortunately, it has several applications for the educators as well. If the teacher prefer project-based learning for students, Trello is very useful. Trello has these digital boards. The teacher can create different boards for assignments, test papers, etc. And in those boards, we can create cards. Furthermore, we can discuss a particular topic in that card. The user can invite the students to view that card. And the students can put in comments, doubts, or ask questions and even attach images, videos, etc.

Also, students can easily look at their projects, set deadlines, and track progress online. In a nutshell, Trello takes a lot of burden off shoulder while enriching the learning experience for kids.

10. Microsoft Teams

Microsoft Teams is another popular tool for IT professionals. And similar to Trello, it has several applications for teachers and educators. Microsoft Teams is a Microsoft Office 365 product. It simply means user can host meetings, chat, share files, and use every Microsoft Office app using Teams.

One of the best features Teams comes with is the Class Notebooks from One Note. Class Notebooks resemble individual student notebooks(physical) but come with additional features and ease of use.

Teachers can assign individual notebooks to students and provide them with real-time feedback. The user can easily distribute exams, handouts, quizzes, and homework instantly to the students. Also, the students can use amazing tools within Teams for taking notes and highlighting important things. This helps the students engage more and enjoy learning. All in all, Teams can reduce the manpower and can completely replace the use of paper. It's yet another amazing tool that ensures effective education online.

11. Online Coding Websites such as DataCamp, HackerRank, Coderbyte

No minimum age exists when it comes to learning how to code.

If user want the students/kids to learn how to code, make sure it's practical. Practicing code on paper is simply a waste of time. And it also kills the creative talent of the students.

This is where the websites such as DataCamp, HackerRank, Coderbyte, etc., come into play. Using such websites, students can implement what they've learned instantly. Also, such websites feature several tricky problems that the students will enjoy. The best part is that most websites are free and accessible from any device. It simply means none of the students will need particular hardware (laptop/PC) to code.

12. Subject Specific Tools

All of the above ICT tools for teaching and learning help in generalized learning. However, when it comes to specific subjects, special tools are required. Following are the specific tools used for different subjects.

ICT Tools for Teaching Geography

Google Maps: With Google Maps, kids can learn to find the distance between two places and look at 360-degree images of places. This can help the students become familiar with multiple locations across the world.

Google Earth: This tool shows the entire earth with every location and supports an amazing zoom feature. Kids can learn about different regions, landmasses, and water bodies in a fun way.

ICT Tools for Teaching Mathematics

CanFigureIt Geometry: This tool makes learning geometry pretty easy. The teacher can teach kids about several mathematical proofs and theorems in an engaging way.

CueThink: User can use this tool to teach kids how to solve math problems in four steps: understand, plan, solve, and review.

ICT Tools for Teaching Biology

Microsoft PowerPoint: User can use HD images and create slides to clear the biological concepts for the kids. Also, user can download templates from Slidesgo and make the job even easier.

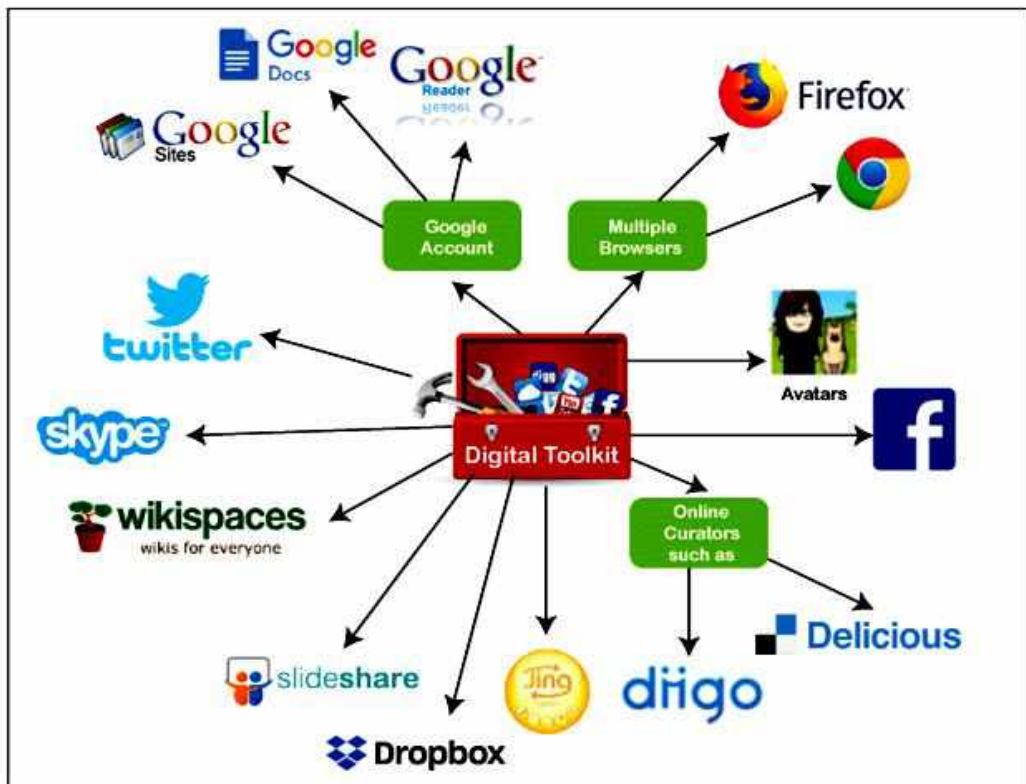
YouTube: What's better than using videos for explaining complex biological processes via YouTube videos. From digestion to excretion, user can find plenty of child-safe content on YouTube.

ICT Tools for Teaching History

User can use the above-listed tools but in a different manner:

YouTube: User can find historical movies related to the chapter.

Microsoft PowerPoint: User can create slideshows with minimal details such as dates, names, locations, and events, etc. This way, kids can learn facts easily and for longer durations.



Merits and benefits of introducing ICT education

ICT in education is not simply a method of education that responds to changes in society, but also offers various advantages and benefits that solve problems in the educational field.

For teachers, it can be used to reduce workload and share information with other teachers, and for students, it can provide an environment where they can easily concentrate on their lessons and become more interested in learning. The following are some of the concrete benefits and effects of ICT in education.

- Improved Learning Efficiency
- ICT improves student learning efficiency. For instance, in the past, students would

take notes of what the teacher had written on the blackboard, and then reread the notes to consolidate their memory of the lesson. With ICT, however, students no longer need to move their hands because of the use of tablets and other devices, and they will be able to concentrate more on the class.

- ICT can also make it easier for students to express their opinions, even if they do not like to raise their hands or be the center of attention during class.
- Reduce the Burden on Teachers
- In addition to teaching and preparing for classes, teachers have a variety of other duties, such as dealing with parents and advising club activities. This burden on teachers is seen as a problem in the field, and the challenge is how to reduce the workload.
- The introduction of ICT in education reduces the burden on teachers in detail, such as the time and effort required to print out materials used in class and to write on the board.
- The time freed up by the introduction of ICT can be used to solidify class content and perform miscellaneous tasks, which is expected to improve the quality of education as a result.
- Simplified Information Sharing
- Another major advantage is to easily share class data and teaching materials used in class among teachers and students. By organizing class materials on PCs and tablet terminals, the time required to distribute materials can be reduced, and classes can proceed efficiently and smoothly.
- Information sharing among teachers will also provide opportunities to learn about good teaching materials and teaching methods, which will have the effect of synergistically enhancing the quality of education.
- Increased Student Motivation
- Increasing students' motivation for learning is also cited as an advantage of ICT, as it is still not that common, and many students may find classes using digital tools refreshing.
- Learning through the tablet devices and electronic blackboards can be expected to increase students' interest in the class itself. When implementing ICT in education, it is a good idea to create questions and animations from the perspective of whether or not students will be interested in them. Of course, the content of the class is important, but it is also important to have a system that engages students in the class.
- Improve IT Literacy of Students
- As ICT in education advances informatization, not only teachers who support learning but also students will be able to acquire knowledge and skills of IT devices. literacy will help students to select and use necessary information and to develop the ability to think for themselves.
- In recent years, lack of IT literacy has often led to unexpected accidents. For

example, corporate security incidents and problems related to social networking accounts are mainly recognized as IT literacy issues, and it is important to ensure that students acquire basic knowledge and skills when using IT.

- We can refer to the information provided by the Ministry of Education, Culture, Sports, Science and Technology when developing and improving class content based on the benefits and effectiveness of ICT education. Please check the following points when considering the introduction or enhancement of ICT in education in the future.

Conclusion

The intervention of information and communication technology is redefining the way students learn. It is making the process of learning more efficient and effective for students and teachers. ICT tools in education make it easier for teachers to use the best strategies to bring out the best in their students. ICT in education sector is beneficial for the students, in addition to this, it is making it possible for schools to impart education in the finest way. Moreover, the technology enables them to manage all the management and administration functions in a seamless manner. Hence, there is no doubt that it is a boon to the education industry.

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ICT TOOLS FOR TEACHING AND LEARNING PROCESS

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Abstract

ICT is a broad term stands for Information Communication Technology. ICT tools for teaching and learning cover everything from digital infrastructures such as printers, computers, laptops, tablets, etc., to software tools such as Google Meet, Google Spreadsheets, etc. In traditional classrooms, a teacher's basic instructional tools for displaying information are chalkboards, multipurpose boards, bulletin boards and charts. But in today's modern scenario, tools of many professions are changing at an incredible rate and that education is no exception. The impact of technology has led to the increased use of computers for presenting information in many of today's classrooms. To make ICT teaching and learning more interactive, various platforms and tools have been created and updated over the period of time. Innovative ICT tools used in classroom teaching which helps teachers to integrate in their subject, for teaching-learning and assessment. There are numerous subject specific free of cost ICT tools available on online and offline platforms which can be used for teaching, learning and assessment. They are used by teachers to encourage participation and engage learning in their classrooms. ICT can also be used by teachers to promote collaborative work and creativity across a wide range of subjects. This study aims at highlighting the superiority of ICT tools for facilitating student learning, retention and attitudes.

Keywords: Information Communication Technology, Teaching-Learning, Visual Information, Online Platforms

Introduction

In today's globalised world the Information and Communication Technologies (ICTs) have become deeply rooted in educational settings. Their use has rooted qualitative changes in how teaching is approached, especially in terms of presenting the contents audio-visually. Even though there has been much discussion over different methods to teach students, lectures are not likely to stop being used. To emphasize particular points, many lectures use written material presented on a chalkboard, whiteboard, or by transparencies on an overhead projector. But in the last 10 years, another method of presenting visual information with lectures has gained prominence which is projecting information directly from a computer onto a screen i.e. PowerPoint presentations. In fact, many colleges and universities have rooms equipped with technology necessary for any teacher to display information in this manner. Furthermore, some administrations are pushing the teachers to use various other technologies for creative teaching and learning like Information Communication Technology, Teaching-Learning, Visual Information, Online Platforms

Literature Review

Pathak & Vyas, 2019 In the current period of education, E-Learning is the most recent type of information and communication technology (ICT) used to improve and expedite

teaching and learning. It is a well-known truth that education has touched almost every corner of the globe, and that ICT has become a vital component of everyone's life. E learning offers a wide range of applications and accessibility to students for 24 hours a day, seven days a week, where anybody may attend class from anywhere and at any time using various communication protocols.

Simin Ghavifekr, Thanusha Kunjappan, Logeswary Ramasamy and Annreetha Anthony, in their research paper, "Teaching and Learning with ICT Tools: Issues and Challenges from Teachers' Perceptions (2020)", revealed that their study is more related to identifying the perceptions in implementing ICT tools in teaching and learning in the classroom among school teachers. It examines the challenges of using ICT tools in teaching and learning in the classroom among school teachers and recognizes the effectiveness of the extent of ICT tools in supporting classroom teaching and learning

D. Sakthivel, Dr. B. Radha, in their study "ICT Tools for Modern Education (2021)", opined that Technology can be an extremely valuable tool, but it is only a tool and technology "cannot replace a teacher" and is not intended to replace the teacher. A good teacher must digitally be literally and must know the effective way to integrate technology into the curriculum so that teachers can keep the students committed

Marta Ferragut Martorell, in her study, "Use of ICT tools in the EFL classroom and their impact on students' motivation", stated that, ICT has turned into one of the foundations of our modern society. Thus, the understanding and mastery of ICT have become an essential part of today's education, alongside numeracy, writing and reading and it is expected to revolutionise the way students learn.

Objectives

- This study aims to analyze whether using ICT tools would be more beneficial for students than Chalk board teaching.
- It also aims to assess the effectiveness of ICT tools in helping the students in understanding and retaining the information.

Limitations

One of the major limitations of the study was that it is totally dependent on secondary data that may not be fully authenticated. Also, the time utilized for the study was very limited which restricted the scope of the study.

Research Methodology

The study is based on secondary data. Relevant data are availed from various sources of information such as Books and Various websites.

ICT enabled tools for effective teaching learning process

Most teachers feel comfortable in using lecture method, which is not capable of achieving various objectives of classroom instruction. ICT may be of great use in achieving various objectives of teaching -learning process. It provides correct information in a

comprehensive manner with different examples. It helps learners to broaden their information base. ICT provides variety in the presentation of content, which helps learners to learn according to their own pace.

Learning Management System (MOODLE)

Moodle stands for Modular Object-Oriented Dynamic Learning Environment and statistics. Moodle is free software, a learning management system providing a platform for e-learning and it helps the various teachers considerably in conceptualizing the various courses, course structures and curriculum thus facilitating interaction with online students. It is able to provide automated assessment in the form of quiz, and give immediate detailed feedback to the students.

Google Classroom

Google Classroom is a free, blended learning platform that offers a variety of benefits for both students and teachers. It keeps track of assignments coming in with a simple glance making it very easy to know everyone's status and to follow up with students who are missing work. Everything is time stamped, so late work is easily identifiable. Since Google apps are cloud based the working Google Classrooms are automatic and is accessible from any device. With the app, both students and teachers can enjoy the full functionality of Google Classroom on a mobile device.

Google Forms

Google Forms allow to conduct MCQ quizzes online. The information is stored as a spreadsheet automatically record the answers. The spreadsheet then populates the responses from the quiz or survey in real-time. Google forms can be used to give feedback to and receive feedback from students and parents.

Video Conferencing Platforms

During COVID pandemic when the world shifted to Online mode for teaching learning various free video conferencing platform like Google meet, Zoom and Cisco WebEx etc., were used to conduct online classes. All these have varying needs and features for facilitating interactive teaching and learning.

Virtual Labs

The Virtual Labs provides remote-access to simulation-based Labs in various disciplines of science and engineering. This student-centric approach facilitates the absorption of basic and advanced concepts through simulation-based experimentation. Internet-based experimentation further permits use of additional web-resources, video-lectures, animated demonstrations and self-evaluation. Virtual labs are any place, any pace, any-time, any-type labs. It is a paradigm shift in student-centric, online education.

Educational Videos and Animations (YouTube and Internet)

Various valuable educational videos of various subjects available on internet also has a great impact. YouTube provide additional help in better understanding of subject knowledge.

Smart Classroom

Classroom integrated with Smart boards and internet connections provides enhanced and interactive learning and teaching opportunities for students and teachers. Teachers can access information from various educational sources for teaching purposes. Smart Classrooms helps in developing critical thinking and problem-solving skills in students. There are many more ICT tools that facilitate innovative teaching learning process.

Advantages of Using ICT Tools in Teaching Learning Process Teaching Makes Easier

Teachers are the people with one of highly benefited of having ICT in education. Through the use of it, it makes the teaching easier. When a teacher teaches the student on a new lesson It makes for them easy to inform and to evaluate what they want them to know. Creating documents files, pdf files or power point presentation through the use of computer or laptop for them to show the topics that they will go to tackle is a great way for teaching.

Lesson can be seen and heard

The advantage of information communication technology is the lessons can be seen and be here. Unlike on the books you can just see it, seeing those pages with paragraphs and full of text and sometime we can see the pictures. Sound coming from the videos or music that being used will be played over and over again that makes it to remember well.

Easier to Understand

When the students see pictures appearing on the white screen using a projector, they understand it easily what it really means.

Improves Communication

Having at technology in the school discussion improves communication. Because through that medium the teacher as well as the student learn more and more vocabulary words. The proper way of saying a word or words, the correct grammar and the meaning of the words improves. Enjoying While Learning Images, music and videos are one of the source of entertainment. When people see that they are happy and enjoy. Unlike from the articles that just compose of full of text it is boring. Through the colorful images, students enjoy listening to the music and imagine what it really means.

Students Perform Better

What is good and importance of ICT in teaching and learning is the students perform better. When a teacher teach in front of the class and start to have a visual aid like projector, the students are attract. Pictures projecton the screen and the student will see what is that. The students perform better when it is attractive.

Know More Information

The internet is one of the fastest way of getting information because just one touch, can get what is needed. In education themore we search and read the more information we will get. The teacher and the students both get more information by the way they use it.

Improves Visual Skill

When students are learning with the use of pictures, or videostheir visualskillimproves. Some teachers use riddles using photos that will improve their thinking skill and cognitive skill. And because of that students are enjoying the lesson.

Conclusion

ICT tools are very powerful in teaching and learning. ICT tools empower both teachers and learners. They transform the teaching and learning processes from being highly teacher-dominated to becoming student-centric and this transformation results in increased learning gains for students, creating and allowing for opportunities for learners. In addition, they are cost-efficient and eliminate the usage of paper. Alongside minimizing cost, they also save time during class lectures enabling swift and dynamic transmission of content. They provide access to dynamic teaching and learning methods and facilitate easy student management. ICT is a powerful tool for educational change and reform. Appropriate use of ICT has helped the college raise the interest levels amongst the students and has helped connect learning to real-life situations. Students enjoy while learning and perform better.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

Volume - 1

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

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A STUDY ON TRANSFORMING THE NATION: DIGITAL INDIA AND INDUSTRY 4.0

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Abstract

The convergence of "Digital India" and "Industry 4.0" represents a transformative synergy poised to reshape India's socio-economic landscape. This paper explores the intersection of these two pivotal initiatives and their implications for various sectors, including manufacturing, agriculture, healthcare, and education. The five keywords that encapsulate this synergy are: Digital India, Industry 4.0, IoT, Digital Transformation, and Socio-Economic Development. Digital India, a government-driven initiative, aims to bridge the digital divide, empower citizens, and transform governance through comprehensive digitization efforts. Industry 4.0, on the other hand, signifies the fourth industrial revolution, marked by the fusion of digital technologies and physical systems, including the Internet of Things (IoT) and Artificial Intelligence (AI). This paper investigates how the principles of Industry 4.0, such as IoT and AI, align with the Digital India vision, offering a roadmap for synergy across sectors. Case studies and data-driven analysis underscore the potential benefits of integrating Industry 4.0 technologies into Digital India's framework. This integration has the potential to foster economic growth, job creation, and an improved quality of life. However, challenges such as the need for a robust digital infrastructure, cybersecurity measures, and skill development are also discussed. The paper provides recommendations and policy implications to harness the full potential of this convergence.

Keywords: Digital India, Industry 4.0, IoT, Digital Transformation, Artificial Intelligence, Socio-Economic Development.

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Introduction

Digital India

Digital India is a flagship initiative launched by the Government of India in July 2015. It was introduced by Prime Minister Narendra Modi with the vision of transforming India into a digitally empowered society and knowledge economy. The primary goal of Digital India is to ensure that government services are made available to all citizens electronically. It also aims to bridge the digital divide in the country by promoting widespread digital literacy and digital inclusion.

Industry 4.0

Industry 4.0, often referred to as the Fourth Industrial Revolution, represents a paradigm shift in manufacturing and industrial processes. It originated in Germany and was first introduced at the Hannover Messe trade fair in 2011. Industry 4.0 is characterized by the integration of digital technologies into various aspects of manufacturing and production, with a focus on automation, data exchange, and the Internet of Things (IoT).

Digital India: Transforming the Nation

Goals of Digital India

Broadband Connectivity: One of the primary goals of Digital India is to ensure high-speed broadband connectivity reaches all parts of the country, including rural and remote areas. Initiatives like the BharatNet project aim to provide broadband access to over 250,000 gram panchayats (local government units).

E-Governance: The initiative aims to promote e-governance by making government services available to citizens online. This includes services related to education, healthcare, social welfare, and more. The goal is to reduce paperwork, minimize bureaucracy, and enhance efficiency in service delivery.

Digital Literacy: Digital India places significant emphasis on digital literacy. The Pradhan Mantri Digital Saksharta Abhiyan (PMGDISHA) was launched to make at least one person in every household digitally literate. This goal is crucial for ensuring that all citizens can participate in the digital age.

Digital Infrastructure: Building a robust digital infrastructure is a key goal. This includes the establishment of data centers, the promotion of cloud computing, and the development of secure and resilient communication networks.

Universal Access to Mobile Connectivity: Ensuring that every citizen has access to affordable mobile communication and data services is a priority. This facilitates access to digital services, even in remote areas.

Economic Growth: Digital India aims to leverage digital technologies to drive economic growth. It promotes entrepreneurship and innovation in areas like e-commerce, fintech, and IT services, contributing to job creation and economic development.

Cybersecurity: Strengthening cybersecurity is integral to Digital India. With increased digitization, there is a need to protect digital assets, data, and critical infrastructure from cyber threats.

Digital Inclusion: The initiative seeks to ensure that marginalized and disadvantaged sections of society are not left behind in the digital transformation. Efforts are made to make digital services accessible to all, regardless of socioeconomic status.

Government Process Reengineering: Digital India encourages government departments to reengineer their processes to make them more efficient and citizen-centric. This involves eliminating redundant steps and streamlining procedures.

Initiatives and Policies for Digital Inclusion and Empowerment

Pradhan Mantri Jan Dhan Yojana (PMJDY): Launched in August 2014, PMJDY is a financial inclusion initiative under Digital India. It aims to provide access to financial services for all households, including the opening of bank accounts, providing debit cards, and enabling direct benefit transfers. This initiative empowers individuals by giving them access to formal banking and financial services.

Aadhaar: The Aadhaar program involves providing a unique 12-digit identification number to every resident of India. Aadhaar is a cornerstone of Digital India, as it serves as a digital identity, enabling citizens to access a wide range of government services and benefits online. It empowers individuals by simplifying identity verification processes.

Digital Locker (DigiLocker): DigiLocker is a cloud-based platform that allows citizens to securely store and share their documents and certificates digitally. It simplifies document verification and reduces the need for physical copies. This empowers individuals by giving them control over their important documents.

eSign (Electronic Signature): eSign is a facility that enables citizens to digitally sign documents online using their Aadhaar credentials. It simplifies paperwork, making it easier to engage in various transactions and government processes.

Direct Benefit Transfer (DBT): DBT is a mechanism that ensures that government subsidies and benefits are directly transferred to beneficiaries' bank accounts. It reduces leakages and ensures that benefits reach the intended recipients, thus empowering them economically.

Common Services Centers (CSCs): CSCs are physical centers established in rural and remote areas to provide various government services digitally. These centers offer services like digital literacy training, online form submissions, and access to government schemes. They empower citizens by bringing digital services to their doorstep.

Digital Literacy Programs: Digital India includes various digital literacy programs aimed at imparting digital skills and knowledge to citizens, especially in rural areas. The Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA) is a notable initiative in this regard, aiming to make one person per household digitally literate.

BharatNet: BharatNet is a project to provide high-speed broadband connectivity to rural and remote areas. It ensures that even in remote regions, citizens have access to the internet and can benefit from digital services.

Jan Aushadhi Pariyojana: Under this scheme, the government promotes the use of generic medicines by making them available at affordable prices through Jan Aushadhi stores. It empowers citizens by providing them access to affordable healthcare.

MyGov: MyGov is a citizen engagement platform that enables citizens to participate in governance and policy-making. It empowers individuals by giving them a voice in the decision-making process.

National Digital Literacy Mission (NDLM): NDLM aims to make at least one person in every household digitally literate. It provides training in digital skills and basic computer operations, ensuring that more citizens can participate in the digital world.

These initiatives and policies under the Digital India program are designed to ensure that all segments of society, including those in rural and remote areas, have access to digital tools and services. They empower individuals by providing them with the knowledge, resources, and access needed to fully participate in the digital age, thereby promoting inclusion and empowerment.

Industry 4.0: The Fourth Industrial Revolution

Industry 4.0 represents a comprehensive transformation of manufacturing and industry through the integration of digital technologies, data-driven processes, and interconnected systems. Its key principles revolve around connectivity, transparency, decentralization, adaptability, resource efficiency, customization, cybersecurity, human-machine collaboration, and a commitment to continuous improvement. These principles collectively enable organizations to achieve greater efficiency, agility, and competitiveness in the modern industrial landscape.

Case studies

Manufacturing - Tata Steel

Integration: Tata Steel, one of India's leading steel manufacturers, implemented Industry 4.0 technologies in its Jamshedpur plant.

Results: Tata Steel improved the efficiency of its steel manufacturing processes significantly. IoT sensors and data analytics were used to monitor equipment health and predict maintenance requirements, reducing downtime and saving costs. Real-time data also helped optimize energy consumption.

Agriculture - Mahindra & Mahindra

Integration: Mahindra & Mahindra, a major player in the Indian agricultural machinery sector, introduced IoT-enabled tractors.

Results: These smart tractors, equipped with IoT sensors and GPS, collect data about soil conditions, weather, and crop health. Farmers can access this data through a mobile app, enabling precision farming, reducing resource usage, and increasing crop yields.

Healthcare - Manipal Hospitals

Integration: Manipal Hospitals, a prominent healthcare provider, adopted IoT and AI-driven solutions for healthcare management.

Results: IoT devices track patient data and send real-time updates to doctors, improving patient monitoring. AI algorithms analyze patient records to predict disease outbreaks and optimize hospital resource allocation. This integration enhances patient care and hospital efficiency.

Logistics and Supply Chain - Flipkart

Integration: Flipkart, India's leading e-commerce platform, uses data analytics, AI, and blockchain in its supply chain management.

Results: Real-time tracking of shipments using IoT sensors ensures efficient logistics operations. AI algorithms optimize routes and delivery schedules. Blockchain technology is employed to enhance transparency in supplier transactions, reducing fraud and errors in the supply chain.

Energy and Utilities - Tata Power

Integration: Tata Power, a major energy company in India, adopted Industry 4.0 principles in its power generation and distribution.

Results: IoT sensors and data analytics are used to monitor and optimize energy generation and distribution. Predictive maintenance ensures the reliability of power plants. This integration enhances the efficiency of energy production and reduces downtime.

Retail and E-commerce - BigBasket

Integration: BigBasket, a prominent online grocery delivery platform, uses data analytics and AI for inventory management.

Results: BigBasket optimizes its inventory based on customer demand data. AI algorithms predict demand fluctuations, ensuring products are available when needed while minimizing waste. This integration enhances customer satisfaction and reduces costs.

Education - Byju's

Integration: Byju's, an edtech startup, uses AI and data analytics to personalize online learning experiences.

Results: AI algorithms analyze student performance and tailor lessons to individual needs. Real-time progress tracking helps students and teachers. This integration improves the effectiveness of online education.

These case studies demonstrate the successful integration of Industry 4.0 technologies across various sectors in India. They highlight how organizations leverage IoT, AI, data analytics, and other digital tools to enhance efficiency, reduce costs, improve quality, and create innovative solutions that benefit both businesses and consumers.

Policy Implications and Recommendation

To strengthen digital infrastructure for the successful implementation of Industry 4.0 within the Digital India framework, several strategies and policy recommendations can be considered:

Broadband Expansion

Policy Implication: Implement a comprehensive plan to expand high-speed broadband internet connectivity, particularly in rural and underserved areas.

Recommendation: Invest in building the necessary physical infrastructure, such as fiber-optic networks and mobile towers, to ensure last-mile connectivity. Encourage public-private partnerships to facilitate infrastructure development.

Digital Literacy Programs

Policy Implication: Continue and expand digital literacy programs to ensure that citizens, especially in rural areas, are equipped with the skills to navigate the digital world.

Recommendation: Collaborate with educational institutions, NGOs, and private organizations to provide training and resources for digital literacy. Target specific populations, including women and marginalized communities.

Cybersecurity Framework

Policy Implication: Develop and enforce a robust cybersecurity framework to protect digital infrastructure and data.

Recommendation: Establish cybersecurity standards and regulations for businesses and government agencies. Promote the adoption of cybersecurity best practices, regular audits, and incident response plans.

Incentives for Digital Investments

Policy Implication: Introduce incentives and tax breaks to encourage private sector investments in digital infrastructure.

Recommendation: Provide tax incentives, grants, or subsidies to businesses willing to invest in expanding digital infrastructure, especially in rural and remote areas.

Public-Private Partnerships (PPPs)

Policy Implication: Foster PPPs to facilitate the development and maintenance of digital infrastructure.

Recommendation: Collaborate with private sector entities to jointly invest in and manage digital infrastructure projects. Establish clear terms and accountability mechanisms in PPP agreements.

Spectrum Allocation

Policy Implication: Efficiently allocate and manage radio spectrum to ensure adequate bandwidth for mobile and wireless internet services.

Recommendation: Implement transparent and competitive spectrum auctions. Encourage spectrum sharing and trading to optimize its use.

Smart Cities and IoT Integration

Policy Implication: Promote the development of smart cities and the integration of IoT technologies.

Recommendation: Develop a framework for creating smart cities that leverage IoT for urban planning, energy management, and public services. Encourage pilot projects and research in this area.

Rural Digital Hubs

Policy Implication: Establish rural digital hubs to serve as access points for digital services and information dissemination.

Recommendation: Create a network of digital service centers in rural areas, equipped with computers, internet connectivity, and trained personnel to assist citizens in accessing government services and digital resources.

Regulatory Streamlining

Policy Implication: Streamline regulatory processes related to digital infrastructure development and operations.

Recommendation: Simplify permit procedures, reduce bureaucratic hurdles, and establish clear guidelines to expedite the deployment of digital infrastructure.

Research and Development

Policy Implication: Invest in research and development (R&D) for emerging digital technologies and infrastructure solutions.

Recommendation: Allocate funding for R&D initiatives in collaboration with academic institutions and industry partners to drive innovation in digital infrastructure.

The Intersection of Digital India and Industry 4.0

The intersection of Digital India and Industry 4.0 represents a transformative synergy poised to reshape India's socio-economic landscape. It's where the government's vision of a digitally empowered society converges with the fourth industrial revolution, resulting in a range of opportunities and challenges. Here's an overview of how Digital India and Industry 4.0 intersect:

Digital Infrastructure for Industry 4.0

Digital India: Digital India aims to establish a robust digital infrastructure, including high-speed internet connectivity even in rural areas.

Industry 4.0: Industry 4.0 relies on a digital infrastructure, including the Internet of Things (IoT) and high-speed connectivity, to enable real-time data exchange and automation in manufacturing and industry.

Intersection: The development of digital infrastructure under Digital India supports the connectivity and data needs of Industry 4.0 applications. This infrastructure enables the seamless integration of IoT devices and data-driven processes in manufacturing and industrial sectors.

IoT and Smart Manufacturing

Digital India: The IoT is a key component of Digital India, supporting smart cities, agriculture, and healthcare.

Industry 4.0: IoT plays a central role in Industry 4.0, connecting machines, sensors, and devices to optimize production processes.

Intersection: The IoT technologies developed for digital inclusion in Digital India can also be applied to create smart manufacturing environments in Industry 4.0. For example, IoT sensors can monitor equipment health and predict maintenance needs in factories.

Data-Driven Decision-Making

Digital India: Digital India emphasizes data-driven governance and service delivery, leveraging big data analytics for better decision-making.

Industry 4.0: Data analytics is fundamental to Industry 4.0, enabling real-time analysis of production data to optimize processes.

Intersection: The data analytics expertise developed under Digital India can be applied to Industry 4.0 scenarios to analyze manufacturing data, improve efficiency, and enhance product quality.

E-Governance and Smart Manufacturing

Digital India: E-governance is a key component of Digital India, providing government services online.

Industry 4.0: Smart manufacturing relies on digital technologies and automation to streamline production processes.

Intersection: Concepts from e-governance, such as online service delivery and citizen engagement, can be adapted to smart manufacturing environments to create efficient and transparent production processes.

Skill Development

Digital India: Skill development is a priority under Digital India, ensuring that citizens are digitally literate.

Industry 4.0: The workforce in Industry 4.0 industries requires digital skills for managing automated processes and data analytics.

Intersection: The focus on skill development in Digital India aligns with the need for a digitally skilled workforce in Industry 4.0. Training programs can prepare individuals for careers in advanced manufacturing and technology.

Economic Growth and Job Creation

Digital India: Digital India aims to stimulate economic growth through digitization and innovation.

Industry 4.0: Industry 4.0 has the potential to drive economic growth through increased productivity and competitiveness.

Intersection: The convergence of Digital India and Industry 4.0 creates opportunities for economic growth and job creation, particularly in sectors where digital technologies are transforming traditional processes.

In summary, the intersection of Digital India and Industry 4.0 presents a unique opportunity for India to leverage its digital initiatives to support advanced manufacturing and industrial processes.

Challenges and Concerns in Implementing Industry 4.0 within the Digital India Framework

Implementing Industry 4.0 within the Digital India framework presents several challenges and concerns that need to be addressed for a successful transformation. Here are some of the key challenges and concerns:

1. Infrastructure and Connectivity
2. Skill Gap
3. Data Security and Privacy:
4. Regulatory Framework:
5. Cost of Implementation:
6. Change Management:
7. Data Governance and Ethics
8. Environmental Impact
9. Interoperability
10. Job Displacement

Addressing these challenges and concerns requires a collaborative effort involving government, industry, academia, and civil society. It also involves a proactive approach to policy development, education, and infrastructure development to create an enabling environment for the successful integration of Industry 4.0 within the Digital India framework.

Impact and Future Prospects

Economic Impact

Growth and Competitiveness: The convergence of Digital India and Industry 4.0 has the potential to drive significant economic growth in India. It enhances the competitiveness of Indian industries, making them more efficient, productive, and capable of competing on a global scale.

Job Creation: While there are concerns about job displacement due to automation, Industry 4.0 can also create new job opportunities in areas like data analytics, AI development, and cybersecurity. Skill development and reskilling programs will be crucial to harness this potential.

Innovation and Entrepreneurship: The digital age encourages innovation and entrepreneurship, leading to the growth of startups and the development of innovative solutions. India has the opportunity to become a hub for technology startups and innovation in various sectors.

Social Impact

Digital Inclusion: Digital India and Industry 4.0 can bridge the digital divide by bringing digital services to rural and underserved areas. This can improve the quality of life, healthcare access, and education opportunities for marginalized communities.

Education and Healthcare: These sectors can greatly benefit from technology-driven solutions, such as online education platforms and telemedicine. Remote learning and healthcare services can reach remote and disadvantaged populations.

Empowerment: Digital initiatives empower citizens by providing access to information, government services, and financial inclusion. This can lead to greater social and political participation.

Environmental Impact

Sustainability: Industry 4.0 technologies can improve resource efficiency in manufacturing and agriculture, reducing waste and environmental impact. Smart cities can optimize energy consumption, contributing to sustainability goals.

Reduced Carbon Footprint: IoT and data analytics can help reduce energy consumption and emissions by optimizing transportation and logistics, as well as enabling smart energy management.

Conclusion

The convergence of Digital India and Industry 4.0 represents a transformative force with profound implications for India's development across economic, social, and environmental dimensions. Key findings and insights from this analysis can be summarized as follows:

1. Transformational Synergy
2. Economic Growth
3. Inclusive Development
4. Environmental Sustainability.
5. Global Leadership

In conclusion, the convergence of Digital India and Industry 4.0 holds the potential to propel India into a dynamic digital age, enhancing its global stature and improving the well-being of its citizens. It represents a transformative journey that, with careful planning, investment, and research, can yield immense benefits for the nation's development and its role in the global digital landscape.

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DIGITAL INDIA AND INDUSTRY 4.0

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Abstract

At present, developed economies like Germany, Japan, the USA, and Singapore have embraced Industry 4.0 to increase their manufacturing competitiveness. At present, India lags behind its global peers in Industry 4.0 adoption. However, it has been started to implement these technologies into its industrial process and it also has created lots of positive impacts also. From the beginning of civilization, human beings have tried to increase their capacity and power. At first, they were using equipment made of wood or rocks but with the advancement of science they explored modern and efficient equipment, and this process is going on. Machines are one of the inventions of humans. Use of machines was the cause of first industrial revolution. It was termed as a revolution because it not only increased production but also brought significant social and economic changes. For example, in 1790s the French revolution took place, which coined new ideas like Equality, Liberty and Brotherhood, the first industrial revolution, which came to pass a few years after the French revolution, infused those ideas. It means industrial revolutions have a huge impact on our society, not only society but it also affects the world economy. With this backdrop the present paper has made attempt to explain the impact of industry 4.0 on Indian industry

Keywords: Industry 4.0; Manufacturing Sector; Indian Economy; Economic Growth; Industrial Development

Introduction

From the beginning of civilization, human beings have tried to increase their capacity and power. At first, they were using equipment made of wood or rocks but with the advancement of science they explored modern and efficient equipment, and this process is going on. Machines are one of the inventions of humans. Use of machines was the cause of first industrial revolution. It was termed as a revolution because it not only increased production but also brought significant social and economic changes. For example, in 1790s the French revolution took place, which coined new ideas like “Equality, Liberty and Brotherhood”; the first industrial revolution, which came to pass a few years after the French revolution, infused those ideas. It means industrial revolutions have a huge impact on our society, not only society but it also affects the world economy.

Today, technology has advanced and we are moving towards the Fourth industrial revolution. New technical breakthroughs like Artificial Intelligence, Internet of things, Big Data etc. will change the entire scenario of current industry. Industry 4.0 is going to change the way we work, the way we live, the way we think and the way we relate things with other. One of the major components of industry 4.0 is Artificial Intelligence (AI). It enables machines to think, learn and in decision making also. It is expected that AI will make a revolutionary change in space industry as well. In the near future, robots will be sent to

space instead of a man and hence will provide new breakthroughs in space science. Not only the space industry but every sector from agriculture to healthcare and education is going to be benefited by AI. On the one hand, AI will be used to tackle challenging problems like security, fighting terrorism, surveillance, traffic control etc and on the other hand, it will bring dynamic changes in banking, airlines, medical technology and education system. By the use of nanotechnology, we can conduct critical cancer operations also. In future normal class rooms are going to be replaced by smart classrooms which will ensure better learning for students. Although now this technology is less affordable, it is expected that it will be cheaper with the advancement of technology. Not only this, AI and machine learning these skills will be installed in future generation syllabus because learning about these is very essential for the next generation. There is also a negative side of this technological advancement. Studies say that robots will turn humans lazy. Although human life will be longer due to advancements in healthcare, it is also true that humans will become less fit and lazier. In such a situation, those who use technology properly to maintain a healthy life will be more benefited than others. Human life costs a lot. That's why in the future generation armed forces we may find robot soldiers. But for countries like India where 10 lakh people are employed in armed forces, this will create a major unemployment situation. Also imagine if countries will start using robots to fulfil their expansionist policy then it will be a major threat to world peace and may cause a third world war.

First Three Industrial Revolutions and India In the past, India was involved in various economic activities which contributed to the growth of the economy. One of the earliest industries to come into existence in India was the textile industry, which was the main contributor to the national income. Prior to industrial revolution, India had an internationally acclaimed cotton textile industry and its products were exported to various parts of the world including Europe and America. In fact, India is documented to have dominated the world's cotton textile markets in 1750. The Indian textile industry thrived due to its access to cheap labour and skill that resulted in high quality but low-priced calicoes (plain white or unbleached cotton cloth). These calicoes were popular in Britain during the late 17th century (Clingsmith and Williamson, 2004). However, after the industrial revolution in Britain the table was turned as textile imports to Britain were prevented by stringent tariffs and other protectionist policies. Even though high tariffs frustrated the Indian textile industry, the superiority of Indian calicoes remained unrivalled and people still imported it. It was not until the discovery and use of steam power from 1815 onward that the Indian textile industry faced an export market threat. Steam power made the previous inventions of spinning mule and power loom more effective and efficient in reducing the cost of British cotton by almost 85 per cent and making it internationally competitive. By 1820, Britain was the leading exporter of textiles,

significantly displacing India. In addition, India's colonial masters'-imposed laws that dictated what kinds of crops were to be grown by the farmers. This led to a situation where not a single food crop was cultivated because the entire land was used for the production of raw material for the British industries. Therefore, industrial revolution turned India into a source of raw materials for British industries as well as a market for its finished products. The Indian economy shrunk because its industrialisation process was hurt (Bagchi, 1976)

Industry 4.0 Technologies and their Industrial Applications

Internet of things (IOT) is another technical breakthrough where machines can communicate with each other. IOT with the AI combination will transfer factories into smart factories, cities into smart cities, cars into smart cars and homes into smart homes. If so happens, then it will reduce human efforts to a minimum. Big data analytics is another crucial component of Industry 4.0. It is basically developed to gather information and data of consumers so that producers can manufacture proper items and services for them. In today's digital world, data is very important for us. Just imagine, if this huge data is processed properly then we will witness magical changes around us. We will get proper on-time services; hence it will save both money and time. Actually, Big Data will completely transform the governance system. It will make it more transparent and efficient. Policy implementation is a major headache for governments. It is expected that Big Data with AI will work to simplify this problem. The government will be able to reach every needy person and no one will be excluded from justice. It means Big Data ensures inclusive socio-economic development in the future.

Industry 4.0 Technologies and Data Privacy

According to the UN, privacy is one of the human fundamental rights. Can we ensure privacy while installing this technology? Is Industry 4.0 going to ruin our fundamental rights? Actually, when we are considering Big Data, we are considering data of millions of TB. In such huge amount of data, personal data doesn't matter much. But this data can be used to influence people politically and may hamper democratic processes also. This data, if not properly guarded, may cause civil wars or riots. So, this is going to be a big challenge in the future. Industrial revolution puts a big impact on world economy and changes its basic structure. For example, the first industrial revolution transformed the agrarian economy into the manufacturing economy; the second industrial revolution reshaped it into the service-based economy and during the IT revolution the world's economy became a knowledge-based economy. But in this advancement, if one had to sustain, he/she has to learn new skills and techniques. For example, when tractors and electric pumps were introduced in the farming sector, only those farmers could sustain well who trained themselves in accordance with modern technology and the rest failed.

Impact of Industry 4.0 Technologies on Human and the Workforce

A huge question arises when we think about artificially intelligent machines: “Will there be any job left for humans?” Actually, jobs are not dying but they are evolving. It is obvious that Industry 4.0 will replace some jobs, but is also creating new jobs like big data analytics, VR designer, blockchain auditor, social media reporter, drone operator space visit guide and many more. It is expected that high-skilled and low skill jobs will stay as before, but middle-tier jobs will be replaced by AI robots. This is known as job polarisation in the economic terms. If workers want to sustain then they have to learn new technological skills. Researchers of Oxford University have found that jobs which are related to manual dexterity, high cognitive skills and social skills are difficult to be computerized, and workers should focus on developing these skills. Doctors are going to be replaced by AI robots in future but if a doctor is trained with hospitality skills and caretaking skills, then he/she will be preferable over a robot-doctor. It means jobs are going to be knowledge-centric and talent centric. A construction worker has to learn something about electronics apart from construction skills if he/she wants to build an automated smart home where sensors are used. Hospitality, condolence, politeness these are some qualities which should be learned as these will value add our character.

In the recent times, human race are heading towards a Gig economy. Gig means not continuous. It is predicted that normal continuous jobs will be reduced and these will be replaced by contractual jobs. If there will be no permanent jobs then there will be no paid holidays and no insurance schemes and also no fixed income. It may create unemployment like situation but I think gradually it will become part of our habit. So the beginning period is going to be tough and it is also expected that the revolution may slow down the world economy for a small period. So we should get ready for it. It is often observed “lack of reciprocity between technology and skill results in social inequality”. Those who learn new skills time to time and update their work with new technology will succeed and for the rest, fourth industrial revolution will be a big challenge. Actually, it depends on you whether Industry 4.0 will be a boon or a curse.

Strategy and Organisation Industry 4.0

Offers an opportunity to develop new business models besides improving the current use of digital technologies. Present openness can be examined using the following criteria:

- Existing knowledge strategy implementation of Industry 4.0;
- Reviewing strategies through a system of indicators for better operations;
- Measure the enterprise investments relating to industry 4.0
- Understand the use of technology and innovation management;
- and - Understand the current state of research and development.

Smart Factory Smart factory is a production environment in which the production systems and logistic systems organise themselves without human intervention. It relies on CPS, which links the physical

and virtual worlds by communicating through IT infrastructure/IOT. The firm's progress in the area of smart factory can be measured using the following criteria:

Digital modelling - Equipment and component infrastructure - Data usage - IT systems/infrastructure Smart Operations The technical requirement in production and its planning which are necessary to realise the self-controlling work piece are known as smart operations (Grant Thornton and Confederation of Indian Industry, 2015). The industry 4.0 readiness for smart operations can be determined by: - Information sharing - Cloud usage - IT security - Autonomous processes Smart Products Smart products are the foundation of the "smart factory" and smart operations. It facilitates automated, flexible, and efficient production. Physical components are equipped with technical components such as sensors, RFID (radio-frequency identification), communication interface, etc., to collect data on their environment and their own status. Readiness in the area of smart products will be determined by looking at ITC add-on functionalities of products and the extent to which data from the usage phase is analysed (Federation of German Industries, 2015). Data Driven Services Companies that are graduating from selling products to providing solutions substantiate data driven services, which are used to align future business models to enhance the benefits to customers. After sales service, business is based on the evaluation and analysis of collected data and reliance on enterprise-wide integration. The physical products themselves must be equipped with physical IT so they can send, receive and process information needed for the operational processes. Readiness in this area can be determined using following criteria: - Availability of these services - Share of revenue derived - Share of data used Employees Employees help companies realise digital transformation plan. Readiness in this dimension can be determined by analysing employees' current skills and ability to acquire 11 new skills as employees are most affected by the changes in technology in an organisation; directly impacting their work environment. This requires them to acquire new skill to become well equipped in the digital work place (European Commission, 2017). This model will help assess the company's readiness on various parameters and analyse potential gaps which need to be addressed in order to adopt Industry 4.0 (Grant Thornton and Confederation of Indian Industry, 2015)

Economic Benefits Provided by Industry 4.0 Technologies

Industry 4.0 technologies will help in the economic regeneration by 2025 enabling enterprises to revamp India's financial status in the post-COVID era besides acting as game-changers. The role of corporations through AI is going to be key for the comeback of the Indian economy post-pandemic. New-age technologies such as block chain, big data analytics, Internet of things (IoT), advanced manufacturing, quantum computing and AI are set to give India a possibility to engrave itself a striking uniqueness as an "International

nucleus” in the near future. As AI functions for “digital inclusion” in India, it is expected to have a ripple impact on economic prosperity and growth. Analysts foresee that AI can help add up nearly \$957 billion to the Indian economy by 2035 and by 2025, AI can add over \$500 billion and nearly 20 million jobs to the Indian economy. The Indian government is also in the process of implementing a robust legal framework governing the data of the country apart from constructing a data-driven society through AI that presents endless prospects to empower people, enhance society and also boost the ease of doing business. India through its AI strategy, constituting an extensive pool of AI workforce and an emerging startup ecosystem, has a remarkable chance to be a prominent contributor to AI-driven resolutions that can further transform agriculture, healthcare, manufacturing, education and skilling thereby impacting the economy positively to a considerable extent. The adoption of AI in various sectors of the economy is seen to have produced favourable returns by lessening time and risk.

Government Initiatives to Speed up the Implementation of Industry 4.0

Recently, the Ministry of Commerce and Industry has set up a Taskforce on AI to kick-start the usage of AI for the country’s economic shift. Nonetheless, AI adoption has remained at a developing stage. Therefore, the Indian government should consider establishing a separate “Industry 4.0 Ministry” for coordinating all new age technology related activities. For instance, the United Arab Emirates (UAE) in 2017 became the first nation in the world to create the post of Minister of State for AI. Today, governments globally are also taking measures to be part of the AI-led digital economy, which is assessed to contribute roughly \$15.7 trillion to the global economy by 2030. Considering India’s present situation, the country is on the verge of a massive opportunity for both economic advancement and gain in the common wellbeing of its citizens. “Inclusive economic growth” can make India the best playground for creating world-class and state of the art technology solutions. For this, the government through its annual budget must consider allocating more for Research and Development (R&D) in various sectors and also establish R&D departments in various educational institutions and universities across the country. India through General-purpose technologies (GPTs) can also influence the whole economy where GPTs have the possibility to drastically transform societies through their effect on the already existing economic and social arrangements.

Growth Potential of Industry 4.0 in Indian Economy

The adoption of AI is not confined to businesses alone, while economies have also shifted their emphasis on creating their AI capacities as a tool to boost growth where developed nations are already in the race and India as an aspiring future superpower is set to enter the AI race. Amidst the accelerated adoption of AI-based technologies, India seems to stand at the ridge of Industry 4.0. Therefore, it would be a convenient shifting for India

to create its AI abilities despite the transnational digital divide broadening even more. From the first industrial revolution until the rise in the IT revolution, the world has stood to benefit more and as per experts, AI like any other new technology in the past will produce more jobs than it destroys. Still, it is seen that the “Initial adoption of technology” has barriers for developing economies where restricted access to Industry 4.0 can broaden the income inequality, and the transformation stage of adoption is presumably to replace some jobs before it produces more jobs. While the influence of AI on the gross domestic product (GDP) and productivity is impressive, studies have also demonstrated the harmful effect of AI on employment. McKinney Global Institute indicated that intelligent mechanisms and robots could eliminate nearly 30 per cent of the global human labour by 2030. Also, with the rise in unemployment, this transformation could become quite difficult though in the past, new technologies have demonstrated to be worthwhile in the long-term, the short-term failures cannot be justified. Nevertheless, India still lags on essential indicators of AI development despite possessing increased levels of entrepreneurship, robust corporations and a skilled pool. Therefore for the betterment of the essential AI indicators a balanced approach, innovative local solutions and top-down policy making should be put forth. Also, the enhanced role of government along with the private sector will be instrumental in directing AI to create equitable development. Furthermore, the continued innovations and collaborations by Public-Private Participation (PPP) are necessary to lessen the cost of modern technologies, which can help the larger population thereby driving the “digital revolution”. However, India should also mainly consider improving its “hardware sector” to help redress bottlenecks since the country still lags behind which is vital for the Indian economy.

Conclusion

As India is expected to have the world’s youngest population by 2030, the country will account for nearly 30 per cent of the global workforce. Therefore, AI in this way can dramatically boost the productivity of the average worker to match the level of today’s top performers. There is also a further need to promote “Scientific temperament” amongst the people in the country about the new age technologies besides taking the ethics and security of Industry 4.0 into consideration. In this context, the “National strategy for AI” in India has recently recommended establishing ethics councils for sector-specific concerning privacy, security, and ethics. Industry 4.0 can also help the country to achieve the Sustainable Development Goals (SDGs) that can drive the Indian economy further. Henceforth the Indian economy and society in the long run is definitely poised for a sea change and the valiant dream to make India a \$5 trillion economy by 2025 can be accomplished through the adoption of Industry 4.0.

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DIGITAL MARKETING: AN OVERVIEW

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Abstract

Digital marketing is the use of digital technologies and platforms to promote products and services, as well as to connect with potential customers. It is an incredibly versatile and powerful tool that can be used in various ways to reach people worldwide. Digital marketing utilizes multiple digital technologies to deliver promotional messages, such as mobile phones, computers and other digital media and platforms. It can be used for B2B (Business to Business) and B2C (Business to Consumer) marketing, depending on the goal and objectives of the campaign. Digital marketing offers unique advantages such as greater reach, improved targeting, personalized messaging and better ROI (Return on Investment). It also allows businesses to stay up-to-date with marketing trends and technologies. With the right strategies and tactics, companies can leverage digital marketing to increase their visibility and reach a larger audience.

Keywords: Digital marketing involves marketing to consumers through digital channels, including websites, mobile devices and social media platforms.

Introduction

Digital is revolutionizing marketing by increasing use of automation and allied technologies. As consumers spend more and more time online, marketers are shifting their budgets to digital marketing. Customers are online means communication with them has to be online too. This is a salient feature of digital marketing. Some of the defining characteristics of digital marketing are;

Origin and Development of Digital Marketing

Digital marketing is also called 'Internet marketing' web marketing or online marketing digital marketing may be defined as the promotion of brands or products through different forms of electronic media. These forms of electronic media. These forms could be website, blogs, social media, mobile, applications, search, banner ads,

Traditional Vs Digital Marketing

Digital marketing is considerably different from traditional marketing in multiple ways. Traditional marketing is spray and pray, where in a marketer disseminates the message to a general audience and merely hopes that ultimately some viewers will buy the product. This lack of specificity leads to wastage. But digital marketing is able to target specific audiences that have interest in the product and hence are already in the market to

buy the product. There is a saying in mass media- 'Half of advertising is waste. But I don't know which half'. Digital marketing removes this limitation of mass media by eliminating wastage.

Digital marketing is about maximizing efficiency. Since it is possible to measure the performance of digital marketing in real time, there is ample scope to tweak the campaigns and improve ROI. Marketers can do the simple A/B testing to identify the most effective messages, images, ads, targeting and layout. In digital there is always scope for improvement.

Search Engine Advertising

Internet is the zero moment of truth. Consumers first search for products or services online before visiting the store. Hence, it is imperative for marketers to be present on search engines. Search engine marketing has two parts-search engine optimization (SEO) and search advertising.

Trends in Search Engine Advertising

This rising competition has led to the domain of search engine marketing to come up with the innovative process of creating ads more comprehensive and less complex. Following are some of the trends that are going to dominate the future.

Google Smart Campaigns

The advent of smart campaigns, creating a Google ad was a job that required countless factors that one had to control. Whether a beginner or an experienced professional, it was an overwhelming experience to control everything from bidding, keyword research, etc.

The scenario changed in 2019 when Google came up with 'smart campaigns'. But what are these smart campaigns?

In simple words, it is an updated version of Google ads and a semi-automated campaigns platform, helping marketers target their audience with minimum knowledge or experience. A smart campaign is different from regular campaigns in the following ways.

Simpler Dashboards and Reporters

What gives smart campaigns an edge over regular ad campaigns is the easy user interface. It gives you five metrics on which smart campaigns are based: impressions, clicks, amount spent, search phrases, call clicks and actions.

Optimises Campaigns

Instead of you handling the targeting, it is the Google algorithm that itself handles the advanced decisions based on your website and your Google My Business Profile. Having this profile is important to verify your local business on Google so that it is easily available on Google maps.

Automated Targeting

With smart campaigns, you don't have to meddle with the custom audiences again and again. The work of diverse targeting and remarketing is done by Google its self. If your business is located gurugram, it will target those potential customers in the area who have the maximum probability of purchasing.

This does not mean that you cannot manage are exclude keywords to be a part of your campaign Google provides an option.

Face Book Marketing

Face book is the highest used social media plat-from, having more then 2.38 billion active users. A repository of people and their choices, this plat-from is a boon to marketers.

Types of Adverts

Face book has different types of ads.

Page Post-Engagement Adverts –Boosted Posts

Page past – engagement adverts are used to increase the audience engagement on the post. This is done through the Boost past option on the page itself or through Ads manager or through face book business manager. Use of face book business manager is recommended as it provides advanced dashboard.

Page – Like Adverts

Page- Like Adverts is an advertisement to inorganically get more people like the fan page. This is especially useful because, in a way, it reduces the need of page post – engagement adverts.

Website Clicks and Conversions Adverts

Face book provides the option to run advertisements to redirect people to the company, s website. Whenever users click on the ad, they are redirected to he company website.

Basic Tools for Interest Targeting in Face Book

After choosing the correct audience, the next step knows the tools for interest targeting on Face book. Let us see the easy in which a digital marketer can target an audience based on their interest in Face book.

Pre-Fabricated Broad Interests

The marketer can choose the interest from the list in the detailed targeting field while targeting ads. Thought this may not be as effective as targeting specific pages and audience after research, it certainly gives a heads – up for the marketer.

Keywords and Exclude Function

Broader Keywords and Association Keyword can be used to target a specific audience based on their interest. Marketers can also exclude a certain section of people from the interest to narrow down the audience to a more refined and profitable one. For example, if a marketer wants to target people interested in fishing, he can target magazines such as outdoor life and then exclude interests such as hiking, hunting, etc.

Audience Insights

Digital marketers can use audience insights to know about potential keywords and to see how close the audience of a certain page is to the audience of their interest.

After entering interest and country, the digital marketer must click page likes and sort by affinity in the above window of audience insights to get results about the page that their audience likes and then target those pages. They can target pages having an affinity score of 5 and above.

The digital marketing can now enter those worlds in the following tab of audience insights and see if Facebook finds it. If the answer is positive, it means that the given words are potential keywords.

Taking Suggestions

Marketers can open the ads manager in Facebook and find suggestions for additional interests after entering an interest and clicking the suggestion button.

Why Am I Seeing this Ad?

A digital marketer can use the 'why am I seeing this tool?' to get ideas on how ads of competitors are targeting. Digital marketers who are new to the Facebook domain can take a leaf from their book and learn the tricks of the trade.

Tracking and Liking

Marketers track current customers on Facebook checking their profile and seeing the interests to get more ideas.

Marketers can like a fan page and get to know about more similar pages from the option of suggested pages. They can check their availability for targeting on audience insight so that they choose high profit yielding pages.

Fastest Growing Pages

They can also track the fastest growing pages in their domain and select lesser known pages since their competitors may not have targeted those pages. Marketers can take the help of third-party websites such as social bakers to know the fastest growing website on Facebook.

Conclusion

Digital marketing is an ever-evolving and dynamic field of marketing. As technology advances and marketing tools become more sophisticated, the need for digital marketers to stay ahead of the curve is essential. Understanding the importance of digital marketing, its various types and tools, as well as how to develop a successful digital marketing strategy, will help any business or organization reach their goals. Digital marketing is not just about creating content, but also about understanding the customer journey and developing a plan that will be effective in reaching the target audience. In order to be successful, digital marketers must remain agile and stay up to date with the latest trends and changes in the field.

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ROLE OF MSMEs IN ECONOMIC DEVELOPMENT OF INDIA

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Abstract

Micro, Small, and Medium Enterprises (MSMEs) have been monumental in accelerating the growth of the Indian economy. They not only play a cataclysmal role in generating employment opportunities at relatively low capital costs but also support industrialization and formalization of the economy. They are also instrumental in ensuring financial inclusion by tapering regional imbalances. MSMEs are veritably hailed as the backbone of the Indian economy as they contribute over 30% to the GDP. With almost 50% contribution to exports, they also form an integral part of the supply chain. The government of India plans to increase MSMEs output and export contribution to 50% and 75%, respectively, by 2024, in line with the aim to make India a \$5 trillion economy. In fact, MSME promotion has been prioritized by the government as part of NITI Aayog's Strategy for New India@75, with a special focus on ameliorating credit gaps and emboldening firms to embrace Industry 4.0 practices that enhance productivity. Thus, present paper will highlight the Role of MSMEs in Indian Economy.

Keywords: Micro, Small and Medium Enterprises, Production, Employment, poverty alleviation and rural development.

Introduction

MSMEs are the backbone of the Indian economy, contributing approximately 30% of the country's GDP (Gross Domestic Product), 45% of manufacturing output and providing employment to 11 crores of India's population. MSMEs, in layman's terms, refer to the enterprises that are engaged in the development and manufacturing of goods and services. The Micro, Small & Medium Enterprises Development (MSMED) Act, 2006 classifies MSMEs based on investment and turnover limits, which are enlisted below.

- i) **Micro Enterprise:** Investment in plant and machinery (P&M) or equipment does not exceed Rs. 1 crore, and turnover does not exceed Rs. 5 crores.
- ii) **Small Enterprise:** Investment in plant and machinery (P&M) or equipment does not exceed Rs. 10 crores, and turnover does not exceed Rs. 50 crores.
- iii) **Medium Enterprise:** Investment in plant and machinery (P&M) or equipment does not exceed Rs. 50 crores and turnover does not exceed Rs. 250 crores.

Existing MSME Classification			
Criteria : Investment in Plant & Machinery or Equipment			
Classification	Micro	Small	Medium
Mfg. Enterprises	Investment<Rs. 25 lac	Investment<Rs. 5 cr.	Investment <Rs. 10 cr.
Services Enterprise	Investment<Rs. 10 lac	Investment< Rs. 2 cr.	Investment<Rs. 5 cr.
Revised MSME Classification			
Composite Criteria : Investment And Annual Turnover			
Classification	Micro	Small	Medium
Manufacturing & Services	Investment< Rs. 1 cr. and Turnover < Rs.5 cr.	Investment< Rs. 10 cr. and Turnover < Rs.50 cr.	Investment< Rs. 20 cr. and Turnover < Rs.100 cr.

Objectives of the Study

The following are the study's aims:

1. To learn about the importance of micro, small, and medium-sized enterprises (MSME) in spurring economic development in India.
2. To understand the role of MSMEs in the Indian economy and their performance.

Review of Literature

Vasanth,Majumdar and Krishna (2012) in their paper have stated that since several successful models of the sustainable SME are gradually evolving, networks of SMEs would become essential for addressing the systemic problems under lying the industrial ecology, enterprise resilience, and global supply chain sustainability. Nihar Ranjan Jena and Lina R Thatte (2018) analyzed that the difference in performance of the MSME sector in different states existed due to the differences in presence or absence of adequate enabling factors like labour force, economic infrastructure, regulatory national level. Present research is mainly based on the framework, size of GSDP and density of MSME clusters etc. and found that Maharashtra was the leader in terms of performance of the MSME sector which was closely followed by Gujarat, Tamilnadu, Andhra Pradesh, Uttar Pradesh, West Bengal and Kerala.

Methodology

The study has a descriptive nature. Secondary data have been collected in order to prepare this document in a comprehensive manner. The data have been collected from publications in various journals, periodicals, conference papers and websites.

Highlights of new MSMEs

‘Atma Nirbhar Bharat Abhiyan’ or the Self-Reliant India Scheme of 2020 by the Government of India has given a new definition for MSMEs.

Following are a Few Highlighting Features of New MSMEs –

1. A provision of Collateral Free Loans to MSMEs
2. An arrangement of loans to MSMEs worth of Rs. 3 lac crores
3. An offer for MSMEs to get a Moratorium period of 12 months
4. Consideration of Manufacturing and Service MSMEs as the same entities
5. MSM is a granted a repayment Tenure of 48 months
6. MSMEs are assured a 100% Credit Guarantee
7. Reclassification of MSMEs will benefit approximately 45 Lac units.

Following are Some of the Essential Elements of MSMEs –

1. MSMEs work for the welfare of the workers and artisans. They help them by giving employment and by providing loans and other services.
2. MSMEs provide credit limit or funding support to banks.
3. They promote the development of entrepreneurship as well as up-gradation of skills by launching specialized training centers for the same.
4. They support the up-grading of developmental technology, infrastructure development, and the modernization of the sector as a whole
5. MSMEs are known to provide reasonable assistance for improved access to the domestic as well as export markets.
6. They also offer modern testing facilities and quality certification services.
7. Following the recent trends, MSMEs now support product development, design innovation, intervention, and packaging.

Overview of Govt. Initiatives on MSMEs

The Government of India has been proactive to ensure that all the benefit of these MSME schemes reaches to the MSMEs in time. The Union Budget 2023-24 focuses on ease of doing business for MSMEs.

The most important measures include:

- Emergency Credit Line Guarantee Scheme (ECLGS) has delivered additional credit to more than 130 lakh MSMEs. The ECLGS will be extended up to March 2023 expanding the guarantee cover by INR 50,000 Cr to a total cover of INR 5 Lakh Cr.
- INR 2 Lakh Cr additional credit for Micro and Small Enterprises to be facilitated under the Credit Guarantee Trust for Micro and Small Enterprises (CGTMSE).
- Raising and Accelerating MSME performance (RAMP) programme with an outlay of INR 6,000 Cr to be rolled out.
- INR 50,000 Cr equity infusion through MSME Self-Reliant India Fund.

Udyam, e-Shram, National Career Service (NCS) and Aatmanirbhar Skilled Employee Employer Mapping (ASEEM) portals will be interlinked. They will now serve as portals with live, organic databases, delivering G2C, B2C, and B2B services relating to credit facilitation, skilling, and recruitment.

Launch of Udyam Assist Platform (UAP) to bring the Informal Micro Enterprises (IMEs) under the formal ambit for availing the benefit under Priority Sector Lending (PSL).



MSMEs: The Growth Accelerators

MSMEs Trends

Traditionally, MSMEs were restricted to the khadi and coir industry. Since then, they have branched out to various industries. For instance, micro and small businesses mostly deal with food and agriculture, while medium-sized firms belong to the automotive, pharmaceutical, or chemical industries. As per the MSME ministry, India has an estimated 633.88 lakh unincorporated non-agricultural MSMEs, of which 31% are engaged in manufacturing, and 36% are in trading activities. Almost 51.25% of MSMEs are in rural areas, while the remaining 48.75% are situated in urban areas. The micro sector accounts for more than 99% of the total number of MSMEs.

MSMEs act as innovation stimulants, encouraging the diffusion of skills, and inculcation of an entrepreneurial culture. They serve as a source of healthy competition and boost economic dynamism. As catalysts for the socio-economic transformation of the country, MSMEs contribute to the economy in the ways mentioned below.

Sustainable Growth

MSMEs play a considerable role in the GDP growth story on account of their contribution to production and processing. Their growth results in an increase in value addition, final output, and profitability. Furthermore, they complement large industries by acting as ancillary units, thus bringing out integration benefits.

Their contribution is increased manifold when one accounts for the multiplier effect of the economic activity undertaken by their employees and suppliers. The CSO data states MSMEs' contribution to Gross Value Added (GVA) at 30% for FY 2019-20, with the manufacturing share standing at 36.9%. MSMEs are being supported by the government through 'Make in India' with the 'Zero Defect & Zero Effect' initiative to promote sustainability and higher quality standards.

Localized Employment Generation

MSMEs typically implement labor-intensive production processes, thereby generating massive employment opportunities. Their small scale restricts them to a particular area or region, which results in the local population being hired. These productive employment opportunities consequently result in increased generation of income and poverty alleviation.

As per the 73rd Round of NSS Report on Unincorporated Non-Agricultural Enterprises', MSMEs employ 11.10 crore workers. The micro sector accounts for over 97% of the employment share as it recruits almost 10.76 crore persons.

Mushrooming Trade and Export Earnings

MSMEs contributed 45.04% to overall exports during FY22. They are expected to benefit further from the 'China plus one' policy, which is being increasingly employed by MNCs looking to diversify their production. The government is targeting \$1 trillion worth of MSMEs exports by 2027. It has even introduced the 'Capacity Building of First-Time MSME Exporters' (CBFTE) scheme for MSMEs' export growth.

Contribution to Taxes

MSMEs contribute to the government's coffers through direct business taxes levied on their revenues and profits. They also pay indirect taxes, including GST, sales tax, excise duties, and cess. The tax provision requiring MSMEs to mandatorily register on the GST portal has even incentivized the formalization of the MSME sector.

Poverty Alleviation

The MSME sector plays a significant role in alleviating poverty and correcting regional imbalances. They ensure a more equitable distribution of income due to their localized nature of business and stave off any rural-urban migration. They also stimulate entrepreneurship, hence kickstarting investment and innovation cycles.

Financial Inclusion

Out of 11 crores employees in the MSME sector, almost 24% are women. Additionally, the socially backward groups, including SCs, STs, and OBCs, collectively own over 66% of

MSMEs, with OBCs accounting for almost half of the share. Almost 74% and 59% of the MSMEs are owned by the vulnerable sections in rural areas and urban areas, respectively.

Meeting SDG Goals

MSME development can assist in better meeting SDG goals, including SDG 1 (ending poverty), SDG 2 (ensuring zero hunger), SDG 3 (promoting good health), SDG 5 (gender equality), and SDG 8 (inclusive growth and decent work).

Concerns Over Finance

As can be seen from above, a robust MSME sector is acutely required for the Indian economy to grow. But these enterprises continue to suffer from the unavailability of timely capital. This lack of access to capital forces MSMEs to scale down or liquefy their business. As a result, there has been an upsurge in the number of financial institutions, including Protium, that are collaborating with MSMEs to provide prompt financing.

Findings

MSMEs address major challenges of the overall Indian economy also, that are unemployment and poverty. By reducing regional imbalances, giving employment to local people living in rural areas, they have done their part to knock-down disparities. Acting as a motivational factor for the existing MSMEs and as an aspiration factor for the potential MSMEs, increase in the income of people and the trend of promoting the interests of consumers, there will be various opportunities for MSMEs to play with in the domestic as well as export-market.

Conclusion

The role of MSME in economic development, particularly in rural and semi-urban areas cannot be underestimated. Despite the challenges, the resilience and contribution of MSME in Indian economy remain strong. Whether through policy support or Business Loans, facilitating the growth and sustainability of MSMEs is crucial for fostering inclusive and sustainable economic progress.

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RURAL WOMEN EMPOWERMENT IN INDIA

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Abstract

India is the land of village and 70 per cent of India's population stays in rural India. Rural India has myriad problems such as dependency on Monsoon ,agriculture, jobs, poor wages, distress migration, malnutrition, poor implementation of government schemes and lack of access to quality education,transport and health-care facilities. As per rural Tradition , a woman's place has been at home and a decade ago, women employment outside the home was looked down upon by the society.Now situation has changed. Because to Empower rural women is became a necessity for the society to ensure sustainable development of the country Rural Women also started seeking employment outside their homes through gross economic necessity followed by the desire to raise economic status, to have an independent income, to make use of education, to pursue a career etc .A Rural woman is the nucleus of the family, particularly, in rural India. She not only collects water, fuelwood, fodder and food but also plays a significant role in preserving the culture, grooming the children and shaping their destiny.

Keywords: rural, women, empowerment, social, education, poverty. 9842862347

Introduction

“There is no tool for development more effective than the empowerment of women”

Women constitute half of total population in our country; women have significant priority in all development efforts. Allover the world women have been accepted as powerful agents of social change empowerment of women is one of the central issues in the process of development of country. In order to fill up to empowerment of women have been built for the betterment and prosperity of women, various programmers were launched by the government. voluntary agencies NGOs are activity involved in the process to improve and empower women socially, economically, and in political frontiers, the basic need for empowering women to ac quire basic skills and abilities in order to raising their status in the society. The educated women do not want to limit their lives in the four walls of the house. They demand equal respect from their partners. However, Indian women have to go a long way to achieve equal rights and position because traditions are deep in Indian society where the sociological set up has been a male dominated one. These women leaders are assertive, persuasive and willing to take risks. They managed to survive and succeed in this cut throat competition with their hard work. Diligence and perseverance. Ability to learn quickly from her abilities. Her persuasiveness, open style of problem

solving. Willingness to take risks and chances. Ability to motivate people, knowing how to win and lose gracefully is the strengths of the Indian women entrepreneurs.

Objectives of the Study

- To study role of rural women in economy.
- To review available government offerings with respect to women empowerment

Research Methodology

This paper is completely descriptive and analytical in nature ,the data used for research it is purely collected from secondary as per the requirement of paper.

Rural Women

Rural women are key agents for achieving the transformational economic, environmental and social changes required for sustainable development. But limited access to credit, health care and education are among the many challenges they face, which are further aggravated by the global food and economic crises and climate change. Empowering them is key not only to the well-being of individuals, families and rural communities, but also to overall economic productivity, given women's large presence in the agricultural workforce worldwide.

Women Empowerment in India

“A Guru who teaches Veda is 10 times superior to an ordinary teacher and the father is 100 times more than a teacher, but the Mother is 1000 times more superior to the father”.

The government of India passed the national policy for the empowerment of women which has the goal to bring the advancement, development and empowerment of women. The national mission for empowerment of women was launched by the government with the aim to strengthen overall processes that promote all round development of women. It has the mandate to strengthen the inter-sector convergence facilities the process of coordinating all the women's welfare and socio economic development programmers across ministers and departments. The Indian Constitution not only grants equality to women, but also empowers the State to adopt measures of positive discrimination in favour of women so that women can improve their livelihood. Within the framework of a democratic polity, our laws, development policies, Plans and Programmes have aimed at women's advancement in different spheres.

It has the mandate to strengthen the inter-sector convergence; facilitate the process of coordinating all the women's welfare and socio-economic development programmes across ministries and departments. This finely conveys that mere imparting literacy would not be sufficient; the women need vocational training or skills also to be able to stand on their feet and be the earning members of the family. Women have been taking increasing interest in

recent years in income generating activities, self-employment and entrepreneurship that also lead to property rights, political representation, social equality, personal right, family development, market development, community development and at last the nation development.

Financial Empowerment

India has taken a significant initiative in extending banking outreach to rural areas. The financial inclusion and accessibility to banking through Pradhan Mantri Jan-DhanYojana (PMJDY) has boosted confidence and prospects of rural women participation in economic activities. Jan Dhan campaign has ensured access to financial services, viz, banking/savings and deposit accounts, remittance, credit, insurance, pension in an affordable manner to rural women. These financial accessibility measures have ensured transparent mode of transaction and timely access to financial services through direct benefits transfer (DBT) facility provided under various Government of India schemes. Over 7 years of the implementation of this scheme, 43.04 Crore accounts has been opened in the country. Further, this constitute 55.47 percent (23.87 crore) women account holders and 66.69 percent (28.70 crore) are Jan Dhan accounts in rural and semi-urban areas (Ministry of Finance, 2021)

This financial inclusion has helped rural population to fight the crisis during COVID-19 pandemic outbreak with uninterrupted access to financial aid. Other initiatives like Pradhan Mantri MUDRA Yojana (PMMY), Stand-Up India Scheme, Prime Minister's Employment Generation Programme (PMEGP) are the additional supporting steps towards financial empowerment and entrepreneurship development of rural women. Over 9 crore women have benefitted jointly from Mudra and Stand-Up India (Ashish Kumar, 2019).

The Role of Skill Development in Women Empowerment

Skill development plays a critical role in women's empowerment. Empowering women through skills training and education can help to bridge the gender gap and promote gender equality. When women have access to education and skills training, they can enhance their personal and professional development, gain independence, and contribute positively to their families and communities. Women who receive skill development training are better equipped to secure higher-paying jobs, start their own businesses, and become financially independent. This, in turn, can lead to a greater sense of self-worth, self-esteem, and confidence, and ultimately, help to break down barriers to gender inequality

Moreover, skill development programs can provide women with a platform to connect with other women and build social networks, which can further enhance their economic and social empowerment. Through these networks, women can share knowledge,

experiences, and resources, and support each other in their personal and professional growth. Finally, skill development programs can also play a crucial role in promoting women's participation in decision-making processes at various levels. By providing women with the necessary skills and knowledge, they can become more active participants in their communities and contribute to the development of policies and programs that address their needs and aspirations.

In conclusion, skill development is a crucial component of women's empowerment. It can help women to gain economic independence, enhance their personal and professional growth, build social networks, and participate in decision-making processes. Therefore, governments, NGOs, and other stakeholders should prioritize investment in skill development programs that specifically target women to promote gender equality and women's empowerment.

Although women can constitute a massive chunk of India's workforce, the percentage rate of working women in the total labour force is declining. Further, a large number of women are employed in the informal sector. These jobs are often seasonal, have meagre wages and provide no security of wages or tenure. Thus a focus on development of skills in women would be crucial in motivating them to develop life skills that will lead to higher paying and good quality jobs, better livelihood, economic independence and the ability to earn for their families.

Rural women's restricted access to productive resources, educational levels and the pre-existing social norms concerning labour that is proper for women, tend to confine them to lower-paying, lower-status jobs with limited prospects for skill training and promotion, thus keeping them bound to their lower status. In many rural firms, widespread patterns of insecure employment and transitory and unstable contractual arrangements restrict employers from providing training to women. Rural women's vocational education and training are sometimes restricted to a small number of female-dominated areas, reinforcing their traditional roles and obligations. While such training improves their economic options, it limits their opportunities to gain from newer, non-traditional professions such as information and communication technology (ICT). Hence, proper skill training along with effective awareness generation campaigns become a prerequisite to bridge the gap between the options women have available to them and what they actually have the potential and inclination to take up.

Challenges Facing Women in India

Discrimination: Women in India often face discrimination in many areas of life, including in the home and in the workplace. This can make it difficult for them to access education and employment opportunities, and can lead to unequal treatment and lower pay.

Lack of access to education and employment: Women in India face significant barriers when it comes to accessing education and employment. For example, data from the World Bank shows that only around 50% of women in India participate in the labour force, compared to around 80% of men. This is due in part to cultural and social barriers that prevent women from participating in the workforce, as well as lack of access to education and training.

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Gender-based violence: is a major problem in India. The National Crime Records Bureau reports that in 2021, there were over 428,278 reported cases of violence against women in India. This included incidents of physical and sexual assault, as well as dowry-related violence and female infanticide. The statistics are alarming, with 31,677 reported rapes against women in 2021 alone.

Poverty: Many women in India live in poverty, particularly in rural areas. Poverty can make it difficult for women to access education and employment, and can lead to other challenges such as poor health and malnutrition.

Disparities between urban and rural areas: Women in rural areas of India often face greater challenges when it comes to empowerment. For example, they may have less access to education and health care, and may be more isolated and vulnerable to gender-based violence.

Conclusion

Rural women are major stakeholders in growth of agricultural sector for the New India. Acknowledging and mainstreaming of rural women via ensured access to resources, technology, education, health facilities, ownership rights and skill development will improve agriculture productivity and help in building an empowered nation.

Though they make half of the world population, women have remained as an oppressed group from the beginning of the history. Though some societies regard women as superior in the family and community, most of societies of the world have been treating women as second class citizens. Because of religious and cultural values and physical structure, women are forced to remain as dominated group around the globe, especially in the least developed nations. There is a solid evidence of discrimination of women worldwide. Even in the most developed nations which boast the best human rights situation in their country, women's participation in almost fields has been minimized

because of male dominance. In many countries, women are kept as 'prisoners' as they are not allowed to participate many social and political activities. In a stratified society like ours, access and empowerment of different section of the societies are becoming serious concerns and to address it planners, managers, social scientist all over the world have started deliberating and devising way out like anything. In this direction genders issues are dominating over other vulnerable issues like poverty, class conflicts, communities, ethnic issues etc. In ensuring an egalitarian development gender equity still remains as a pertinent question as it has been for the thousands of years of human civilization. Gender issues beyond its epistemological certainly imbibe other components like production relation, access to education, geographical distribution, occupational imperatives, marital system and even physical & physiological weaknesses.

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FREELANCING - THE FUTURE OF GIG ECONOMY

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Abstract

In the gig economy, freelancing has emerged as a prominent and flexible work arrangement. This study explores the experiences and challenges faced by freelancers in India and around the world. It examines the motivations for choosing freelancing, the types of services offered, and the impact of the gig economy on individuals' careers and income stability. Additionally, the study investigates the role of digital platforms in connecting freelancers with clients and facilitating their work. By understanding the dynamics of freelancing in the gig economy, policymakers and stakeholders can strategize to support and empower freelancers, ensuring a sustainable and inclusive future of work.

Keywords: Gig economy, Freelancing

Introduction

"Discover the power of the gig economy, where you can be the boss of your own schedule and make a living doing what you love!"

The gig economy started to gain prominence in the early 2010s with the rise of platforms like Uber, Lyft, and Airbnb. The gig economy has evolved significantly over the years. These platforms provided opportunities for individuals to earn income by offering their services on a flexible basis. Since then, the gig economy has continued to grow, with the rise of technology and online platforms the gig economy has expanded. It has become a popular way for people to find work and for consumers to access services conveniently.

The gig economy refers to a work environment where individuals take on short-term, flexible jobs or "gigs" instead of traditional long-term employment. It's all about having the freedom to choose when and where you work. Individuals taking on "gigs" or temporary jobs, often facilitated through online platforms, to earn income. It offers mouldability the opportunity to work on other projects. Platforms like Uber, TaskRabbit, and Upwork have made it easier for people to find gigs and connect with clients. It's a modern way of working that provides flexibility and opportunities for individuals to showcase their skills and pursue their passions.

The concept of the gig economy is all about flexibility and independence in work. Instead of having a traditional job with a fixed schedule, people can take on short-term projects or "gigs" based on their skills and interests. It's like being your own boss. This allows individuals to have more control over their careers and pursue multiple opportunities simultaneously. It's a popular trend that offers flexibility and the chance to explore different work experiences.

These gigs can range from freelance work, such as graphic design or writing, ride-

sharing services like Uber and Lyft, to on-demand services like food delivery platforms like DoorDash and Uber Eats, freelance platforms like Fiverr, and home-sharing platforms like Airbnb. It's a way for individuals to have more control over their work and schedule. These platforms connect individuals looking for services with gig workers who can provide them on a flexible basis.

Review of Literature

Nithi Aayog report on 27th June 2022¹ released a report on India's booming gig platforms economy, which in turn cites the current report by international forums on India's gig economy. The economic survey 2020-21 has noted that India has all newly emerged as one of the world's largest countries for flexible-staffing (gig and platform work) the ILO's 2021 world employment and social outlook report states that the number of digital labour platforms has grown fivefold over the last decade.

It was estimated that 7.7 million workers were engaged in the Gig Economy, (2020-21) they constituted to around 1.5% of the total workforce in India, and it is expected to rise up to 23.5 million workers by 2029-30, 4.1% of total livelihood in India by then. Chapter 6 of the report specifically deals in great detail, with the social security policies that can be adapted to the Gig workers and presents global examples where countries such as the US, UK, Singapore, South Africa, Hong Kong have already made laws to confer such benefits.

In International social security association (2018)² Social security and the Gig Economy, this article by the International social security association discusses the challenges of providing social security for Gig workers and proposes potential solutions, such as the creation of a universal basic income or a portable benefits system.

National Law University Delhi (2020)³ A review of existing frameworks in India. This report by the national law university Delhi provides an overview of the legal framework governing Gig workers in India including the social security challenges faced by these workers.

International labour organization 2018⁴ This report by the international labour organization provides an overview of the social protection challenges faced by gig workers in India and proposes various policy options to address these challenges.

Centre for sustainable employment, Azim Premji university (2020) current scenario⁵ This report by the centre for sustainable employment at Azim Premji University provides an overview of the social security challenges faced by Gig workers in India and argues for the need for a separate law to address these challenges.

Freelancer

A freelancer is someone who works independently and offers their services to clients on a project for short-term basis. They are not officially connected with any organizations. They work on a project basis, collaborating with clients to deliver high-quality work.

Freelancers often manage their own business, handle client communication, and handle administrative tasks. Freelancers do a variety of things depending on their skills and expertise. They offer services such as graphic design, writing, web development, photography, consulting, and much more. Working as a freelancer in the digital space have the flexibility to choose their projects, set their rates, the ability to work remotely and work on their own terms. It can be a great way to pursue your passions, have a flexible schedule, and gain diverse work experiences. India has a thriving freelance community with many talented individuals offering their skills and services to both within the country and internationally.

Freelancers have a diverse range of experiences in the gig economy. Freelancers may face challenges such as managing their own workload, dealing with unpredictable income, and finding a work-life balance. Overall, freelancing can be a rewarding and fulfilling experience for those who thrive in an independent and dynamic work environment.

Freelancers have had a significant impact on the workforce and the economy. They bring unique skills and expertise to the table, offering specialized services to clients and businesses. Freelancers contribute to innovation and creativity by bringing fresh perspectives and diverse experiences to projects. They also play a crucial role in supporting the growth of small businesses and startups by providing cost-effective and flexible services. Additionally, freelancers contribute to economic growth by creating job opportunities for themselves and potentially hiring others as their businesses expand. Overall, freelancers have become an integral part of the modern workforce, driving innovation and providing valuable services to clients and businesses.

Importance of Freelancing

Freelancing is important because it provides individuals with the opportunity to have greater control over their work and lifestyle. It allows people to pursue their passions, set their own rates, and choose the projects they want to work on. The main importance are as follows;

1. **Flexibility:** Freelancers provide businesses with the flexibility to hire talent on a project-by-project basis, allowing them to scale their workforce as needed.
2. **Specialized skills:** Freelancers often have specialized skills and expertise in specific areas, providing businesses with access to a diverse range of talent.
3. **Cost-effectiveness:** Hiring freelancers can be more cost-effective for businesses, as they don't have to provide benefits or pay for overhead expenses.
4. **Innovation and fresh perspectives:** Freelancers bring fresh perspectives and innovative ideas to projects, helping businesses stay competitive.
5. **Increased productivity:** Freelancers can help businesses meet tight deadlines or handle overflow work, increasing overall productivity.
6. **Collaboration opportunities:** Freelancers can collaborate with in-house teams, bringing their unique skills and knowledge to the table.

7. Market responsiveness: Freelancers can quickly adapt to changing market demands and provide specialized services that businesses may not have in-house.
8. Entrepreneurial spirit: Freelancers often have an entrepreneurial mind set, bringing a high level of motivation and dedication to their work.

Types

There are various types of freelancers based on their skills and areas of expertise. Some common types include graphic designers, writers, web developers, social media managers, virtual assistants, photographers, content creators, copywriters, marketers, consultants, translators, and video editors.

Advantages

1. Flexibility: You have the freedom to choose when, where, and how you work.
2. Independence: You can be your own boss and have control over your career.
3. Variety: Freelancing allows you to work on different projects and explore various industries.
4. Work-life balance: You can create a schedule that suits your lifestyle and personal commitments.
5. Skill development: Freelancing exposes you to new challenges and helps you grow your skills.
6. Higher earning potential: As a freelancer, you have the opportunity to set your own rates and potentially earn more than in a traditional job.
7. Networking: Freelancing allows you to connect with clients and professionals in your field, expanding your professional network.
8. Personal fulfilment: Freelancers often find satisfaction in doing work they are passionate about and having a sense of ownership over their projects.

Disadvantages

Some common constraints in freelancing includes;

1. Inconsistent income: Freelancers may experience fluctuations in their earnings due to the nature of project-based work.
2. Client acquisition: Finding and securing new clients can be a constant challenge for freelancers.
3. Business management: Freelancers are responsible for managing their own finances, contracts, and administrative tasks.
4. Isolation: Working independently can sometimes lead to feelings of isolation and a lack of social interaction.
5. Lack of benefits: Freelancers typically do not have access to benefits such as healthcare, retirement plans, or paid time off.
6. Job security: Unlike traditional employment, freelancers do not have the same level of job security and may face periods of uncertainty.

Digital Platforms in GIG

The growth of freelancers in digital platforms has been incredible. In the gig economy, digital platforms play a significant role in connecting freelancers with clients. With the rise of platforms like upwork, fiverr and freelancer, more and more people embracing freelance work and finding opportunities to showcase their skills and expertise. The gig platforms, provide a space where individuals can showcase their skills and offer their services to a global audience. They make it easier for freelancers to find gigs, negotiate contracts, and receive payments securely. Digital platforms also offer various categories of work, such as writing, design, programming, and marketing, allowing freelancers to find opportunities that align with their expertise. It's a convenient and efficient way for freelancers to connect with clients and for clients to access a diverse pool of talent.

The gig economy has truly flourished in the digital realm providing freelancers with the flexibility and freedom to work on their own terms. It is an exciting for freelancers in the digitalspace.

In recent years, the gig economy has expanded. In pandemic hugely compounded its growth, which forced the people to stay in home. The following are gig economy's increasing prevalence:

- The number of global gig workers is anticipated to rise to 78 million in 2023
- 50% of freelancers are skilled workers in fields like IT, programming, counselling, and marketing
- 36% of freelancers freelance as a full-time job
- 86% of freelancers think the best days for freelancing are still to come
- By the end of 2023, 52% of workers are predicted to have spent some of their careers as independent workers.

With the continued growth of the gig economy and advancements in technology, freelancers will have even more opportunities to thrive. The demand for flexible and specialized talent is expected to increase, opening up new avenues for freelancers to showcase their skills and expertise. As remote work becomes more common, freelancers can work with clients from all over the world, expanding their reach and potential client base. However, it's important for freelancers to adapt to changing market trends, upskill themselves, and stay updated with technology to remain competitive. Overall, the future looks bright for freelancers as they continue to shape the way we work.

Conclusion

This article examines a important roles of freelancers in gig economy and the highlights of various factors affecting the growth of gig economy. While the gig economy is growing quickly in India, the unorganised sector remains a primary source of employment for a significant part of the population. In the gig economy, freelancers are the driving force, offering their specialized skills and services on a project basis. This flexible and independent work arrangement allows individuals in India and around the world to

pursue their passions, have control over their careers, and work remotely. However, it's important to recognize the challenges that freelancers face, such as income instability and lack of benefits. Policymakers and stakeholders should understand the dynamics of the gig economy and the experiences of freelancers to create a supportive environment that addresses these challenges. The gig economy has proven to be favourable for both employees and employers. The gig workers heavily influenced by demand, it made all gig employees vulnerable to the fluctuations of the economy. This inconsistency and lack of stability has created a insecurity for many gig workers, especially those who are heavily reliant on gigs from a particular industry as a form of employment or are unable or unwilling to undertake tasks in other industry. By doing so, we can ensure that freelancers continue to thrive and contribute to the growth of the gig economy.

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SUSTAINABLE BUSINESS PRACTICES IN START-UPS

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Abstract

Emerging and running companies are looking for ways to thrive in a competitive environment with innovative business models. Recent trends such as circular economy, fair trade and sharing economy are some of the many approaches that address this issue. In fact, most research on the topic of sustainable business models is still exploratory and does not fully acknowledge these emerging approaches, whose definitions, boundaries, and defining characteristics are still somewhat vague. Many studies seek to contribute to the understanding of the inner entrepreneurial dynamics of innovative sustainable business models. Few studies focus on the fashion business, a resource-intensive industry in which opportunities to reduce environmental impacts and to innovate business models abound.

Keywords: *Startups, Green, Business models, etc.,*

Introduction

Start-ups are an increasingly important phenomenon in the business industry. Many such companies have been created over the past few years, illustrating the interest in and growth of such entrepreneurship. Emerging companies are more likely to be founded on sustainable business models. In many cases, such models incorporate the principles of the circular economy. The 2030 Sustainable Development Goals (SDGs) are a unique collection of seventeen time-bound goals that strive to balance the three sustainability objectives of economic, social, and environmental sustainability. Sustainability has become a catalyst for growth across all sectors of the economy. The financial industry, in particular, has been scrutinized for its contribution to environmental sustainability. The emerging concept of a green startup has gained momentum because of the rising awareness campaigns for sustainable development. Also, after looking at the impact of lockdowns because of Covid-19, this topic has gained the attention of many researchers. Looking at the need and urgency to introduce sustainable development for a nation's progress, all major nations have laid out policies in terms of green finance to elevate sustainable entrepreneurship. Since it is an emerging topic, nothing much has been researched. Hence, there is a research gap, particularly for the Indian economy, which has become one of the most politically strong nations among the world's major forces. This paper is an attempt to fill the same. Hence, this topic is researched to reckon the present status of green startups in India. The nation has recently shown significant growth in the number of unicorns, a jump in export value and other economic aspects related to business growth. Moreover, it endeavours to

assess and compare India's performance in sustainable entrepreneurship with the country which has performed better in terms of green startups.

Sustainable Practices

- a. **Green Finance** – The financial activity that is designed to improve the environment is green finance. A variety of loans, financing instruments and investments are included in this program in order to promote the development of environmentally friendly projects or to reduce the climatic effect of more conventional ones.
- b. **Green Startup** – As the name implies, a green (startup) firm provides goods and services that aid in creating a more sustainable environment. In a sustainable world, current demands are addressed without jeopardizing the capacities of future generations to satisfy theirs. Because of this, a green company is often known as a long-term company. It can also be described as a corporation that does not harm the environment, economy or local community in any way whatsoever.
- c. **Sustainable Entrepreneurship** – Sustainable entrepreneurs are people or firms that use their primary operations to contribute to sustainable development. A sustainable entrepreneur develops and implements sustainable ideas for the mass market, which benefits the greater community as a whole. When it comes to creating new goods, services, industrial methods, techniques and organizational models that positively influence the environment and society, sustainable entrepreneurship is opportunity oriented.

Reasons for Green Economy

- The shift to a green economy includes the efficient and effective use of natural resources, energy and new technology, resulting in economic development and employment creation. Adopting a green economic model may be successful if there is a global commitment and a strategically established framework for global investment that includes developing and developed nations. It is also crucial for the successful expansion of green finance.
- The green economy is fueled by specialized policies aimed at eliminating or lowering ecologically detrimental subsidies, developing a market for ecosystem products and services and enabling institutions via the provision of market-based incentives, opportunities and enabling institutions.
- Green finance is motivated by the desire to move toward a green economy. As defined by the G20 research group, green finance is “the financing of initiatives that generate environmental advantages within the framework of ecologically sustainable development”. These environmental benefits include reductions in air, water and land pollution, reductions in greenhouse gas (GHG) emissions, increased energy efficiency while maximizing the use of available natural resources and

mitigation of and adaptation to climate change, as well as their associated benefits. It is a stepping stone toward resolving many environmental concerns and bringing economies together on a sustainable path. If India wants to focus on making its economy green, it must focus on promoting green finance for developmental activities. Glancing at rising environmental issues, that country must take steps to scale up sustainable development initiatives.

- Indian entrepreneurs are expected to raise \$42 billion in 2021, up from \$11.5 billion the previous year. Additionally, the Indian government has designated 14,000 new enterprises for recognition in 2021. India now has 83 unicorns with a combined worth of \$277 billion as of January 2022. Delhi-NCR has surpassed Bangalore as India's new startup hub. Delhi-NCR added almost 5,000 recognized startups in the previous two years, while Bangalore added 4,514. However, Maharashtra has the most recognized startups, with 11,308 in total. In 2021, demand for office space in the Delhi-NCR area increased by 50% year on year, mainly owing to high absorption by startups and technology enterprises. In 2021, the office space sector will absorb 6.3 million square feet, while startups will absorb 1 million square feet

Conclusion

The study reviewed the use of disruptive innovation and the circularity of resources in the business models of start-ups. The results show that start-ups are innovating in terms of the circularity of resources through a range of partially implemented initiatives. These initiatives allow start-ups to manage their data and microdata, create artefact integration systems, generate connectivity, accelerate digitisation, stimulate partnerships and cooperation between parties in the supply chain, generate new market opportunities and develop efficient transition systems for the circularity of resources. Thus, there is ample evidence that disruptive innovation supports the circular economy in start-ups.

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AN ANALYTICAL STUDY ON IMPACT OF MAKE IN INDIA ON MSME'S IN KERALA

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Abstract

The "Make in India" initiative, launched by the Government of India on 1st September 2014, has had a significant impact on Micro, Small, and Medium Enterprises (MSMEs) in Kerala. This study is an attempt to analyse the impact of Make in India on MSMEs in the state. The "Make in India" campaign aimed to promote domestic manufacturing, boost job creation, and enhance India's position in the global manufacturing landscape. In Kerala, a state known for its strong service sector, the impact on MSMEs has been multi-faceted. With the help of the Make in India programme, MSMEs in Kerala have gained better access to national and international markets due to the promotion of domestically manufactured goods. This has facilitated export-oriented growth for several enterprises. To compete in the manufacturing sector, many MSMEs in Kerala have upgraded their technology and improved the skills of their workforce. This has led to increased productivity and competitiveness.

The government's incentives for MSMEs under the "Make in India" program, such as credit support and tax benefits, have encouraged entrepreneurship and investment in the state. MSMEs in traditional sectors like handicrafts and coir have explored diversification into manufacturing, aligning with the campaign's objectives. In conclusion, the "Make in India" initiative has had a positive impact on MSMEs in Kerala by enhancing market access, technology adoption, and investment. However, addressing infrastructure challenges and promoting sustainable manufacturing practices are crucial for ensuring the long-term growth of MSMEs in the state.

Keywords: *Make in India, MSMEs, Sustainability*

Introduction

In recent years, India has witnessed a transformative economic initiative known as "Make in India," aimed at fostering indigenous manufacturing and promoting self-reliance. This ambitious program, launched by the Government of India, seeks to position the nation as a global manufacturing hub and reduce its dependence on imported goods. While the impact of Make in India has been widely debated on a national scale, its implications at the regional level, particularly in the state of Kerala, have garnered limited attention.

Kerala, often celebrated for its unique socio-economic model, has a substantial presence of Micro, Small, and Medium Enterprises (MSMEs) that play a pivotal role in the state's economy. These enterprises are not only vital contributors to employment generation but also significant contributors to the state's GDP. As Make in India unfolds, it is imperative to investigate how this nationwide initiative resonates within the context of Kerala's MSME sector.

This paper aims to delve into the multifaceted dimensions of the Make in India campaign and its influence on MSMEs in Kerala. By analysing the policies, challenges, and opportunities faced by these enterprises in the wake of this initiative, we seek to provide a comprehensive understanding of the impact on the state's economic landscape. Furthermore, we will explore the strategies adopted by Kerala's MSMEs to align with the goals of Make in India while preserving their unique characteristics and addressing regional peculiarities.

Through this study, we aim to shed light on whether make in India serves as a catalyst for the growth and sustainability of MSMEs in Kerala or if it presents formidable hurdles that need to be surmounted. By examining this crucial nexus between national policy and regional economic dynamics, we can glean insights that may guide policymakers, entrepreneurs, and stakeholders in fostering economic development and self-reliance within the state.

Why Make in India?

Job Creation: By promoting manufacturing, the initiative aims to create job opportunities for the growing workforce in India. This helps in addressing unemployment and underemployment issues.

Foreign Direct Investment (FDI): "Make in India" encourages foreign companies to invest in India and establish manufacturing units. This leads to an influx of foreign capital, technology, and expertise, which can benefit the Indian economy.

Export Promotion: The initiative focuses on enhancing the export of Indian-made products. By producing goods of high quality and competitiveness, India can tap into global markets and improve its trade balance.

Ease of Doing Business: "Make in India" includes efforts to simplify and streamline business regulations and processes. This creates a more business-friendly environment, making it easier for both domestic and foreign companies to operate in India.

Skill Development: To support the manufacturing sector's growth, there's an emphasis on skill development programs to equip the workforce with the necessary skills and training required for modern manufacturing practices.

Infrastructure Development: Investments are made in infrastructure development, such as industrial corridors, logistics, and transportation networks, to facilitate manufacturing activities.

Diversification of Industries: "Make in India" encourages diversification across various industries, including electronics, automobiles, aerospace, and more, reducing the country's reliance on a few sectors.

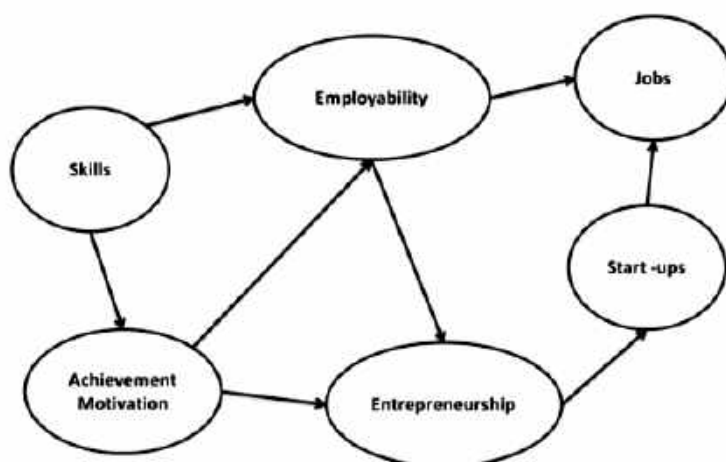
Global Competitiveness: By improving the quality and competitiveness of domestically manufactured products, India can compete on a global scale, reducing the need for imports.

Sustainable Growth: There's also an emphasis on sustainable and eco-friendly manufacturing practices to ensure that growth is environmentally responsible.

Overall, the "Make in India" initiative aims to transform India into a global manufacturing and investment destination, fostering economic growth and self-reliance.

Entrepreneurship as a Base for "Make in India" - An Opportunity

Within the 'Make in India' framework, being implemented on a campaign mode, skills form a strategic priority. The success of 'Make in India' depends largely on the entrepreneurship base of the country. Therefore, it is important to analyse and establish the relation between skills, achievement motivation, entrepreneurship and start up.



Objectives of the Scheme

- (i) To support the sustainability and growth of MSEs by addressing common issues such as improvement of technology, skills and quality, market access, access to capital, etc.

- (ii) To build capacity of MSEs for common supportive action through formation of self-help groups, consortia, upgradation of associations, etc.
- (iii) To create/upgrade infrastructural facilities in the new/existing industrial areas/ clusters of MSEs.
- (iv) To set up common facility centres (for testing, training centre, raw material depot, effluent treatment, complementing production processes, etc). Many MSMEs are incompetent in collaborating with the right partner nor are unaware of the opportunities in this scheme. Though there are several agencies in relation to building collaborative competencies the reach to the real beneficiary clients is limited to the working capacity because of non-availability of exact information. Fear to collaborate in harnessing huge opportunities are also making a dent in the initiative of MSME clusters.

Rank	District	No .of Newly registered units in 2017-2018	Total Investment(In Lakh)	Total Employment Generated
1.	Palakkad	1907	13285.01	6391
2.	Eranakulam	1895	14180.13	6328
3.	Thiruvanthapuram	1656	9012.25	5559
4.	Thrissur	1836	11989.15	5202
5.	Malapuram	1243	12083.02	4520
Least performing districts in terms of Employment generated				
1.	Idukki	248	1300.05	692
2.	Wayanadu	302	1543.10	786
3.	Kasargod	347	2906.12	1200

Source: *Economic Review 2017 By State Planning Board, Government of Kerala*

In terms of employment generation, districts such as palakkad, Eranakulam, Thiruvanthapuram, malapuram are showing highest ranking among the 14 districts in Kerala. Idukki, Wayanadu, Kasargod districts are being least performing districts in Kerala in MSME sector in terms of employment generation and number of units registered every year.

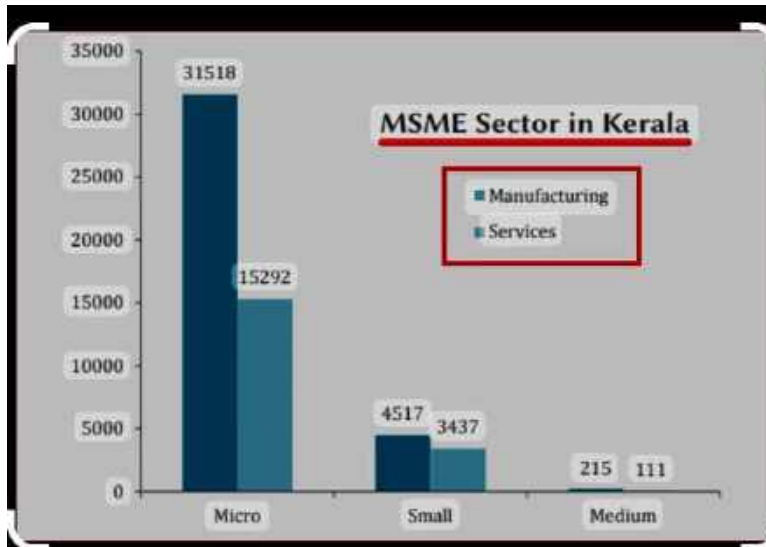
Objective of the Study

1. To analyse the impact of make in India programme on Kerala MSMEs.
2. To study the opportunity and challenges of the scheme in Kerala.
3. To Evaluate the awareness among entrepreneurs on make in India.

Methodology of the Study

The study is descriptive in nature and is based on secondary data taken from various government reports published by the government of India and other published reports.

Data Analysis and Interpretation



This graph shows the combination of MSE in Kerala in different sector such as manufacturing and services in micro sector 31518 are from manufacture and 15292 are from service sector it indicates higher denomination in manufacturing sector.

Table 2: MSME units registered in Kerala under each subsector

Subsector	No. of registered MSME units between 2015 and 2019
Agro and Food Based	11286
Textile and Garments	8308
General/Mechanical Light Engineering	7764
Wood	3461
Cement	1668
Printing and Allied	1590
Paper Products	783
Service	15138
Information Technology	1338

In this table shows MSME units registered in Kerala under each subsector. Largest leading sub sector is service 15138 units' and food based MSME units between 2015 and 2019 is 11286 units. Subsequently follows textile and garments, mechanical light engineering, wood industries, cement industries, printing and allied industries, information technology and paper products.

Suggestion and Recommendation

Research and Data Analysis: Conduct comprehensive research and data analysis to assess the actual impact of the "Make in India" initiative on MSMEs in Kerala. Gather data on employment generation, investment, and production in the state.

Sector-wise Analysis: Analyse the impact on specific sectors where MSMEs are prominent in Kerala, such as tourism, handicrafts, and agro-processing. Identify key challenges and opportunities within each sector.

Policy Alignment: Evaluate the alignment of Kerala's state policies with the goals of the "Make in India" initiative. Suggest adjustments to state policies to better support MSMEs.

Infrastructure Enhancement: Assess the state's infrastructure and identify areas where improvements can enhance the competitiveness of MSMEs. This may include transportation, power supply, and technology access.

Skill Development: Promote skill development programs tailored to the needs of MSMEs in Kerala. Ensure that the workforce is equipped with the necessary skills to thrive in the changing manufacturing landscape.

Access to Finance: Facilitate easier access to finance for MSMEs through government schemes or partnerships with financial institutions. This can help them invest in modern technology and expand their operations.

Export Promotion: Encourage MSMEs in Kerala to explore export opportunities by providing them with information, training, and support for international market entry.

Cluster Development: Promote the formation of industry clusters in Kerala to foster collaboration among MSMEs. Clusters can lead to economies of scale and shared resources.

Innovation and Technology Adoption: Encourage MSMEs to embrace innovation and modern technology by offering incentives and support for research and development.

Market Access: Facilitate better market access for MSMEs, both domestically and internationally, by reducing trade barriers and streamlining regulations.

Monitoring and Evaluation: Continuously monitor the impact of these recommendations and adjust policies as needed. Regular evaluations will help fine-tune strategies.

Promotion of Brand Kerala: Promote a unique "Made in Kerala" brand to differentiate products from the state and attract consumers who value local craftsmanship and quality.

Conclusion

The Make in India is hopefully accepted as an initiative which addresses not the macro level issues but the engineered and choreographed efforts of diverse sectors and its regulators could alleviate several challenges that might would not have ever addressed in a country like India otherwise. The initiative could help capitalize on the opportunities and has the potential to reduce the existing challenges.

A STUDY ON THE IMPACT OF OCEN ON THE FINANCIAL INCLUSION FOR MSMEs

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Abstract

MSME sector plays a predominant role in the development of the economy. Around 33% of GDP of the country is been contributed by the MSME sector. Moreover, it provides more than 100 million employment opportunities. Yet, they face hindrance in availing credit facilities due to lack of collateral and credit history and they also undergo huge formalities like producing data and documents, document verification, physical verification, interest rate finalisation based on subsidy eligibility. In order to remove these discrepancies incurred by the MSMEs, the Global Fintech Fest held in the year 2020 has introduced OCEN - Open Credit Enablement Network which was effective from the year 2023. This paper analysis the various prospects of OCEN and the impact of it on the enhancement of credit availability for the MSME sector. The paper also studies the impact of OCEN in the financial inclusion for the MSMEs.

Keywords: MSME, OCEN, credit, financial inclusion

Introduction

India lacks formal, affordable credit access. The current rails for the flow of capital to the untapped market are broken, which has prevented the massive market opportunity from being realized. They are damaged so that lenders can contact these potential borrowers and identify those who are creditworthy. High borrower acquisition costs and time-consuming custom tie-ups with loan originators are just two of the many reasons.

The marketplaces' attempts to match customers with lenders are broken. Both the manual processes and the custom integrations are expensive and time-consuming. Due to implementation difficulties, it takes a long time for loans to be deposited into customers' accounts, which limits their ability to offer specialized financial products quickly. Among the many duties handled by a lender today are sourcing, identity verification, underwriting, disbursement, recollections, and dispute management. In the past, the most successful lenders had to be exceptional at each of these abilities in order to increase their profit margins and serve the expanding markets.

OCEN

At the Global Fintech festival in July 2020, Infosys CEO Nandan Nilekani introduced the idea of OCEN. He mentioned the Open Credit Enablement Network (OCEN), which will make microcredit available to a previously underserved MSME sector by digitally connecting borrowers and lenders through marketplaces.

In a nutshell, OCEN is a protocol for the software infrastructure that connects all parties involved, such as lenders, loan service providers (LSPs), and borrowers. The LSPs that enable this interaction are typically eCommerce platforms or marketplaces.

OCEN is a project to decouple lending and enable the formation of specialized entities, each of which specializes in a specific task. So, in the future, we see lending as a collaboration between a number of companies, each concentrating on sourcing /distribution, identity verification, underwriting, capital arrangement, recollections, etc. Now, organizations like marketplaces that have strong business relationships with their clients (individuals or businesses) can integrate credit offerings into their applications. Previously known as "Loan Service Providers," these organizations are now known as Loan Agents (LAs).

Role of the Participants

Lender

The regulated entity that develops and is the owner of credit products is the lender. To serve the Borrower, they collaborate with other members of a Product Network. The loan agent collaborates with the lenders to develop the product while being aware of the borrowers' credit needs.

Loan Agent

The borrower's agent who will assist the borrower in selecting the best loan offer. For assisting the borrower in choosing the best loan, the borrower's agent will charge a fee. The term "loan agent" is broader and includes both Borrower Agent (BA) and Lender Service Provider (LSP), encompassing both the established DLG model known as LSP and the developing model in which BA serves as the borrower agent.

Derived Data Partner (DDP)

A network collaborator known as a "derived data provider" contributes to the network by giving the lender extra data to feed into their underwriting engine.

Collections Partner (CP)

A collaborator chosen by the Loan Agent (LA) to assist in the collection process is referred to as a Collections Partner. The lender is still free to choose the Collections Partner or to carry on with their current collection practices.

Disbursement Partner (DP)

Support for purpose-controlled products is the responsibility of a disbursement partner (DP). Within the OCEN journey, this partner will set up integration with suppliers, retrieve their catalog, and facilitate easy direct payments to suppliers.

KYC Partner

A coworker chosen by the Loan Agent (LA) is a KYC partner. For Assisted KYC or any other technology-related specialization offered on the network, this partner can be enlisted. The lender still has the option of using the KYC partner in the network or sticking with their current practices.

Implementation of OCEN

- Modifying the OCEN protocol for the business procedures and technology stack of digital platforms and lenders
- Creating a digital acquisition channel that includes the entire loan application process.
- Establishing partnerships in the fintech space with a variety of lenders, platforms, and the credit enablement ecosystem (eNACH, PAN verification, etc.)
- Creating underwriting models based on alternative data and cash flow.
- creating a business rules layer and analytics layer jointly with both parties.
- Creating a layer for borrower interaction and servicing in cooperation with both parties.
- Creating a layer for payment reconciliation

Financial Inclusion

The International Finance Corporation estimates that India's MSME market has a staggering \$400 billion credit gap. In India, the flow of credit to MSMEs has always been disrupted. Finding creditworthy borrowers is expensive for financial institutions due to the lack of formal data to underwrite MSMEs.

MSMEs also have very specific credit requirements. They frequently require smaller loan amounts, quicker repayment schedules, and easy access to funds. Banks can't afford to make small ticket size loans and typically take a long time to process their applications because underwriting MSMEs is complicated and expensive.

This system is improved by OCEN and Embedded Finance. Financial services can be provided by organizations that are close to borrowers. They could provide useful platform information for underwriting.

Benefits of OCEN for MSMEs

New Credit Products

Digital platforms that have a thorough understanding of their customers are able to perform what is known as specialized origination thanks to OCEN's facilitation of more

straightforward and efficient partnerships. By working with lenders who serve the interests of all parties (especially borrowers), they can offer in-context, tailored credit products with advantageous terms.

Financial Inclusion

Indian MSMEs (middle and small-sized enterprises) number 63 million. However, 11% of them qualify for loans from traditional lenders.

The others rely on loan sharks and non-banking financial institutions (NBFIs), who charge exorbitant interest rates. The remaining 89% of borrowers will be able to obtain credit with OCEN at a lower APR. Additionally, this will advance the objective of the unbanked population's financial inclusion.

Data Equals Loan

Small businesses are disregarded by lenders because they have no credit history. The widespread adoption of technology has made it easier for marketplaces and eCommerce platforms to access massive amounts of customer data.

Using this data, lenders can create strategies that are specific to the requirements of small businesses. For instance, an LSP may now check a merchant's GST data to assess their dependability and decide whether to lend to them.

Customised Credit

Small businesses have unique credit requirements. They require a brief, small loan with a quick repayment option. The conventional lenders, who preferred high-value clients, saw this as being unprofitable. With the arrival of OCEN, this will alter.

MSMEs would be able to get low-interest loans for small and large purchases. Additionally, rather than the borrower's balance sheet, LSPs and lenders will base their loan offers on the cash flow of the borrower. So, it will bring about much-needed change for the previously underserved MSME sector.

Daily Credit Availability

One cannot completely rule out intraday credit with OCEN in addition to the small loan. For instance, OCEN will soon make it possible for a Kirana store owner or another individual to obtain a one-day loan. It suggests that anyone who can repay a loan by the end of the day will be able to do so the following morning.

Low-Interest Rates

Lenders will be able to reduce their operational and loan processing expenses. Additionally, because the entire financing cycle will be completed online, LSPs and lenders will save time and money. They will be able to provide credit to a larger number of customers at lower interest rates as a result.

Growth for Everyone

LSPs, lenders, and borrowers will all cooperate to advance their own interests and the health of the economy. LSPs will nudge lenders to give their clients specialized credit options.

These tailored loans will be available to borrowers, who can use them to grow their businesses. Everyone will profit in the long run from this cash inflow.

Quick Loan Disbursement

Currently, banks and NBFCs process loan applications in about seven days. OCEN will be used to manage the entire loan cycle online, from loan origination through verification and approval.

The stakeholders will also exchange consent-based information about the borrower. It will speed up turnaround because this data has already been independently verified. As a result, the borrower will receive the loan quickly.

Security

The efficient exchange of data between all parties is the foundation of OCEN. The customer has given this transaction their full consent. The information will be protected by stakeholders. There are consequently fewer opportunities for data leakage.

Anytime a Credit

Once OCEN is operational, MSMEs will be able to apply for a loan in the morning and receive credit in the evening. Their loan application won't be delayed because of a weekend or holiday. They are free to apply for a loan at any time, any day, and will receive the money as quickly as possible.

Conclusion

OCEN has the potential to transform MSME lending in India if properly implemented. By utilizing the technological prowess of numerous stakeholders, including lenders, LSPs, and TSPs, the digital infrastructure that will be developed using the framework can facilitate better service for the MSME borrower. It will give MSMEs the freedom of choice along with a safe and convenient way to obtain formal credit. The loan application process will be made easier and quicker, and credit underwriting will be based on aspects like a company's ongoing cash flow rather than on antiquated techniques like credit history analysis. MSME and the nation's GDP will gain significantly over time from the implementation of OCEN.

MSMEs - A WAY TO POVERTY ALLEVIATION AND RURAL DEVELOPMENT

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Abstract

The Micro, Small and Medium Enterprises play a pivotal role in the economy of a country. They have emerged as key drivers of innovation, growth and employment. The rural development and poverty alleviation are the major challenges which hinder the growth of the country. In developing countries like India MSMEs are a major source of generating employment, creation of wealth and alleviating poverty. Each and every part of the country is responsible for creating nation's economic growth and prosperity. MSMEs paved the way to all categories of the people to engage in economic activities and thereby increase their standard of living. Thus, it helps to lift the weight of unemployment in the country. By generating employment and creating business opportunities MSMEs provide better earnings that translates to better quality of life of the rural people. As the earning capacity of the rural population increases it leads to the economic development of the region too. It also corrects the regional imbalances and disparities too. By increasing their buying capacity, they can live better and it also broadens their dreams and ambitions. This also enable them to expand their business to other parts of the world. Even though MSMEs are facing challenges like lack of finance, lack of technical knowhow etc. they are contributing a good share to the country's economy. If the government take supporting measures for strengthening MSMEs definitely the country's economy will grow. The present study is purely theoretical and based on secondary information only.

Keywords: MSMEs, Rural development, Poverty alleviation, Employment opportunities, Regional imbalances

Introduction

The MSME sector is a key driver responsible for driving the country's economic growth. Micro, Small, and Medium Enterprises (MSMEs) account for a significant portion of India's GDP and employ several thousands.

In India, there are approximately 63 million MSMEs, which contribute nearly 30% percent to the country's GDP. This underscores the importance of the MSME sector in the Indian economy and highlights the need for support.

Latest MSME Classification System in India 2023

The latest MSME classification system is based on business turnover, unlike the previous system, which was based on plant and machinery or equipment investment. Therefore, the classification of MSMEs has been revised to increase the turnover limit for each category and reduce the compliance burden of MSMEs.

Based on their annual turnover, the new classification system has 4 categories - micro, small, medium, and enterprises.

MSME Category	Turnover Limit (Annual)
Micro-Enterprise	Up to ₹5 Crores
Small Enterprise	Up to ₹50 Crores
Medium Enterprise	Up to ₹250 Crores

It is worth noting that the turnover limit for micro-enterprises has been increased by almost 5 times, while the limit for small enterprises has been increased by 10 times under the new MSME classification system. This allows for more flexibility and inclusion of businesses, promoting ease of business and encouraging growth and expansion of MSMEs in India.

Features of the New MSME Classification

The new system replaces the earlier system, which was based on the investment in plant and machinery, with the turnover-based criterion. Here are some of the key features of the MSME classification system.

- **Turnover-based Criterion:** Under the new system, businesses with an annual turnover of up to ₹250 Crores are classified as MSMEs. This change in criteria allows for more flexibility and inclusion of more businesses, which will benefit the economy as a whole.
- **Ease of Doing Business:** The new MSME classification system is designed to promote ease of doing business by simplifying the registration process and reducing the compliance burden. The new system also eliminates the need for businesses to provide multiple registrations.
- **Unique Identification Number:** This unique number will help access various government schemes and benefits and provide a single reference point for all regulatory and compliance purposes.
- **Incentives and Subsidies:** The government has announced several measures to support MSMEs, such as reducing the cost of credit, providing subsidies for technology upgradation, and offering tax incentives.

Role of New MSME Classification in India

The new Micro, Small and Medium Enterprises (MSME) classifications are designed to boost small businesses and entrepreneurs, the backbone of the economy.

Here are some of how the new MSME classification system is expected to promote entrepreneurship and self-employment in India.

Promoting Local Manufacturing: The new classification of the MSME system helps achieve the goal of Atmanirbhar Bharat (Self-reliant India). This is achieved by promoting local manufacturing and reducing dependence on imports. The government encourages them to produce goods locally and reduce imports by providing incentives and subsidies to MSMEs.

Realising the Potential of MSMEs: The new classification system helps realise the potential of MSMEs by providing them with easier access to credit, technology upgradation, and other forms of government support.

Access to Skilled Manpower: The government has launched several initiatives to address the skill gap in the MSME sector. These include the Skill India Mission, the Apprenticeship Act, and the Pradhan Mantri Kaushal Vikas Yojana, which aim to provide youth and workers with skill training and employment opportunities.

Government Support for MSMEs: The government has launched several schemes and initiatives to improve access to finance, technology, and a skilled workforce for small businesses. These include Credit Guarantee Scheme, Prime Minister's Employment Generation Programme, Technology Upgradation Programme, Skill India Mission and many more.

Role of MSMEs in Indian Economy

Since its formation, the MSME segment has proven to be a highly dynamic Indian economy sector. MSMEs produce and manufacture a variety of products for both domestic as well as international markets. They have helped promote the growth and development of khadi, village, and coir industries. They have collaborated and worked with the concerned ministries, state governments, and stakeholders towards the upbringing of rural areas.

MSMEs have played an essential role in providing employment opportunities in rural areas. They have helped in the industrialization of these areas with a low capital cost compared to the large industries. Acting as a complementary unit to large sectors, the MSME sector has enormously contributed to its socio-economic development.

MSMEs also contribute and play an essential role in the country's development in different areas like the requirement of low investment, flexibility in operations, mobility through the locations, low rate of imports, and a high contribution to domestic production.

With the capability and capacity to develop appropriate local technology, provide fierce competition in domestic and international markets, technology-savvy industries, a contribution towards creating defence materials, and generating new entrepreneurs by providing knowledge, training, and skill up-gradation through specialized training centres.

Poverty Alleviation through MSMEs

- MSMEs create employment that lift people out of poverty. The latest global estimate suggests that 11 percent of the world's population, or 783 million people, lived below the extreme poverty threshold in 2013.⁵ Most of the poor in developing countries are not employed or do not earn enough to lift themselves out of poverty. Job creation in the private sector has proven to be a main driver in the fight against poverty. Over the past 30 years, the private sector has contributed to a sharp

decline in the share of the population in the developing world living below the poverty line from 52 percent to 22 percent

- MSMEs contribute significantly to the employment creation process of the private sector. In emerging markets, 4 out of 5 new positions in the formal sector were created by MSMEs, which is about 90 percent of total employment.
- Informal enterprises engage poor and marginalized populations. In lower income economies, a large share of MSMEs are informal enterprises and serve as a source of livelihood for the base of the pyramid population, consisting of 4 billion people that earn less than US \$3000 a year.
- It is estimated that more than 70 percent of the workforce in developing countries operates in the informal economy either through self-employment or from work in enterprises that are not legally registered businesses
- Given the flexibility of the informal economy, it provides opportunities for the poor, including women and youth, to earn money. According to the International Labour Organization (ILO), the majority of those employed in the informal economy lack social protection, rights at work and decent working conditions.
- Informal enterprises offer an avenue for interventions to formalize MSMEs and to provide access to social protection for those that they employ. Given the scale of informal employment, particularly in developing economies, support in formalizing MSMEs would be a step to achieving Goal 1. Individual MSMEs have the potential to adopt actions in their business practices to contribute to the goal. They can set and enforce strict policies and practices that do not discriminate against the poor
- MSMEs can also recruit, train, and employ local community members, including those living in poverty, and integrate them into the MSME value chain.

New business models/solutions of MSMEs that will help achieve the SDGs. The ambitious push for eliminating poverty through the SDGs offers a new range of business models and opportunities that are being tapped by the private sector, including MSMEs. Although the purchasing power of the poor is limited, the cumulative effect is large. According to a report by the World Resources Institute (WRI), the base of the pyramid has substantial UNDESA – Report on MSMEs and the Sustainable Development Goals 5 purchasing power, constituting a \$5 trillion global consumer market.

They offer a market that is increasingly being connected by mobile phones. The scale of the market and mobile phone penetration provides opportunities for market-based solutions in delivering services that will lift people out of poverty. There are encouraging entrepreneurial ventures, for example, providing affordable water filters or home treatment systems so that households can purify water for themselves, offering low-cost solar-powered lighting systems that can provide a few hours of light in the evening.

Rural Development through MSMEs

Micro, small and medium enterprises (MSMEs) are said to be the backbone of the Indian economy. Rightly so, the contribution of Indian MSMEs to Gross Value Added (GVA) in the country's GDP in FY20 stood at 30% while the sector's contribution in manufacturing segment revolved around 37% in the same year. In short, MSMEs contribution in the growth of Indian economy, especially the role of MSME in rural development has been unmatched in last few year.

When it comes to MSME and rural development, there is the valuable role of small-scale industries in rural India, and the contribution of the cottage industry. Traditional businesses such as cotton weaving, silk weaving, handicrafts, etc., have been instrumental in the growth of the region, by ways of eradicating poverty, generating employment, contributing towards economic growth and so on.

How do MSMEs Promote Rural Development?

MSMEs have a big role to play in rural development. They help rural population and facilitate development in various ways. Here is how:

Employment Generation

MSMEs in rural areas create employment opportunities for youth in the nearby villages. Apart from direct employment, the business also creates opportunities for other businesses indirectly.

For example, a small-scale food manufacturing unit in the village generates employment for workers in the factory. Additionally, it also creates opportunities for allied sectors such as local raw material suppliers, machinery and tool manufacturers, logistics and transport service providers, and so on. As the rural population gets employment and business, it helps in eradicating poverty in the region. In other words, MSME sector acts as tool for poverty eradication.

Government schemes, like the ASPIRE scheme of 2015, is centred around supporting entrepreneurship in agro-based businesses in rural India for employment generation and economic development.

Making Workforce Employable

Many a times, MSMEs provide initial training to enable the local workforce to undertake specific jobs. This gives local people an opportunity to learn new skills and be relevant with current time and age.

For example, the local workforce may not have the skills required to work on a new high-tech machine. However, with training they can be taught and acquire new skills and be ready for this job and similar opportunities. Also, it helps the workforce to be more employable in the future and grow in their careers.

Economic Development of the Rural Area

By generating employment and creating business opportunities, the role of small-scale industries in rural India development is enormous. They provide better earnings that translates to better quality of life for the rural population. As the buying capacity of the rural population increases, it leads to the economic development of the region too.

Getting Recognition on the Global Map

The MSME sector, especially the cottage industry like saree weaving, carpet weaving etc., are classic examples of family run businesses (or generational businesses).

Generally, the entire family is engaged in the business and in some cases, the whole village. Through the arts, the artisans' creativity gets exposure in the national and global markets. Many traditional sarees such as Banaras silk from Uttar Pradesh, Kanchipuram silk sarees from Tamil Nadu, Paithani from Maharashtra, etc., are known for delicate work. They are not only popular in the country but are also exported globally.

Generating Foreign Exchange

As mentioned, many MSMEs in the rural sector are engaged in exports and generate foreign exchange, in turn helping the national economy to grow. For example, India is the 5th largest exporter of leather goods and accessories, according to Invest India. Leather exports reached \$4.03 billion in FY 2020-21. Each exporting MSME has contributed to reach this milestone.

Self-reliance or Aatmairbharata

As the MSMEs in the rural areas mostly source raw materials and workforce locally, they are aligned with the central government's mission of self-reliant India or Aatmanirbhar Bharat.

How Can Your Business Help Rural Development?

Source locally: Procurement strategy of sourcing locally can help your business to be cost effective. Additionally, you generate business for another local/rural business and help it grow too.

Hire local workforce: You can hire local talent. If the need be, they can undergo training to acquire new skills for the job. Many large companies having manufacturing units in the rural region have a policy of acquiring a certain percentage of talent from the local area.

Collaborate with rural businesses: Instead of competition, forge collaborations with alike or complementing businesses in the region. This will help you as well as other businesses grow and expand.

A Look at the Schemes & Programmes Initiated by the Ministry of Micro, Small & Medium Enterprises

To foster the growth and development of the MSME sector, the **Ministry of Micro, Small and Medium Enterprises** has been implementing various schemes and programmes **encompassing a wide range of areas**, including:

- Credit support;
- New enterprise development;
- Formalisation;
- Technological assistance;
- Infrastructure development;
- Skill development and training; and,
- Market assistance to MSMEs.

The **Schemes/Programmes Initiated & Implemented** by the Ministry Inter Alia Include:

- Prime Minister's Employment Generation Programme (PMEGP);
- Credit Guarantee Scheme for Micro and Small enterprises (CGTMSE);
- Micro and Small Enterprises-Cluster Development Programme (MSE-CDP);
- Entrepreneurship Skill Development Programme (ESDP), and,
- Procurement and Marketing Support scheme (PMS) and National SC/ST Hub (NSSH)

The government has recently taken several steps to provide support to the MSME sector to bolster its growth, including:

1. Rs. 5 lakh crore Emergency Credit Line Guarantee Scheme;
2. Rs. 50,000 crore equity infusion through the MSME Self-Reliant India Fund;
3. The inclusion of Retail and Wholesale trades as MSMEs.
4. An online portal **Champions**, a platform for resolution, redressal and remedies, a facility provided by the Ministry of Micro, Small and Medium Enterprises for ensuring a speedy, convenient, and effective redressal of MSMEs grievances,
5. Non-tax benefits for upward changes in MSME status; and,
6. The RAMP, (Raising and Accelerating MSME Performance Program)
7. The **launch of the Udyam Assist Platform (UAP) on January 11, 2023**, has been another significant measure taken by the government, which aims to bring **Informal Micro Enterprises (IMEs) under the formal ambit, enabling them to avail benefits under Priority Sector Lending (PSL).**

The contribution of micro, small and medium enterprises to India's economic growth is well- documented. A report by consultancy **KPMG**, a multinational professional services network and **CII**, the Confederation of Indian Industry, states that:

- The MSMEs account for nearly 30% of India's GDP and 45% of her exports;
- Play a crucial role in socio-economic development;
- Are providing employment to 110 million people;
- Are playing a major role reducing inequalities;

- Playing an important role in rectifying regional imbalances;
- Providing low-cost raw material to support large industries and allied sectors; and,
- Bridging the rural-urban divide.

Conclusion

MSMEs play a significant role to the growth of developing countries like India. It brings out many changes to the rural folk and helps them to improve fast. By getting engaged in various activities they can earn more and this will pave the way for poverty eradication. Unemployment is the major evil prevailing in our country. Creation of employment opportunities is one of the goals of MSMEs. Enhancing production in rural areas and reducing regional imbalances make the rural region to grow fast. The various support and assistance from the part of government will make it easier to achieve the goal of MSMEs.

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ROLE OF MSME'S IN SUSTAINABLE DEVELOPMENT

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Abstract

In terms of economic growth, job creation, and poverty elevation, reduction in inequality, Micro, Small, and Medium Enterprises are widely recognised as key contributors to preserving sustainable development. MSMEs, often known as "growth engines," are critical for developing nations' economies, such as India's, since they have the ability to create a large number of jobs. This sector has piqued policymakers' interest since it is labour-intensive and has the ability to alleviate regional disparity, guarantee financial autonomy for rural people, and aid in long-term development. Micro, Small, and Medium Enterprises (MSME) in India are widely regarded as critical to the country's economic progress in the twenty-first century. The present paper will concentrate on the MSME market situation and trends in India. This essay examines the MSME sector's present state, its performance, and the challenges it faces in the Indian economy.

Keywords: MSME, growth, Sustainable, government, challenges

Introduction

In India, MSMEs contribute nearly 8% of the country's GDP, around 45% of the manufacturing output, and approximately 40% of the country's exports. It won't be wrong to refer them as the 'Backbone of the country.'

The Government of India has introduced **MSME or Micro, Small, and Medium Enterprises** in agreement with Micro, Small and Medium Enterprises Development (MSMED) Act of 2006. These enterprises primarily engaged in the production, manufacturing, processing, or preservation of goods and commodities.

MSMEs are an important sector for the Indian economy and have contributed immensely to the country's socio-economic development. It not only generates employment opportunities but also works hand-in-hand towards the development of the nation's backward and rural areas.

Review of Literature

Ch Hema Venkata Siva Sree(2019)in her paper entitled, "MSMEs in India growth and challenges" has made a study to know the current status and growth of MSMEs in India and to study the impact of MSMEs on employment generation in India. The study had found that growth of MSMEs in rural areas i.e. 51% are more when compared to urban areas ie, 49%.

Meera Omkar Shetty & Ganesh Bhat S. in their paper entitled, “A Performance analysis of Indian MSMEs” has made a study to know the role of MSMEs in the Indian economy, and two, to do the Strengths, Weaknesses, Opportunities, and Challenges (SWOC) analysis, for understanding the internal and external factors which influence the MSMEs. The study found that The study observes that there is parity between rural and urban areas. At present, MSMEs provide 110 million employments, out of which 76% are male and 24% female based on gender.

Dr. P. Mariselvam(2021) in his paper entitled “Role and Performance of MSME Sector in India” has made an study to assess the performance of MSME sectors in India and to analyse the role of MSME Enterprises in rural and urban areas. The findings of the study states that MSME sector has been creating 11.10 core jobs (360.41 lakh in Manufacturing, 0.07 lakh in Non-captive Electricity Generation and Transmission, 387.18 lakh in Trade and 362.82 lakh in Other Services) in the rural and the urban areas across the country.

Subramanian et al (2019) has pointed that the importance of MSME has been recognized in recent years in both developed and developing countries for its significant contribution in gratifying various socio-economic objectives such as higher growth of employment, output, promotion of exports and fostering entrepreneurship. They play a crucial role in the industrial development of any country.

Objectives

The primary objective of the research is,

- To study the role of MSME in the development of the Indian economy.
- To study the recent developments in MSME sector.

Role of MSMEs in Indian Economy

Since its formation, the MSME segment has proven to be a highly dynamic Indian economy sector. MSMEs produce and manufacture a variety of products for both domestic as well as international markets. They have helped promote the growth and development of khadi, village, and coir industries. They have collaborated and worked with the concerned ministries, state governments, and stakeholders towards the upbringing of rural areas.

MSMEs have played an essential role in providing employment opportunities in rural areas. They have helped in the industrialization of these areas with a low capital cost compared to the large industries. Acting as a complementary unit to large sectors, the MSME sector has enormously contributed to its socio-economic development.

MSMEs also contribute and play an essential role in the country's development in different areas like the requirement of low investment, flexibility in operations, mobility through the locations, low rate of imports, and a high contribution to domestic production.

With the capability and capacity to develop appropriate local technology, provide fierce competition in domestic and international markets, technology-savvy industries, a contribution towards creating defense materials, and generating new entrepreneurs by providing knowledge, training, and skill up-gradation through specialized training centers.

Classification of enterprises into micro, small and medium enterprises (in Rs)

Kind of enterprise	Act of 2006		Bill of 2018
	Manufacturing	Services	All enterprises
	Investment towards plant & machinery	Investment towards equipment	Annual Turnover
Micro	25 lacs	10 lacs	5 Cr
Small	25 lacs to 5 Cr	10 lacs to 2 Cr	5 Cr to 75 Cr
Medium	5 Cr to 10 Cr	2 Cr to 5 Cr	75 Cr to 250 Cr

Highlights of New MSMEs

‘AtmaNirbhar Bharat Abhiyan’ or the Self-Reliant India Scheme of 2020 by the Government of India has given a new definition for MSMEs.

Following are A Few Highlighting Features of New MSMEs -

1. A provision of Collateral Free Loans to MSMEs
2. An arrangement of loans to MSMEs worth of Rs. 3 lac crores
3. An offer for MSMEs to get a Moratorium period of 12 months
4. Consideration of Manufacturing and Service MSMEs as the same entities
5. MSM is a granted a repayment Tenure of 48 months
6. MSMEs are assured a 100% Credit Guarantee
7. Reclassification of MSMEs will benefit approximately 45 Lac units.

Recent Development in MSME Sector

Continued Digital Adoption

Digitalisation is the transition to using digital technologies to modify an existing business model and it can offer fresh prospects for generating revenue and value-producing opportunities. The COVID-19 pandemic facilitated a significant shift in the MSME ecosystem from the traditional approach to the digital medium. CRISIL reports that 53% of SMEs and 47% of micro-enterprises in India adopted digital sales platforms as against the pre-COVID figure of 29%.

MSMEs in various sectors can accelerate their digitalisation journey to improve efficiency, productivity, and skills. In 2023, this momentum will continue, with many

businesses projected to adopt the digital model amidst the Government's Digital India mission. The Textile Sector and Gems & Jewellery sector are among the leading MSME sectors to embrace the 'big digital shift'. A survey by the Endurance International Group states that 50% of them incorporated technologies like WhatsApp and Video Conferencing tools for daily business operations.

Formalisation of More MSMEs

Formalisation - or legal registration of businesses - can help unrecognised or uncategorised MSME businesses to become a recognised entity and therefore gain access to resources such as government schemes, business credits, and tax benefits.

UDYAM REGISTRATION Portal is targeted to reach a 5 crore registration count in 2023, nearly 4x estimated growth in 12 months. This will open the gates to formal and affordable credit to registered MSMEs," Mr. Swain added. According to him, the Government is also working to connect every district of the country by setting up enterprise development and technology centres. He also stated that, with the slew of policy interventions, the MSME sector has the potential to become the largest employment-generating sector by 2035.

Increasing the Number of Exports from India

India's trade and external sector has a significant impact on the GDP growth and expansion in per capita income. India is among the world's largest producers of milk, pulses and jute and the second largest producer of rice, wheat, fruit and cotton, groundnut, sugar, and vegetables. It is also one of the leading producers of spices, fish, poultry, livestock and plantation crops. Most of these are run in small production units.

Reducing Dependency on Imports

MSMEs can contribute greatly towards reducing imports and enhancing exports. In 2023 and the coming years, the Government is on a mission to implement Make in India more actively to reduce importing goods and products from foreign countries. The Make in India programme aims at utilising the existing Indian talent base, creating additional employment opportunities and empowering the secondary and tertiary sectors. The programme also aims at improving India's rank on the Ease of Doing Business index by eliminating unnecessary laws and regulations. It also makes the bureaucratic processes easier, making the Government more transparent, responsive and accountable.

Increased Consumer Demand in India

Consumer demand depends on buying power, representing an individual or household's ability to make purchases. It's all about the consumer's behaviour on how much money they'll put back into the economy when spending on shopping, restaurants,

amusement parks, etc. If prices decline, consumers have greater buying power, whereas when inflation occurs, prices of goods and services go up, and consumers have less buying power. Consumer demand will continue to drive India's growth story in 2023. A report from Fitch Solutions states that consumer spending in India will experience solid growth over 2023 with buying power of household expected to grow by 7.1% in 2023 compared year on year to 2022.

Conclusion

The MSME sector in India is growing at good pace & even is providing employment opportunities to masses of the people. The contribution of Manufacturing Sector as well as Service Sector of MSMEs is significant to the total GDP of the Country. The Govt. of India has taken number of initiatives & is in the process of gearing up the growth of Micro, Small & Medium Enterprises in the country. The Govt. of India so making number of tie-ups & agreements with the NGOs, Governmental agencies as well as with the Universities for making it sure that proper implementation of Governmental policies for setting up of MSMEs is there & entrepreneurs are properly guided for starting their ventures. But still MSMEs are facing many challenges.

MSMEs can avail of various schemes or benefits aimed at financial assistance, technology upgradation and assistance, infrastructure development, skill development and training, enhancing competitiveness and market assistance of MSMEs. The tech adoption and increasing raw material prices both of which require MSMEs to invest more in the businesses. Also, the need to ramp up domestic production to meet the increasing market demand and economic growth plans (\$5 trillion), leads MSMEs to enhance their production.

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A STUDY ON AWARENESS TOWARDS MSME SERVICES PROVIDED TO THE ENTREPRENEURS - WITH SPECIAL REFERENCE TO POLLACHI TALUK

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Abstract

In today business world MSME provide number benefits to the entrepreneurs especially for new generation entrepreneurs. The main objectives of research are to study the awareness about MSME among the entrepreneurs. Most of the entrepreneurs are having awareness about the schemes availed among the entrepreneurs. There are number of schemes which is provided by to the entrepreneurs like seedmoney support and startups etc. This study will helps to create awareness about financial support and various schemes availed for new generated as well as existing entrepreneurs. The main objective of the study is to identify the awareness towards schemes availed to new generation as well as existing entrepreneurs. The statistical tools used in this study are simple percentage and chi-square test. The main findings of the study are: most of the respondents are male and majority of the respondents are married and most of respondents are aware about the schemes availed from the government. It is suggested that the government may conduct various programmes about the various schemes provided by the government.

Introduction

Entrepreneurship is an important driver for creating employment opportunities, boosting innovations, and thereby fueling growth. The government of India has taken a large number of initiatives since 2014 which are changing the mind-set of people to foster the spirit of entrepreneurship. The earlier challenges in terms of access to credit, market linkages, space and network, and mentors are being made available through programmes like Start-up India; Ease of Doing Business; Stand Up India, MUDRA, and Atal Innovation Mission. An increasing number of tech-based start-ups in the area of Journal of Entrepreneurship and Management Submitted, e-commerce/m-commerce, financial services, ITES, etc., are emerging, making India the third largest start-up ecosystem in the world. For instance, the Byju's Learning App started in July 2015 as a start-up has become a unicorn within 3 years of its launch. First, according to Maresova (2010), there are cultural factors which discourage too many people from starting a business. Hence, there is a need to develop a more entrepreneurial culture, starting with young people, and from school education as stated by Medarova et al., (2012). Also, there is too often a stigma attached to failure. Second, the administrative requirements are often a major factor in putting entrepreneurs off as opined by Hajek et al., (2013). Third, entrepreneurs need to find it easier to attract investors as put forward by Puzova and Maresova (2014).

Review of Literature

Dalbery (2011) highlighted that MSMEs are often thwarted by an inefficacy to attain financial capital for expansion and growth and advance intercessions to cover the gap in financing. The author suggests charting out roles of contribution for multilateral actors and the public.

Nagaraja and Murthy (2010) suggested that the government of India has to establish a board for signifying procurement policy and development frameworks in order to make the sector a significant and a vibrant player in the development of the Indian economy.

Ardichvili et al. (2003) theorize the identification process of opportunity. The entrepreneur's social networks, personality traits, and prior knowledge as precedents of entrepreneurial alertness to business opportunities are identified. Entrepreneurial alertness is an important prerequisite for the success of identification of the opportunity; development, recognition, and evaluation. A theoretical model, a set of propositions, laws of interaction, and suggestions for further research are provided.

Gupta (1998) highlighted that in India government bodies/organizations like SIDBI, IDBI, and NABARD, etc., are providing both financial and non-financial support required by the smallscale cottage and industries. These organizations are found to have been playing very significant role in the development of small-scale and cottage industries, in particular, through financial assistance and consultancy services.

Objectives of the Study

Objectives of the study is:

1. To identify the awareness towards various Services offered by MSME to entrepreneurs.

Scope of the Study

This study will cover the awareness about the various schemes availed for new generated as well as existing entrepreneurs provided by the government.

Methodology

For the purpose of the study both primary and secondary data are utilized. Primary data have been collected from entrepreneurs by distributing questionnaire to them.

Secondary data have been collected from journals, magazines, newspaper, books and websites.

Convenient sampling method has been adopted for collecting primary data.

Of the 110 questionnaire distributed to entrepreneurs, 100 were found complete in all respect and they are considered for the study.

Regarding period of the study, it has been carried out during the financial year 2022 - 2023.

Limitations of the Study

The data being primary nature, limitations applicable to primary data are equally applicable to present study. The sample is limited to entrepreneurs. The study is confined to Pollachi taluk and hence utmost care should be taken before generalizing the results.

Profile of E-Entrepreneurs

The demographic profile of entrepreneurs include variables such as age, gender, marital status, educational qualification, annual turnover, age of business, size of business, nature of business, nature of e-business and experience in e-business. It is presented in table 1.1.

Table 1.1 Profile of E-Entrepreneurs

Particulars	Numbers	Percentage
Age		
Up to 40 years	40	40.00
41 to 46 years	50	50.00
Above 46 years	10	10.00
Gender		
Male	60	60.00
Female	40	40.00
Marital status		
Married	60	60
Unmarried	40	40
Educational qualification		
Diploma	30	30.00
Under Graduate	40	40.00
Post Graduate	20	20.00
Professionals	10	10.00
Annual turnover (Rs.)		
Up to Rs.1 crore	50	50.00
Rs.1 - Rs.2 crore	40	40.00
Above Rs.2 crore	10	10.00
Age of business		
Up to 20 years	40	40.00
21-33 years	30	30.00
Above 33 years	30	30.00
Particulars		
Size of business		

Small	40	40.00
Medium	30	30.00
Large	30	30.00
Awareness about assistance provided by government		
Aware	40	40.00
Unaware	30	30.00
Partly known and partly unknown	30	30.00

Source: Primary data

N=100

Table 5.1 shows that, majority of the entrepreneurs (50.00%) belong to the age group up to 41-46 years. Majority of the entrepreneurs (60.00%) are male. Regarding marital status, majority of the e-entrepreneurs (60%) are married. E-entrepreneurs with under graduate qualification constitute 40%. Majority of the entrepreneur's annual turnover (50.00%) is up to crores. Regarding age of the business most of the entrepreneurs (40%) are in the age group upto 20 years. Regarding size of business, small (40%). Majority of the e-entrepreneurs (40%) are having awareness towards financial assistance provided by the government.

Findings, Suggestions and Conclusion

Findings of the Study

The findings of the study are as follows

- Majority of the entrepreneurs (50.00%) belong to the age group up to 41 -46 years.
- Majority of the entrepreneurs (60.00%) are male. Regarding marital status.
- Majority of the e-entrepreneurs (60%) are married.
- E-entrepreneurs with under graduate qualification constitute 40%.
- Majority of the entrepreneur's annual turnover (50.00%) is up to crores.
- Regarding age of the business most of the entrepreneurs (40%) are in the age group upto 20 years. Regarding size of business, small (40%).
- Majority of the e-entrepreneurs (40%) are having awareness towards financial assistance provided by the government.

Suggestions of the Study

The following are the suggestions of the study are as follows:

1. Government may organize motivational programmes like workshop, conference and seminars to the various groups of entrepreneurs.
2. Government may take measures for better enforcement of cyber laws to protect online shopping consumers.

Conclusion

MSME development is very important and crucial for the development of industries, achieving sustainable growth and creating inclusive growth for MSMEs in India. This research found out that problems faced by MSMEs in India are access to financial or capital and managerial capacity. But it is imperative that access to capital or finance alone is not sufficient to attain entrepreneurial development. Therefore, the finance obtained by FIs should be capable of being managed. It is not important to have access to necessary information as to what he/she should do; the money would go down the drain. With this study, it can be concluded that MSMEs entrepreneurs are more satisfied with financial support and also with other facilities provided by the SIDBI.

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STRATEGIES FOR SUSTAINABLE DEVELOPMENT IN INDIA - AN OVERVIEW

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Abstract

Sustainability is a long-term vision of commitment or goals, while the process or way to achieve those goals is known as sustainable development. Sustainability is a multidimensional concept, and it often describes the concept of sustainable development through four key components. They are society, culture, environment, and economy. This paper covers the concept of sustainable development, its need in India, Sustainable development goals, and Indian Government Initiatives in Sustainable development and strategies for sustainable growth. The secondary data used to describe the concept is collected from various websites. Sustainable development brings stability to the environment and it has to be kept in mind that the use of eco-friendly technologies and resources won't harm the environment and it is time for the global community to act upon their responsibilities to promote sustainable development.

Keywords: Sustainable development, Society, Environment, Economy, Cultural

Introduction

Sustainable Development means development that meets the needs of the present without compromising the ability of future generations to meet their own needs. The concept of sustainable development is the process of sustaining economic growth over time without lowering the standard of living for future generations. It was first mentioned in the 1980 World Commission Strategy report by the IUCN (International Union for the Conservation of Natural Resources). Sustainability is based on ensuring that the current generation leaves a legacy of quality of life for the next generation. Sustainable development is observed as the mutually beneficial interaction between the legal interest of a business and the economy, government and politics, and civil society, and culture.



Core Elements of Sustainable Development

• Environmental Sustainability

Environmental sustainability supports the preservation and wise use of nature by preventing it from being used as an endless source of resources. Environmental sustainability is achieved by a variety of factors, including water conservation, renewable energy investment, support for sustainable transportation, and innovation in sustainable building and architecture.

• Social Sustainability

It can promote gender equality, the growth of individuals, groups, and cultures, and the spread of healthcare, education, and a tolerable standard of living worldwide.

• Economic Sustainability

It emphasises equitable economic growth that creates wealth for all while minimising environmental damage. investment and equitable allocation of financial resources. destroying poverty in all of its manifestations and dimensions.

Need of Sustainable Development in India

Achieving economic development is an essential factor for a country. There are certain issues that pose a threat to the sustainable development of India. Some of those issues are:

Environmental issues	Economic issues	Social issues	Cultural issues
• Biodiversity loss • Himalayan urbanisation • Lack of waste management • Resource depletion • Air quality issues • Environment degradation • Hamper in the ecosystem	• low income per capita • Dependency of huge population • Heavy population • Unemployment • Slow improvement • Lack of industries • Poor human capital	• Corruption • Illiteracy • Poverty • Women's safety • Sanitisation • Lack of education • Healthcare issues	• Caste system • Gender inequality • Communism • Child abuse

Sustainable Goals

This plan was created with the goals of preserving the environment, eradicating poverty, and bringing prosperity and peace to all people by the year 2030. the following are some of the 17 SDGs:



Policy Initiatives of Government for Sustainable Development

The government of India has framed policies in the direction of achieving SDGs. These include Swachh Bharat mission, BetiBachaoBetiPadhao, Pradhan MantriAwasYojana, Smart Cities, Pradhan Mantri Jan Dhan Yojana, Deen Dayal Upadhyay Gram Jyoti Yojana and Pradhan MantriUjjwalaYojana, among others.

Strategies for Sustainable Development

- 1. Deployment of Non-conventional sources for energy:**India mainly relies on thermal and hydroelectric power facilities to meet its power needs. For the operation of their industries, factories, machinery, transportation, and other systems, nearly every nation is reliant on the utilisation of natural gas, coal, and fossil fuels. These conventional energy sources end up being the main cause of pollution and global warming because they generate such large amounts of carbon and greenhouse gases. Consequently, the most effective way to support sustainable development has been to invest in renewable energy sources. Alternative, cleaner energy sources that can be used in place of more conventional ones include solar energy, wind energy, and hydropower.
- 2. Installing Mini-hydel Plants:**In mountainous areas, streams are prevalent and can be used to establish/install mini-hydro plants. Mini-hydel plants utilize the energy of streams to propel turbines that generate electricity or power, which are powered by the energy of perpetual, perennial, or all-year-round streams. They are environmentally friendly since they don't alter land-use patterns or interfere with water flows while producing enough electricity to meet local needs.
- 3. Cleaner fuel use in both rural and urban regions:**Rural households use wood, animal waste, and other biomass as fuel. Urban households use gas, oil, and electricity. As a result of this fuel consumption, there are a number of negative impacts, including deforestation, a decrease in green cover, and air pollution due to cattle dung. To deal with this issue, LPG and gobar gas are being promoted. Subsidised LPG is available, and subsidies and low-interest loans are provided to

promote gobar gas plants. The use of these fuels reduces pollution significantly and is environmentally friendly. Indian transportation is heavily dependent on petroleum products, which emit a lot of CO₂ and pollute the environment. CNG (Compressed Natural Gas) has significantly reduced air pollution over gasoline and petroleum since it is an environmentally friendly and cleaner fuel.

4. **Utilisation of bio-compost:** After the green revolution, Indian farmers shifted to the use of chemical fertilisers while ignoring the use of compost to improve agricultural output and production. A rise in the use of chemical fertilisers, or excessive use of chemical fertilisers, has not only harmed land fertility/productivity but has also contaminated water sources, including groundwater. Due to the increased demand for organic food, farmers have now become aware of the use of compost and have started to use compost made from organic wastes, which maintains and improves soil productivity and does not contaminate food. Cattle are maintained in certain areas of the country only for the production of dung, which is an essential fertiliser and soil conditioner.
5. **Biopest control:** With the advent of the green revolution, the use of chemical pesticides for higher yields has increased, which not only contaminates food items but also pollutes soil and water bodies, including groundwater. The use of plant-based pesticides is being promoted. Neem-based pesticides are environmentally friendly and have no adverse effects. Measures are being taken to improve public knowledge about the use of different animals and birds (such as snakes, lizards, owls, and peacocks) in controlling pests. The practice of mix cropping of producing various products on the same ground in consecutive years has also helped the farmers in sustainable development.
6. **Traditional practices and knowledge:** Traditionally, Indian people have been connected to their environment. All agricultural, healthcare, housing, and transportation practices were environmentally friendly. However, the traditional system are gone away as a result of modernisation. It has caused damage to the ecosystem and our rural heritage. India is well known for its traditional AYUSH treatment, which includes approximately 15,000 plant species with medicinal properties that are very effective in treating chronic medical problems. But, because of the western treatment system, these traditional systems of Unani, AYUSH, etc., are now being ignored by people. Therefore, it is essential to use the old systems as they are environment friendly, do not involve large-scale industrial and chemical processing, and are relatively free from different side effects.
7. **Awareness among individuals:** Environmental degradation is a threat to India's ecosystem that can only be solved with people's participation. People do their best to safeguard assets for future generations at the micro-level/family level, but at the

macro-level/national level, they do not consider the protection of natural wealth/resources for future generations. There is an urgent need to raise the public's awareness about the dangers of population growth or environmental degradation, as well as the rational use of natural resources and how each individual can contribute to preventing environmental degradation. It will almost definitely minimise further environmental degradation and will lead to sustainable development.

Future of Sustainable Development

Sustainable development practices help countries and businesses grow in ways that adapt to the challenges posed by climate change. This protects important natural resources for our current and future generations and allows communities to thrive. By the year 2050, it is estimated that our global population will likely reach 9 billion people. Sustainable development is necessary to maintain a livable world for each of these people.

Conclusion

Sustainable development stabilizes the environment's requirements. As a result, future generations will be able to use the resources. The sustainable development movement is a wonderful method for conserving nature's resources. It can be done by using eco-friendly technologies and resources that won't have a serious impact on the environment. The resources that are available to us shall be used in a sustainable manner so that they do not become extinct for the usage of future generations. The resources that are available to us shall be used in a sustainable manner so that they do not become extinct for the usage of future generations.

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FINANCIAL INCLUSION FOR MSMEs

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Abstract

This study aims to analyze the impact of financial inclusion on the performance of micro, small and medium enterprises (MSMEs) and examine the mediating role of financial intermediation and accessibility capital. The results of this study show that financial inclusion affects MEME performance both directly and indirectly through financial intermediation and access to capitalism. which means that increasing access to finance for MSMEs followed by increased financial intermediation in the form of access to financial services for MSMEs will improve MSME.

Introduction

This study aims to analyze the impact of financial inclusion on the performance of micro, small and medium enterprises (MSMEs) and examine the mediating role of financial intermediation and accessibility capital. However, many MSMEs want to maintain small-scale operations, which is why their lack of capacity and finances are not of particular importance. In this case, policy instruments designed to support the growth of small businesses are likely to have little or no impact on these businesses. The results of this study show that financial inclusion affects MEME performance both directly and indirectly through financial intermediation. and approach capitalism. meaning that improving access to finance for MSMEs, followed by improving financial intermediation in the form of access to financial services for MSMEs, will improve MSME business performance. This means that improving access to finance for MSMEs, followed by increased financial intermediation in the form of access to financial services for MSMEs, will improve their performance.

The main objective of the study is to understand the function of financial goods and services in mediating the link between access to finance and the growth of micro, small and medium enterprises (MSME) in developing markets. Therefore, this article aims to see whether the use of money goods and services in a developing country like India mediates the link between access to finance and MSME growth or not. Data were collected from 392 MSMEs of Jammu region using cross-sectional research method. The exclusive study collected data from MSMEs in the Jammu region of India. This result can still be confirmed in other emerging economies. MSMEs can participate in financial inclusion initiatives launched by organizations for better utilization of financial services.

Impact of Financial Inclusion for MSMEs:

- **Increased Financial Stability**

Improved financial stability is a result of successful financial inclusion, as individuals have access to a range of financial products and services that can help them manage their finances effectively. Greater transparency and accountability in the financial sector are also direct benefits of financial inclusion amid increased financial literacy. This is because more and more people have access to formal financial services and are able to participate in the financial system.

- **Enhanced Economic Well-Being**

Access to formal financial services, such as savings accounts and insurance, can help people manage risk and build a safety net in case of emergencies. Access to the financial sector and its services can help people save money, and effectively employ the same. Funds can thereby be effectively used to plan for the future, and invest in education, health, and other assets that can be instrumental in improving their economic well-being.

- **Improved Access to Financial Markets**

Financial inclusion is instrumental in increasing access to financial markets and providing opportunities for investment in different asset classes through the organised segment of financial market. India has recently seen a massive increase in the number of investors over the past couple of years. This continual inclusion can lead to economic growth and job creation

- **Reduced poverty**

Financial inclusion allows people to be part of the organised financial sector and provides better access to credit and other financial services. Financial inclusion can help people participate fully in the economy, improve their standard of living, and build a more financially stable and inclusive society.

Importance of MSMEs

- Flexibility ensures innovation.
- Adaptability capacity to adjust with changing environment.
- Ensures regional development.
- Creates large scale employment.
- Encourage inclusive growth.
- Simple management structure for enterprise.
- Cheap labour and minimum overhead.

Concession on Electricity Consumption

The micro small and medium enterprises. You just have to submit an application, a registered MSME certificate, and a copy of your electricity bill to apply for this incentive.

Collateral Free Bank Loans

The small, medium and micro businesses. New and established firms can file benefits under this scheme.

The Credit Guarantee Trust Fund Scheme was introduced by the GoI, SIDBI, and the Ministry of Micro, Small & Medium Enterprises to ensure this scheme (Credit Guarantee Scheme) is implemented for all Micro and Small Enterprises.

Access to the International Market

The corporate delegations from India are given financial assistance to attend international conferences, trade fairs, exhibitions, business meetings, and seminars.

More Flexibility and Agility

Micro small and medium enterprises could react to the market developments more than a effectively and modify their business plans since they are generally more flexible and agile than bigger companies.

Challenges Faced by MSMEs

1. Financial Issues

In India, small businesses have limited existing capital or valuable assets. Therefore, accessing financial resources is still difficult for MSMEs. These financial problems make it difficult to raise immediate capital through a business loan. Without capital, they must reduce costs or close amid fierce competition. If an MSME business does not have sufficient profits or positive cash flow, it may experience increased financial problems and reduced liquidity.

2. Regulatory Issues

Registration is the first step to starting an MSME. However, the process takes time and has many regulatory prerequisites, such as tax compliance, labor law changes, etc. Although the Indian government is making efforts to reform the registration and regulatory process, it is very difficult for MSMEs to register and comply with all required laws.

3. Dynamic Market

New startups and other e-commerce companies are entering the market and increasing competition for small businesses in the MSME sector. Increased competition has made market dynamics volatile and can negatively impact MSME operations. In such a hot

market, if a small business is not performing well and earning steady profits, it may have to close due to a cash flow crisis.

Scope of MSMEs

- Aviation: GSE Accessory Systems and Tools.
- Naval system.
- Subsystems and accessories.
- earth system
- Subsystems and accessories.
- Capital goods. Computers and electronic equipment.
- MRO.
- R&D foundry, forging and boiler manufacturing.
- Software.
- Research different facility layout plans (process, product, fixed, hybrid)
- Situations where they are best performed. Research the material flow process in the
- plastic bag manufacturing industry.
- Propose the most suitable development plan for the plastic bag manufacturing industry.
- Ideal workspace according to ergonomic statistics.

Scope of Enterprises

1. Encourage the dispersion of industries throughout the country, including small towns, villages and economically backward areas.
2. Promote balanced development among regions throughout the country. 6. Encourage effective mobilization of the country's untapped resources.
3. Create immediate and large-scale employment opportunities with relatively low investment. At the same time, integrate regions lagging behind in national development.
4. Promote balanced development among regions throughout the country.
5. Encourage effective mobilization of the country's untapped resources, Improve the living standards of people in the country.

Conclusion

The role of the micro small micro enterprise in the economic development of India cannot be overlooked, With this fast growing economy and vast opportunities micro small micro enterprises are about to raise the bar and challenges international competition We hoped to see them in a far better position in terms of growth as well as manufacturing excellence. We could expect more schemes from the government to make micro small micro enterprises excellent.

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ROLE OF MSME IN THE DEVELOPMENT OF INDIAN ECONOMY

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Abstract

Micro, Small, and Medium Enterprises (MSMEs) have been monumental in accelerating the growth of the Indian economy. They not only play a cataclysmal role in generating employment opportunities at relatively low capital costs but also support industrialization and formalization of the economy. They are also instrumental in ensuring financial inclusion by tapering regional imbalances. MSMEs are veritably hailed as the backbone of the Indian economy as they contribute over 30% to the GDP. With almost 50% contribution to exports, they also form an integral part of the supply chain. The government of India plans to increase MSMEs output and export contribution to 50% and 75%, respectively, by 2024, in line with the aim to make India a \$5 trillion economy. In fact, MSME promotion has been prioritized by the government as part of NITI Aayog's Strategy for New India@75, with a special focus on ameliorating credit gaps and emboldening firms to embrace Industry 4.0 practices that enhance productivity.

Keywords: Indian economy, industrialization, contribution, MSME, Strategy.

Introduction

The Micro, Small and Medium Enterprises (MSME) sector has emerged as a highly vibrant and dynamic sector of the Indian economy over the last five decades. It contributes significantly in the economic and social development of the country by fostering entrepreneurship and generating large employment opportunities at comparatively lower capital cost, next only to agriculture. MSMEs are complementary to large industries as ancillary units and this sector contributes significantly in the inclusive industrial development of the country. The MSMEs are widening their domain across sectors of the economy, producing diverse range of products and services to meet demands of domestic as well as global markets.

MSMEs, in layman's terms, refer to the enterprises that are engaged in the development and manufacturing of goods and services. The Micro, Small & Medium Enterprises Development (MSMED) Act, 2006 classifies MSMEs based on investment and turnover limits, which are enlisted below.

- i) **Micro Enterprise:** Investment in plant and machinery (P&M) or equipment does not exceed Rs. 1 crore, and turnover does not exceed Rs. 5 crores.
- ii) **Small Enterprise:** Investment in plant and machinery (P&M) or equipment does not exceed Rs. 10 crores, and turnover does not exceed Rs. 50 crores.

iii) Medium Enterprise: Investment in plant and machinery (P&M) or equipment does not exceed Rs. 50 crores and turnover does not exceed Rs. 250 crores.

Traditionally, MSMEs were restricted to the khadi and coir industry. Since then, they have branched out to various industries. For instance, micro and small businesses mostly deal with food and agriculture, while medium-sized firms belong to the automotive, pharmaceutical, or chemical industries.

As per the MSME ministry, India has an estimated 633.88 lakh unincorporated non-agricultural MSMEs, of which 31% are engaged in manufacturing, and 36% are in trading activities. Almost 51.25% of MSMEs are in rural areas, while the remaining 48.75% are situated in urban areas. The micro sector accounts for more than 99% of the total number of MSMEs.

MSMEs: The Growth Accelerators

MSMEs act as innovation stimulants, encouraging the diffusion of skills, and inculcation of an entrepreneurial culture. They serve as a source of healthy competition and boost economic dynamism. As catalysts for the socio-economic transformation of the country, MSMEs contribute to the economy in the ways mentioned below.

Sustainable Growth

MSMEs play a considerable role in the GDP growth story on account of their contribution to production and processing. Their growth results in an increase in value addition, final output, and profitability. Furthermore, they complement large industries by acting as ancillary units, thus bringing out integration benefits.

Their contribution is increased manifold when one accounts for the multiplier effect of the economic activity undertaken by their employees and suppliers. The CSO data states MSMEs' contribution to Gross Value Added (GVA) at 30% for FY 2019-20, with the manufacturing share standing at 36.9%. MSMEs are being supported by the government through 'Make in India' with the 'Zero Defect & Zero Effect' initiative to promote sustainability and higher quality standards.

Localized Employment Generation

MSMEs typically implement labor-intensive production processes, thereby generating massive employment opportunities. Their small scale restricts them to a particular area or region, which results in the local population being hired. These productive employment opportunities consequently result in increased generation of income and poverty alleviation.

As per the 73rd Round of NSS Report on Unincorporated Non-Agricultural Enterprises', MSMEs employ 11.10 crore workers. The micro sector accounts for over 97% of the employment share as it recruits almost 10.76 crore persons.

Mushrooming Trade and Export Earnings

MSMEs contributed 45.04% to overall exports during FY22. They are expected to benefit further from the 'China plus one' policy, which is being increasingly employed by MNCs looking to diversify their production. The government is targeting \$1 trillion worth of MSMEs exports by 2027. It has even introduced the 'Capacity Building of First-Time MSME Exporters' (CBFTE) scheme for MSMEs' export growth.

Contribution to Taxes

MSMEs contribute to the government's coffers through direct business taxes levied on their revenues and profits. They also pay indirect taxes, including GST, sales tax, excise duties, and cess. The tax provision requiring MSMEs to mandatorily register on the GST portal has even incentivized the formalization of the MSME sector.

Poverty Alleviation

The MSME sector plays a significant role in alleviating poverty and correcting regional imbalances. They ensure a more equitable distribution of income due to their localized nature of business and stave off any rural-urban migration. They also stimulate entrepreneurship, hence kickstarting investment and innovation cycles.

Financial Inclusion

Out of 11 crores employees in the MSME sector, almost 24% are women. Additionally, the socially backward groups, including SCs, STs, and OBCs, collectively own over 66% of MSMEs, with OBCs accounting for almost half of the share. Almost 74% and 59% of the MSMEs are owned by the vulnerable sections in rural areas and urban areas, respectively.

Meeting SDG Goals

MSME development can assist in better meeting SDG goals, including SDG 1 (ending poverty), SDG 2 (ensuring zero hunger), SDG 3 (promoting good health), SDG 5 (gender equality), and SDG 8 (inclusive growth and decent work).

Concerns Over Finance

As can be seen from above, a robust MSME sector is acutely required for the Indian economy to grow. But these enterprises continue to suffer from the unavailability of timely capital. This lack of access to capital forces MSMEs to scale down or liquefy their business. As a result, there has been an upsurge in the number of financial institutions, including Protium, that are collaborating with MSMEs to provide prompt financing.

Direct Benefit Transfer in the M/o MSME

All welfare and subsidy schemes of Governments of India have been brought under Direct Benefit Transfer (DBT) with the aim of improving delivery system by re-engineering the existing process for welfare and subsidy schemes, for simpler and faster flow of funds and to ensure accurate targeting of the beneficiaries, de-duplication and reduction of fraud. A nodal point for the implementation of the DBT programmes, DBT cell have been constituted in the Ministry.

The schemes have been categorized based on the benefit type to the beneficiary's i.e., Cash, Kind or Composite (i.e., Cash and Kind). Below is the table showing the main DBT schemes of the Ministry with the benefit type, number of beneficiaries and total funds transferred / expenditure incurred

Sl. No.	Name of the Scheme	Benefit Type	Total no. of beneficiaries (2022-23) (upto 31.12.2022)	Total Expenditure (Rs. crores) (2022-23) (upto 31.12.2022)
1	ATI Scheme (Training Component)	In Kind	1674	0.871
2	MPDA Grant to Khadi Institutions	Cash	86990	29.45
3	Coir Vikas Yojana	Cash	775	45.789
4	SFURTI SI	In Kind	2082765	384.509
5	Prime Ministers Employment Generation Programme (PMEGP)	Cash	46808	1505.61
6	Entrepreneurship and Skill Development Programme (ESDP)	In Kind	6312	2.55
7	International Co-operation (IC) Schemes	Cash	56	6.87

Operational Guidelines of CLCS-TU Scheme (having five components-IPR, Lean, Design Clinic, Incubation and ZED) are under redesigned and as such the Scheme is in inactive mode till their finalization.

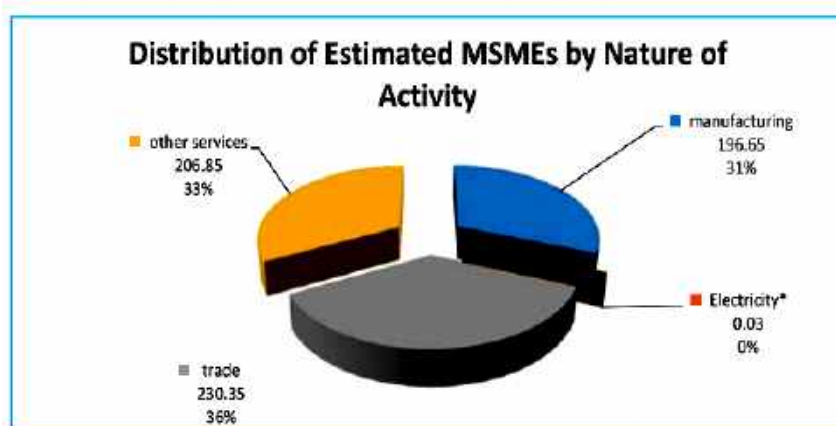
Growth and Performance of Micro, Small and Medium Enterprises (MSMEs)

The Micro, Small & Medium Enterprises (MSMEs) have been contributing significantly to the expansion of entrepreneurial endeavors through business innovations. The MSMEs are widening their domain across sectors of the economy, producing diverse range of products and services to meet demands of domestic as well as global markets. The MSMEs in India are playing a crucial role by providing large employment opportunities at comparatively lower capital cost than large industries as well as through industrialization of rural & backward areas, inter alia, reducing regional imbalances, assuring more equitable distribution of national income and wealth

Estimated Number of MSMEs in Country

MSMEs in India are playing a crucial role by providing large employment opportunities at comparatively lower capital cost than large industries as well as through industrialization of rural & backward areas, inter alia, reducing regional imbalances, assuring more equitable distribution of national income and wealth. As per the National Sample Survey (NSS) 73rd round, conducted by National Sample Survey Office, Ministry of Statistics & Programme Implementation during the period 2015-16, there were 633.88 lakh unincorporated nonagricultural MSMEs in the country engaged in different economic activities (196.65 lakh in Manufacturing, 0.03 lakh in Non-captive Electricity Generation and Transmission¹, 230.35 lakh in Trade and 206.85 lakh in Other Services) excluding those MSMEs registered under (a) Sections 2m(i) and 2m(ii) of the Factories Act, 1948, (b) Companies Act, 1956 and (c) construction activities falling under Section F of National Industrial Classification (NIC) 2008. Figure 2.1 shows the distribution of MSMEs activity wise.

Figure 2.1 Distributions of Estimated MSMEs (Nature of Activity Wise)



**Non-captive electricity generation and transmission*

Employment

As per the National Sample Survey (NSS) 73rd round conducted during the period 2015-16, MSME sector has been creating 11.10 crore jobs (360.41 lakh in Manufacturing, 0.07 lakh in Non-captive Electricity Generation and Transmission, 387.18 lakh in Trade and 362.82 lakh in Other Services) in the rural and the urban areas across the country. Statement No. 2.7 shows the distribution of MSMEs activity wise.

Statement No. 2.7: Estimated Employment in the MSME Sector (Activity Wise)

Broad Activity Category	Employment (in lakh)			Share (%)
	Rural	Urban	Total	
(1)	(2)	(3)	(4)	(5)
Manufacturing	186.56	173.86	360.41	32
Electricity*	0.06	0.02	0.07	0
Trade	160.64	226.54	387.18	35
Other Services	150.53	211.69	362.22	33
All	497.78	612.10	1109.89	100

*Non-captive electricity generation and transmission

Village Industries Employment during Last 5 Years and Current Year Projection are Given Below:

Village Industries : Employment

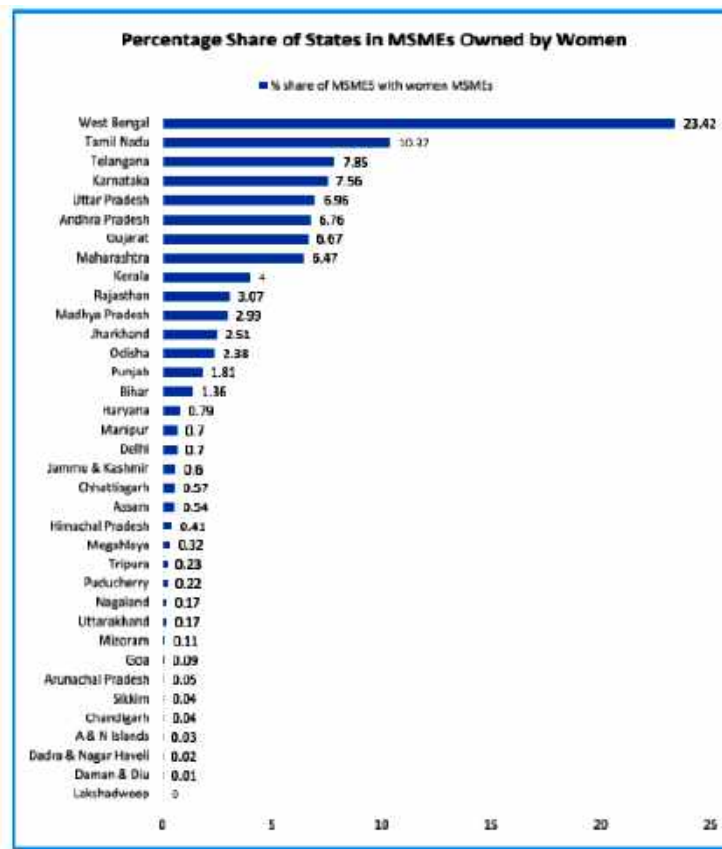
(Artisan in Lakh)

YEAR	EMPLOYMENT
2017 - 18	135.71
2018 - 19	142.03
2019 - 20	147.76
2020 - 21	154.09
2021 - 22	162.64
2022 - 23 (up to 31.12.2022)	166.37
2022 - 23 (Projected up to 31.03.2023)	170.71

Achievement - Year-wise data during the FY 2017-18 to 2022-23

Year	Projects Approved			Projects completed			Budget utilized (Rs. in crore)		
	CFC	ID	Total	CFC	ID	Total	BE	RE	Exp.
2017-18	9	12	21	13	11	24	184.00	157.65	157.11
2018-19	11	26	37	17	11	28	279.00	173.40	172.73
2019-20	38	35	73	11	11	22	227.90	227.90	226.34
2020-21	26	42	68	8	12	20	390.69	116.28	116.28
2021-22	18	13	31	3	13	16	156.50	156.50	135.59
2022-23 as on 04.01.2023	9	19	28	1	2	3	262.00	120.00	78.68
Total	111	147	258	53	60	113	1500.09	951.73	886.73

The main focus of the schemes/programmes undertaken by the Organisations of the Ministry is to provide/facilitate a wide range of services required for accelerating the development of MSMEs. Nevertheless, there are a few schemes/programmes which are individual beneficiary oriented. There are several schemes, wherein women are provided extra benefits/ concessions/ assistance. The details of concessions for women may be seen in the respective scheme guidelines as available on the Ministry's website www.msme.gov.in



Role and Importance of MSME in the Indian Economy

MSMEs are a vital part of the Indian economy and have made significant contributions to the country's socio-economic growth. They create job possibilities and contribute to the development of the country's backward and rural areas. MSMEs contribute almost 8% of the country's GDP, around 45% of manufacturing production, and about 40% of exports. With this significant contribution, it isn't an exaggeration to call them the 'backbone of the country.'

MSMEs Currently Employ over 46.6 Million People, as per the National Sample Survey (2019).

Let's Look at their Role and Importance in the Indian Economy

Economic Stability

Because of MSME's contribution to manufacturing, exports, and jobs, it benefits other industries. MNCs frequently purchase semi-finished and additional items from small businesses, such as clutches and brakes, by vehicle manufacturers. Even after the GST is implemented, it helps bridge the gap between small and large companies. 40% of the total MSME sector has also implemented GST registration, which has increased the government's revenue by 11%.

Cheap Labour

One of the critical challenges in large-scale firms is to retain human resources through effective human resource management professionals. However, when it comes to MSME, the labor requirement is lower, and it does not necessitate the use of a highly skilled laborer. As a result, the owner's indirect expenses are also minimal.

Large-Scale Employment Generation

MSMEs seek to improve the lives of workers by offering employment, loans, and other services. Furthermore, it provides many opportunities for unemployed people to take advantage of. India produces over 1.2 million graduates annually, with approximately 0.8 million engineers. So far, no economy has been able to offer such a vast number of freshmen in a single year. MSMEs play a significant role in supporting India's young talent as they join the workforce.

A Significant Contribution to "Make in India."

Thanks to MSMEs, the prime minister of India's trademark campaign, "Make in India," has been simplified. It serves as a foundation for making this ambition a reality. Furthermore, the government has urged the banking institutions to offer more credit to small and medium-sized businesses.

The MSME sector plays a vital role in the lives of ordinary people and the country's economic growth. In recent years, many youths have been inclined toward entrepreneurship, and MSME sectors are fully supporting it. So, it is necessary to help the MSME sector financially, and **PSB59** is continuously progressing towards it.

Challenges Pertaining to MSMEs

Lack of Adequate and Timely Access to Finance

- Access to finance continues to remain the biggest challenge for MSMEs and has constrained their growth.
- MSME funding from banks has been stalled, as decision-making managers are reluctant of loans going bad.
- After the **IL&FS crisis** and its effect on the other NBFCs (Non-Banking Finance Companies), MSMEs ran into deep trouble because of the liquidity crunch that followed.
- Due to this, MSMEs are not able to invest in manufacturing, purchase raw materials on time, access new technologies or acquire new skills due to lack of funds which is a big handicap especially in its fight with global competitors.

Technological Disruption

- India 's MSME sector is based on obsolete technology, which hampers its production efficiency
- With the emergence of new technologies like Artificial Intelligence, Data Analytics, Robotics and related technologies (collectively called as **Industry Revolution 4.0**) is a bigger challenge for MSMEs than for organized large-scale manufacturing.

Regulatory Cholesterol

- MSMEs require a lot of government services and approvals, for which the entrepreneur has to run around various government departments.
 - o Getting construction permits, enforcing contracts, paying taxes, starting a business and trading across borders continue to constrain doing business.
- Regulatory risks and policy uncertainty in the past have dented investor confidence.

Problem of Scale

- Majority of the firms in MSMEs are micro-enterprises.
- The MSME space is virtually a micro space formed by a plethora of small and local shops and hence, scaling them up is a problem, especially when fund access is challenging.

Steps To Be Taken

- **Increasing Domestic Manufacturing Capabilities:** The government can play a crucial role in creating domestic manufacturing capabilities by leveraging proposed public procurement and projects.
 1. For example, Mega public projects such as Sagarmala, Bharatmala, industrial corridors, and the Pradhan Mantri Awas Yojana (PMAY) can stimulate domestic manufacturing activities.
 2. This should be accompanied by a simplification of the regulatory process.
- **Cluster Manufacturing:** Efforts should be made to develop self-sufficient clusters of manufacturing competence, with Cluster Administrative Authorities, empowered to provide single window clearances to entrepreneurs and investors.
- **Leveraging Industrial Revolution 4.0:** Disruptive technology, while leading to job losses in traditional areas, also presents new job opportunities.
 1. A greater connect between government-industry-academia is required to identify the changing requirements in manufacturing and prepare an employable workforce.
 2. Also, the Industrial Revolution 4.0 will boost the Industrial supply chains in India.

- **Need to improve Ease of Doing business:** Reforms: India has already taken several steps, due to which ease of doing business in India has improved significantly (India's ranking in **ease of doing business report** has improved from 142 in 2014 to 63 in 2020).
 1. However, still some reforms are needed in regard, especially in the field of land, labour reforms and in enforcing contracts.
- **Making Indian Products to Match Global Standards:** There is a need for harmonizing Indian quality standards with global standards in many sectors.
 1. Lack of harmonization has affected Indian exports and prevented the leveraging of trade agreements adequately.
 2. There is a need to promote **ZED manufacturing (Zero effect- Zero Defect)** as envisaged by **Make in India**.

Conclusion

In conclusion, the Indian SME sector today is a gateway to global growth due to its competitive and quality product range. However, support from the government is required to minimize the transaction costs of technology upgrade, market penetration, infrastructure upgrade, etc. The SME sector is often called the "engine of growth" for developing economies. We begin with an overview of the sector in India and look at some recent trends that highlight the evolution and importance of the sector in relation to the Indian economy. We have analyzed the growth of MSMEs in terms of fixed investment, production performance, employment generation and export contribution. The MSME Development Act, 2006 is perhaps the most important of these recent policy changes. Interest policy is state spending and subsidies focused on this sector. It is concluded that MSMEs in the Indian economy have shown tremendous growth and outstanding performance with the contribution of policy framework and effective steps taken by the government from time to time for the growth and development of MSMEs.

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ROLE OF MSME IN ECONOMIC SELF RELIANCE

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Abstract

The MSME industry plays a crucial role in the development of the Indian economy. Its contribution to the country's GDP is nearly a third of the country's GVA and it contributes nearly half of the country's exports. Moreover, the sector is a major employer, especially in the rural and less developed areas helping reduce regional imbalance. The sector also strengthens other industries by providing them raw materials and ancillary products. The MSME sector has always acted as a bulwark for the Indian economy, providing it resilience to ward off global economic shocks and to face adversities. The MSME network in India is vast and covers around 630 lakh units manufacturing 8000+ products contributing about 45% to manufacturing output and about 40% to direct and indirect exports. The MSME sector is reportedly the second-largest employer in the country after agriculture.

Keywords: *Self-Reliant India, MSME, Government Scheme, Self-Reliant India Fund*

Introduction

MSMEs form the bedrock of India's industrial landscape, encompassing a vast array of enterprises across various sectors. According to the Ministry of Micro Small and Medium Enterprises, MSMEs contribute significantly to India's GDP, employment, and exports. The sector is a major generator of employment, providing livelihoods to millions, particularly in rural and semi-urban areas. MSMEs are a vital part of the Indian economy. They account for approximately 45% of India's industrial output and around 40% of total exports. This means that MSMEs are responsible for a significant portion of the country's economic growth.

In the textile industry, MSMEs account for around 60% of the total employment. They also play a significant role in the manufacturing of garments, footwear, and other products. In the agricultural sector, MSMEs are involved in the production of a wide range of products, such as processed foods, fertilizers, and agricultural machinery. They also play a key role in the supply chain for agricultural products. In the services sector, MSMEs are involved in a wide range of activities, such as transportation, tourism, and retail. MSMEs are a major source of employment in India and employ a great number of women and youth. They employ around 111 million people, which is about 40% of the country's workforce.

The Impact of MSME's on India's Self- Reliance

MSMEs act as catalysts for India's self-reliance, driving economic independence through various means. These enterprises play a pivotal role in reducing the country's dependency on imports, fostering domestic innovation, and building a robust and self-sustaining economic ecosystem.

One of the primary ways MSMEs contribute to self-reliance is by reducing India's reliance on imports. By producing goods and services domestically, MSMEs help curb the nation's dependence on foreign products. This localized production not only strengthens the Indian economy but also bolsters its resilience against global economic fluctuations and disruptions. By fulfilling local demand and reducing imports, MSMEs contribute to a more self-sufficient economy that can better withstand external shocks.

MSMEs are also instrumental in supply chain development, creating a web of interconnectedness across industries. They account for 60% of the total number of enterprises in the country, and as key players in various supply chains, these enterprises support both upstream and downstream activities. Their engagement in supply chains fosters domestic production and distribution networks, reducing the need to rely on foreign suppliers. This interdependence within the country's supply chains enhances the overall efficiency of the economy and contributes to its self-reliance.

Small-scale businesses have been a hallmark of the Indian economy since independence. Over the last five decades, the MSME sector has evolved to show itself as a vibrant and dynamic component of the economy. Initially, the non-agricultural MSME sector was heterogeneous and consisted of traditional industries. These included khadi, silk, coir, cottage and village industries, Small Scale Service and Business Enterprises (SSSBes), and Small Scale Industries (SSIs). Today, all these industries are clubbed together under the umbrella term of Small Scale Industries (SSI). In 2006, the Micro, Small, and Medium Enterprises Development (MSMED) Act was enacted. This statute aimed to incorporate all the diverse industries, the service sector, and medium enterprises.

As a result, the MSME sector in India is classified into two categories: the manufacturing and service industries. Furthermore, the industries are classified as micro, small, and medium based on the investment made toward machinery and equipment. MSMEs contribute towards exports, entrepreneurial development, upliftment of rural and backward areas, and employment generation. The MSME sector has been creating over 110 million jobs in areas such as manufacturing, non-captive electricity generation and transmission, trade and other service, across rural and urban areas in the country.

Challenges for the MSME Sector

The sector is expected to shoulder a substantial portion of the country's economy. But there are some challenges that lie ahead:

Need for digitization: Owing to problems like the dearth of proper infrastructure, finance, and limited knowledge, the MSME sector has been slow in going digital. Digitizing the sector could help in enhancing efficiency and reliability, cutting costs, and keeping up with trends.

Importance of business knowledge: With growing competition, it is imperative for MSMEs to have a thorough grasp of the opportunities, challenges, in-depth know-how, trends, and risks of the industry to run a successful business. The right business strategy can help a company scale up.

Problems related to funding: Many MSMEs may not have all the financial documentation in place or enough access to digitization in order to take advantage of government schemes. There is also a challenge with collateral as the perceived risk of funding MSMEs is higher. Cash flow and working capital issues are challenging, especially in instances where payments are delayed. While protections exist under the MSMED Act, such as penalties for delayed payments, the fear of losing long-term business means that these protections are rarely ever invoked

Self-Reliant India Fund for MSMEs

As part of the Atmanirbhar Bharat package, the Indian government announced the allocation of Rs. 50,000 crore for equity infusion in MSMEs through the Self-Reliant India (SRI) Fund. SRI fund operates through a mother-fund and daughter-fund structure for equity or quasi-equity investments.

The National Small Industries Corporation (NSIC) Venture Capital Fund Limited (NVCFL) was designated as the Mother Fund for the implementation of the SRI Fund. It was registered as a Category-II Alternative Investment Fund (AIF) with SEBI

Objectives of the Sri Fund

To provide equity funding to viable and high-potential MSMEs, fostering their growth and transformation into larger enterprises. To bolster the MSME sector's contribution to the Indian economy by promoting innovation, entrepreneurship, and competitiveness. To create an environment conducive to technological up gradation, research and development, and increased market access for MSMEs.

Composition of the SRI Fund

The Rs. 50,000 crore SRI Fund comprises: Rs. 10,000 Crore from the Government of India to initiate equity infusion in select MSMEs. Rs. 40,000 Crore sourced through Private Equity (PE) and Venture Capital (VC) funds, leveraging private sector expertise and investment.

Status of MSME Sector in India

The MSME sector of India contributes around 33% of the country's total GDP and is predicted to contribute worth USD 1 trillion to India's total exports by 2028. MSMEs provide about 110 million jobs which is 22-23% of the total employment in India. It contributes to reducing unemployment and underemployment, supporting inclusive growth and poverty reduction. The MSME sector fosters a culture of entrepreneurship and innovation. It encourages individuals to start their own businesses, promotes indigenous technologies, and contributes to the development of new products and services. Compared with large-scale companies, MSMEs aided in the industrialization of rural areas at minimal capital cost.

Government Initiatives for the MSME Sector

MSME Champions Scheme: Comprising MSME-Sustainable (ZED), MSME-Competitive (Lean), and MSME-Innovative (for incubation, IPR, Design, and Digital MSME), this scheme provides financial assistance to MSMEs to enhance their competitiveness and innovation capabilities.

Infusion in Credit Guarantee Fund: As part of the Budget 2023-24, the government announced an infusion of Rs. 9,000 crore in the corpus of Credit Guarantee Fund Trust for Micro & Small Enterprises.

Raising and Accelerating MSME Performance (RAMP): This initiative focuses on strengthening institutions and governance of MSME programs at both the central and state levels.

Conclusion

The journey towards economic independence and self-reliance is a dynamic process, and MSMEs are at their heart. Their resilience, innovation, and inclusivity have been crucial in driving India's progress on the path to self-reliance. As the government continues to implement policies and provide support, Indian MSMEs are poised to play an even more significant role in shaping the nation's future and elevating India's standing on the global stage. By nurturing these enterprises and enabling their growth, India can truly achieve its dream of becoming an economically independent nation.

There is no doubt that MSMEs play a critical role in Nation Building and growth of the economy. It is necessary that the support to this segment is accelerated, and government targets its ease of doing business initiative towards MSMEs. The targeted government policies can be a major catalyst in guiding MSMEs to the desired sectors of the economy to fuel growth of the economy. This could be done by framing conducive policies, offering incentives and most important, removing the on-ground hurdles, easy access to credit being a prime example. No doubt there is a long road to traverse but it is also beyond doubt that with entrepreneurship, innovation and agility at its core, the MSME sector can

not only play a vital role in making India a US\$5 trillion economy in the next five years but can also become a growth engine for making India a developed country by 2047.

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ROLE OF FINTECH - INNOVATION AND ADOPTION IN SUSTAINABLE BUSINESS START-UPS

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Abstract

The integration of new technologies and the digitization of society have created a favourable environment for the development of Fintech startups in India. The FinTech Industry has seen tremendous growth in India over the last decade since it caught pace after expansion of interest services in the country. In India Fintech adoption rate is 87% against the global average of 64%⁴. By providing the access to banking and financial services for unbanked people, the FinTech industry plays a predominant role to bettering financial inclusion. This paper explores the various segments and significance of Fintech industries in the success of digital transformation and it also inspects the regulatory legal framework, Government initiatives, the key principles and thrust areas of the Fintech start-ups. Besides this it also tried to identify the emerging trends, issues and challenges in Fintech revolution.

Keywords: Digital Startups, Fintech Innovation, Sustainable Development, Business Start-ups etc.,

Introduction

Financial technology (better known as Fintech) is used to describe new tech that seeks to improve and automate the delivery and use of financial services⁴. The Fintech companies play a major role in improving access to the gamut of financial services like AePS, Aadhar Pay, Remittances, and Recharges for the masses². With over 2,000 FinTech businesses officially recognized by DPIIT (Department for Promotion of Industry and Internal Trade) in India and projections indicate that the total addressable market for the Indian FinTech industry is set to reach \$ 1.3 trillion by 2025⁵.

Fintech companies are innovative, nimble, and have lower operational costs than traditional banks⁶. They can lead the way through taking financial services, increasing access to credit, innovating with speed and compliance, promoting a cashless economy to the farthest corners of the country⁶. Fintech companies can play a key role in boosting financial inclusion by leveraging the existing financial ecosystem and emerging technologies to make banking simpler, more accessible, and cost-effective for millions of unbanked and underbanked Indians⁶.

FinTech is increasingly becoming an important focus area for all the key stakeholders in India's Financial Services industry – Regulators, Traditional Banks, NBFCs, Payment Banks, Investors, Payment Service Providers, Broking and Wealth Management Companies, Insurance providers and pure-play FinTech players. The FinTech infrastructure backbone has been strengthened tremendously with the host of options available to market participants such as BBPS, Bharat QR, India Stack, UPI³.

Statement of the Problem

The FinTech infrastructure backbone has been strengthened tremendously with the host of options available to market participants such as BBPS, Bharat QR, India Stack, UPI, etc³. In India Fintech adoption rate is noted as 87% against the global average of 64%⁴. According to a World Bank analysis more than 190 million Indians lack access to formal financial services, 20 percent of the Indian population is still unbanked, implying enormous untapped economic potential⁶. Rural India has only 17% internet penetration compared to 60% in urban India³. Above these two interpretations make an argument and couldn't judge the exact state of Fintech development in India.

To know the present scenario of Fintech startups in India, the following questions were raised?

What are the various segments and significance of Fintech startups in India?

What are the factors associated with the growth of Indian Fintech industry?

What are all the issues, challenges faced by Fintech companies in the current economic climate?

What are the emerging trends predicted by Fintech industry?

Objectives of the Study

This study makes an attempt to find the solutions for the questions asked in the statement of the problem. Accordingly the following objectives have been framed.

1. To know the various segments and significance of Fintech startups in India.
2. To identify the factors associated with the growth of Indian Fintech industry.
3. To identify the regulatory legal framework and Government Initiatives for Fintech in India.
4. To explore the issues, challenges faced by Indian Fintech companies in the current economic climate.
5. To identify emerging trends in Fintech startups in sustainable development.

Research Methodology

As the research paper is of conceptual and review nature, the researcher has applied exploratory research design by using varied secondary data availed from the secondary data sources. Based on the secondary data and review, the researcher has reported on important role of Fintech -Innovation and adoption in India

Review of Literature

Mr. Nishant kumar published an article titled as "Role of Fintech in India's Digital Economy" in Nasscom community website on March 16, 2023. In this article he reveals that the role of Fintech in Indian Digital Economy, the key benefit of Fintech for business in

India, challenges of Fintech in India and the future of Fintech in India. He noted that in India the future of Fintech companies is bright, the immense potential.

The Times of India published an article entitled as “The role of Fintech companies in strengthening the banking and online payment sector in rural India” on October 12, 2022 written by Amit Tyagi. The author expresses that India’s Fintech market is among the fastest growing and is ranked the third largest market. He denotes that the companies have the potential to reshape the financial services and financial inclusion in India. He added that the companies play a major role in improving access to the gamut of financial services like AePS, Aadhar Pay, Remittances, and Recharges for the masses.

Deloitte the Learning Academy conducted a study and published an article in the name of “FinTech in India – Ready for Breakout”. This article denotes the critical issues addressed by Indian FinTech companies and few of the critical structural issues afflicting Indian financial services as increase outreach, improve customer experience, reduce operational friction, and foster adoption and usage of the digital channel. This report suggests the financial companies can learn and adopt best practices around risk and internal controls, operational excellence, compliance culture, and employee engagement.

Fintech Segments –Area Wise Classification

Deloitte report analyzed the breakout potential of India’s Fintech sector across six segments i.e Payments, Credit, Investment Management, Personal Finance Management, BankTech and InsurTech and across twenty sub-segments. Customer Loyalty, Technology & IT Infrastructure.

Area	Fintech Segments	Area	Fintech Segments
Credit	Peer-to-Peer Lending Crowd Funding Market Place for Loans Online Lenders – on-book lending by NBFCs Credit Scoring Platforms	Payments	M-wallets and PPIs Merchant Payments and PoS Services International Remittance Crypto Currencies
Investment Management	Robo Advisors Discount Brokers Online Financial Advisors	Personal Finance Management	Tax Filling and Processing Spend Management and Financial Planning Credit Scoring Services
Bank tech	Big Data Blockchain Customer Onboarding Platforms	Insur tech	Insurance Aggregator IOT, Wearables and Kinematics

Source : Deloitte Analysis

Significance of Fintech Startups in India

- **Promoting Financial Inclusion in India** – Most of the Indian people in rural area remain outside the formal financial system, and the use of financial technologies can bridge the gap left by traditional banking.
- **Finance for Micro, Small and Medium Enterprises (MSME)** – Lack of capital is the biggest threat to MSME, FinTech startups can play a key role and solve the issue of credit availability and offering easier and quick access to loans.
- **Improve Customer Experience** - FinTech start-ups provide better customer experience in terms of convenience, personalization, transparency, accessibility and developing credit scores and underwriting credit for customers for improving financial services penetration in India by leveraging big data, machine learning and alternative data.

Growth Factors of Indian FinTech Sector

Customer Loyalty, Funding environment, Technology & IT Infrastructure, Value proposition, Innovative use of Data, Cost of operation are considered as a key factors, leading to success of Fintech companies³.

The following seven factors are likely to drive the growth of the Indian FinTech sector, in the medium to long term³:

- Combination of steady economic growth with low penetration of financial services.
- Large public sector banks and insurers lagging market growth.
- Regulatory forbearance toward FinTech.
- Indian Millennials rapidly ascending the adoption S-curve of digital financial services and thus perceiving higher friction from incumbents.
- India Stack and internet data proliferation to improve financial services utility infrastructure and connectivity to support digital financial services.
- Advances in technology and adoption of cloud services leading to asset light models with almost zero unit costs at transaction levels could enable subsidization without building scale.
- Lower real interest rates in Indian economy.

Regulatory Legal Framework and Government Initiatives for Fintech in India

Owing to the overlapping and non-linear business models of fintech businesses, there is no single all-encompassing regulatory legal framework for fintech in India. The applicable laws and rules governing a fintech business will generally depend on the nature of the business being conducted⁷. It is usually regulated by the RBI, SEBI, the Insurance Regulatory and Development Authority of India (IRDAI), the Pension Fund Regulatory and Development Authority (PFRDA), and IFSCA⁷. Aspects that are regulated by the aforementioned authorities include online payments and transactions, payment

aggregators and gateways, data and privacy, lending and collection of deposits, trading of securities and derivatives, offering of insurance products and services, etc. For many financial offerings, prior approvals and licenses need to be obtained from the RBI, SEBI or IRDAI for a business to commence⁷.

The government has already laid the groundwork for the Fintech industry to provide flexible and innovative digital banking with regulations like the Unified Payment Interface (UPI), Aadhaar, and open application programming interfaces (APIs)⁶. The Government also announces measures to specifically promote investments in tech/fintech/start-up businesses in India, or which have a positive impact on those sectors. Additionally, IFSCA has also introduced an incentive scheme for, inter alia, domestic fintechs seeking access to overseas markets as well as foreign fintechs seeking market access to IFSCs in India. The Government also proposed many tax-related relaxations, including an extension of timelines (from March 31, 2023, to March 31, 2025) for funds relocation to IFSC GIFT City. Tamil Nadu FinTech Policy 2021, offering collaboration and incentives for select fintech startups⁷.

The laws and regulations that may apply to fintechs in India are listed below:

RBI

- Payment and Settlement Systems Act, 2007.
- Master Directions on Prepaid Payment Instruments (MD-PPIs), 2021.
- Framework for Scale Based Regulation for Non-Banking Financial Companies, 2021.
- Directions for opening and operation of Accounts and settlement of payments for electronic payment transactions involving intermediaries, 2009.
- Guidelines for Licensing of Payments Banks, 2014 and Operating Guidelines for Payments Banks, 2016.
- Framework for Recognition of a Self-Regulatory Organisation for Payment System Operators, 2020.
- Guidelines on Regulation of Payment Aggregators and Payment Gateways, 2020.
- Circular on Processing of e-mandate on cards for recurring transactions, 2019.
- Circular on Tokenisation – Card transactions, 2019.
- Guidelines on Digital Lending, 2022.
- RBI Master Directions on Credit Card and Debit Card – Issuance and Conduct, 2022.

National Payments Corporation of India (NPCI)

- Various circulars on Unified Payments Interface (UPI) payments.

SEBI

- Circular on Mutual Funds, 2021.

IRDAI

- Guidelines on Insurance Repositories and Electronic issuance of Insurance Policies, 2015.
- Guidelines on Insurance e-commerce, 2017.
- Insurance Regulatory and Development Authority of India (Issuance of e-Insurance Policies) Regulations, 2016.

IFSCA

- International Financial Services Centres Authority Act, 2019.
- Framework for FinTech Entity in the International Financial Services Centres (IFSCs), 2022.

Apart from these the following initiatives are taken by the government for the benefit of public.

- **Jan Dhan Yojana** - This initiative is considered as a world largest financial inclusion and it has helped in new account enrolment of over 450 million beneficiaries for direct benefit transfer and accessibility to a host of financial services applications such as remittances, credit, insurance, and pensions. It helps the Fintech companies to build technology products to enter the large consumer base in India⁴.
- **India Stack** -It is a set of APIs that allows governments, businesses, startups and developers to utilise a unique digital Infrastructure to solve India's hard problems towards presence-less, paperless and cashless service delivery⁴.
- **UPI (Unified Payments Interface)** -It is an advanced mobile app-based payment system to transfer funds between bank accounts developed by the National Payments Corporation of India in 2016, is the multiplier force behind the Fintech revolution in India. 338 banks registered under the platform, recorded more than 6.28 billion transactions in July 2022 worth 10.62 lakh crore ⁴.
- **Digital Rupee** - India launched its Central Bank Digital Currency (CBDC) or digital rupee or e-rupee recently. It is an electronic version of cash and will primarily accelerate the growth of the FinTech market in India⁴.
- **Fintech Hub** - **Fintech** Valley Vizag, O-hub Bhubaneswar, Bandra Kurla Complex, FinTech Hub Kolkata, Mumbai Fintech Hub are Fintech parks created by the respective Government to promote business infrastructure in the state, and attract investors and multinational financial corporations to set up their offices in the hub.

Issues, Challenges faced by Fintech Companies in the Current Economic Climate

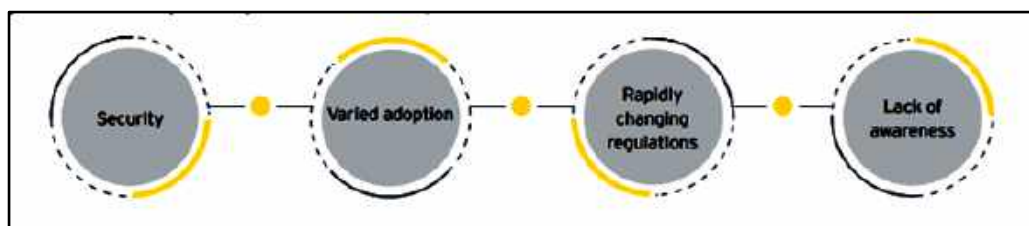
Fintech systems are vulnerable to hackers by automation of processes and digitization of data. Absence of regulatory authority has led to increased chances of fraud threat to investor protection and movement of money in the economy. Due to the diversity of

offerings in FinTech, it is difficult to formulate a single and comprehensive approach to these problems.

According to RBI financial literacy is only 27% of Indian adults and 24% of women meet the minimum level of financial literacy. The lack of financial literacy is also considered as a main issue. During the pandemic, digital lending through mobile apps became popular, but more than half of these digital loan providers were operating illegally. Many apps used tactics to exploit the widespread lack of financial literacy, charging interest rates up to 500% ⁴.

The true legal status of cryptocurrency continues to be a grey area in India⁷. The Government of India introduced a draft Cryptocurrency and Regulation of Official Digital Currency Bill, 2021 (Cryptocurrency Bill), which provides for: (a) the creation of a framework for official digital currency to be issued by the RBI; and (b) the prohibition of all private cryptocurrencies in India – with certain exceptions, in order to promote the underlying technology of cryptocurrency and its uses⁷. As per a recent report, WazirX, India's biggest Cryptocurrency exchange registered an annual trade of over \$43 billion.

Nearly three-quarters of population resides in rural India Fintech industries making its route to reach digitalization. Infrastructural costs, low usage due to lack of awareness, inconsistent availability of electricity, theft, and vandalism are some of the major deterrents for physical bank branches and ATM operators in rural areas².



Source :Deloitte Analysis

Emerging Trends in Fintech Industry

Fintech companies can rapidly roll out new features and products by testing new innovations in secure sandboxes while checking for adherence to government regulations and data security. This enables Fintech companies to provide innovative products and services in a faster yet secure manner⁶. The Fintech activities are divided into three broad categories: the Banking Sector; Capital Markets; and Funds Management and the Insurance Sector, and the notable Fintech trends include BNPL (Buy Now, Pay Later), Digital Banks, Robo Advisory, Blockchain, Sustainable Finance products, neo-banks, Embedded finance/ Insurance, Cyber Insurance, Artificial intelligence (AI) and the metaverse etc., are some notable trends of the year and it could change the scope and landscape of Fintech and it continued to show an upward trend too⁷. The Fintech areas/activities expressly include

Agri Tech, Climate/Green/Sustainable Tech, Space Tech, Solutions for Banking, Financial Services and Insurance domain leveraging (AI, Chatbots, Web 3.0, etc)⁷.

Conclusion

Through the mobile applications and online platforms, Indian FinTech companies have been successful in offering various financial services to this population. It likely to reduce costs and improve quality of financial service and it will develop unique and innovative models of assessing risks and it will create a more diverse, secured and stable financial services land shape³. The government should require Fintech companies to ensure that the data harvested from consumers will not be used for any purpose other than serving the consumer's interest⁴. Establishing technological safeguards, educating and training customers will also help in democratizing Fintech and guarding against cyberattack issues. FinTech will create a more diverse, secured and stable financial services landscape. FinTech companies are less homogenous than incumbent banks, and offer great learning templates to improve, both, capabilities and culture³.

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A STUDY ON THE IMPACT OF MOBILE BANKING APPLICATIONS IN INDIA - AN OVERVIEW

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Abstract

The commercial banking industry in India has implemented various financial advancements, leading to a shift from traditional banking to technology-based banking. This transition aims to meet customer needs and gain a competitive advantage. An example of such innovation is mobile banking, which is available in all licensed banks with branches in India. This feature allows customers to conduct banking transactions at any time and from any location, providing them with convenience and influencing their banking activities. Furthermore, it facilitates continuous communication between banks and clients and boosts revenue by increasing customer transactions through mobile banking. This study primarily focused on the impact of mobile banking applications in India. Previous research investigated the relationship between mobile banking, internet usage, and the technological services offered by banks to customers. In conclusion, the study found that customers place trust in banks because of the convenience and security they offer in transactions. Customers are more likely to choose banks and use their services if the system is adaptable and easily accessible. The integration of technology, particularly mobile technology, in the banking industry has attracted a new group of customers.

Keywords: Mobile Banking, Technology, Customers, innovation

Introduction

The term "mobile banking" describes interactions between a customer and a bank over a mobile platform, such as a smartphone or tablet. This is distinct from mobile payments, which entail making little transactions via a mobile device. When compared to traditional branch or internet banking, mobile banking has benefits including convenience and efficiency. Over the past few decades, technology has played an increasingly crucial role in the banking sector. Banks are constantly searching for the most effective ways to utilize technology in order to enhance their services, provide convenience, and improve efficiency for their customers.

Mobile phones have become an integral part of everyone's daily lives and are now considered a common and essential technology. They have greatly simplified the provision of banking services to a wider range of customers in a cost-effective and time-efficient manner. To improve the convenience of their primary services, the majority of banks have developed applications, commonly referred to as apps, which enable customers to access banking services anytime and from anywhere.

The banking industry has witnessed a transformation from the traditional physical model to a contemporary mobile banking system, enabling customers to virtually access their banks through their mobile phones and avail services at any time and place with a simple click. Mobile banking has brought about significant changes in tasks like checking account balances, transferring funds online, making utility payments, and other services, all with the convenience of a mobile device.

The continuous advancements in information and technology have resulted in numerous improvements in the design and delivery of products and services within the banking sector. The popularity of mobile banking is on the rise as customers increasingly find it convenient to pay bills, recharge their mobile phones, instantly transfer funds, and more. This special issue is highly appropriate given the rapid growth and excitement surrounding mobile banking. Over the last few years, there has been a significant increase in the mobile application industry. Banks are eager to establish their presence in this sector in order to engage with their customers through mobile applications.

Importance of the Study

The rise of mobile payment has been aided by government efforts and technological advancement. Thanks to technology, mobile users can now use the applications that have been downloaded on their smartphones to conduct financial transactions or make payments. The popularity of electronic payment, in which products and services are exchanged without the need of cash, surged with the expansion of mobile payment. This has experienced exceptional growth thanks to the smart phone revolution. The interactions between customers and financial service providers are greatly influenced by mobile banking services. It has special ability to support Anywhere Anytime Banking makes it the most practical and simple option to stay connected to the bank. After acquiring the required approval from the Department of Payment & Settlement Systems, Reserve Bank of India, banks are allowed to offer mobile banking services SMS, USSD, or Mobile banking application.

Mobile banking services are accessible to bank customers regardless of their mobile network. It essentially enables consumers to perform various banking activities, including accessing financial account information, conducting transactions with their bank, transferring money, and making credit card payments from anywhere. These services have expanded recently, offering additional options such as transaction details, account balance viewing, mini statements, third-party fund transfers, utility bill payments, and more. As a result, there has been a significant increase in mobile banking transactions. Additionally, banks have embraced mobile applications, commonly known as apps, since the introduction of mobile banking.

Significance of the Study

The smart phone revolution in India has paved way for an unprecedented growth of Mobile Commerce and Mobile Banking in India. The Mobile banking services are playing a significant role in the interactions between consumers and financial service providers. The unique feature of Mobile banking is that it enables Anywhere Anytime Banking and is the most convenient and easy way to stay connected to the bank. Banks are permitted to offer Mobile banking services (through SMS, USSD or Mobile banking application) after obtaining necessary permission from the Department of Payment & Settlement Systems, Reserve Bank of India.

Mobile banking services are made available to bank customers irrespective of the mobile network. It virtually allows consumers to do all their banking activities such as obtaining financial account information, conducting financial transactions with their financial institution and allowing consumers' to transfer money and make credit card payments anywhere. These services have recently broadened with array of options like banking transaction details, viewing of account balance, mini statement, third party transfer of funds, utility bill payments features etc. has led to a surge in Mobile banking transactions. With the advent of Mobile banking, banks have also embraced Mobile Applications popularly called as Apps. Banks are being forced to undergo a significant makeover as more and more consumers use the internet and mobile devices.

Review of Literature

Shirin Alavi and Vandana Ahuja (2016) emphasized mobile technologies have changed established channels, leading to benefits for the banking services sector through the adoption of mobile apps. **Sindhu Singh & R. K. Srivastava (2020)** discovered that the factors influencing adoption significantly impact customers' behavioral intention to use mobile banking. **Chawla, D., & Joshi, H. (2017)** conducted empirical research on the influence of various factors on user attitude and intention, finding that they positively and significantly affect user intention to adopt mobile banking. **Anshul Malik, S. Suresh, and Swati Sharma (2017)** conducted a study on the factors influencing the adoption and continuous use of mobile apps by consumers, which can provide a strategic advantage to marketers in this competitive environment.

Chawla and Joshi (2017) discovered that there are significant differences in both attitude and intentions towards mobile banking among the three segments of customers: leaders, followers, and laggards in terms of technology adoption. **Kamboj, Sharma, and Sarmah (2022)** proposed that all dimensions of m-banking failure have an impact on the utilization of m-banking, which subsequently affects user satisfaction and customer engagement. **Sampaio, Ladeira, and Santini (2017)** pointed out that there is a positive relationship between the benefits provided by mobile banking and customer

satisfaction. **Perna Sharma Bamoriya and Dr. Preeti Singh (2012)** stated that the major obstacle in adopting mobile banking services is the concern for customers' security.

Sahoo, D. and S. Pillai, S. (2017) demonstrated that the servicescape of mobile banking strongly predicts customers' attitude towards M banking, which in turn influences customer engagement. **Chawla, D. and Joshi, H. (2019)** discovered that factors such as perceived ease of use, perceived usefulness, trust, security, facilitating conditions, and lifestyle compatibility significantly impact consumer attitude and intention to use mobile wallets. **Barnes and Corbitt (2003)** mentioned that recent advancements in telecommunications have facilitated the introduction of new methods for accessing banking services, one of which is mobile banking, where customers interact with a bank through their mobile phones.

Viral Bhatt and Dixita Nagar (2021) validated that factors such as ease of use, mobile atmosphere, and perceived responsiveness, image of the bank, perceived security, perceived risk, performance benefits, social influence, and hedonic motivation have substantial direct impacts on mobile banking. **Nidhi Singh and Neena Sinha (2016)** concluded that the mere introduction of mobile service is not enough; banks should give priority to improving features that incentivize customers to embrace this service. **Perna Sharma Bamoriya and Preeti Singh (2011)** found that range of issues related to banks, mobile handsets, and telecom operators. These issues include functionality, security, and privacy of mobile handsets, standardization and customization of services, downloading and installing application software, and the quality of telecom services.

Results and Discussion

The adoption of mobile technology as an alternative distribution channel for delivering banking services to customers demonstrates potential in the newly developed banking model worldwide. Mobile banking is a revolutionary innovation that enhances service delivery in the banking industry. Banks are leveraging this technology to empower both banked and unbanked customers, while also benefiting mobile network operators and reducing operational costs. Technological advancements have rapidly transformed various aspects of our lives, including the banking business. Smart devices are now utilized in providing banking services, and the combination of internet technology and mobile networks offers new possibilities and applications. The Bank's focus on strengthening infrastructure and ensuring the safety and security of digital transactions has contributed to the rapid adoption of digital payments across the country. This was aided by the introduction of innovative products in the payment space.

The Bank also worked towards building a strong and resilient technology infrastructure, which ensured the smooth functioning of critical and systemically important payment and settlement systems in the country. Technology plays a crucial role

in the banking sector, which is one of the largest financial institutions. The sector is constantly exploring the potential of technology-enabled services to enhance the experience and convenience for customers. In today's era of information, mobile phones have become a common device for individuals, leading to the emergence of mobile banking as an alternative channel for banking services. India, as the largest telecom market globally, has significant potential for expanding mobile banking services.

Initially, banks developed customized applications for mobile phones, but with the advent of smartphones, traditional mobile software has evolved into mobile apps. However, the development of apps for various mobile operating systems presents a significant challenge. Security is also a concern due to the small size and vulnerability of mobile devices to theft. To address this, customers need to be educated on how to safely use mobile banking.

In a country like India, where different languages are spoken in different regions, it is crucial to have user-friendly banking software that supports local languages. Raising awareness among existing customers and providing special incentives for using mobile banking will boost adoption rates. Once customers have confidence in the technology, the use of mobile banking will naturally increase.

Conclusion

This study concluded that customers will engage in more transactions if the Mobile Banking App is user-friendly and easy to navigate. The study found that there is a noticeable difference in perception between frequent app users and those who never use it. This study suggests that using the app more often increases awareness of mobile banking services. Additionally, individuals who use the app frequently find it more convenient and compatible compared to those who have never used it. Therefore, banks should actively encourage customers to use the app more often to improve customer satisfaction and promote awareness of their services. Currently, there is a significant business opportunity in the banking industry when it comes to attracting customers. Customers trust banks because of the convenience and security they provide in transactions. Customers are more likely to choose banks and use their services if the system is adaptable and easily accessible. The integration of technology, especially mobile technology, in the banking sector has attracted a new group of customers.

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CHALLENGES FACED BY SMALL RETAIL BUSINESSES

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Abstract

Small retail businesses encounter fierce competition, financial constraints, and inventory management dilemmas. The digital shift necessitates e-commerce adoption, while regulatory compliance adds complexity. Supply chain vulnerabilities and economic uncertainties create additional hurdles. Despite these challenges, successful small retailers thrive by prioritizing customer service, offering unique products, and fostering community connections.

Keywords: *Competition, Financial Constraints, Inventory Management, E-commerce Adoption, Customer-Centric Approach*

Introduction

Small retail businesses, often family-owned or driven by passionate entrepreneurs, are the heartbeat of local communities, infusing them with unique character and convenience. These enterprises, including corner stores, boutiques, and even online ventures, establish personal connections with their customers, fostering a strong sense of community.

Despite facing formidable competition from large retail chains and e-commerce giants, small retailers carve out their niche by offering distinct products and services tailored to local tastes. Their adaptability and embrace of technology enable them to respond swiftly to changing consumer preferences and market dynamics.

This article will explore the resilience and innovation displayed by small retail businesses, showcasing their pivotal role in sustaining the fabric of local communities and contributing to the dynamic tapestry of the broader retail landscape.

Review of the Literature

1) Sustainability of SMEs in the Competition: A Systemic Review on Technological Challenges and SME Performance

RPIR Prasanna, JMSB Jayasundara, Sisira Kumara Naradda Gamage, EMS Ekanayake, PSK Rajapakshe, and GAKNJ Abeyrathne(2019)- Sustainability of SMEs in the Competition: A Systemic Review on Technological Challenges and SME Performance This review examines how technology affects SME survival globally, emphasizing key drivers like social capital, innovation, and partnerships with larger corporations, while highlighting the importance of a skilled workforce and seizing tech opportunities for success.

2) Problems and prospects of Indian MSMEs: a literature review

Davinder Singh, J.S. Khamba and Tarun Nanda(2018)- MSMEs play a crucial role in India's economy by providing significant employment opportunities and addressing poverty. This study examines the challenges they face in a competitive environment and explores factors enhancing their manufacturing performance, essential for India's growth.

3) Literature Review : The Efforts To Strengthening of Micro, Small and Medium-Sized Enterprises (MSME) in Indonesia

Nafizha Trie Permata Sari, Andriani Kusumawati(2022)- MSMEs are crucial for poverty reduction in countries like Indonesia, facing challenges such as workforce quality and high costs. To strengthen them, efforts include government collaborations, training, digital adoption, capital access, policy support, and promoting entrepreneurship through events.

4) The Impact of CRM on Business or MSME Performance: A Literature Review

Budi Utami, Sudarmiatin Sudarmiatin(2022)- This study used a systematic literature review of Scopus Q1, Q2, and Q3 articles to investigate the impact of CRM on SMEs. They screened articles with keywords "CRM" and "company performance (MSMEs)" and found a positive relationship between CRM and both financial and non- financial SME performance.

5) MSMEs Business Sustainability: A Literature Review

Zul Afdal, Menik Kurnia Siwi, Tri Kurniawati, Marwan(2021)- This article underscores MSMEs' need for sustainability in the face of uncertainty, emphasizing the impact of the Covid-19 pandemic. It highlights the importance of quality, technology, and competitive pricing for their success, particularly in Industry 4.0. The article also identifies research gaps and recommends future study directions.

6) Analysis Transformation and Digitalization of MSMEs (Literature Review)

Rahman Soesilo, Liosten Rianna Roosida Uly Tampubolon(2023)- This research employs a literature review to describe and explain variables. It identifies significant relationships between digitization transformation, productivity, added value, and downstream research through qualitative methods. Despite search limitations, it contributes to knowledge in digitalization transformation and introduces a novel framework.

7) Identification of Human Resource Management Best Practices in the MSME Sector

Abd. Karman, Purnomo, Akbar Jaya, Teguh Setiawan Wibowo(2022)- This study examines MSME human resource management through 60 publications (2010-2022) using a phenomenological approach. Key findings highlight the importance of superior human resources, effective sales strategies, customer-centricity, and adaptive governance for MSME success in a competitive landscape.

8) Characterizing and Distinguishing 'Innovative Start-ups' Among Micro, Small and

Medium Enterprises (MSME)

S. Navaneetha Krishnan, L. S. Ganesh, C. Rajendran(2020)- This study explores start-ups and their high failure risk. It identifies various terms used for start-ups and aims to categorize them as Innovative Start-ups (ISs). Additionally, it proposes a framework distinguishing ISs from Conventional MSMEs (C-MSMEs), aiding policymakers, entrepreneurs, and investors. It also highlights four new research areas in the field.

9) Utilization of Digital Marketing for MSME Players as Value Creation for Customers during the COVID-19 Pandemic

Finny Redjeki, Azhar Affandi(2021)- COVID-19 shifted lifestyles towards online shopping. Indonesian MSMEs can thrive via Digital Marketing. This qualitative study explores its potential, suggesting steps like goal-setting, target audience identification, platform selection, and content creation. It also highlights added value for customers using digital marketing.

10) MSMEs in India: A Vision for the Future

Nidhi Gautam, Akash Sondhi(2020)-MSMEs are pivotal for emerging economies, contributing to exports, employment, and GDP, especially during economic downturns. This chapter underscores their significance, challenges, and outlines a forward-looking vision for India. It guides policymakers and highlights SMEs' potential in a globalized world.

11) Role of Lean Six Sigma in the Indian MSMEs during COVID-19

Mrigendra Nath Mishra, Ashutosh Mohan, Arghya Sarkar(2021)- This study examines Lean Six Sigma implementation in Indian MSMEs during or post-COVID-19, highlighting benefits, obstacles, and cultural shifts. Findings emphasize its potential for improving operations but note limitations. It offers practical guidance and contributes to understanding Lean Six Sigma in the pandemic context.

12) Evaluating the Significant Role of E-Commerce to the Resiliency of MSMEs During the Covid-19 Pandemic

Marderick M. Presto(2021)- This paper argues that e-commerce is vital for economic resilience, especially for MSMEs during COVID-19, with indicators including increased internet use, mobile apps, and equal market opportunities.

13) Determinants of Small Medium Micro Business Empowerment: Systemic Literature Review

Aidil Amin Effendy, Muhamad Apep Mustofa, Raden Ruli Basuni, N Nurjaya Mail, Denok Sunarsi (2022)- This study investigates determinants of MSME empowerment in the globalization era, highlighting the key roles of government lending programs, banking support, and policies promoting credit financing and market access for MSMEs during the pandemic.

14) The Impact of Technology on MSME Sector in India

Deshraj Son(2023)- This paper examines the impact of technology and ICT on India's

MSME sector, emphasizing their role in economic development and addressing sector-specific challenges.

15) Business Development Services for Micro, Small and Medium Enterprises - Literature Review of Past Trends and Future Directions

Sandeep Goyal, Bruno S. Sergi, Mark Esposito(2018)- This article examines the role of BDS providers in enhancing MSME performance, emphasizing their significance in economic growth and job creation. It notes challenges like an underdeveloped BDS market, limited MSME adoption, evolving BDS provider dynamics, and a shift from public to private providers. The research objectives encompass BDS evolution, provider definition, challenge understanding, and strategic action identification.

Objectives of the Study

- To Study the Role of Small Retail Businesses
- To Identify the challenges faced by the small retail businesses
- To give suggestions and solution

Research Methodology

The paper is exploratory in nature, and based on available secondary data such as books, journals, magazines and other sources. Secondary data refers to information that has been collected by someone else for a different purpose and is used by researchers in their own studies or analyses.

Role of Small Retail Business

Small retail businesses contribute significantly to the vitality of local communities and the broader economy. They serve as vital employers, offering job opportunities and livelihoods to residents, thus contributing to lower unemployment rates and bolstering the local economy. Moreover, these businesses foster community engagement by building personal connections with customers and often participating in local events and initiatives.

Local Employment: Small retail businesses are often significant employers within their communities, providing jobs and livelihoods to local residents. This helps reduce unemployment rates and boosts local economies.

Community Engagement: Small retailers foster a sense of community by building personal relationships with their customers. They often participate in local events and initiatives, contributing to the social fabric of the area.

Support for Local Suppliers: Many small retailers source their products from local artisans, craftsmen, and suppliers, thus supporting and promoting local businesses.

Tax Revenue: Small retail businesses generate tax revenue for local governments through sales taxes and property taxes, which can be used to fund essential community services.

Economic Growth: By stimulating local spending and keeping money within the community, small retailers contribute to the overall economic growth of their regions.

Entrepreneurship: Small retail businesses are often started by entrepreneurs and serve as training grounds for future business leaders. They contribute to a culture of innovation and entrepreneurship.

Consumer Convenience: Small retailers provide convenient access to everyday goods and services, reducing the need for consumers to travel long distances for their shopping needs.

Adaptability: Small retail businesses are agile and can quickly respond to changing consumer preferences and local trends, helping to keep communities vibrant and up-to-date.

Sustainability: Some small retailers prioritize sustainable practices, such as selling locally sourced and eco-friendly products, contributing to environmental and social sustainability efforts.

Challenges Faced

Financial challenges: financial challenges, including cash flow management, high operating costs, and fierce competition from larger rivals. Access to financing and the cost of establishing an online presence pose additional hurdles.

Access to Capital: Securing financing and capital for expansion, inventory management, and technology upgrades can be more challenging for small retailers compared to larger corporations.

Competition from Large Retailers: Small retailers often compete with large chain stores and e-commerce giants, which have greater resources and buying power. Price competition can be especially challenging.

Supply Chain Disruptions: Small retailers may lack the resources to quickly adapt to supply chain disruptions caused by factors like natural disasters, trade issues, or the COVID-19 pandemic.

Customer Retention: Building and maintaining customer loyalty is crucial for small retailers, as they often rely on repeat business. Providing exceptional customer service is essential but can be resource-intensive.

Changing Consumer Preferences: Adapting to evolving consumer preferences and trends is critical. Small retailers must stay attuned to customer needs and adjust their product offerings accordingly.

Local Economic Conditions: Economic downturns or fluctuations in local economies can directly impact the spending habits of consumers in a particular area, affecting small retailers sales.

Online Competition: The growth of e-commerce and online marketplaces has intensified competition and required small retailers to establish a strong online presence,

which can be costly and technically challenging.

Rising Operating Costs: Expenses such as rent, utilities, and employee wages can be a substantial burden for small businesses. Economic fluctuations and minimum wage increases can further strain their budgets.

Inventory Management: Balancing inventory levels to meet customer demand without overstocking or understocking can be a complex task, affecting cash flow and profitability.

Distribution challenges : Small retail businesses face distribution challenges stemming from limited resources and logistics, often resulting in delayed order fulfillment and inventory management difficulties.

Discussion

The abstract and introduction present a comprehensive view of small retail businesses, emphasizing their vital role in local communities and economies. Small retailers are depicted as not only sources of employment but also as facilitators of community engagement and supporters of local suppliers, contributing to tax revenue and overall economic growth. However, the discussion highlights the multitude of challenges these businesses face, including financial constraints, competition from larger retailers, supply chain disruptions, and adapting to evolving consumer preferences. Their adaptability and emphasis on sustainability are noted strengths, and the study suggests that embracing digital transformation can help them address some of these challenges, particularly in competing with e-commerce giants. Overall, the research underscores the importance of recognizing both the challenges and opportunities faced by small retail businesses in sustaining their unique contributions to local communities and the broader retail landscape.

Conclusion

In conclusion, small retail businesses, despite their pivotal role in fostering community engagement and contributing to local economies, face a multitude of challenges in today's competitive landscape. These challenges encompass intense competition, financial constraints, inventory management dilemmas, the necessity of e-commerce adoption, and the need for a customer-centric approach. Additionally, compliance with complex regulations and supply chain vulnerabilities add to their operational burdens. Nevertheless, resilient small retailers showcase innovation through exceptional customer service, unique product offerings, and strong community connections, enabling them to not only survive but thrive in their local ecosystems. These businesses remain vital contributors to the dynamic retail landscape, embodying adaptability and entrepreneurship at the heart of our communities.

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WOMEN'S PERCEPTION TOWARDS TECHNOLOGY IN SUSTAINABLE DEVELOPMENT THROUGH MSME

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Abstract

This study aims at exploring women's perception towards technology in sustainable development and variables associated with level of opinion towards technology especially e-bike. Data for the study have been collected from 180 women through issue of structured questionnaire by adopting convenience sampling method. Simple Percentage and Chi-square test have been used to analyze the data. The study reveals that majority of the women are in the age group of 35 to 45 years and majority of them are undergraduates and employed in private sector with an earning between Rs.20001 to Rs.40,000 per month and they are aware about E-Bike through friends. The level of opinion to purchase e-bike are less pollution followed by Incentives/subsidies from government, durability, eco-friendly, less dependence on fossil fuels, no fuel cost, smooth driving and appearance of vehicle. Chi-square test reveals that area, age, occupation, monthly income, family income and period of usage are significantly associated with the level of opinion for e-bike.

Keywords: *Women- Technology-Sustainable.*

Introduction

Indians prefer two wheelers because of their small manageable size, low pricing, maintenance, and availability of loans on liberal terms. Indian streets are full of people of all age group riding two-wheelers. Wide varieties of two wheelers are available in the market, known for their latest technology and enhanced mileage. Indian bikes, scooters and mopeds represent style and class for both men and women. India is the second largest producer and manufacturer of two-wheelers in the world. The face of auto industry that was redefined with the invention of fuel-efficient technology is all set to see dawn of a new era in two- wheeler industry. Electric vehicles differ from fossil fuel-powered vehicles in that the electricity they consume can be generated from a wide range of sources, including fossil fuels, nuclear power, and renewable sources such as tidal power, solar power, and wind power or any combination of those. There are several policies, promise and pledges with the ever-increasing emission of greenhouse gases. There is an increased fear of environment pollution at every step with modern technology and innovation. In this regard the present study brief about women perception towards technology in sustainable development through MSME especially e-bike.

Literature Review

Ajaysinh Paramar and Tushar Pradhan (2021) in their study made an attempt to know the consumer perception towards e- vehicle in Vadodara City. The data for the study have been collected by issuing questionnaire to 100 respondents by using random sampling method. The data have been analysed using simple percentage. The finding of the study reveals that the most of the people prefer other than e-vehicle. **Sivasakthi and Geethanjali (2020)**, in her research made an attempt to know the customer satisfaction towards ampere electronic bike with special reference to Coimbatore City. The data for the study have been collected by issuing questionnaire to 120 respondents by adopting random sampling techniques. The data have been analysed using simple percentage and ranking analysis. The finding of the study depicts that advertisement affects to buy E-bike. Customers feel the price of ampere e-bike is moderate.

Statement of the Problem

The two-wheelers of the present world have the sounds to attract the consumers but at the cost of degrading the environment. The usage of e-bike has solution for good environment by reducing pollution, sound etc. With the rising cost of fuel, increasing levels of pollution, high running and maintenance cost of vehicle, the electrically chargeable bikes and scooters are gaining popularity. Sheela Srivastava and Sivakoti Reddy (2011), found that majority of the customers are satisfied with price and availability of spare parts in the local market of the vehicles. Customers are not satisfied with the insurance policy of the companies. Shuvam Mondal et.al (2022), depicts that the carrying expenses are less than fuel (petrol/diesel) cost and hence they are willing to buy e-vehicle (or) switch to one. In this backdrop, an attempt has been made to study the women's opinion for e-bike and variables influencing the level of opinion towards e-bike.

Objectives of the Study

The following are the objectives of the study

- To know the socio-economic profile of the women.
- To find out the level of opinion towards e-bike.
- To identify the variables that associate with level of opinion towards technology.

Research Methodology

The study is based on primary data collected through issue of well-structured questionnaire. It contains questions relating to the socio-economic profile, factors influence to purchase to e-bike. A sample of 180 women in Pollachi Taluk has been selected by adopting convenience sampling method. Simple Percentage and Chi-Square test have been used to analyze the data.

Data Analysis

The findings of the study are divided into three sections namely, Socio-economic profile of sample women's, level of opinion towards e-Bike and variables associated with level of opinion for e-bike are showed in the following paragraphs.

(i) Socio - Economic Profile

- Most 86 (47.7%) of the women are in the age group 35 to 45 years.
- Majority 92 (51.1%) of the women are from rural area.
- Majority 123 (68.3%) of the women are married
- Majority 118 (65.5%) of the women belong to the nuclear family
- Majority 129 (71.6%) of the women are under graduate.
- Majority 146 (81.1%) of the women are private employee.
- Most 88 (48.8%) of the women are earning between Rs.20,001 and 40,000.
- Most 74 (41.1%) of the women monthly family income is between 50,001 to 100,000.
- Majority 154 (85.5%) of the women are using e-bike less than a year.
- Majority 136 (75.5%) of the women are friends induced to purchase an e-bike.
- Majority 127 (70.5%) of the women are using battery electric vehicle.

(ii) Level of Opinion towards E-Bike

- Majority 92 (51.1%) disagree that use of fossil fuel does not influence them to purchase e- bike
- Most 88 (48.8%) of women agree that less pollution while using e-bike influence them to purchase e- bike
- Most 86 (47.77%) of women disagree that no fuel cost does not influence them to purchase e- bike
- Most 78 (43.3%) of women agree that smooth driving influence them to purchase e- bike
- Majority 106 (58.88%) of women agree that incentives/subsidies from government influence them to purchase e- bike
- Most 76 (42.22%) of women agree that the factor that eco-friendly factor influence them to purchase e- bike
- Majority 97 (53.88%) of women agree that less maintenance influence them to purchase e- bike
- Majority 114 (63.33%) of women agree that durability influence them purchase e- bike
- Most 84 (46.67%) of women agree that appearance of vehicle influence to purchase e- bike

(iii) Variables Associated with Level of opinion towards e-Bike

To identify the association between the select variables and level of opinion towards e-bike, the Chi-square test has been employed.

Table: 2 Variables Associated with Level of Opinion towards e-Bike

Variables	d.f	Calculated χ^2 Value	Table Value 5% Level
Area	4	13.408	9.488
Age	6	14.987	12.592
Marital Status	2	1.001	5.991
Type of family	2	3.775	5.991
Educational Qualification	4	4.367	9.488
Occupation	2	7.152	5.991
Monthly Income	6	14.979	12.592
Family Income(Per Month)	6	16.018	12.592
Period of Usage	4	12.366	9.488
Sources of Information	4	5.968	9.488
Type of E-Bikes	4	7.068	9.488

It has been found that there exists a significant association between area, age, occupation, monthly income, family income per month, period of usage and level of opinion for e-bikes.

Suggestions

- Producers are suggested to come up with more developed batteries and their life time has to be increased.
- Service centre's can be increased to solve the problems and needs of the customers when needed.
- Number of charging stations may be opened in different spots

Conclusion

According to the study there are many factors that influence the women towards e-bikes. The concept of e-bike has entered in recent years with help of MSME and same is gaining momentum. As an eco friendly product it is more suitable for the city as it can reduce the emission of harmful gas and here by it reduces the pollution. Due to high increase in fuel prices, the electrically charged vehicles seem to be the best one compared to traditional vehicles. Number of charging stations may be opened in rural areas to increase the use of e-bikes then fuel bikes.

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SUSTAINABLE DEVELOPMENT THROUGH MSMEs: A PATH TO ECONOMIC AND ENVIRONMENTAL PROSPERITY

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Abstract

Micro, Small, and Medium Enterprises (MSMEs) play a pivotal role in the global economy. They are the foundation of many economies, making a substantial impact on GDP, employment, and innovation. As the globe struggles with environmental issues and economic inequalities, the idea of sustainable development has gained popularity recently. MSMEs are particularly positioned to support sustainable development because of their inherent flexibility and agility. This article explores how MSMEs can be catalysts for both economic and environmental sustainability.

Keywords: MSMEs, Economic and Environmental Sustainability, Inclusive growth, Efficiency and Policy support.

Introduction

Micro, Small and Medium Enterprises (MSMEs) represent a vital segment of the global economy, contributing significantly to economic growth, job creation and Innovation. Micro, Small and Medium Enterprises (MSMEs) form the backbone of economies worldwide, playing an important role in driving economic growth, fostering entrepreneurship and generating employment opportunities. These enterprises are characterized by their relatively smaller size compared to large corporations but are no less significant in their contributions to the global business landscape.

MSMEs are known for their ability to generate employment opportunities, especially in rural and underprivileged areas. By providing job opportunities, they help reduce poverty and improve the standard of living for communities. Sustainable development is, at its core, about improving the well-being of people, and MSMEs contribute directly to this goal. The specific definitions and categorizations of MSMEs vary from country to country, but they generally encompass businesses with limited resources, including fewer employees, lower capital investments and often localized operations.

Despite their modest scale, MSMEs hold immense economic and social importance. They are engines of job creation, particularly in regions where larger corporations may not have a significant presence. Additionally MSMEs are hotbeds of innovation, often pioneering new products, services and business models. Their agility allows them to respond swiftly to changing market dynamics, contributing to economic dynamism.

Classification

Composite Criteria: Investment in Plant & Machinery/Equipment and Annual Turnover:

Classification based on Manufacturing Enterprises and Enterprises rendering services:

In exercise of the powers conferred by sub-section (1) read with sub-section (9) of section 7 of the 'Micro, Small and Medium Enterprises Development Act, 2006 (27 of 2006) and in supersession of the notification of the Government of India, Ministry of Small Scale Industries, dated the 29th September, 2006, published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section(ii), vide S.O. 1642(E), dated the 30th September 2006 except as respects things done or omitted to be done before such supersession, the Central Government, hereby notifies the following criteria for classification of micro, small and medium enterprises (w.e.f 01.07.2020) namely:

- a) A micro enterprise: where the investment in Plant and Machinery or Equipment does not exceed one crore rupees and turnover does not exceed five crore rupees
- b) A small enterprise: where the investment in Plant and Machinery or Equipment does not exceed ten crore rupees and turnover does not exceed fifty crore rupees;
- c) Medium enterprise: where the investment in Plant and Machinery or Equipment does not exceed fifty crore rupees and turnover does not exceed two hundred and fifty crore rupees.

Objectives of the Study

1. To explore how MSMEs can be catalysts for both economic and environmental sustainability.
2. To study the government's MSMEs assistance programmes.

Review of Literature

Endris and Kassegn (2022)¹ found that MSMEs significantly contributed to the sustainable development goals of Ethiopia through creating employment, alleviating poverty and improving their standard of living.

Erik Avanesian and Jose Nino (2020)² concluded that a favourable economic and geographical position were the factors of sustainable development of small & medium sized businesses.

Mohd. Asif Khan (2011)³ found that The MSME sector is significant for generating exports, economic empowerment which result in employment. It also performs a variety of vital and significant functions in the Indian economy. According to the 4th Census of the MSME sector, MSMEs sector is made up of 26.1 million businesses that employ an estimated 59.7 million people according to the 4th Census of the MSME sector. Besides, MSMEs sector is anticipated to employ 1012.59 lakh people by the end of 2012 as per the

annual reports for 2011–12 and the projects for 2012–13, This industry is just behind the agricultural sector in terms of manufacturing output and total exports, accounting for around 45% and 40% of both sectors, respectively. Therefore, governments of India and of states have given this sector a very high priority in order to achieve balanced, sustainable, more equitable, and inclusive growth in the country to ensure overall prosperity among all the countrymen.

Role of MSMEs in Sustainable Development

In recent years, there has been growing recognition of the role MSMEs play in sustainable development. Their ability to adapt to evolving market demands positions them as key players in addressing environmental challenges, promoting social inclusivity and fostering economic growth that benefits a broader spectrum of society.

A. Economic Prosperity

a) Job Creation

MSMEs are renowned for their capacity to create jobs, particularly in rural and disadvantaged areas. They aid in lowering poverty and raising communities' standard of living by presenting employment possibilities. MSMEs immediately contribute to this objective since improving human well-being is at the heart of sustainable development.

a) Innovation and Entrepreneurship

MSMEs are often hotbeds of innovation and entrepreneurship. They have the agility to adapt to changing market demands and can develop environmentally friendly technologies and products. Sustainable development relies on innovative solutions to environmental challenges, and MSMEs can be key players in this endeavor.

b) Inclusive Growth:

Sustainable development seeks to ensure that economic growth benefits all segments of society, especially marginalized groups. MSMEs, by their nature, are often more inclusive in their hiring practices and can empower women, minorities, and disadvantaged individuals to participate in economic activities. This inclusivity fosters social equity and contributes to sustainable development.

B) Environmental Sustainability

a) Resource Efficiency

MSMEs can adopt practices that enhance resource efficiency. Through measures like waste reduction, energy conservation, and sustainable sourcing of raw materials, they can minimize their environmental footprint. These actions not only benefit the planet but also often lead to cost savings, making businesses more resilient.

b) Green Technologies

Many MSMEs are at the forefront of developing and implementing green technologies. Whether it's solar-powered appliances, eco-friendly packaging, or sustainable agriculture practices, MSMEs can pioneer environmentally conscious solutions that have a positive impact on both local and global scales.

c) Circular Economy

MSMEs can contribute to the transition towards a circular economy, where products and materials are reused, remanufactured, or recycled to reduce waste. By designing products with durability and recyclability in mind, MSMEs can help create a more sustainable and less wasteful economy.

Governments MSMEs Assistant Programmes

For MSMEs to fully realize their potential in sustainable development, governments must provide appropriate policy support. Schemes of MSMEs are as follows:

a) Credit Guarantee Trust Fund

Micro, Small and Medium Enterprises and Small Industries Development Bank of India (SIDBI) jointly established a Trust named Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) in order to implement Credit Guarantee Scheme for Micro and Small Enterprises. The corpus of CGTMSE is contributed by Government of India and SIDBI. 75% of the loan amount to the bank is guaranteed by the Trust Fund. Collateral free loan up to a limit of ₹ 100 lakh is available for individual MSE on payment of guarantee fee to bank by the MSE.

b) Market Access

Governments can promote sustainable MSMEs by creating market incentives such as green procurement policies and preferential treatment for environmentally friendly products and services. To provide marketing support to Micro and Small Enterprises (MSEs), Ministry of MSME has notified the public procurement policy for micro and small enterprises (MSEs) order, 2022 under the MSMED Act, 2006 which is effective from 1st April 2012 and has become mandatory w.e.f. 1st April 2015.

c) Interest Subsidy Eligibility Criteria Scheme

The Interest Subsidy Eligibility Certificate (ISEC) Scheme is an important mechanism of funding khadi programme undertaken by khadi institutions. It was introduced to mobilise funds from banking institutions for filling the gap between the actual fund requirements and availability of funds from budgetary sources. the ISEC Scheme, credit at a concessional rate of interest of 4% per annum for working capital, is made available as per the requirement of the institutions. The difference between the actual lending rate and 4% is

paid by the Central Government through KVIC to the lending banks. The Khadi institutions, having valid Khadi certificate and sanctioned khadi programme. The Institutions registered with the KVIC/State Khadi and Village Industries Boards (KVIBs) can avail of financing under the ISEC Scheme.

d) Procurement and Marketing Support Scheme

Procurement and Marketing support Scheme would cover the following activities:

- To encourage Micro and Small Enterprises (MSEs) to develop domestic markets and promotion of new market access initiatives.
- To facilitate market linkages for effective implementation of Public Procurement Policy for MSEs Order of 2012.
- To educate MSMEs on various facets of business development.
- To create an overall awareness about trade fairs, latest market technique.

e) MSME Champions Scheme (Erstwhile CLCS-TUS)

Ministry of MSME has been implementing Credit Linked Capital Subsidy and Technology Upgradation Scheme (CLCS-TUS) for promoting competitiveness amongst Micro, Small and Medium Enterprises (MSMEs) by the way of wastage reduction through Lean Manufacturing, support for Design improvement, building awareness on Intellectual Property Rights, Zero Defect Zero Effect (ZED) Scheme, digitally empowerment of MSME through Digital MSME and to promote & support untapped creativity of individual and to promote adoption of latest technologies in manufacturing.

MSME Champions scheme has been formulated through Standing Finance Committee (SFC) by merging all 6 components of erstwhile Technology Upgradation Scheme (TUS) for a period of 5 years i.e 2021-22 to 2025-26. It is a Holistic Approach to unify, synergize and converge various schemes and Interventions with a single purpose. The end objective is to pick up clusters and enterprises and modernize their processes, reduce wastages, sharpen business competitiveness and facilitate their National and Global reach and excellence.

f) Entrepreneurship Skill Development Programme (ESDP)

Entrepreneurship promotion and development Programmes are being organized regularly to nurture the talent of youth by enlightening them on various aspects of industrial/business activity required for setting up MSEs. These Programmes are conducted for youth and other people interested to set up their own industrial/self-employment venture. Such activities are also organized in ITIs, Polytechnics and other technical institutions/business schools, where skill/talent is available to motivate them towards self-employment.

g) Survey Studies and Policy Research Scheme

Survey Studies and Policy Research Scheme Conducting the study/survey to analyze the constraints and challenges faced by the MSME as well as the opportunities available to them;

Conduct the study/ survey and analyze on the basis of empirical data and use the results of surveys, evaluation studies of scheme for this Ministry and analytical studies for policy research, designing appropriate strategies and measures of intervention by the Government.

Conclusion

Sustainable development through MSMEs is not just an ideal but an achievable reality. These enterprises, with their capacity for job creation, innovation, and environmental stewardship, are well-positioned to drive economic and environmental prosperity. By fostering a supportive ecosystem for MSMEs and recognizing their potential in the sustainable development agenda, we can create a more equitable, prosperous, and sustainable future for all.

In the coming years, the role of MSMEs in sustainable development is expected to become even more critical. . As global awareness of environmental issues, continues to grow. Consumers and Businesses alike are placing a premium on sustainability. MSMEs that embrace eco-friendly practices and products can tap into this growing market demand. Further driving their economic success while contributing to a healthier planet.

Moreover, collaboration among MSMEs, larger corporations and governments can lead to synergistic efforts in sustainable developments. Partnerships that promote knowledge sharing, technology transfer and joint initiatives can amplify the positive impact of MSMEs in achieving sustainability goals.

In conclusion, MSMEs hold immense potential in the pursuit of sustainable development. Their ability to balance economic growth with environmental responsibility makes them valuable contributors to a more equitable and greener future. By recognizing and supporting the pivotal role of MSMEs we can pave the way for a world where prosperity and sustainability go hand in hand.

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JOB STRESS AMONG MSME EMPLOYEES

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Abstract

Stress has those days end up a worldwide crisis, that's affecting the humans strolling in nearly each vicinity of the economy. It now not most effective influences physical and intellectual health of employees, but moreover reduces the competitiveness and productivity of the organization. MSME zone is one of the most annoying sectors. The fundamental goal of the study to supply out troubles related to work stress that can be tackled for improving the organizational climate with inside the worker organization. Primary information emerge as accrued from the respondents on the idea of questionnaires through Google form. The questionnaire become advanced in a manner to be able to carry out the perception of the respondent at the individual and reason of labour strain amongst the employees determined on as respondents. 100 samples are gathered randomly and facts has been gathered through distribution of questionnaires. For analysing number one data, statistical tools like simple average, weighted average and Garrett ranking technique were used. The findings of this take a look at can also moreover assist the control to formulate strain coping strategies through which they might boom the morale, overall performance and wellbeing of the employees.

Keywords: Job stress, Morale, Overall Performance.

Introduction

Workplace stress may be described because the intellectual trauma and misery that a worker has to undergo while there may be a disparity among the necessities at work and the capabilities, performance or the assets available. Job satisfaction is an important issue to address within an undertaking force as it ensures that the personnel care and value are considered.

Workplace nowadays has come to be a studio in which scripts are written to overhaul different studios and outperform each single instance of competition out with inside the middle. Hence the stress positioned with the aid of using employers on their "bulls" to plough their fields is immense. This stress takes its toll and consequences in elevated tension and anxiety stages amongst workers. This phenomenon is popularly known as stress in the place of work.

Job stress need to know no longer be confused with assignment which understand which energizes us psychologically and physically, motivates us to examine new Competencies and gives some of satisfaction at the same time as the undertaking which energizes us psychologically and physically ,motivates us to examine new abilities and gives some of satisfaction even as the challenge is met, whereas, in technique stress the challenge transforms into techniques desires that can't be met turning relaxation to exhaustion ,and the experience of pride into feelings of pressure.

Many people have experienced upheaval, downsizing, layoffs, mergers, and bankruptcies of their location of its employment and it has fee loads of hundreds of

employees their jobs. Overworking, repeated rebuttals can cause such a response in workplaces these days. Majorly, work related stress affects sleep causing insomnia and sleeplessness. It affects fitness adversely because of the reduced sleep.

It can cause problems in the family of the affected individual like infighting, frequent arguments and fits of disagreement. This adversely affects the family life and also enhances the inefficiency at work. All of this lead to increased levels of frustration and hesitancy and directly affects the quality of work, thus further compounding the pressure on the individual. Also stress is related to the cause of various physical disorders like cardiovascular and others. Hence workplace stress is a potent problem faced by modern day offices and employees. It not only affects the individual, also the company is on the receiving end of poorer quality of work output.

According to Mclean (1979) stress affect everyone in the workplace whether blue collar or white collar workers. (Islam et al, 2012) Stress can be defined in general term as people feel pressures in their own life. The stress due to workload can be defined as reluctance to come to work and a feeling of constant pressure associated with general physiological, psychological and behavioural stress symptoms. Hence stress is the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs have the worker and he/she expressed that job stress can lead to poor health and even injury.

Review of Literature

Malek et al. [2010], stated that job stress is an unpleasant emotional situation that an individual experience when requirements of a job are not counter balanced with his ability to cope with the situation. It is a well-known phenomenon that expresses itself differently in various work situations and affects the workers differently.

"Melissa Bushman" [2007], the common causes of low morale include stress, negativity and gossip within the workplace along with lack of incentive programs. The projected solutions to deal with low morale is increasing employee attitudes and improving attendance. Stress is the most frequent cause of low employee morale. Numerous factors may increase the stress levels of employees, but the major reason that employees experience stress is their relationship with their manager, and it has been proved that highly authoritarian managers are likely to cause an increase in level of absenteeism. Therefore, when absenteeism rates are high in a certain department of company, poor employee relationships with the manager or bosses should be considered. For this purpose management training could be used resolve the issue and avoid problems.

"Bowling Harvey" [2001], stress occurs with the interaction between an individual and the environment, which produces emotional strain affecting a person's physical and mental condition. Stress is caused by stressors, which are events that create a state of disequilibrium within an individual. These authors also stated that the cost of too much stress on individuals, organizations, and society is high. Many employees may suffer from

anxiety disorders or stress-related illnesses. In terms of days lost on the job, it is estimated that each affected employee loses about 16 working days a year because of stress, anxiety or depression.

“Ritchie and Martin” [1999], states that stress was described in terms of external, usually physical, forces acting on an individual. Later it was suggested that the individual’s perception and response to stimuli or events were a very important factor in determining how that individual might react, and whether an event will be considered stressful. These authors further contended that most researchers acknowledged that both external and internal factors affect stress. They viewed stress as a response to external or internal processes, which reach levels that strain physical and psychological capacities beyond their limit.

Statement of the Problem

The stress on the place of job is soaring from many years. Most organizations with the goal of accomplishing better overall performance become saddling employee’s overload of labour to fulfill the cut-off date and this might have mental and physical outcomes at the employees which might also additionally bring about something’s opposite to what those companies need to achieve. Although companies are paying more attention than with inside the beyond to the outcomes of the trauma their employees undergo after they place extraordinary needs on them, there may be nevertheless more room for improvement. Again, to generate sufficient sales to be self-sustaining and on the way to fund the acquisition of contemporary-day equipment intended efficient offerings provision and superior personnel of resources. There has been the want for a non-stop alternate in management strategies, administration and the call for of employees to carry out had been increasing.

Objectives of the Study

- To recognize the personnel socio- economic profile.
- To discover the impact of activity pressure at the overall performance of the employees.
- To measure the elements influencing process strain amongst employees.
- To become aware of the personal inadequate, self-role distance, role ambiguity & role inadequacy.

Research Methodology

- Primary records become accrued from the respondents on the premise of questionnaires of 100 via Google form.
- For analysing primary data, statistical tool like simple average, weighted average and Garrett ranking method have been used.

Scope and Significance of Study

- MSMEs often have limited resources and may not prioritize employee well-being. Studying job stress can highlight the importance of creating a healthy work environment for the employees' physical and mental health.
- High levels of job stress can lead to decreased productivity and increased absenteeism. Addressing job stress in MSMEs can contribute to improved performance and profitability.
- High job stress can lead to employee turnover, which is costly for MSMEs. By understanding and mitigating job stressors, MSMEs can retain valuable talent and reduce recruitment and training expenses.
- Governments and policymakers may use research on job stress among MSME employees to formulate policies and provide support programs that can help MSMEs create healthier workplaces.
- MSMEs collectively employ a significant portion of the workforce in many countries. Addressing job stress in this sector can have a positive economic impact by reducing healthcare costs, improving productivity, and enhancing the overall quality of life for employees.
- Demonstrating a commitment to employee well-being can enhance an MSME's reputation and attract socially responsible investors, partners, and customers.

Analysis and Interpretation

Determinants of Job Stress among Employees

Simple Average
Employees Most of them 36 (36 %) are in the age group of (26- 30) years majority of respondents 51 (51%) are males. majority of 50(50%) personnel from rural area. Most of 42 (42%) of employees are Post graduate. Most of personnel 46(46%) are married.

Majority of 64 (64%) are permanent. Most of 38 (38%) personnel are categorized above 20000. maximum of 47 (47%) of employees are with inside the segment of 2-4 members. Majority of 65(65%) are having 2 contributor incomes. most of them 38(38%) are in a trading.

Majority of them 51 (51%) area unit in an exceedingly middle level. Majority 79 (79%) of personnel are acquiring a month -to-month salary. most of 37 (37%) have much less than 1 year of experience. Majority of 88 (88%) employees are select that they having a protection measures in an employer. Majority of 65 (65%) employees are the pick fairly dissatisfied.

So it may be stated that the facts become accumulated from one hundred personnel via the structured questionnaire through Google form. The facts become categorized into age, gender, location, academic qualification of personnel, marital status, nature of job, month-to-month income, general quantity of individuals in family, modern-day role to your company, enjoy to your modern-day company, delight together along with your work environment and so on. Based on the accumulated facts simple percent evaluation had been employed.

Determine to Receive /Accumulated Facts Concerning Job Stress Garrett Ranking Technique

Garrett's ranking technique was used to rank the preference indicated by the respondents on different factors. As per the method, respondents have been asked to assign the rank for all factors and the outcomes of such ranking have been converted into score value with the help of the following formula:

$$\text{PERCENT POSITION} = 100 (R_{ij} - 0.5) / N_j$$

Where,

100= constant

0.5= constant

N_j = Number of ranks

R_{ij} = variable numbers.

Causes of Stress in Work Place Garrett Ranking

Causes of Stress	SCORE	RANK
Long hours	53.86	1
Heavy workload	53.08	2
Tight deadlines	51.36	3
Boring work	51.15	4
Lack of resources	50.17	5
Insufficient skills	49.53	6
Job insecurity	49.44	7
Poor relationship	48.29	8
Low salary	46.35	9
Over supervision	44.77	10

By the use of Garrett's ranking approach observed that, personnel can motive over strain from lengthy running hours (53.86) as first and from heavy workload ranked as second accompanied via way of means of other sources. Over supervision (44.77) are the least supply can motive strain for the personnel and ranked as tenth. It is inferred that lengthy running hours of the personnel can motive strain.

Determination of Employees to Overcome /Prevent Stress Weighted Average

Where the relative significance of the difference object is not the same, weighted arithmetic mean is computed. The term "weight" stands for the relative significance of the distinctive items. The formula for calculation is,

$$\text{Weighted average} = \sum WX / \sum W$$

Where,

WX = the weighted arithmetic mean

X = the variable values.

W = the weights.

Expected Interventions of Job Stress from Work Environment

(A = Agree, N= Neutral, DA=Disagree, WAS=Weighted average score)

Interventions	A	N	DA	TOTAL	WAS	Rank
Work environment	61	34	5	100	2.56	1
Job description	58	33	9	100	2.49	2
Training and education	58	32	10	100	2.48	3
Training and education	58	32	10	100	2.42	4
Safety of technology	48	41	11	100	2.37	5
Promotions and rewards	47	42	11	100	2.36	6
Adequate time for planning	38	59	3	100	2.35	7
Physical exercise	49	36	15	100	2.34	8
Promotion of Personal equipment	46	40	14	100	2.32	9
Time completion of job	42	48	10	100	2.32	10
Involvement in decisionmaking	49	33	18	100	2.31	11
Physical hazards	41	47	12	100	2.29	12

It's visible from the above, concerning the expected interventions of Organizational stress to overcome stress amongst respondents. Some of the variables we decided on to check its affiliation with activity strain amongst personnel. By the usage of weighted average score, Work environment (2.56) has secure stood at the beginning and job description (2.49) has steady stood at second, the training and education (2.48) has secure stood at third and Physical hazards (2.29) are the least preference of component inflicting strain.

Conclusion

Stress is a circumstance of bodily or intellectual pressure that is going at the side of associated stressors. Stress is turning into a more and more much critical thing in our running life. Each person is exposed to more than a few stressors each at work and of their non-public life's. In the running environment, sure profession has better strain degree than others and person personnel will react to the state of affairs in one-of-a-kind ways. Pressure also can be an amazing issue main to increased productivity. However, whilst this stress will become excessive, strain is caused.

The problems arise while the strain on a person appear to be overwhelming or out of controls. That is, they understand themselves as being not able to manage and now no longer to own the vital competencies to fight their strain. This present examine geared

toward locating the diverse stages of man or woman and organizational strain amongst the employees. Based on the findings, the analyst finish that enriching welfare measures, retaining affordable operating hours, employee gatherings and affordable repayment programs could truly lessen the man or woman and organizational strain amongst the employees, and also will make a contribution to the performance of the organization.

Suggestions

- Give greater manipulate over the activity to employees
- Encourage worker participation wherein personnel are concerned in selection making processes. This can result in suitable communication and position ambiguity, interpersonal talents may be developed.
- Implement bendy operating hours.
- Allow participation of the employees throughout the activities.
- The employees having excessive stage of strain due to their incapacity to make use of their capabilities and work independently.
- Stress control programmes which include numerous workshops and seminars must be conducted periodically for the personnel to lessen their private in addition to expert strain.
- The Proper work allocation have to be done.

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FINANCIAL INCLUSION FOR MSMEs

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Abstract

Financial inclusion is the process of making existing financial services more accessible to the general public while also improving their quality and availability.

Financial inclusion can boost economic growth and national financial efficiency while reducing social inequalities and poverty. All societal groups are given access to financial services. MSMEs are still having capital access issues at the moment. Due to the absence of financial data on MSMEs compared to larger, more open enterprises, access to financial services in banking is still challenging; as a result, banks have more trouble determining the creditworthiness of MSMEs. The use of digital technology continues to be encouraged to increase access to financial services that reach the community, especially those living in rural and remote areas, including groups of low-income communities and Micro, Small, and Medium Enterprises (MSMEs). The MSME sector has an enormous contribution to the Indian economy. MSMEs in India face various challenges, such as access to finance, marketing, competitiveness, and productivity. In India, microlending plays a significant role in promoting financial inclusion. Over the past few decades, it has significantly aided in the eradication of poverty. In addition to offering microcredit, microlending institutions also offer other financial services like savings, insurance, and remittance, as well as non-financial services like private counselling, training, and assistance with starting a business, all in a convenient way.

Keywords: *Financial inclusion, financial services, MSMEs, digital technology, credit worthiness*

Introduction

MSMEs (micro, small, and medium-sized firms) have recently attracted more attention in India due to their strategic value to the nation's economy and development. MSMEs contribute significantly to job creation; the nation's 48.8 million MSMEs employ 111.4 million people. MSMEs contribute 7.7% of the nation's GDP and manufacture more than 6,000 goods in the manufacturing sector alone. MSMEs in the services industry also contribute 27.4% of the nation's GDP.

Despite their contributions, MSMEs in India confront a number of difficulties. They frequently face the challenge of keeping up with rapidly advancing technologies while also running the risk of going out of date. In order to maintain product standards and quality, they frequently struggle to establish their core competitive advantages and must deal with significant credit costs. MSMEs must also address the problem of protecting their intellectual property and the lack of qualified staff. Finally, research on MSMEs has shown that the availability of financial resources and their accessibility are the most important variables in fostering the expansion of MSMEs in emerging economies. Both of these problems present inherent difficulties for financing MSMEs in the Indian setting because of knowledge of funding programs among MSME entrepreneurs and the limited contribution

of venture capitalists, nonbanking financial companies (NBFCs), foreign banks, angel investors, and initial public offerings to the financing of MSMEs in the Indian context, both of these problems pose inherent difficulties for MSMEs.

Micro and small businesses are included among the priority lending sectors by the Reserve Bank of India because banks are the main source of financing in India. Additionally, banks have been instructed to increase credit to micro and small businesses by 20% annually and the number of microenterprise accounts by 10% annually. This study aims to determine whether these incentives and plans have reached MSMEs and whether business owners are aware of them in light of such policies.

Statement of the Problem

MSMEs have different types of requirements at different stages of their life cycle, it became clear during the preliminary interviews with entrepreneurs conducted for this study. This prompted the authors to examine the difficulties in gaining access to various sources of finance that MSMEs employ at various points of their life cycles and to develop a deeper knowledge of those sources. This study is a first-of-its-kind attempt to look at these elements because there were no studies that documented the financial demands of MSMEs at various stages of their life. The article thus focuses on the sources of funding utilized by MSMEs across various phases of the firm life cycle, as well as on the knowledge of and use of various financial programs made accessible by the government.

Objectives of the Study

1. Identify the various sources of funding that are used and the objectives for which they are used at various phases of the MSMEs life cycle.
2. Identify the difficulties MSMEs encounter when attempting to obtain funding from various sources at various stages of their life cycle.

Review of Literature

International Finance Corporation (2012) estimates that 32.5 trillion Indian rupees (Rs) worth of financing is available to the MSME sector. This sum includes self-financing, formal financing, and unofficial financing. The industry receives a total contribution of Rs25.5 trillion from unofficial sources and self-finance, of which Rs24.4 trillion comes from unofficial financing. In other words, MSMEs rely on self-financing and informal sources for 78% of their funding. Banks and NBFCs contribute the remaining 22% (Rs6.9 trillion), with banks contributing the majority (91.8%).

Few SMEs receive official financial support because they are seen as a high-risk and financially unviable proposition to lend to. **(Ambrose 2012)**.

According to **Prasad (2006)**, Indian banks in particular are reluctant to lend to small businesses for a variety of reasons, including the impossibility to secure collateral, the

prevalence of non-performing assets, the high cost of transactions, and the inability to confirm the applicants' trustworthiness.

According to Grant Thornton and FICCI (2011), the cost of capital is high for MSMEs, and less time and paperwork should be needed to obtain financing.

In order to meet the growing short-term and long-term capital requirements of MSMEs, **Lahiri (2012)** said that banks should use more creative lending strategies.

Finance Used by MSMEs in Different Stages of the Life Cycle

Start-up phase: Companies in this phase reported using money from friends, family, and public (i.e., government-owned) banks mostly for working capital. They also reported using money from personal and family sources. Public banks were the other often mentioned institutional source used for collateral financing. This suggested that launching a business required a high level of readiness, risk aversion, or both.

Survival stage: The main financial support needs for businesses in this stage were working capital, short-term loans, and overdrafts. Following personal funds and private banks, public banks and moneylenders provided the majority of the working capital financing. In addition, short-term loans and overdraft capabilities were obtained through private banks. Businesses acknowledged using moneylenders as well, albeit at a lower scale. Using official sources or reliable unofficial sources appears to be a continuing trend from what businesses in the start-up stage stated. Businesses at this stage would be looking to pay off debts, for which they would need efficient day-to-day operations and appropriate working capital availability.

Growth stage: At this period, businesses needed working cash, collateral finance, and quick loans. Working capital was obtained from state banks, private and cooperative banks, as well as from personal and family sources. Public banks were used to get collateral funding, and cooperative banks to a lesser extent. Although the usage of moneylenders was mentioned, short-term loans were obtained from private and cooperative banks. This finding may indicate that businesses were more concerned with their individual financial requirements and the resources needed to meet them. The prevalent use of public banks for collateral lending as well as the utilization of the banking system and family wealth to meet working capital needs are examples of the important role that trust plays in securing this form of financing. Since cooperative banks were also cited as a resource to meet the various financial demands of businesses at this stage, it is important to determine whether their rules and practices allow businesses in the growth stage to quickly get the short-term financing they require.

Sustenance stage: In this stage, businesses reported using working capital financing from private banks, public banks, cooperative banks, and personal funds. Additionally, short-term loans and collateral financing were also secured through cooperative banks. At this point, the landscape of an enterprise's financial needs appears to be dominated by

working capital, collateral finance, and short-term loans. This carries on the previously mentioned trend of businesses continuing to use financing from reliable sources. In this stage, a business would like to borrow money from reliable sources with whom it has built ties. It would be fascinating to investigate the factors that led to cooperative banks being so widely used by businesses at this point for working capital, collateral financing, and short-term loans.

Challenges in Accessing MSME Finance

Start-up stage: The difficulty of securing collateral or a guarantee, the length of time it takes to process loan applications, ignorance about available programs, and procedural difficulties were the four main obstacles to receiving finance that businesses identified at this stage. Businesses also perceived difficulty in completing necessary documentation and expensive service fees for loan application as hurdles. Businesses in the startup stage might not be able to offer security for a loan and may not be aware of all the available programs, which could make it difficult for them to select the best financial aid choice.

Survival stage: Even though the sequence was different, the main obstacles faced by businesses at this level were identical to those mentioned by businesses in the start-up stage. The two factors that received the highest ratings were the challenge of producing collateral or a guarantee and procedural difficulties. Long processing times, ignorance of available programs, excessive service costs for handling loan requests, and difficulties filling out the necessary paperwork were considered as equally difficult problems. Businesses at this stage would typically want to increase their markets while also breaking even with reference to startup investments. As a result, they would require working cash to cover their daily expenses. These enterprises cannot be expected to provide collateral, and would be hindered by complicated procedures and delays in loan disbursements. They also continue to lack knowledge of available financial assistance schemes.

Growth stage: Major issues mentioned by businesses at this stage included ignorance of available programs, high processing costs for loan requests, trouble providing collateral or a guarantee, high interest rates, and difficulty completing the necessary paperwork. Lack of understanding about certain programs may prevent owners from selecting the best form of financing for their business, as businesses in this stage would need both working capital and short-term loans. Though enterprise owners may be more inclined to seek formal financial assistance, high service fees and high rates of interest could be a deterrent. Enterprises in the growth stage also would be in a state of rapid transition and therefore the need to provide documentation for securing financial assistance would be a deterrent to accessing funds.

Sustenance stage: Businesses in this stage frequently reported having trouble providing collateral or a guarantee, dealing with procedural difficulties, being unaware of

the various programs that were available, lengthy processing times for loan applications, high service fees for processing loan requests, and having trouble completing necessary paperwork. High loan rates were also cited as a problem by a sizable proportion of businesses. Although entrepreneurs in this stage identified procedural hurdles, processing times, and high rates of interest as obstacles to obtaining financing, it is important to look into the part that ignorance of available programs plays and how it affects other obstacles. The entrepreneurs were worried about the need for security or collateral. This would suggest that banks or lending institutions need to be more realistic about lending to MSMEs that have already established themselves in the market.

In conclusion, MSMEs encounter a variety of difficulties during their whole life cycle. In both the start-up and expansion stages, at least one business evaluated each financial issue as difficult. Infrastructure, labor, labor law compliance, or enterprise registration were not perceived by businesses as obstacles to obtaining financing during the survival stage. Businesses in this level have access to sufficient infrastructure and labour.

Conclusion

Businesses in the startup stage primarily use finances from friends, family, and personal savings for working capital. Additionally, for working capital and collateral financing, they employ public sector banks. Finance was obtained from reputable formal sources (public banks) as well as reputable informal ones (personal, family, and friends). In the event of repayment difficulties, there would be less pressure, especially when dealing with reliable informal suppliers.

In summary, personal savings, family wealth, friends, moneylenders, and the banking system, which consists of public, private, and cooperative banks, are the main sources of finance employed during the many periods of the life cycle.

Enterprises in the start-up and survival stages frequently encountered difficulties providing collateral or a guarantee, delayed loan processing, and a lack of understanding about potential schemes while trying to acquire financing. Businesses at each of these stages were unable to offer collateral or security or undergo lengthy loan applications because they had not yet established their companies entirely.

Recommendations for the Government

Enhance financial awareness: It is important to actively promote accurate and timely information about MSME programs through broadcast, newspaper, and magazine advertisements. To fulfill the information needs of MSMEs and to explain policy, the government should think about launching a dedicated TV channel.

Reduce documentation: It would be preferable to do away with complicated documentation requirements in favor of easier processes, such as a "know your customer"

form that gathers essential data about the business or owner and is accessible to all financial institutions.

Ease legal requirements: There is an urgent need to ease the burden of legal compliance on MSMEs, at least in the first 3 years of their existence.

Enhance sensitivity in lending institutions: Building lenders' capacity is necessary to enable them to better respond to the unique requirements of businesses operating in various industries and phases of the company life cycle.

Ensure that tax policies are fully implemented: By doing this, there will be a focus on improving transaction visibility, which will give a more accurate sense of the transaction history of the firm in question and aid in assessing its creditworthiness.

PROBLEMS AND PROSPECTS OF WOMEN ENTREPRENEURS IN HOME BASED BUSINESS

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Abstract

The fast growing and developing world of home-based business promise to have major influence on the very nature of small scale business. Entrepreneurship can be used as important tool for economic development of Indian women. The entry of large number of educated and young women entrepreneurs to the home-based business sector suggests that it will not only create jobs for themselves but also for others leading to greater economic growth. Therefore, this study aims to understand the problems and prospects of women entrepreneurs in home-based business. This study employs One Sample Sign Test method of data analysis. Primary data were obtained through the administration of 115 questionnaires. Hypotheses were tested and the results show that Government supportive measures, the entrepreneurship development programmes (EDPs) offered for women entrepreneurs are sufficient for the sustainable growth of women entrepreneurial sector. Formal education System, Lack of real entrepreneurial traits and management ability are the major causes of failure among women entrepreneurs.

Introduction

In India, entrepreneurship has been dominated by a male-governed economy, where the role of women as entrepreneurs has been negligible. However, in the recent past Female entrepreneurs have been playing an increasingly important role in promoting growth and development of the country's economy. Entrepreneurship directly provides employment and economic independence to improve their social, educational and health status. Women in India have been taking an active and direct role in the nation's economic and political fields, though in recent times there have been some stray incidents in the latter field. Women entrepreneurs are gaining momentum all over the country. They have achieved recognition and are making valuable contribution to the National Economy. A number of home business opportunities such as embroidery, handicrafts, herbal medicine, sewing, cooking, beauty salon etc. are required to be exploited by women entrepreneurs. The fast growing and developing world of the home-based business promises to have major influence on the very nature of small business. The entry of large number of educated and young women entrepreneurs to the home-based business sector suggests

that it will not only create jobs for themselves but also for others leading to greater economic growth which is the demand of the day for meeting global challenges.

Review of Literature

Alam, Jani and Omar (2011) analysed in their research paper that family support, positive social ties and internal motivation factor impressively affects the success of women entrepreneurs in small businesses.

Goyal Meenu and Prakash Jai (2011) have analysed that employment generation, self-identity and social status, bright future of the wards and need for additional income are the core reasons for women becoming entrepreneurs.

Objectives

- i. To identify the areas of home based businesses where women entrepreneurship can be developed.
- ii. To highlight the problems which limit the scope of women entrepreneurship.
- iii. To analyze the problem faced by women to promote and run their units and to suggest possible solutions.

Research Methodology

The specification of methods and procedures for obtaining the knowledge needed to organise or solve problems is known as research methodology. The project's general operational pattern or framework specifies what information is to be gathered from which sources and using which procedures.

Research Design: Descriptive Research Design.

Sources of Data

Primary Data: The primary data were collected based on the structured questionnaire through interview schedule.

Secondary Data: The secondary data has been collected through book, magazines, newspapers Articles, Research papers, Government & Non-government reports, census data and Thesis.

Sampling Technique: Convenience Sampling.

Sampling Size: The sample size was collected from 120 respondents.

Techniques and Tools of Analysis

One sample sign test has been used for testing the hypothesis of the study and rest of the data analyze through percentage. There are five hypothesis framed by the researcher to know the findings.

Hypotheses of the Study

The following are the hypotheses of the present research work

1. Government supportive measures are not sufficient for the sustainable growth of this sector.
2. Lack of real entrepreneurial traits and management ability is one of the major causes of failure among women entrepreneurs.
3. The entrepreneurship development programmes (EDPs) offered for women entrepreneurs are not sufficient to promote Managerial ability among them.
4. Formal education has no significant impact in the level of managerial abilities of entrepreneurs.
5. Women entrepreneurs are not aware about the policies, strategies and supportive measures of the government.

Findings

Specific Findings from the Hypothesis Testing

1. Government supportive measures are sufficient for the sustainable growth of entrepreneurial sector.
2. Lack of real entrepreneurial traits and management ability is one of the major causes of failure among women entrepreneurs.
3. The entrepreneurship development programmes (EDPs) offered for women entrepreneurs is sufficient to promote Managerial ability among them.
4. Formal education has no significant impact in the level of managerial abilities of entrepreneurs.
5. Women entrepreneurs are aware about the policies, strategies and supportive measures of the government.

Major Findings from the Study

- 44% of the women entrepreneurs were from the age group of 31-40 years and 5% were from the age group of 50 and above.
- 68.69% of women entrepreneurs were facing planning problems.
- 47% of women entrepreneurs faced various implementations problems.
- 61% of women entrepreneurs have production and raw material problems.
- 80% of women entrepreneurs were facing different financial problems.
- 83% of women entrepreneurs were facing marketing and social problems.
- 94.78% of women entrepreneurs engaged in home based business were facing governmental issues.
- 97% of women entrepreneurs agreed that changing social environment provide more business opportunity to them.

- 69.6% of women entrepreneurs of the Patna district prefer working in service and manufacturing sector.

Suggestions

- Government should start awareness campaign through different mode of advertisement like Radio, Television, Newspaper and Public Announcement.
- To improve entrepreneurial traits and management abilities it is suggested to the government and educational institutions that the concept of entrepreneurship should be treated as practical means of learning Entrepreneurship.
- It is suggested to government that complex procedure and documentation related to registration, taxation, financial assistance and technical assistance should be made in simple form.
- EDPs should appoint women trainers so that participants can open up and discuss their problems freely.
- It is recommended to women entrepreneurs that they should form a local group with the help of social media and advertise or sell their products or services in the particular group.

Conclusion

Home based businesses done by women entrepreneurs were mostly working in micro enterprises. Women Entrepreneurs were using their business as the tool of self-empowerment. Profit motive has less significance than economic empowerment of the women. More than 60% of the total Women entrepreneurs were highly experience. They have more than 10 years of experience but still Income level of the female entrepreneurs is low in the district who was engaged in home based business. From the study it has been conclude that, following business plan are the top most home- based business plan such as Beauty Parlor business, home-based Fashion Designing/ Tailoring, home-based Coaching classes, home-based Readymade Garments business, home-based Food processing business are the most suitable and having bright future prospects.

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EXPLORING THE TRANSFORMATIVE IMPACT OF E-COMMERCE ON MICRO, SMALL, AND MEDIUM ENTERPRISES

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Abstract

E-commerce has emerged as a game-changing force in the global business landscape, offering unique opportunities and challenges for Micro, Small, and Medium Enterprises (MSMEs). This abstract provides a glimpse into a comprehensive research study that delves into the transformative impact of e-commerce on MSMEs.

The research aims to analyze how e-commerce has affected various aspects of MSMEs, such as market reach, competitiveness, revenue generation, operational efficiency, and sustainability. It employs a mixed-methods approach, incorporating both quantitative data analysis and qualitative case studies, to provide a holistic understanding of the subject matter.

Introduction

In Modern Era rapidly evolving global business landscape, the digital revolution has ushered in an era of unprecedented change and innovation. Among the profound transformations witnessed, the advent of electronic commerce, or e-commerce, stands as one of the most significant. E-commerce has revolutionized the way businesses operate and interact with consumers, opening up new opportunities and challenges across industries. In this context, this study seeks to investigate the profound impact of e-commerce on Micro, Small, and Medium Enterprises (MSMEs).

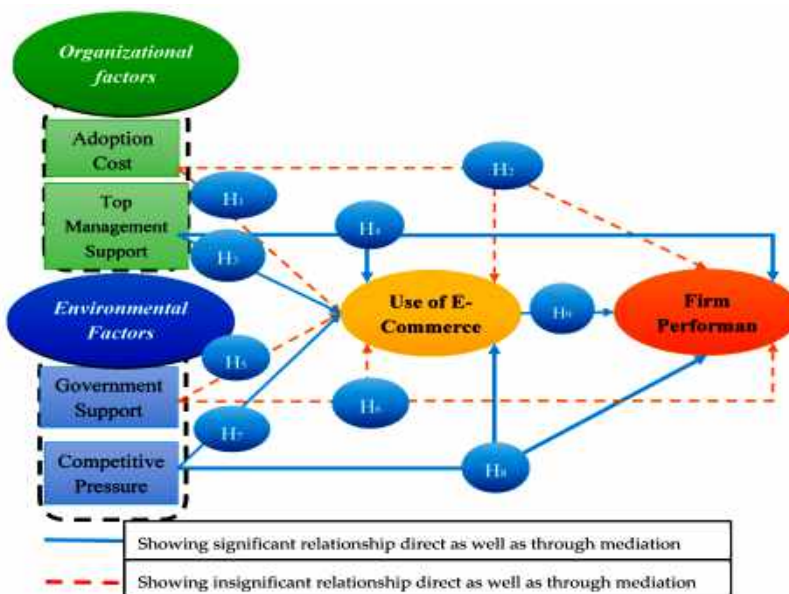
Micro, Small, and Medium Enterprises (MSMEs) constitute a vital segment of the global economy, accounting for a significant portion of employment, innovation, and economic activity. They play a crucial role in driving economic growth, fostering entrepreneurship, and reducing income inequality. However, MSMEs often face numerous challenges, including limited access to markets, resources, and technology, which can hinder their growth and sustainability.

The emergence of e-commerce has provided MSMEs with a potential pathway to overcome some of these challenges. E-commerce platforms offer MSMEs the ability to reach a broader customer base, reduce operational costs, and enhance their

competitiveness in the global market. The adoption of e-commerce can enable MSMEs to tap into the digital economy's vast opportunities, thus contributing significantly to economic development and job creation.

Objective of the Study

- Analyzing the growth trends in e-commerce adoption among MSMEs.
- Assessing the economic impact of e-commerce on MSMEs, including revenue growth and cost savings.
- Examining the role of e-commerce in expanding market access and global competitiveness for MSMEs.



Trends in E-Commerce

The growth trends in e-commerce adoption among Micro, Small, and Medium Enterprises (MSMEs) are a crucial aspect of understanding the impact of e-commerce on this segment of businesses. To conduct this analysis effectively, researchers can employ various methodologies and data sources. Here are some key points to consider when conducting such an analysis:

1. Data Collection

Gather data on e-commerce adoption rates among MSMEs over a specific period, which could range from the past decade to recent years.

Utilize primary sources such as surveys, questionnaires, and interviews with MSME owners and managers to collect firsthand information on their e-commerce adoption experiences.

Utilize secondary sources, including government reports, industry publications, and academic studies, to obtain historical data and market insights

2. Segmentation

Segment the MSMEs into categories based on factors like business size (micro, small, medium), industry, geographical location (urban, rural), and years in operation. This segmentation can help identify variations in e-commerce adoption trends among different groups.

3. Time Series Analysis

Employ time series analysis techniques to examine how e-commerce adoption has evolved over time. Plotting adoption rates over several years can reveal trends, seasonal variations, and growth patterns.

4. Comparative Analysis

Compare e-commerce adoption rates among MSMEs to adoption rates in other sectors or among larger enterprises. This can help assess whether MSMEs are catching up or lagging behind in e-commerce adoption.

5. Qualitative Insights

Complement quantitative data with qualitative insights gained through interviews and case studies. This can provide a deeper understanding of the reasons behind e-commerce adoption or the barriers that MSMEs face in this regard.

6. Regional and Global Comparisons

Compare e-commerce adoption trends among MSMEs in different regions or countries to identify regional disparities and factors contributing to variations in adoption rates.

7. Forecasting

Develop forecasts or projections based on historical data and trends to predict future e-commerce adoption rates among MSMEs.

8. Factors Influencing Adoption

Explore factors influencing e-commerce adoption, such as access to digital infrastructure, awareness of e-commerce benefits, regulatory frameworks, and access to finance. This can help explain why some MSMEs are quicker to adopt e-commerce than others.

9. Policy Implications

Analyze the policy initiatives and support mechanisms that may have contributed to or hindered e-commerce adoption among MSMEs. Assess the effectiveness of government policies in promoting digitalization among small businesses.

Impact of E-Commerce on MSME

The impact of e-commerce on Micro, Small, and Medium Enterprises (MSMEs) encompasses several dimensions, including revenue growth and cost savings. E-commerce

has the potential to significantly influence these aspects of MSME operations. Let's delve into the specific ways e-commerce can affect revenue growth and cost savings for MSMEs:

Impact on Revenue Growth

1. **Wider Market Reach:** E-commerce provides MSMEs with a global platform to showcase their products or services. This expanded reach allows them to access a broader customer base, both domestically and internationally, leading to increased sales opportunities.
2. **24/7 Availability:** Unlike traditional brick-and-mortar stores, e-commerce websites are operational round the clock. This continuous availability enables MSMEs to cater to customers at any time, which can lead to higher sales and revenue.
3. **Personalized Marketing:** E-commerce platforms often use data analytics and customer profiling to offer personalized product recommendations and targeted marketing. This personalized approach can boost conversion rates and customer retention, contributing to revenue growth.
4. **Diversification of Product Offerings:** E-commerce allows MSMEs to easily expand their product lines or diversify into complementary products or services, tapping into new revenue streams.
5. **Reduced Geographic Limitations:** MSMEs can transcend geographical limitations through e-commerce, allowing them to reach customers in remote or underserved areas, further expanding their revenue potential.

Impact on Cost Savings

Lower Operational Costs: E-commerce typically requires lower operational costs compared to maintaining a physical storefront. MSMEs can save on expenses related to rent, utilities, and in-store staff.

Inventory Management: E-commerce enables more efficient inventory management through real-time tracking and demand forecasting, reducing carrying costs and minimizing the risk of overstocking or stockouts.

Marketing Efficiency: Digital marketing tools, such as pay-per-click advertising and social media campaigns, offer cost-effective ways to reach a target audience compared to traditional advertising methods.

Streamlined Processes: E-commerce platforms often come with integrated management systems that streamline order processing, payment collection, and customer support, reducing administrative costs.

Access to Cost-Effective Technology: Cloud-based e-commerce solutions and open-source platforms are accessible and cost-effective, allowing MSMEs to deploy and maintain their online stores without significant upfront investments.

1. **Data-Driven Decision-Making:** E-commerce platforms provide valuable data and analytics that MSMEs can leverage to make informed decisions, optimize operations, and minimize waste.
2. **Reduced Physical Infrastructure:** With e-commerce, there's less reliance on physical infrastructure, such as large warehouses or storefronts, leading to further cost savings.
3. **Flexibility:** E-commerce allows MSMEs to scale their operations up or down more easily in response to market fluctuations, minimizing financial risks.

Role of e-commerce in Expanding Market Access and Global Competitiveness (MSMEs)

The role of e-commerce in expanding market access and global competitiveness for Micro, Small, and Medium Enterprises (MSMEs) is profound and multifaceted. E-commerce has become a powerful tool for MSMEs to transcend geographical boundaries and compete on a global scale. Here's an exploration of the key ways in which e-commerce contributes to market access expansion and enhances global competitiveness for MSMEs:

1. Broader Market Reach

E-commerce platforms provide MSMEs with a global marketplace, allowing them to reach customers beyond their immediate geographic vicinity.

MSMEs can target a wider and more diverse customer base, including international audiences, without the need for physical expansion.

2. Reduced Geographic Limitations

E-commerce eliminates the constraints imposed by physical location. MSMEs can serve customers in remote or underserved areas, including regions where traditional retail infrastructure may be lacking.

This reduces dependence on local economic conditions and vulnerabilities to regional market fluctuations.

3. Cost-Effective Market Entry

E-commerce offers a cost-effective means for MSMEs to enter international markets. Setting up an online store and digital marketing often require less initial investment compared to establishing physical stores abroad.

MSMEs can test new markets with lower risk, adapting strategies based on real-time feedback and performance data.

4. Access to Global Suppliers

E-commerce allows MSMEs to source products, materials, and services from global suppliers, enabling them to access high-quality inputs at competitive prices.

This can enhance the competitiveness of MSMEs by reducing production costs and improving product quality.

5. Enhanced Customer Engagement

E-commerce platforms facilitate direct interaction between MSMEs and their customers. This direct engagement can lead to better understanding of customer preferences and needs, allowing for tailored offerings.

Personalized customer experiences can boost customer loyalty and word-of-mouth referrals, further expanding market reach.

6. Data-Driven Decision-Making

E-commerce generates valuable data on customer behavior, preferences, and market trends. MSMEs can harness this data for informed decision-making, optimizing product offerings, pricing, and marketing strategies.

Data-driven insights enable MSMEs to adapt quickly to changing market conditions and customer demands.

7. Global Brand Exposure

E-commerce enables MSMEs to establish and promote their brands on a global scale. A well-designed online presence can build brand recognition and reputation worldwide.

MSMEs can compete with larger enterprises by leveraging their unique selling points and niche market positioning.

8. Logistics and Supply Chain Efficiency

E-commerce facilitates efficient order processing, inventory management, and shipment tracking. MSMEs can optimize their supply chains, reduce lead times, and offer reliable delivery options to customers worldwide.

Streamlined logistics enhance competitiveness by ensuring timely and cost-effective deliveries.

9. Compliance and International Trade Facilitation

E-commerce platforms often provide guidance on regulatory compliance and trade documentation, simplifying international trade for MSMEs.

Access to international markets becomes more accessible, with less bureaucratic hurdles to navigate.

Findings of the Study

The findings of this study will provide valuable insights for policymakers, business owners, academics, and industry stakeholders. By understanding the transformative effects of e-commerce on MSMEs, we can develop strategies to harness its full potential, address challenges, and create an enabling environment that fosters the growth of these enterprises. In doing so, we can ensure that MSMEs remain at the forefront of economic development in an increasingly digital world

Conclusion

The transformative impact of e-commerce on MSMEs underscores the importance of embracing digitalization in the modern business landscape. E-commerce has leveled the playing field, allowing MSMEs to compete with larger enterprises and thrive in a globalized economy. To harness the full potential of e-commerce, MSMEs must not only adopt digital technologies but also prioritize customer-centric approaches, adapt to changing market dynamics, and remain agile in their operations.

As we move forward, policymakers, industry stakeholders, and MSMEs themselves must work collaboratively to create an enabling environment that fosters digital innovation, supports digital skill development, and addresses regulatory and infrastructure challenges. By doing so, we can ensure that MSMEs continue to drive economic growth, foster entrepreneurship, and contribute to a more inclusive and dynamic global economy in the digital age.

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SMES AND MSMEs IN MAKE IN INDIA INITIATIVE

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Abstract

The 'Make in India' initiative and the 'Atmanirbhar Bharat Abhiyaan' (Self Reliant India Campaign) have played a key role in promoting business and local manufacturing in the country, giving special thrust to Micro, Small and Medium Enterprises (MSMEs), also referred to as the backbone of Indian economy.

Keywords: *approximately, entrepreneurship, facilitated, generating employment manufacture, facilitated*

Introduction

The central government has also taken immediate response measures in the form of the Atmanirbhar Bharat Package to ensure continuity of businesses during the COVID-19 pandemic. Along with these measures, the main governing body for MSMEs in the country, i.e., the Ministry of Micro, Small and Medium Enterprises (M/o MSMEs) also has numerous schemes in place to support the budding manufacturing units across the country.

Overview of Govt. Initiatives on MSMEs

MSMEs are the backbone of the Indian economy, contributing approximately 30% of the country's GDP (Gross Domestic Product), 45% of manufacturing output and providing employment to 11 crores of India's population. The Government of India has been proactive to ensure that all the benefit of these MSME schemes reaches to the MSMEs in time. The Union Budget 2023-24 focuses on ease of doing business for MSMEs. The most important measures include:

- Emergency Credit Line Guarantee Scheme (ECLGS) has delivered additional credit to more than 130 lakh MSMEs. The ECLGS will be extended up to March 2023 expanding the guarantee cover by INR 50,000 Cr to a total cover of INR 5 Lakh Cr.
- INR 2 Lakh Cr additional credit for Micro and Small Enterprises to be facilitated under the Credit Guarantee Trust for Micro and Small Enterprises (CGTMSE).
- Raising and Accelerating MSME performance (RAMP) programme with an outlay of INR 6,000 Cr to be rolled out.
- INR 50,000 Cr equity infusion through MSME Self-Reliant India Fund.
- Udyam, e-Shram, National Career Service (NCS) and Aatamanirbhar Skilled Employee Employer Mapping (ASEEM) portals will be interlinked.
- They will now serve as portals with live, organic databases, delivering G2C, B2C, and B2B services relating to credit facilitation, skilling, and recruitment.

- Launch of Udyam Assist Platform (UAP) to bring the Informal Micro Enterprises (IMEs) under the formal ambit for availing the benefit under Priority Sector Lending (PSL).

Make in India Campaign

Make in India campaign is an initiative of GOI to encourage the multinational as well as domestic companies to manufacture their products in India. This is an ambitious flagship programme and a dream of honourable Prime Minister Mr. Narendra Modi was launched on 25th September, 2014. The main objectives of the programme are –

- To make India as Global manufacturing hub,
- To create jobs, to encourage entrepreneurs in India,
- To boost economic growth,
- To urge both local and foreign companies to invest in India
- To Foster innovation, protect intellectual property, and enhance skill development
- The new initiative is based on four pillars to boost entrepreneurship in India & it encompasses 25 sectors.
- The pillars are (1) New Processes (2) New Infrastructure (3) New Sectors and (4) New Mindset

Role of MSME's

The Micro, Small and Medium Enterprises (MSMEs) play a pivotal role in the economic and social development of India. The MSME sector is playing a major role in the manufacturing output, employment and exports. It plays a key role in the development of the economy with their effective, efficient, flexible and innovative entrepreneurial spirit. MSME sector has emerged as a dynamic and vibrant sector of the economy. It is expected that Indian economy will grow by over 8% per annum until 2020. The major advantage of this sector is its generating employment at low cost. The MSME sector is highly heterogeneous. There are different size of the enterprises, variety of products and services and level of technology. It helps in the industrialization of rural and backward areas. It reduces regional imbalances. It provides equitable distribution of national income and wealth. The role of MSME sector in Indian economy is better understood from the following fact sheet [Source: CARE Ratings]

MSME sector –Some high lights

- Indian MSME sector consists of approximately 45 million units
- Produces more than 6,000 products, ranging from traditional to high-tech items
- High product diversification: 67% of its produce is from manufacturing goods, followed by 17% from
- services, and 16% from repairs and maintenance

- Employs around 101 million people
- Accounts for 45% of the manufacturing output
- Contributes 8-9% to the country's GDP
- Accounts for 40% of the country's exports

T E Narasimhan, 'Make in India' to transform MSMEs' fortunes: Minister, The Business Standard(Chennai),January12,2015

The MSME's minister has said in a symposium on 'Growth and Prospects of MSME Sector in the Emerging Scenario' organized by the National Institute for Entrepreneurship and Small Business Development. The minister is of the opinion that the Make in India campaign has the potential to transform the fortunes of the MSME sector, enabling it to scale hitherto unheard-of heights. He viewed that this campaign is very relevant for Indian MSME's and highlighted the policy initiatives initiated by GOI to support the MSME's which will be effective from 1st of April, 2015. In 2013-14, 56 CPSUs organized 1,007 vendor development programmes (VDPs) for MSE's. In 2014-15, the target is over 55 national VDPs and 351 state VDPs across the country, to develop MSE vendors with a budget allocation of Rs 5 crores.

Conclusion

The make in India programme through New Processes, New Infrastructure, New Sectors and New Mindset aims to facilitate investment, foster innovation, enhance skill development and build a sustainable eco-system for the manufacturing infrastructure in the country. Make in India programme with the inclusion of MSME's in the New Start up policy of GOI, definitely helps this sector to prosper and grow. We view that the various policy initiatives and incentives for MSME announced under this programme, definitely the Make in India Campaign helps, supports and act as boost for MSME sector.

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YOUNG ENTREPRENEURSHIP IN INDIA

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Abstract

Entrepreneurship is characterized by the process of recognizing opportunities to build a new product, service, or process and finding necessary resources to exploit the opportunity and improving the lifestyle of people. Promoting entrepreneurship is an essential component to ensure economic development at the national and the regional level. This can be accomplished as an individual or as a team. Effective entrepreneurs are characterized by traits such as creativity, innovativeness, proactivity, and risk propensity. India has one of the world's fastest growing economies. The efficiency of entrepreneurial teams is influenced by various factors such as team member characteristics, team leadership, demographic and informational diversity. Entrepreneurial teams are most benefited in a context of strong interpersonal bonds and shared goals.

Keyword: Youth entrepreneurship, Self-employment.

Introduction

They are the cadence to promote positive changes, innovativeness scale, and size of work capacity, performance and desire to succeed. We trust that the young people are energetic, enthusiastic, with entrepreneurial spirit - can make a difference in this time of profound international disorder.

The young have already shown that they do better with technology, they are more involved in social networks, and able to start a business compared to the older ones. But there is one more difference between the two generations, the young are not attached and can easily leave the idea or business they have created.

A study realized by The Guardian Life Small Business Research Institute, shows that the probability that those born after the year 80's, called Generation Y, to sell their businesses to 100%. Young entrepreneurs form the category who are not as emotionally attached to their businesses that they do not sell them to a big company or another contractor, if there is the case.

Young Indians want to be recognized for creating an environment that supports entrepreneurship as a tool for the country's growth.

The Indian government is also supporting this idea by putting in constant effort and establishing various employment creation plans to provide more job chances for both educated and illiterate youngsters in the country.

Objectives

1. To understand the role of youth entrepreneurs in India.
2. To know the relationship between startup India & youth entrepreneurship.
3. To study the causes of youth employment and entrepreneurship in India.
4. To understand the schemes for young entrepreneurs in India.

Role of the Young Entrepreneurs in India

Entrepreneurship is the act of taking on a new task and accepting the risks and responsibilities that come from it. An entrepreneur is someone who has the will power and aptitude to turn a simple idea or invention into a successful business. The Indian government has made significant efforts to promote entrepreneurship and encourage young entrepreneurs. The number of advantages that young entrepreneurs bring to a country is endless.

Challenges for Youth Entrepreneurship

The youth population is a heterogeneous one and there are some significant differences across groups in their potential for entrepreneurship and the barriers they face. Some groups that face particularly strong labour market challenges includes ethnic minorities, those living in deprived areas, those from low-income families, and those with low education levels.

Youth entrepreneurship, while full of potential, often faces unique challenges that can make it difficult for young people to start and sustain successful businesses. Some of the key challenges for youth entrepreneurship include:

1. **Limited Access to Capital:** Many young entrepreneurs lack the financial resources to start or expand their businesses. They may have limited savings, poor credit history, or difficulty securing loans or investments due to their age and lack of experience.
2. **Lack of Experience:** Youth entrepreneurs may lack the experience and knowledge needed to run a successful business. They may have limited understanding of business operations, marketing, finance, and other critical aspects of entrepreneurship.
3. **Limited Networks:** Building a professional network is crucial for business success. Young entrepreneurs may have smaller networks compared to more established professionals, making it challenging to find mentors, partners, or customers.
4. **Work-Life Balance:** Balancing the demands of entrepreneurship with personal life and education can be extremely challenging.

Schemes for Young Entrepreneurs in India

The youth are the heart of any country, and they have a significant influence on how that country develops. Developing youth's talents as a result becomes important. The

Indian government has implemented a several efforts, including development programmes, apprenticeship programmes, and others, to guarantee that young people have the skills they require.

1. **Pradhan Mantri Mudra Yojana (PMMY):** This scheme provides loans to micro and small enterprises, including young entrepreneurs, to help them start or expand their businesses. It has three categories: Shishu, Kishore, and Tarun, each catering to different stages of business development.
2. **National Skill Development Corporation (NSDC):** NSDC offers various skill development and training programs to equip young entrepreneurs with the skills needed to succeed in their businesses.
3. **Atal Innovation Mission (AIM):** AIM is a government initiative that aims to promote a culture of innovation and entrepreneurship among young Indians. It includes programs like Atal Tinkering Labs, Atal Incubation Centers, and Atal New India Challenges.
4. **Technology Business Incubators (TBIs):** TBIs are set up by various government bodies and institutions to provide startups with infrastructure, mentorship, and access to resources. Examples include the National Science & Technology Entrepreneurship Development Board (NSTEDB) and NASSCOM 10,000 Startups.
5. **Young Entrepreneur Scheme (YES):** Young Entrepreneur Scheme offered by various banks and financial institutions, this scheme provides financial support and mentorship to young entrepreneurs to help them start or expand their businesses.

Recommendation

Certainly, here are some recommendations for young entrepreneurs looking to start and grow their businesses:

1. **Start with Passion:** Pursue a business idea that you are truly passionate about the enthusiasm and dedication will be crucial in overcoming obstacles and staying motivated through the ups and downs of entrepreneurship.
2. **Self-Educate:** Invest in own education and skill development. Take courses, attend workshops, and read books related to entrepreneurship, business management, marketing, and finance.
3. **Mentorship:** Find a mentor who has experience in same industry or a related field. A mentor can provide valuable guidance, share insights, and help you navigate the challenges of entrepreneurship.
4. **Create a Solid Business Plan:** Develop a comprehensive business plan that outlines the business goals, target market, marketing strategy, financial projections, and a clear roadmap for growth.
5. **Secure Funding:** Explore various funding options, including personal savings, family and friends, investors, venture capitalists, crowdfunding, and business

grants. Choose the funding source that aligns with the business model and growth strategy.

6. **Learn from Failure:** Understand that failure is a part of the entrepreneurial journey. Many successful entrepreneurs faced failures before achieving their goals.
7. **Build a Strong Brand:** Focus on building a strong brand identity that resonates with the target audience. The brand should convey your values, mission, and unique selling points.
8. **Take Care of the Well-Being:** Entrepreneurship can be demanding, so prioritize the physical and mental well-being. Maintain a healthy work-life balance, seek support when needed, and practice self-care.

Methodology

The literature search was conducted to identify studies investigating the opportunities and challenges for young entrepreneurs in India by using online database 'Web of Science', 'Google Scholar', and 'Research Gate'. Articles were limited to those written in English and conducted especially with the Indian contexts.

Secondary data were collected through journals, news articles, magazines and internets.

Conclusion

In conclusion, young entrepreneurs possess incredible potential and a unique perspective that can drive innovation and economic growth. However, they also face distinct challenges on their entrepreneurial journey. To thrive in this dynamic landscape, young entrepreneurs should embrace their passion, educate themselves continuously, mentorship, and build strong networks. Creating a solid business plan, securing funding wisely, and leveraging technology are essential steps toward success. Many successful entrepreneurs faced failures before achieving their goals. So, building a strong brand, prioritizing personal well-being, and staying persistent in the face of challenges are important elements of a successful entrepreneurial path.

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UNLOCKING GROWTH: THE POWER OF DIGITAL MARKETING FOR MSME'S

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Abstract

The Power of Digital Marketing for MSMEs," the focus is on how Micro, Small, and Medium Enterprises (MSMEs) are leveraging digital marketing to their advantage. Digital marketing has become an essential tool for MSMEs, offering cost-effective reach, targeted advertising, and data-driven insights. Despite its benefits, MSMEs face challenges such as limited resources and ever-evolving technology. The research methodology is exploratory, based on secondary data sources. The article concludes that MSMEs investing in digital marketing, creating a strong online presence, and adapting to change are well-positioned for growth and success in the digital age.

Keywords: MSME, Digital marketing ,customer centric ,Adoption.

Introduction

Micro, Small, and Medium Enterprises (MSMEs) are the backbone of many economies, driving innovation, job creation, and economic growth. In today's increasingly digital world, the adoption of digital marketing strategies is no longer an option but a necessity for MSMEs aiming to thrive and remain competitive. This article explores the transformative impact of digital marketing on MSMEs, shedding light on its benefits, challenges, and key strategies for success.

Review of Literature

Digital Marketing According to Chaffey et al. (2009) in Febriyantoro and Arisandi (2018), digital marketing is the marketing of products or services using technology. One form of digital marketing is the use of electronic media or the internet (internet marketing). The characteristics of digital marketing are: the efforts to increase interactions and activities between businesses and customers that depend on the use of technology; the existence of interactive technology to access information for both business and customers; the efforts to use the internet for various business activities, such as, research, analysis and planning to find, attract and retain customers; and, the efforts to increase the acceleration of buying and selling of goods and services, information and ideas via the internet.

Widiastuti et al. (2021) states that digital marketing is a marketing activity, including branding, using technology and social networks to support marketing goals to communicate on a global scope and change the way companies do business with their customers. Digital Marketing can be seen as an interactive and integrated marketing

solution to facilitate interaction between producers, market intermediaries and potential consumers, where digital marketing helps business people to find information easily about consumers and, then, provide the solutions for their needs and wants. On the other hand, digital marketing helps consumers and prospects consumers in finding product or service information, as well as, purchasing them through the internet (Kusuma et al., 2022)

The concept of marketing has evolved. In the past, a promotion was only conducted in one direction where marketers provided messages and information to potential customers. Nowadays, the marketing concept has evolved from the 4P marketing mix (Product, Price, Place, and Promotion) to 4C (Customer solution, Cost, Convenience Channel, and 27 Copyright © 2023 ASIAN SCHOLARS NETWORK - All rights reserved Asian Journal of Entrepreneurship e-ISSN: 2716-6635 | Vol. 4, No. 1, 24-34, 2023 <http://myjms.mohe.gov.my/index.php/aje> Communication) which allows both parties, marketers and customers, to participate in marketing activities (Andhyka, 2020).

Operational Definition

The power of digital marketing in MSMEs refers to the measurable and impactful ability of online strategies, tools, and channels to enhance the visibility, reach, engagement, conversion, and overall business growth of a micro, small, or medium-sized enterprise. This power can be quantified through key performance indicators (KPIs) such as website traffic, social media engagement, lead generation, customer acquisition, conversion rates, and return on investment (ROI), reflecting the effectiveness of digital marketing efforts in achieving business objectives, expanding market presence, and increasing profitability within the MSME sector.

Research Methodology

The paper is exploratory in nature, and based on available secondary data such as books, journals, magazines and other sources. Secondary data refers to information that has been collected by someone else for a different purpose and is used by researchers in their own studies or analyses.

The Digital Landscape for MSMEs

In recent years, digital marketing has emerged as a game-changer for MSMEs, offering a plethora of opportunities to reach and engage with their target audiences. Here are some key ways in which digital marketing is transforming the MSME landscape:

Cost-Effective Reach

Digital marketing offers cost-effective advertising channels such as social media, email marketing, and pay-per-click advertising. MSMEs can maximize their marketing budgets and achieve higher ROI compared to traditional marketing methods.

Targeted Advertising

With digital marketing tools, MSMEs can precisely target their ideal customers based on demographics, interests, behavior, and location. This precision ensures that their marketing efforts reach the most relevant audience, improving conversion rates.

Online Presence

Establishing a strong online presence is essential in today's digital age. MSMEs can create user-friendly websites and optimize them for search engines (SEO), making it easier for potential customers to find them online.

Content Marketing

Quality content is king in digital marketing. MSMEs can leverage blogs, videos, infographics, and more to educate, engage, and build trust with their audience, positioning themselves as industry experts.

Data-Driven Insights

Digital marketing provides valuable data and analytics that enable MSMEs to measure the success of their campaigns in real-time. This data-driven approach allows for quick adjustments and optimization.

Challenges Faced by MSMEs

While digital marketing offers numerous benefits, MSMEs encounter specific challenges on their digital journey:

Limited Resources

Many MSMEs have limited budgets and may lack dedicated digital marketing teams, making it challenging to implement and manage comprehensive digital strategies.

Technological Barriers

Some MSMEs struggle with adopting and effectively using digital marketing tools and technologies, requiring training and technical support.

Content Creation

Consistently producing high-quality content can be time-consuming and resource-intensive for smaller businesses.

Competitive Landscape

MSMEs often compete with larger enterprises with more substantial resources and brand recognition, making it essential to find niche markets and unique selling points.

Changing Algorithms

Digital platforms frequently update their algorithms, requiring MSMEs to stay informed and adapt their strategies accordingly.

Conclusion

In today's digital era, the adoption of digital marketing is not a luxury but a necessity for MSMEs looking to grow and thrive. The benefits of cost-effective reach, precise targeting, and data-driven insights can level the playing field for smaller businesses. However, to succeed in the digital landscape, MSMEs must overcome challenges such as limited resources and evolving technology.

As digital marketing continues to evolve, MSMEs that invest in their online presence, create valuable content, and embrace data-driven strategies are poised for success. With the right approach and a commitment to adaptability, MSMEs can harness the power of digital marketing to unlock their growth potential and shape a brighter future for their businesses.

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A STUDY ON ROLE OF TECHNOLOGY IN DRIVING SUSTAINABLE DEVELOPMENT IN 2023

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Abstract

Technology is critical to sustainable development because it allows for new solutions to economic, social, and environmental concerns. Technology is advancing at an incredible rate in 2023, and new breakthroughs are sprouting all the time. This presents a once-in-a-lifetime opportunity to use technology to create a more sustainable future.

One important area where technology is assisting in sustainable development is the switch to renewable energy. Renewable energy sources such as solar, wind, and hydropower are becoming more efficient and cost-effective, making them more viable alternatives to fossil fuels. Technological developments in energy storage and transmission are also making it easier to integrate renewable energy into the grid.

Agriculture is another important sector where technology is assisting with sustainable growth. Precision agricultural technologies, such as drones and sensors, are assisting farmers in reducing pesticide and fertilizer use while increasing crop yields. Other technologies, such as vertical farming and hydroponics, are providing new opportunities for more sustainable food production.

Technology is also helping to combat climate change. Carbon capture and storage (CCS) technology, for example, can be used to absorb and store carbon dioxide emissions from power stations and other industrial facilities underground. Other technologies, such as electric vehicles and transportation systems driven by renewable energy, can help to minimize greenhouse gas emissions from the transportation industry.

Technology can help with social and economic development in addition to environmental benefits. Digital technologies, for example, can assist in connecting people to important services such as healthcare and education, even in remote locations. In the green economy, technology can also be used to create new jobs and possibilities.

Overall, technology has the potential to play a significant role in attaining long-term growth. It is crucial to stress, however, that technology is not a panacea. It is critical to use technology properly and in an inclusive and equitable manner.

Keywords: *sustainable development, technology, renewable energy, agriculture, climate change, social development, economic development*

Introduction

Sustainable development is defined as development that meets current needs without jeopardizing future generations' ability to meet their own. It has three components: economic, social, and environmental.

All three pillars of sustainable development rely heavily on technology. Artificial intelligence (AI), for example, can be used to develop new renewable energy solutions and increase energy efficiency. Blockchain can be used to increase financial inclusion and build

more transparent and efficient supply chains. Precision agriculture can assist farmers in reducing pesticide and fertilizer use while increasing crop yields. Smart cities can use technology to minimize traffic congestion and air pollution while also improving citizens' quality of life. The circular economy is a new economic model that focuses on reducing waste and pollution while maximizing resource utilization. Technology has the potential to play a critical role in supporting the transition to a circular economy.

Review of Literature

1. Sustainable Development: A Review of the Literature and Frameworks

This study by Khan, Mohapatra, and Jena (2023) gives an in-depth look at the notion of sustainable development, including its history, concepts, and pillars. It also addresses the various frameworks for measuring and assessing sustainable development.

According to the authors, sustainable development is a complex and diverse notion with economic, social, and environmental components. They also emphasize the significance of equality and intergenerational justice in long-term development.

Finally, the study discusses the obstacles and prospects of attaining sustainable development. According to the writers, sustainable development necessitates a fundamental shift in how we produce, consume, and live. They also advocate for increased research and collaboration in order to create innovative answers to the difficulties of sustainable development.

2. Sustainable Development Goals: A Bibliometric Analysis of Literature Reviews

Khaled, Al-Shammari, and Hussain (2022) present a bibliometric study of literature reviews on the Sustainable Development Goals (SDGs) in this paper. The authors found 91 published literature reviews between 2015 and 2021.

According to the report, the SDGs are a fast increasing field of research, with a trend toward diversification of research fields. Technology (SDG 9) and economic growth (SDG 8) were the most often examined SDGs. The authors did, however, identify a number of research gaps, including reduced inequalities (SDG 10), gender equality (SDG 5), oceans, seas, and marine habitats (SDG 14), and peace, justice, and strong institutions (SDG 16).

The authors conclude that the SDGs are a complex and challenging set of goals, but they also represent an opportunity to create a more sustainable and equitable world. They call for more research and collaboration to achieve the SDGs.

3. Sustainable Development and Climate Change: A Review of the Literature

Stafford-Smith et al. (2017) conduct a literature assessment on the relationship between sustainable development and climate change. Climate change, according to the authors, is a serious danger to sustainable development, but it also gives an opportunity to transition to a more sustainable economy.

The writers address how climate change is affecting sustainable development in a variety of ways, including rising poverty and inequality, food insecurity, and relocation. They also talk about how sustainable development can assist to mitigate and adapt to climate change.

The authors conclude that climate change and sustainable development are two of the most pressing challenges facing humanity today. They call for urgent action to address both challenges.

4. Sustainable Development and the Role of Technology

Solow (2018) analyzes the importance of technology in sustainable development in this study. The author contends that technology has the potential to play a critical role in tackling many of the difficulties of sustainable development, including climate change, poverty, and inequality.

Solow covers a number of technologies that have the potential to aid in sustainable development, including renewable energy, energy efficiency, and sustainable agriculture. He also examines the difficulties associated with applying these technologies, such as cost and accessibility.

The author concludes that technology is an essential tool for sustainable development, but it must be used wisely. He calls for more investment in research and development of sustainable technologies, as well as for policies that support the adoption of these technologies.

5. Sustainable Development and the Global Economy

Stiglitz (2019) analyzes the relationship between sustainable development and the global economy in this paper. The author contends that the current global economic system cannot be sustained and that a fundamental transition is required to ensure long-term progress.

Stiglitz emphasizes how the current global economic system is unsustainable in a variety of reasons, including its dependency on fossil fuels, contribution to climate change, and inability to address inequality. He also explores the numerous approaches to establish a more sustainable economy, such as through investments in renewable energy, education, and healthcare.

The author concludes that sustainable development is essential for the long-term prosperity of the global economy. He calls for urgent action to transition to a more sustainable economic system.

Conclusion on Following Review's

These are only a few instances from the huge literature on sustainable development. The literature on sustainable development is broad and multifaceted, but it all strives for the same goal: to make the world a more sustainable and equitable place for all.

The literature on sustainable development emphasizes the significance of addressing sustainable development's three pillars: economic, social, and environmental. It also stresses the value of equity and intergenerational justice.

The literature on sustainable development also explores the difficulties and opportunities associated with attaining sustainable development.

Objectives

The Objectives of this Paper are to:

1. Review the role of technology in driving sustainable development in 2023.
2. Identify the key challenges and opportunities in using technology to achieve sustainable development.
3. Propose recommendations for how to use technology more effectively to achieve sustainable development.

Challenges Faced

There are a number of challenges faced in using technology to achieve sustainable development. These include:

- The digital divide: Not everyone has access to or the skills required to profit from technology.
- Technology's environmental impact: The creation and use of technology can have negative environmental consequences, such as e-waste and pollution.
- Technology's ethical implications: Technology can be utilized for both good and negative purposes. It is critical to guarantee that technology is used responsibly and ethically.

Research Methodology

This paper is based on a review of the literature on the role of technology in sustainable development. The literature reviewed includes academic papers, government reports, and industry reports.

Secondary Source of Data Collected

The secondary source of data collected for this paper includes:

- The United Nations Sustainable Development Goals (SDGs)
- The World Economic Forum's Global Risks Report
- The International Energy Agency's World Energy Outlook
- The International Telecommunications Union's Measuring the Information Society Report

Technology and Sustainable Development in 2023: A Detailed Analysis

Technology is advancing at an unprecedented rate, and new innovations are emerging all the time. This presents a unique opportunity to leverage technology to create a more sustainable future.

The Potential of Technology for Sustainable Development

Technology can support sustainable development in a variety of ways. For example, it can help to:

- Reduce our dependency on fossil fuels and shift to renewable energy sources. Renewable energy sources like solar, wind, and hydropower are becoming more efficient and cost-effective, making them more feasible substitutes for fossil fuels. Energy storage and transmission innovations are also making it easier to integrate renewable energy into the system.
- Increase agricultural yield while lowering environmental effect. Precision agricultural technologies, such as drones and sensors, are assisting farmers in reducing pesticide and fertilizer use while increasing crop yields. Other technologies, such as vertical farming and hydroponics, are providing new opportunities for more sustainable food production.
- Deal with climate change and other environmental issues. Carbon capture and storage (CCS) technology can be used to absorb and store carbon dioxide emissions from power stations and other industrial facilities. Other technologies, such as electric vehicles and transportation systems driven by renewable energy, can help to minimize greenhouse gas emissions from the transportation industry.
- Increase accessibility to education and healthcare. Even in rural regions, digital technologies can help connect people to important services like as healthcare and education. Telemedicine programs, for example, enable patients to consult with doctors remotely via video conferencing technology. Students all over the world have access to educational resources thanks to e-learning platforms.
- Create new green economy employment and opportunities. Around the world, the solar and wind industries are providing millions of employments. Electric vehicles and energy efficiency are two other green economy industries that are quickly expanding.

Challenges and Opportunities in Using Technology for Sustainable Development

While technology has the potential to play a significant role in sustainable development, there are also some challenges that need to be addressed. These include:

- The digital divide: The digital divide refers to the gap between those who have access to and those who do not have access to information and communication

technologies (ICTs). This can be a significant impediment to long-term growth, as ICTs are required for access to education, healthcare, and other critical services.

- Technology's environmental impact: The manufacture and usage of technology can have a negative influence on the environment. Electronic device manufacture, for example, can generate hazardous waste, and the usage of fossil fuels to power data centers can contribute to climate change.
- Technology's ethical implications: Technology can have ethical implications. Facial recognition software, for example, can be used to follow and monitor people without their knowledge. It is critical to create and apply technology in a responsible and ethical manner.

Overcoming the Challenges

There are a number of things that can be done to overcome the challenges of using technology for sustainable development. These include:

- Investing in infrastructure and digital divide programs. Making ICTs more accessible and inexpensive for everyone, particularly in developing nations, is part of this.
- Creating and implementing more sustainable technology. This includes technologies such as renewable energy-powered data centres and recycled electronic gadgets, which lessen the environmental effect of technology production and use.
- Encouraging responsible and ethical technological development and use. This includes creating and enforcing legislation to protect privacy and security and to prevent technology exploitation.

Conclusion

In 2023, technology has the potential to play a big role in propelling sustainable development. However, it is critical to address the issues associated with employing technology for sustainable development, such as the digital gap, technology's environmental impact, and technology's ethical implications. We can ensure that technology is used to create a more sustainable and equitable future for all by investing in infrastructure and programs to bridge the digital gap, developing and employing more sustainable technologies, and supporting responsible and ethical development and use of technology.

Additional Thoughts on Using Technology for More Equitable and Inclusive Sustainable Development

In addition to the above-mentioned problems and opportunities, it is critical to evaluate how to leverage technology for sustainable development in a more equal and inclusive manner. Here are some specific ideas:

- Concentrate on developing technology that serve the most vulnerable and disenfranchised communities. For example, innovations that can help underdeveloped countries improve food security, access to clean water, and healthcare.
- Ensure that everyone has access to the skills and knowledge required to use technology effectively, including providing education and training on digital literacy and technology skills.
- Encourage responsible and ethical development and use of technology, including developing and enforcing regulations that protect privacy and security and prevent technology misuse.

In 2023, technology will be critical in driving sustainable development. It has the potential to help us lower our environmental footprint, increase our social well-being, and build more inclusive and equitable communities. However, it is critical to address the issues associated with employing technology for sustainable development, such as the digital gap, technology's environmental impact, and technology's ethical implications.

Recommendations

The following recommendations are proposed for how to use technology more effectively to achieve sustainable development:

- Invest in digital infrastructure and training to bridge the digital gap.
- Create and implement environmentally friendly sustainable technology.
- Make use of technology to increase openness and accountability in the governance process.
- Promote ethical technology use through public education and awareness initiatives.

Role of Specific Technologies in Driving Sustainable Development

AI is one of the most promising technologies for accelerating sustainable development. Artificial intelligence can be used to create new renewable energy technologies, enhance energy efficiency, reduce pollution, and create new sustainable agriculture techniques. AI-powered smart grids, for example, can assist balance electricity supply and demand, while AI-powered self-driving cars can help minimize traffic congestion and air pollution.

Another promising technology for driving sustainable development is blockchain. Blockchain can be used to increase financial inclusion and build more transparent and efficient supply chains. Blockchain, for example, can be used too.

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M-COMMERCE AND MOBILE APPS: OPPORTUNITIES FOR SMES IN EMERGING NATIONS

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Abstract

In the current era of globalization, SMEs need to keep up with technology to be able to compete with other businesses. Laying out SMEs' online business is difficult, considering that the SMEs' qualities are unique to different organizations. From Uber to Airbnb Mobile Apps are fundamentally altering the manners in which business is finished opening various new roads for business and making new business sectors. Innovation has made resource sharing a reality, prompting productive use of assets at costs a lot lower than expected. Markets are turning out to be more interconnected and correspondence is essentially imbued in our deals. This paper reviews current concepts in M-Commerce and Mobile Applications. In this paper, M-Commerce is characterized as a piece of online business. A large part of the help to web-based businesses relies upon having or giving the right foundation, guidelines, the strategy blend permitting online businesses to flourish. The conclusion recommends that M-Commerce relies altogether upon online business advancements. Innovation reception is turning out to be more reasonable as well as a need to get by in the present super serious business climate. Just blocks and concrete or organizations without a presence on the web would be in a tough spot and may shut down sooner rather than later. Adaptability is normal for SME businesses on it simpler to pursue a decision for an enormous scope, like innovation reception, changing or in any event, patching up a current business cycle to fulfill market needs and benefit existing or expected open doors. M-commerce, accordingly, holds incredible advantages for SMEs to develop their incomes extraordinarily by being accessible at the fingertips of millions of expected purchasers all over the planet.

Keywords: M-Commerce, SMEs, Applications

Introduction

Progressions in Mobile commerce-related advances are significantly having an impact on how business is finished. Its development has effectively made new courses for organizations to grow networks in a computerized commercial center. Mobile Apps are extending at a staggering rate. From food to shopping to leasing a vehicle or even a house, there is an application for everything. There is a wealth of chances and SMEs should adjust to make the most of this. M-commerce, otherwise called Mobile business, empowers online deals and the acquisition of products, administrations, and data through cell phones. It is likewise viewed as a sub-set of online business. Despite being generally new, similar to web-based business, Mobile Commerce is ruling shopper decisions over actual visits to shops. This could be handily connected with the exceptional development in the utilization of cell phones and other cell phones. The extension in revenue and pertinence of Mobile innovation offers open doors for SMEs to further develop their showcasing procedures. As

well as showcasing, innovation is likewise stepping up the client experience presented by these organizations.

Using Mobile Commerce as a SME

Embracing innovation is reasonable but fundamental for endurance in the savagely aggressive business universe of today. Ventures with just actual areas or without a web-based presence would endure extraordinarily and could try and bear weighty misfortunes before long.

Mobile Applications

Mobile applications are a major in online business. It gives a productive answer for setting up a web-based store and drawing in clients with a quick and open shopping experience. Its critical advantage is as far as giving an upgraded start-to-finish client experience. It integrates all that from showing item data to installment, and buy finish. A very planned application can assist organizations with acquiring an upper hand, fabricating dependability, and incrementing client maintenance. Many driving internet business organizations have zeroed in on limited-time messages and showcasing on cell phones for better deals potentially opening doors on a careful spending plan. Become familiar with the most recent Mobile advancements and how you can pick the best one for your business from our article about Mobile application improvement innovation.

Responsive Site for Mobile Commerce

If you plan to give upgraded content as opposed to consistent commitment, a responsive site is a lot quicker arrangement. It works with sharing substance and comparable shopping experience for both work area and cell phone clients. The increasing of website composition as per screen size keeps a steady encounter for the client. It is additionally one of the most practical choices to use the pattern of Mobile business. Aside from a Mobile application and a responsive site, you can likewise choose PWA which represents moderate web applications. With PWAs, you can use the advantages of m-business and convey a Mobile application-like client experience.

Virtual Entertainment Commercial Center

Virtual entertainment is normally a device for simply showcasing advancements by organizations. In any case, numerous huge social stages have acquainted a commercial center with interface clients with organizations and start cooperations that carry worth to organizations. A few stages have likewise presented highlights that let organizations grandstand items via web-based entertainment. Alongside being a compelling showcasing instrument, it is a simple choice to arrive at clients and fabricate a brand on the web. Using

outsider commercial centers and social channels can permit your business to cooperate with clients with purchasing plans and create potential customers.

M-Commerce and Independent Venture Endeavor Benefits for SMES

Here is a portion of the manners in which Mobile Commerce keeps on driving the development of private company endeavor associations and why it ought to be important for SMEs.

Quicker Exchanges

Mobile applications make it more straightforward and quicker to stack information and indexed lists on cell phones. This implies that clients can peruse items and menus quicker, prompting quicker exchanges. Having the option to make buys straightforwardly through a Mobile application has prompted surer client experience, rehash buys, and expanded deals.

Improved Client Experience

The client experience matters. Having a decent item or unrivaled service is sufficiently not. Organizations with an application that is not difficult to explore, quick, intelligent, and helpful will see higher transformation rates and expanded income. Additionally, numerous applications offer selective advantages like focuses or limits to clients, which increments commitment. The most convincing motivation to utilize a Mobile application is to expand consumer loyalty. Most clients collaborate with applications day to day and have an assumption that organizations they cooperate with will have one, frequently not considering a business with those that don't. Essentially, a decent Mobile application can procure more clients and better client unwaveringness.

More Straight forward Client Association

Applications have pop-up message capacities that can send messages straightforwardly to a client's gadget. These notices permit your business to offer specials, limits, deals, item dispatches, or make different declarations in a flash. While certain clients will switch off this usefulness, it can develop your image openness for those who don't.

Customized Content and Contributions

Similar to Amazon, Mobile applications can offer explicit substance given client conduct, shopping designs, search, and area, from there, the sky is the limit. Amazon utilizes its exclusive calculation to make item proposals to clients in light of what they've bought and given different clients who have bought or looked through the same thing. This sort of customized effort can prompt better client devotion and expanded deals for your independent venture undertaking.

Better Examination

Application downloads and communications provide your business with a great deal of client information for your business to focus on and use to make shockingly better client encounters. Having a superior knowledge of shopping designs, ways of behaving, patterns, and different information can help your business with gauging, and item improvement, and the sky is the limit from there.

Diminished Cost

If you've previously caught a client by inspiring them to download an application, you've saved yourself promoting dollars. If your business is a Mobile application just, you save fundamentally over facilitating an actual area. You can likewise possibly cut down on compensation costs by utilizing fewer individuals than you would have to staff an area. Cash saved might be reinvested to assist you with becoming your SME.

Utilizing M-Commerce to its Fullest Potential

Innovation keeps on driving business, fueling development, and making better client and worker encounters. Utilizing Mobile Commerce and Mobile applications to develop your client reach and commitment is an important move in current business. Finding the right Mobile improvement stage can assist you with receiving every one of the rewards of Mobile application innovation for your private venture undertaking and permit you to be both fruitful and serious in your industry.

Factors that Confines Smes from Making Full Utilization of Web Based Business

Online business is by and large introduced in very positive terms yet alongside the likely advantages come likely issues for non-industrial nations. The reception of online business in creating nations varies significantly from one country to the other. Be that as it may, many face various comparative hindrances to web-based business. These primarily incorporate an absence of monetary, lawful, and actual foundation for the advancement of Internet business. The advancement of different sorts of web-based business relies basically upon the current design of a modern area and how it squeezes into a guaranteed sectoral esteem chain. Also, the distinction between societies and business ways of thinking across agricultural nations has additionally been seen to limit the relevance and adaptability of the online business models planned by some created nations.

Even though SMEs have various explanations behind participating in online business, the security concerns of the clients remain a significant obstacle to growing web-based business administrations and businesses. Most likely, the greatest disadvantage is the hesitance of clients to give online data about their Visas. Guaranteeing both trust and commonality through a well-functioning site has shown to be one of the significant online business achievement factors. In the equivalent vein, the development of broadband has made a more noteworthy requirement for clients to safeguard their security and security in

an "on the web" climate. Both personal clients and organizations report that PC infections are the "malware" they experience the most. Security keeps on being an issue for on-the-web organizations as clients need to feel certain about the honesty of the installment cycle previously they focused on the buy.

The capability of online business must be accomplished given sufficient foundation. In most emerging nations, this requirement presents a significant snag. More modest, low-pay web markets in agricultural nations, especially in Africa, have been not able to draw in adequate interest in foundation. Joined with the absence of rivalry, this outcome in data transmission costs can be multiple times higher than in created nations. As a rule, these nations stay outside the scope of fiber optic links and should go to satellites for worldwide - and now and then even homegrown - networks. This happens even in disdain of critical upgrades achieved by innovation.

One more area of concern is the absence of specialized abilities which holds SMEs back from understanding their full Internet business potential. Many non-industrial nations try not to have a labor force that has adequate preparation in ICT and Mobile innovation. This extraordinarily impediments numerous SMEs that might look to broaden or to fan out into the internet business. Ensuring ventures have the required set of abilities and capacities to utilize important advances gainfully is critical to getting the financial advantages of web-based business. Numerous business visionaries in emerging nations, and particularly in least-created nations, miss the mark on important limits or attention to take full benefit of ICT.

Regardless of whether business visionaries in non-industrial nations approach cell phones or the web, they may not realize how best to use them for their business tasks. In certain conditions, they might try and neglect to see the benefit of putting resources into the innovation required to have the option to take benefit of the chances of online business.

Conclusion

It is critical to recollect, nonetheless, that SMEs are in good company in their inclusion with internet business. The public authority and the confidential area have crucial tasks to carry out not just in permitting online business to happen but to guarantee that it develops and benefits SMEs as well as customers. Top-notch and solid exchanges over the web need progressed media communications frameworks and ones that offer broadband and Mobile broadband administrations at reasonable costs to the two organizations and private clients. This requires an empowering climate where the contest between broadcast communications suppliers is strong. Likewise required is a labor force with strong ICT abilities. Such abilities are critical for the further advancement of online business also, other Mobile applications. The last option is basic in the journey to create important and excellent applications. Here as well, legislatures can play an indispensable job in guaranteeing that optional and professional schools show the fundamental abilities to assist with building a suitable computerized economy and one that is fit for adjusting to the necessities of its clients.

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INDUSTRY 4.0 AND ITS IMPACT ON INDIAN ECONOMY

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Abstract

Developed economics such as Germany, Japan, the United States and Singapore have industry 4.0 to boost their manufacturing competitiveness. In terms of Industry 4.0 adoption, India presently lags behind its worldwide peers. It has, however, begun to incorporate these technologies into its industrial processes, which has resulted in a number of positive outcomes. Since the start of civilization, humans have strived to increase their capacity and power. Initially, they used wood or pebbles as equipment, but as science progressed, they found complex and efficient technology, and this process is currently ongoing. Machines are an example of a human invention. The introduction of machines sparked the first industrial revolution. It was labeled a revolution because it not only increased output but also caused significant social and economic changes. For example, in the 1790s, the French Revolution invented new concepts such as equality, liberty, and brotherhood; a few years later, the first industrial revolution infused those ideas. It shows that industrial revolutions have a huge impact on both our society and the global economy. In this framework, the current study seeks to describe the impact of Industry 4.0 on Indian industry.

Keywords: *Developed Economics, Industrial Revolution, Industry 4.0.*

Introduction

Humans have attempted to expand their capacity and strength since the dawn of civilization. Initially, they used equipment made of wood or pebbles, but as science advanced, they discovered sophisticated and efficient technology, and this process is still ongoing. Machines are one of human inventions. The first industrial revolution was caused by the use of machinery. It was dubbed a revolution because it not only raised output but also brought about enormous social and economic changes. For example, in the 1790s, the French Revolution generated new principles such as "Equality, Liberty, and Brotherhood"; the first industrial revolution, which occurred a few years later, infused those ideas. It means industrial revolutions have a huge impact on our society, not only society but it also affects the world economy.

Today, technology has advanced to the point where we are on the verge of the Fourth Industrial Revolution. New technological developments such as artificial intelligence, the internet of things, big data, and so on will alter the entire landscape of the current sector. Industry 4.0 will transform the way we work, live, think, and interact with one another. Artificial Intelligence (AI) is a key component of Industry 4.0. It helps machines to think, learn, and make decisions. AI is likely to cause a revolution in the space sector as well. In the near future, robots will be deployed to space instead of humans, resulting in new advances in space science. AI will boost not only the space industry, but every area, from

agriculture to healthcare and education. On the one hand, AI will be utilised to tackle difficult challenges such as security, terrorism, surveillance, and traffic control, and on the other, it will bring about dynamic changes in banking, airlines, medical technology, and education. We can also do important cancer surgeries using nanotechnology.

Industry 4.0 Technologies and their Industrial Applications

Another technological advance is the Internet of Things (IOT), which allows machines to connect with one another. IoT combined with AI will transform factories into smart factories, towns into smart cities, automobiles into smart automobiles, and homes into smart homes. If this occurs, human efforts will be reduced to a bare minimum. Big data analytics is another important aspect of Industry 4.0. It is primarily designed to collect consumer information and data so that manufacturers may create appropriate products and services for them. Data is extremely crucial in today's digital environment. Imagine, if this massive amount of data is properly digested, we will see magical changes all around us. We will receive proper on-time services, saving both money and time. Big Data will, in fact, radically revolutionise the governance structure. It will be more transparent and efficient as a result. Governments struggle with policy implementation. Big Data and AI are expected to work together to solve this challenge. The government will be able to reach every person in need, and no one will be denied justice. It means that in the future, Big Data will enable inclusive socioeconomic development.

Industry 4.0 Technologies and Data Privacy

According to the UN, privacy is one of the human fundamental rights. Can we ensure privacy while installing this technology? Is Industry 4.0 going to ruin our fundamental rights? Actually, when we are considering Big Data we are considering data of millions of TB. In such huge amount of data, personal data doesn't matter much. But this data can be used to influence people politically and may hamper democratic processes also. This data, if not properly guarded, may cause civil wars or riots. So this is going to be a big challenge in the future. Industrial revolution puts a big impact on world economy and changes its basic structure. For example, the first industrial revolution transformed the agrarian economy into the manufacturing economy; the second industrial revolution reshaped it into the service-based economy and during the IT revolution the world's economy became a knowledge-based economy. But in this advancement, if one had to sustain he/she has to learn new skills and techniques. For example, when tractors and electric pumps were introduced in the farming sector, only those farmers could sustain well who trained themselves in accordance with modern technology and the rest failed.

Impact of Industry 4.0 Technologies on Human and the Workforce

A huge question arises when we think about artificially intelligent machines: "Will there be any job left for humans?" Actually, jobs are not dying but they are evolving. It is obvious that Industry 4.0 will replace some jobs, but is also creating new jobs like big data

analytics, VR designer, block chain auditor, social media reporter, drone operator space visit guide and many more. It is expected that high-skilled and low skill jobs will stay as before, but middle-tier jobs will be replaced by AI robots. This is known as job polarisation in the economic terms. If workers want to sustain then they have to learn new technological skills. Researchers of Oxford University have found that jobs which are related to manual dexterity, high cognitive skills and social skills are difficult to be computerized, and workers should focus on developing these skills. Doctors are going to be replaced by AI robots in future but if a doctor is trained with hospitality skills and caretaking skills, then he/she will be preferable over a robot-doctor. It means jobs are going to be knowledge-centric and talent centric. A construction worker has to learn something about electronics apart from construction skills if he/she wants to build an automated smart home where sensors are used. Hospitality, condolence, politeness these are some qualities which should be learned as these will value add our character.

In the recent times, human race are heading towards a Gig economy. Gig means not continuous. It is predicted that normal continuous jobs will be reduced and these will be replaced by contractual jobs. If there will be no permanent jobs then there will be no paid holidays and no insurance schemes and also no fixed income. It may create unemployment like situation but I think gradually it will become part of our habit. So the beginning period is going to be tough and it is also expected that the revolution may slow down the world economy for a small period. So we should get ready for it. It is often observed “lack of reciprocity between technology and skill results in social inequality”. Those who learn new skills time to time and update their work with new technology will succeed and for the rest, fourth industrial revolution will be a big challenge. Actually, it depends on you whether Industry 4.0 will be a boon or a curse.

Economic Benefits Provided by Industry 4.0 Technologies

Industry 4.0 technologies will help in the economic regeneration by 2025 enabling enterprises to revamp India's financial status in the post-COVID era besides acting as game-changers. The role of corporations through AI is going to be key for the comeback of the Indian economy post-pandemic. New-age technologies such as block chain, big data analytics, Internet of things (IoT), advanced manufacturing, quantum computing and AI are set to give India a possibility to engrave itself a striking uniqueness as an “International nucleus” in the near future. As AI functions for “digital inclusion” in India, it is expected to have a ripple impact on economic prosperity and growth. Analysts foresee that AI can help add up nearly \$957 billion to the Indian economy by 2035 and by 2025, AI can add over \$500 billion and nearly 20 million jobs to the Indian economy. The Indian government is also in the process of implementing a robust legal framework governing the data of the country apart from constructing a data-driven society through AI that presents endless prospects to empower people, enhance society and also boost the ease of doing business. India through its AI strategy, constituting an extensive pool of AI workforce and an

emerging startup ecosystem, has a remarkable chance to be a prominent contributor to AI-driven resolutions that can further transform agriculture, healthcare, manufacturing, education and skilling thereby impacting the economy positively to a considerable extent. The adoption of AI in various sectors of the economy is seen to have produced favorable returns by lessening time and risk.

Government Initiatives to Speed up the Implementation of Industry 4.0

Recently, the Ministry of Commerce and Industry has set up a Taskforce on AI to kick-start the usage of AI for the country's economic shift. Nonetheless, AI adoption has remained at a developing stage. Therefore, the Indian government should consider establishing a separate "Industry 4.0 Ministry" for coordinating all new age technology related activities. For instance, the United Arab Emirates (UAE) in 2017 became the first nation in the world to create the post of Minister of State for AI. Today, governments globally are also taking measures to be part of the AI-led digital economy, which is assessed to contribute roughly \$15.7 trillion to the global economy by 2030. Considering India's present situation, the country is on the verge of a massive opportunity for both economic advancement and gain in the common well being of its citizens. "Inclusive economic growth" can make India the best playground for creating world-class and state of the art technology solutions. For this, the government through its annual budget must consider allocating more for Research and Development (R&D) in various sectors and also establish R&D departments in various educational institutions and universities across the country. India through General-purpose technologies (GPTs) can also influence the whole economy where GPTs have the possibility to drastically transform societies through their effect on the already existing economic and social arrangements.

Growth Potential of Industry 4.0 in Indian Economy

The adoption of AI is not confined to businesses alone, while economies have also shifted their emphasis on creating their AI capacities as a tool to boost growth where developed nations are already in the race and India as an aspiring future superpower is set to enter the AI race. Amidst the accelerated adoption of AI-based technologies, India seems to stand at the ridge of Industry.

Therefore, it would be a convenient shifting for India to create its AI abilities despite the transnational digital divide broadening even more. From the first industrial revolution until the rise in the IT revolution, the world has stood to benefit more and as per experts, AI like any other new technology in the past will produce more jobs than it destroys. Still, it is seen that the "Initial adoption of technology" has barriers for developing economies where restricted access to Industry 4.0 can broaden the income inequality, and the transformation stage of adoption is presumably to replace some jobs before it produces more jobs. While the influence of AI on the gross domestic product (GDP) and productivity is impressive, studies have also demonstrated the harmful effect of AI on employment. McKinsey Global

Institute indicated that intelligent mechanisms and robots could eliminate nearly 30 per cent of the global human labor by 2030. Also, with the rise in unemployment, this transformation could become quite difficult though in the past, new technologies have demonstrated to be worthwhile in the long-term, the short-term failures cannot be justified. Nevertheless, India still lags on essential indicators of AI development despite possessing increased levels of entrepreneurship, robust corporations and a skilled pool. Therefore for the betterment of the essential AI indicators a balanced approach, innovative local solutions and top-down policy making should be put forth. Also, the enhanced role of government along with the private sector will be instrumental in directing AI to create equitable development. Furthermore, the continued innovations and collaborations by Public-Private Participation (PPP) are necessary to lessen the cost of modern technologies, which can help the larger population thereby driving the “digital revolution”. However, India should also mainly consider improving its “hardware sector” to help redress bottlenecks since the country still lags behind which is vital for the Indian economy.

Conclusion

India is anticipated to have the world's youngest population by 2030, accounting for approximately 30% of the global workforce. As a result, AI can drastically increase the productivity of the average worker to meet the level of today's top achievers. There is also a need to foster "scientific temperament" among the people of the country regarding new generation technologies, in addition to taking the ethics and security of Industry 4.0 into account. In this regard, India's "National strategy for AI" recently advocated the establishment of ethics councils for sector-specific concerns like privacy, security, and ethics. Industry 4.0 can also assist the country in meeting the Sustainable Development Goals (SDGs), which can propel the Indian economy forward. In the long run, the Indian economy and society are clearly prepared for a sea change, and the courageous aim of making India a \$5 trillion economy by 2025 can be realised with the implementation of Industry 4.0.

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EMPOWERING MSMEs WITH SCIENTIFIC INNOVATION AND TECHNOLOGY: A CATALYST FOR SUSTAINABLE GROWTH

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Abstract

Micro, Small, and Medium Enterprises (MSMEs) play a pivotal role in driving economic growth and employment generation in emerging economies. To enhance their competitiveness and sustainability, it is imperative to equip MSMEs with the latest scientific knowledge and technology. This article explores the strategies and mechanisms to empower MSMEs through targeted knowledge dissemination and technology adoption. By fostering collaboration between MSMEs and research institutions, providing access to cutting-edge scientific advancements, and offering tailored training programs, this approach enables MSMEs to harness the transformative power of technology. The article highlights case studies and best practices to illustrate the tangible benefits that accrue from this empowerment, including increased productivity, enhanced product quality, and improved market access. Ultimately, empowering MSMEs with scientific knowledge and technology not only fortifies their capacity for innovation and growth but also contributes to the overall economic resilience and competitiveness of the broader industrial landscape. This article serves as a roadmap for policymakers, industry stakeholders, and academia to strategically leverage the potential of MSMEs in driving sustainable economic development.

Keywords: MSME, Empowerment, Technology, Innovation and sustainable Growth

Introduction

In the dynamic landscape of global commerce, Micro, Small, and Medium Enterprises (MSMEs) have emerged as the lifeblood of economies worldwide. In India, they form the backbone of industry, contributing significantly to employment, innovation, and economic output. However, in an era defined by rapid technological advancements and an increasing focus on sustainability, the empowerment of MSMEs with scientific knowledge and cutting-edge technology has become not just an advantage, but an imperative[1].

This article embarks on a journey into the realm of MSMEs, illuminating the transformative potential that arises when scientific acumen converges with technological prowess. We delve into the pivotal role that this synergy plays in enhancing the competitiveness, resilience, and sustainability of these enterprises. From adopting eco-friendly practices to harnessing the power of data-driven insights, the infusion of scientific knowledge and technology not only catapults MSMEs into the forefront of industry but also aligns them with the ethos of a rapidly evolving global marketplace. Join us as we navigate through a landscape where innovation is not a luxury but a lifeline, where scientific knowledge is not confined to laboratories but is wielded on factory floors and in

storefronts. Through a series of insightful analyses and compelling case studies, we will unveil the tangible benefits and unprecedented opportunities that await MSMEs on this transformative trajectory. In the following sections, we will explore key strategies, success stories, and the far-reaching impact of empowering MSMEs with scientific knowledge and technology. From sustainable practices that mitigate environmental impact to data-driven insights that refine operational efficiency, this article aims to shed light on a paradigm shift that promises to not only redefine the trajectory of MSMEs but also shape the economic destiny of nations. This strategy is pivotal in enhancing their competitiveness, resilience, and contribution to economic and environmental well-being. Here are the key strategies within this approach. Empowering MSMEs (Micro, Small, and Medium Enterprises) involves leveraging various scientific disciplines and technologies to enhance their capabilities, productivity, and sustainability. Here are some key areas of science involved in empowering MSMEs[3]:

Technology Transfer

Engineering and Technology Sciences: This includes fields like mechanical engineering, electrical engineering, and materials science. These disciplines help in transferring cutting-edge technologies to MSMEs, enabling them to improve their production processes and product quality.

Information Technology

Computer Science and Information Technology: These fields are fundamental in enabling MSMEs to leverage digital technologies, such as cloud computing, data analytics, and automation, to streamline operations, improve decision-making, and enhance competitiveness.

Environmental Science and Sustainability

Environmental Sciences: Understanding environmental impact assessments, pollution control, waste management, and sustainable practices are crucial for MSMEs to operate in an eco-friendly manner.

Energy Efficiency and Renewable Energy

Energy Sciences and Engineering: This encompasses the study of energy systems, renewable energy technologies (solar, wind, biomass), and energy-efficient practices. Implementing energy-saving measures and adopting renewable energy sources can significantly reduce operational costs for MSMEs.

Biotechnology

Bioprocessing and Biomanufacturing: Biotechnology plays a role in various industries, including pharmaceuticals, food processing, and biofuels. MSMEs can benefit from advances in bioprocessing technologies to develop sustainable and innovative products.

Quality Assurance and Control

Metrology and Quality Control: These disciplines ensure that products meet specified quality standards through precise measurement techniques and quality control processes.

Automation and Robotics

Mechatronics and Automation Engineering: Automation technologies involving robotics, artificial intelligence, and machine learning can help MSMEs optimize production processes, increase efficiency, and reduce human error.

Nanotechnology

Nanoscience and Nanotechnology: This field deals with materials and processes at the nanoscale, offering opportunities for innovation in areas like electronics, healthcare, and materials science.

Data Analytics and Business Intelligence

Analyzing large datasets can provide valuable insights for decision-making, market research, and process optimization within MSMEs.

By leveraging these scientific disciplines, MSMEs can drive innovation, improve operational efficiency, enhance product quality, and contribute to sustainable economic development. Integrating science into their operations enables MSMEs to compete on a global scale and adapt to evolving market demands.

Technology Transfer and Adoption

Collaborative Partnerships: Facilitate collaborations between MSMEs and research institutions, universities, and technology providers. Foster a culture of innovation and knowledge-sharing to promote the adoption of cutting-edge technologies.
Technology Assessment and Feasibility Studies: Provide support for MSMEs to assess the suitability, feasibility, and potential benefits of adopting specific technologies. This could include conducting pilot projects and feasibility studies.
Innovation Grants and Subsidies: Offer financial incentives to MSMEs for the adoption and integration of innovative technologies that align with sustainable development goals[4].

Customized Technical Assistance

Technical Advisory Services: Establish expert panels or consultancy services that provide customized technical advice to MSMEs. This could cover areas like process optimization, resource efficiency, and technology selection. Conduct comprehensive assessments of MSME operations to identify areas where technological interventions can lead to improved sustainability, productivity, and profitability.

Market Intelligence and Trends

Technology Watch Programs: Monitor and analyze global and local trends in technology and sustainable practices. Provide regular updates to MSMEs to keep them informed about emerging opportunities and potential disruptors. **Market Research and Demand Analysis:** Conduct studies to understand market demands for sustainable products and services. Equip MSMEs with market intelligence to align their offerings with evolving customer preferences[5].

Intellectual Property Rights (IPR) Support

IPR Workshops and Clinics: Organize workshops and clinics to educate MSMEs about the importance of intellectual property rights, including patents, copyrights, and trademarks. Provide guidance on how to protect and leverage their innovations. **Assistance in Patent Filing and Protection:** Offer support in the process of filing for patents and protecting intellectual property, including assistance in drafting applications and navigating legal procedures. By implementing these strategies, MSMEs can be transformed into dynamic engines of sustainable growth, leveraging scientific knowledge and technology to enhance their operational efficiency, reduce environmental impact, and contribute to the overall economic and ecological well-being of the nation[6].

Conclusions

Empowering the Micro, Small, and Medium Enterprises with scientific innovation and technology stands as a potent catalyst for sustainable growth. This integrated approach capitalizes on a diverse range of scientific disciplines to revolutionize the operational landscape of MSMEs. The infusion of technology drives efficiencies across various sectors, fostering a culture of competitiveness and adaptability. Moreover, it positions MSMEs as dynamic players in the global economic ecosystem, capable of leveraging their newfound capabilities on an international scale. The path forward lies in a continued commitment to nurturing this union of science, technology, and MSMEs, as it holds the promise of a brighter, more sustainable future for economies and societies around the globe.

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DIGITAL FINANCIAL INCLUSION IN INDIA: CHALLENGES AND OPPORTUNITIES

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Abstract

India's Financial Inclusion journey has been phenomenal in the last decade and expressly promoted by the Government of India through their Digital India Movement & Pradhan Mantri Jan Dhan Yojana. Reduction of poverty and addressing the challenges of ensuring sustainable income could become a key factor to achieve an inclusive society. Information and Communication Technology are providing access to unbanked population progressively and helping to bring them into the banking segment. Digital Technologies are driving usage and making a positive impact on livelihood of citizens. In this paper we are discussing on what is achieved in Financial Inclusion so far and what next and how do we leverage and harness digital technologies to achieve an inclusive society. This paper enlists various challenges that continue to prevail in achieving an inclusive society.

Keywords: *Financial Inclusion, Information and Communication Technology, Social Inclusion, Health Inclusion, Sustainable Growth ecosystem*

Introduction

Financial Inclusion (FI) means delivering basic financial services to the marginalized and excluded members of society. It is the process in which we ensure adequate line of credit accessible by the weaker section of the society at a reasonable cost. Financial inclusion helps in developing a culture of savings among semi urban and rural population by bringing low income groups within the formal frame- work of banking and insurance sector which is significant for national economic development. It came into prominence around 2008 when it became clear to the government that it needs to be the key driver for economic growth of the country. Vision for Financial Inclusion in India is to induce inclusive financial growth by including the unbanked and unsupported individuals and MSMEs by formal financial institutions by providing them convenient access to basic financial products including bank accounts, remittances, bill payments, government supported insurance, pension products and formal credit at reasonable costs. There has been growing evidence on how financial inclusion has a multiplier effect in boosting overall economic output, reducing poverty and income inequality at the national level.

With the advent of "Digital India Movement" and telecom penetration to deep rural areas, sincere efforts are made to bring widespread formal banking channels and innovative financial technology together to create a viable and vibrant ecosystem to drive accessibility of formal financial products to unbanked and deprived segments of Indian society. It started with the services related to opening of no-frills accounts, delivering smart cards containing balance and biometric information to registered on the card. There was no active network connectivity during initial stages of FI. Last mile agents used to visit

the bank, withdraw money & beneficiary list, go to each beneficiary, authenticate with biometrics, and deliver the services. Post which, they go back to the bank to reconcile. Out of 650,000 villages in India, around 150,000 were identified by the govt. initially to service through BC Model.

Fast-forward now, there is far more online connectivity in the remotest areas, smart card is replaced by real time Aadhaar based authentication, beneficiary enrolment & transactions can be done in real-time in field. Last mile channels like micro ATMs, Kiosks, PoS machines, Tablets, Mobile Phones are utilised for service delivery. Basic requirement of UPI based FI transaction is that the beneficiary account should be opened through PM JDY scheme and it is linked to the customer's mobile number.

There is a great need for inclusive growth. By leveraging digital technologies, this is a great opportunity for Govts. and market leaders to improve digital penetration, ease of use of digital products, contextualised and personalised offerings to citizens increase availability, drive down costs, enhance security and trust. There is a need for sustainable cooperation between govts., businesses and unbanked population .

National leadership and policy making institutions like RBI and Niti Aayog have brought in some strong initiatives for inclusive growth which culminated in National Mission for Financial Inclusion namely Pradhan Mantri Jan Dhan Yojana PM JDY leveraging banking network and technology innovations. It enabled access to financial services and coverage of banking to excluded population.

With over 95% of Indian population having Unique Identification through Aadhaar, India achieved 80% of adult population having bank account by 2017. 77% Indian Women have bank accounts. In the outbreak of Covid-19 pandemic, this back bone of bank account has been instrumental to provide help of ₹500 per month for 3 months to over 200 Mn woman beneficiaries, transfer of Rs. 6000/- in 3 installments per year (currently citizens are receiving their 8th installment) of PM Kisan Samman Nidhi Yojana to farmers through direct benefit transfer schemes . Under PM JDY, 423.7 Mn total no of Beneficiaries of which 279.5 Mn Semi Urban/ Rural Beneficiaries . Rapid digital penetration along with enhancing the financial literacy of people has started. We are moving from assisted to self-service model for multiple services.

Current Challenges

1. People included in the financial inclusive ecosystem end up getting excluded and are not able to sustain within the framework due to various reasons general or health related causes.
2. There is a clear demarcation of digital divide among some are tech savvy people and delivering the services and making them understand is not difficult, where as some in semi-urban and majority of people in rural areas find difficult to understand and utilise technology efficiently.
3. Lack of financial literacy and awareness on financial cybercrimes has resulted in

general mistrust among rural population which leads to reduced digital penetration.

4. There is a burden on running sustainable last mile delivery model, particularly in rural areas & last mile level service delivery. Multiple Govt. & Business agencies are trying to reach the same location for various reasons related to FI, Social or Healthcare inclusion and these are disjoint efforts and driving higher costs.
5. Different data elements available with govt. such as healthcare schemes data, social inclusion data, COVID data, vaccination data, etc. are not leveraged to full extent as there is clear lack of coherence between these data elements.
6. Last mile technological systems and artefacts are vulnerable to exposure and exploitations. It is loosely handled by BC or BF agents as adequate security measures to control it are not put in place. This has resulted in lot of frauds happening on the ground. About 22% BC agents faced fraud in 2017, a noteworthy increase from 2% in 2015. Business model of Last mile & BC Agent network must be looked at again from privacy security & safety angle.
7. Data Privacy is still a major concern as a lot of captured data is easily available to various stake- holders as PII norms are not completely followed. KYC Data & mobile numbers are available everywhere. Biometric data is captured duplicitously by some BC Agents in clay who will replicate it later for fraudulent reasons. Another way is when they give a manual receipt instead of computerised one during transactions.
8. SMS messages for transactions in an account are not reaching the customer due to lack of mobile device (More than 310 Mn people still do not possess a basic feature phone or a smart phone) or financial institutions are not sending these messages for low value transactions. This has led to increased dependency on local agents.
9. Access to credit is still a concern as small time lenders charging high rate of interest are prevalent in rural areas. Govt. schemes have not penetrated fully and need more rural outreach to enhance credit access. Lack of avenues for digital lending and online loans from credible financial institutions is missing.
10. Recommendations for individuals based on their requirement is not provided and leveraging the personalised data of the person, by performing analytics using AI & ML, banks can offer loans, insurance and other services based on analytics & credit score.

National Strategy for Financial Inclusion

In the year 2020, RBI came up with national strategy for Financial Inclusion with focus on creating an outreach of financial services outlets to provide banking access to every household within 5KM radius. All eligible adults must have access to basic financial services such as Bank Account, line of credit, life and other insurance, pension scheme and suitable investment product. Now, the next paradigm for financial inclusion program

(2020–2024) is focused on addressing inherent behavioural and practical aspects .

1. *A strong financial transaction grievance redressal system* to address concerns of arguably less technology-savvy citizens.
2. *Increasing digital penetration* as still the smartphone usage for financial transactions are limited to urban and semi urban population predominantly.
3. *Bank account opening for the remaining population* of the country as still the PMJDY penetration is about 80% of the population.
4. *Ensuring the privacy of data and information of citizens* and prevention of fraudulent transactions and demographic data.
5. *Easy and affordable digital payment options* to suit the needs of small businesses and unstructured sector workers.
6. *Providing access to basic and most essential financial products* such as transactional accounts, digital payments, basic term insurance, basic medical insurance, and pension options to the population specially in the agricultural and unorganized MSME sector workers.

According to a World Bank report, globally achieving Universal Financial Access by 2020 [3] has been one of the key developmental agenda of the World Bank which aims to provide adults who currently aren't part of the formal financial system, with access to a transaction account to store money, send and receive payments to manage their financial lives. Our National Strategy is also aligned to these broad virtues suggested by World Bank. On key parameters, India is quite ahead and continuously progressing:

1. *Leadership* in India is having singular focus on technology enabled financial inclusion. It is evident through steps like DBT, PM Kisan, financial assistance to woman and poor during the recent Covid-19 pandemic etc.
2. *Target based approach for specific sectors & regions* including “National Mission for Capacity Building” by bankers for MSME sector, Certified Credit Counsellor Scheme for MSME to join them with the formal Financial Channels and informed financial credit decisions.
3. *Regulatory Framework* in Banking to protect customers, promote fair business processes and prevent unhealthy practices by market players. Initiatives like exclusive “Financial Inclusion Fund” (with initial corpus Rs.2000 Crore), issuances of differentiated banking license—Small Finance Banks, Payments Banks etc., launch of BC Registry with Indian Banks Association (IBA) etc. are steps towards the same.
4. *Market Development* initiatives like Branch Authorization Guidelines (2017) etc. to ensure accurate targeting of the beneficiaries, de-duplication and reduction of fraud and leakage have been taken. Linking all financial assistance schemes to DBT is a strong footprint in this direction
5. *Strengthening Payments Structure* through digital retail payments systems like AEPS, NACH, UPI, CTS, IMPS etc. operated by NPCI are significant steps. Aadhaar

linked direct benefit transfer has changed the scenario for public funds distribution in India.

6. *Last mile delivery* to bridge the gap for remote connectivity and doorstep financial services is key to success. ICT based solution like business correspondents/facilitators and IPPB are landmark steps in this area, launch of UPI on feature phones will be a big game changer also enabling ecosystem for NFC based touchless payments.
7. *Financial Literacy and Awareness* is a primary bottleneck in progressive financial inclusion in India. Launch of financial literacy program in 2013 helped in addressing this to some extent.

Conclusion

Even though the country has made immense progress in widening accessibility for the majority of the excluded population, including through a strong supply-side push for digital financial services, policies should focus more on addressing demand-side constraints to promote use of financial services, which remains low. Improving financial and digital literacy, internet and smartphone access, and expanding digital government payments to households (government to person) will help close the emerging digital divide. At the same time, strengthening consumer protection, data privacy, and cybersecurity remain crucial to promoting safe financial inclusion.

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A STUDY ON GROWTH AND MARKETING OF PASSENGER CAR IN KANYAKUMARI DISTRICT

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Abstract

The Indian passenger car industry is one of the fastest-growing markets of the global level, but is currently experiencing flat or negative growth rates. It has shown great achievements in terms of introduction of new technology, development, spread, flexibility and has changed the business scenario. The cost of manufacturing vehicles in Indian is less as compared to the cost of manufacturing automobile vehicles in foreign countries. The important objective of the study is to analyze the growth of passenger cars in Kanyakumari district and marketing factors motivating to purchasing of passenger car. The study mainly based on both primary and secondary data. The sample size was fixed at 150. The important finding of the study is the sale of passenger car in Kanyakumari District has been increased from 12862 units in the year 2013 to 25950 units in the year 2022. The marketing factors motivating towards purchase of cars, "Brand Image" with the mean score of 91.31 contributed 1st rank, "Different Models" with the mean score of 88.69 contributed 2nd rank and Fix Low Initial Amount" with the mean score of 51.26 contributed 13th rank.

Keywords–Growth, Marketing, Purchasing and Passenger Car

1. Introduction

The passenger car industry is one of the most important drivers of economic growth of India and one with high participation in global value chains. The growth of this sector has been on the back of strong government support which has helped it carve a unique path among the manufacturing sectors of India. The passenger car produced in the country uniquely cater to the demands of low- and middle-income groups of population which makes this sector stand out among the other passenger car producing countries. Today the Indian passenger car industry is fulfilling the demand of the Indian as well as consumers in other countries. The implementation of the new industrial policy has accelerated the growth and development of the passenger car sector. According to recent reports, India overtook Brazil and became the sixth largest passenger vehicle producer in the world, grew 20 to 22 percent to sell around three million units in the course of 2020 and 2021.

2. Objectives

The important objectives of the study are,

1. To study the growth on passenger car sales in Kanyakumari District.

2. To analyses marketing factors motivating to purchasing of passenger car in the study area.
3. To study customer satisfaction towards passenger car in Kanyakumari District.

3. Hypothesis

1. The mean ranks of factors determining customer satisfaction towards passenger cars are significantly different in Kanyakumari District.

4. Methodology

The study is mainly based on both primary and secondary data. The primary data is collected from the sample respondents in passenger car owners in Kanyakumari district through the personal interview method. The secondary data were obtained from journal, magazines, newspapers, bulletin, case studies, working papers, books and internet have also been used. The sample respondents have been selected by Proportionate Random sampling method. The sample group consists of 150 passenger car owners. The tools used for the study are Trend Analysis, Graphical Analysis, Simple Mean, Friedman test and ANOVA test.

5. Data Analysis

5.1 Passenger Car Sales in Kanyakumari District

The details of passenger car sales in Kanyakumari district presented in Table.1

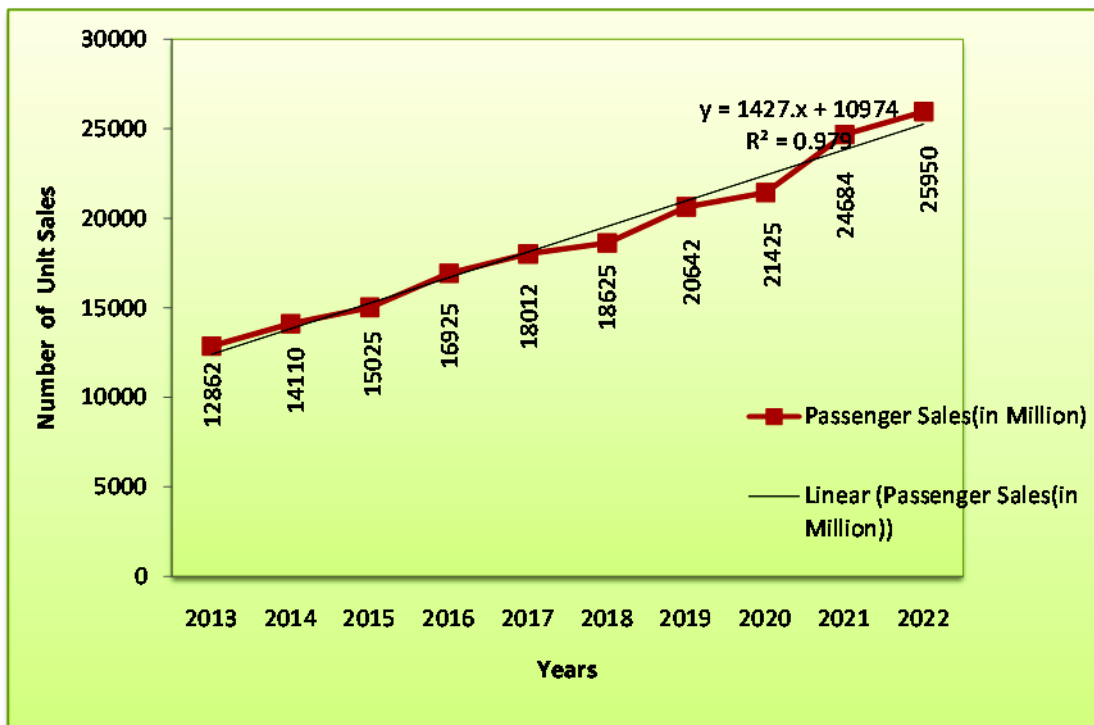
Table.1
Passenger Car Sales in Kanyakumari District

Sl.No	Year	Passenger Sales (in Million)	Raise/ Diminish (in Million)	% Raise/ Diminish	Trend Value
1	2013	12862	-	-	12862
2	2014	14110	1248	8.8448	13829
3	2015	15025	915	6.0899	15256.7
4	2016	16925	1900	11.2260	16684.4
5	2017	18012	1087	6.0349	18112.1
6	2018	18625	613	3.2913	19539.9
7	2019	20642	2017	9.7713	20967.6
8	2020	21425	783	3.6546	22395.3
9	2021	24684	3259	13.2029	23823
10	2022	25950	1266	4.8786	25250.7

Source: RTO Office, Nagercoil, 2023, Statista.com, 2023

The table.1.shows that the sale of passenger car in Kanyakumari District has been increased from 12862 units in the year 2013 to 25950 units in the year 2022. The sales trend has been steadily increasing upward trend the whole study period. In the year 2022, the sales passenger car in Kanyakumari district is to attain a peak level that is 25950 units of passenger cars. The trend and growth of sales of passenger car is progressively increasing from the first year of study period. The sales of Passenger car sales in Kanakumari District is illustrate in the figure.1

Figure.1
Passenger Car Sales in Kanyakumari District



5.2 Marketing Factors Motivating towards Purchase of Cars

The thirteen marketing factors motivating the purchase of cars are investigated. Friedman's test analysis was used to identify the factor, which is the essential marketing factors motivating the purchase of cars. The marketing factors motivating to purchase the are presented in Table.2.

Table.2
Marketing Factors Motivating towards Purchase of Cars

Sl.No	Factors	Mean	SD	Ranks
1	Influenced by Sales People	74.11	1.231	VII
2	Fix Low Initial Amount	51.26	0.856	XIII
3	Brand Image	91.31	1.356	I
4	Better After Sales Service	76.50	1.162	VI
5	Market Survey	65.62	1.183	X
6	Different Models	88.69	0.961	II
7	Customer Focus	70.65	1.159	VIII
8	Social Media Advertisement	81.09	1.125	IV
9	Target the Right People	62.99	0.725	XI
10	Good Resale Value	84.71	1.625	III
11	Fix Competitive Price	77.56	1.356	V
12	Discounts & Offers	68.00	1.264	IX
13	Installment Premium	56.35	1.654	XII

Source: Primary data

Table.2 shows that marketing factors motivating towards purchase of cars, “Brand Image” with the mean score of 91.31 contributed 1st rank, “Different Models” with the mean score of 88.69 contributed 2nd rank, “Good Resale Value” with the mean score of 84.71 contributed 3rd rank, “Social Media Advertisement” with the mean score of 81.09 contributed 4th rank, “Fix Competitive Price” with the mean score of 77.56 contributed 5th rank, “Better After Sales Service” with the mean score of 76.50 contributed 6th rank, “Influenced by Sales People” with the mean score of 74.11 contributed 7th rank, “Customer Focus” with the mean score of 70.65 contributed 8th rank “Discounts & Offers with the mean score of 68.00 contributed 9th rank, “Market Survey” with the mean score of 65.62 contributed 10th rank, “Targets the Right People” with the mean score of 62.99 contributed 11th rank, Installment Premium” with the mean score of 56.35 contributed 12th rank and Fix Low Initial Amount” with the mean score of 51.26 contributed 13th rank.

5.3 Customer Satisfaction towards Passenger Car

Table.3 describes the distribution of the factors to determine customer satisfaction towards passenger cars analyzed regarding “Price, Fuel Consumption, External Design, Quality, Life of the Vehicles, Service Capability, Maintenance Charge, Colour, Availability of Spares, Riding Comfort, Look & Style, Resale Values, Pulling Power (bhp), Seating Capacity, Safety Features, Speed, Shock absorbs & transmission, Braking efficiency, Low Smoke Emission, Cost of spares, and Performance” are analyzed. Table.3 represents a

descriptive analysis of the mean ranks of the twenty-one factors to determine that customer satisfaction towards passenger cars is not significantly different in Kanyakumari District. The descriptive analysis includes the mean score, standard deviation, minimum score, maximum score, first quartile, median, and third quartile of twenty-one variables.

Table.3
Descriptive Statistics

Sl.No	Variables	Mean	Std.	Min	Max	Percentiles		
						25 th	50 th (M)	75 th
1	Price	3.4933	1.24973	1	5	3	4	4
2	Fuel Consumption	4.0800	0.57855	2	5	4	4	4
3	External Design	3.9067	0.93856	1	5	4	4	4
4	Quality	3.4067	1.24356	1	5	2	4	4
5	Life of the Vehicles	3.1433	1.48666	1	5	2	4	4
6	Service Capability	3.6733	1.21582	1	5	4	4	4
7	Maintenance Charge	3.8267	0.84400	1	5	4	4	4
8	Colour	3.9100	1.10422	1	5	4	4	5
9	Availability of Spares	3.2233	1.53012	1	5	2	3	5
10	Riding Comfort	3.7900	1.42337	1	5	3	4	5
11	Look & Style	3.6633	1.47555	1	5	2	4	5
12	Resale Values	3.0800	1.50371	1	5	2	3	5
13	Pulling Power (bhp)	3.0900	1.54592	1	5	2	3	5
14	Seating Capacity	3.5800	1.37230	1	5	2	4	5
15	Safety Features	3.6700	1.51506	1	5	2	4	5
16	Speed	4.4967	0.79083	1	5	4	5	5
17	Shock absorbs & transmission	4.3167	0.89390	1	5	4	4	5
18	Braking efficiency	3.5167	1.12574	1	5	3	4	4
19	Low Smoke Emission	3.5033	1.28406	1	5	2	4	5
20	Cost of spares	4.3467	0.99488	1	5	4	5	5
21	Performance	4.4333	0.88402	1	5	4	5	5

Source: Computed data

Table.3 shows that “Speed” has the highest mean score of 4.4967, followed by “Performance.” According to the respondents, “Speed” is an important factor determining customer satisfaction towards passenger cars. “Performance” is essential to determining customer satisfaction with passenger cars. Other factors are the least important among the respondents.

6. Findings

The important findings of the study are,

- The Study expresses that the sale of passenger car in Kanyakumari District has been increased from 12862 units in the year 2013 to 25950 units in the year 2022.
- The sales trend has been steadily increasing upward trend the whole study period. The trend and growth of sales of passenger car is progressively increasing from the first year of study period.
- The study shows that marketing factors motivating towards purchase of cars, “Brand Image” with the mean score of 91.31 contributed 1st rank, “Different Models” with the mean score of 88.69 contributed 2nd rank and “Fix Low Initial Amount” with the mean score of 51.26 contributed 13th rank.
- The study reveals that “Speed” has the highest mean score of 4.4967, followed by “Performance.”
- The study expresses that “Speed” is an important factor determining customer satisfaction towards passenger cars. “Performance” is essential to determining customer satisfaction with passenger cars. Other factors are the least important among the respondents.

7. Suggestions

The important recommendations are given below;

- The passenger car manufacturers are recommended that they have to produce the cars with the latest technology with superior quality and at a lower price.
- Soft loans should be provided to the customers for purchasing of car.
- The company needs to concentrate on fuel efficient and attractive design cars to attract the all categories of people especially middle income people.
- The branches can be opened in many new areas for diversification and the company should also think of providing other passenger car parts for its customers in order to cover the entire range of an car industry.
- Internal loopholes can be checked for minimizing the number of complaints received by the customers.

8. Conclusion

The study concluded that the growth of the passenger car industry caused an economic revolution across the India. It highlights the various factors which motivate the marketing of passenger cars in Kanyakumari district. The study has analyzed the customer satisfaction of various brands of passenger car. This finding of the study will enable the Government and the passenger marketers to frame suitable mandates to promote the

Automobile industrial market particularly the passenger car market. Finally, the growth and marketing of passenger cars in Kanyakumari is positive one.

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FINANCIAL INCLUSION OF MSME

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Abstract

*This study aims to determine the effect of the digital economy on the financial inclusion of MSME and try to examine the technology adoption variable in mediating the impact of the digital economy. Structural model results indicate a mediation and a reflective impact of the extended technology acceptance model on digital economy and financial inclusion relationship. The role of the digital economy and technological adaptation has significant implications for financial inclusion. The digital economy is a sign of future economic development and growth which is marked by the rapid development of business transactions. The world's economies have harnessed the potential of technology-based inclusion through a combination of financial products and services. Technology adoption plays a role in reducing the digital economy gap towards financial inclusion in Sukabumi MSMEs. This study proposes the concept of the digital economy as an independent variable and technology adoption as a mediating variable on the financial inclusion of MSME actors. This research is empirical and has a wider application. **Key words:** Digital economy, Financial inclusion, Technology adoption.*

Introduction

Finance covers all aspects of economic activity, is a fundamental and essential part of an inclusive series of transactions that are important in creating economic stability, improving financial arrangements, managing government programs in the field of backwardness, and narrowing gaps between individuals and regions. According to the World Bank and the European Commission, a comprehensive or inclusive mode of finance is a comprehensive activity that is expected to minimize everything that is considered to interfere with the implementation process to enable the public to optimize the use of technology in the financial sector. As presented two things above, financial inclusion focuses on the accessibility, availability, and benefits of the formal financial system owned by economic actors, which is not limited to the reach of community needs in the business sector. India's Micro, Small and Medium Enterprises (MSMEs) sector has appeared as a vibrant and dynamic sector for the economy. It has been recognized as a catalyst in promoting the growth and development. The concept of financial inclusion has become a major issue on the development agenda in a number of developing countries. According to the United Nations, financial inclusion refers to easy access to financial services for low-income people and micro-, small-, and medium- sized enterprises (MSMEs).

MSME (Micro Small and Medium Enterprises)

The Micro; Small and Medium Enterprises Development (MSMED) Act was notified in 2006 to address policy issues affecting MSMEs as well as the coverage and investment ceiling of the sector. The Act seeks to facilitate the development of these enterprises as also enhance their competitiveness. MSMEs make a crucial contribution to India's GDP. MSMEs contribute more than 29% to the GDP and are responsible for 50% of the country's total exports. They are also accountable for one-third of India's manufacturing output. The main mission of MSME is to promote e-Governance for empowering citizens, promoting the inclusive and sustainable growth of the Electronics, IT & ITeS industries, enhancing India's role in Internet Governance, adopting a multipronged approach that includes development of human resources, promoting R&D and innovation, enhancing efficiency through digital services and ensuring a secure cyber space.

Objectives

- e-Government: Providing e-infrastructure for delivery of e-services
- e-Industry: Promotion of electronics hardware manufacturing and IT-ITeS industry
- e-Innovation / R&D: Implementation of R&D Framework - Enabling creation of Innovation/ R&D Infrastructure in emerging
- areas of ICT&E/ Establishment of mechanism for R&D translation
- e-Learning: Providing support for development of e-Skills and Knowledge network
- e-Security: Securing India's cyber space
- e-Inclusion: Promoting the use of ICT for more inclusive growth
- Internet Governance: Enhancing India's role in Global Platforms of Internet Governance.

Functions

- Facilitation and credit flow to MSMEs
- Improving competitiveness of MSMEs
- Improve manufacturing base through upgradation of technology
- Promotion of MSMEs through cluster bases approach
- Marketing support to MSMEs
- Skill development and entrepreneurship development training
- Creation of new Micro Enterprises through Prime Minister's Employment Generation Program (PMEGP)
- Growth and development of Khadi and Village Industries (KVI) sector

Growth and development of Coir Industry **KEY CHALLENGES FACED BY THE MSME SECTOR**

- Lack of availability of adequate and timely credit
- High cost of credit
- Collateral requirements
- Limited access to equity capital
- Procurement of raw material at a competitive cost
- Problems of storage, designing, packaging and product display
- Lack of access to global markets
- Inadequate infrastructure facilities, including power, water, roads, etc.,
- Low technology levels and lack of access to modern technology
- Lack of skilled manpower for manufacturing, services, marketing, etc.,
- Multiplicity of labour laws and complicated procedures associated with compliance of such laws.

Concept and Definition of Financial Inclusion

Financial inclusion is one of the most important aspects in the present scenario for inclusive growth and development of economies. The financial inclusion term was first time used by British lexicon when it was found that nearly 7.5 million persons did not have a bank account. But financial inclusion concept is not a new one in Indian economy. Bank Nationalization in 1969, establishment of RRBs and introduction of SHG- bank linkage programs were initiatives taken by RBI to provide financial accessibility to the unbanked groups. According to committee on Financial inclusion headed by Dr. C. Rangarajan defined financial inclusion as “The process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as weaker sections and low income groups at an affordable cost.” Financial inclusion does not stand for delivery of financial services for all at all cost. But it means that the delivery of financial services and products at affordable costs of excluded sections of population and low income groups. It plays a crucial role to remove away the poverty from the country. Financial inclusion it provide equal opportunities to vast sections of population to access mainstream financial services for better life, living and better income. It provides path for inclusive growth. Financial inclusion can be described as the provision of affordable financial services, viz saving, credit, insurance services, access to payments and remittance facilities by the formal financial systems to those who are excluded. So, financial inclusion refers to access to vast range of financial product and services at affordable cost. It not only includes banking products but also other financial services such as loan, equity and insurance products.

Concept of Financial Exclusion

Before we understand financial inclusion we should have knowledge about financial exclusion. The word of financial exclusion first time used in 1993 by Leyshon and thrift who were concerned about limited access on banking services as a result number of bank branches were closed. In 1999, Kempson and Waylay defined financial exclusion in border sense which refers to those people who have excluded access to mainstream financial services and product till date numbers of analysts added their views to define financial exclusion. Financial exclusion describes as a situation in which people do not have access to mainstream financial product and services such as banks accounts, credit cards and insurance policies, particularly home insurance, education loan. The effects of financial exclusion can include exclusion from other mainstream services, such as pension or saving schemes, and can also lead to debt and/or cut off from essential utilities. According to the European Commission, Financial exclusion is: "A process whereby people encounter difficulties accessing or using financial services and products in the mainstream market that are appropriate to their needs and enable them to lead a normal social life in the society in which they belong". In India, The Report of the financial inclusion in January 2008 by C Rangarajan, Financial exclusion is defined as restricted access to financial services to certain segment of the society. Generally, this large section of the population comprises individuals or family falling into low income groups, which are not able to access even the most basic banking services like bank accounts, credit, insurance, financial advisory services and payment services. So basically, financial exclusion is the situation where certain group of population is excluded or unable to access low cost an appropriate mainstream financial products and services.

Importance of Financial Inclusion

Easy access to financial services will allow the population leaving in lower strata, to save money safely and help in preventing concentration of economic power with a few individuals, thus mitigating the risks that the poor could face as a result of economic shocks. Therefore, providing access to financial services is becoming an area of concern for the policymakers as it has far reaching economic and social implications. In India, The single most frequently used source of loan for medium Indian household is still moneylender. Large parts of our financial system are still hampered by political intervention and bureaucratic constraints, limiting their potential contribution. India's poor, many of who work as agricultural and unskilled semi-skilled wage laborers and low salaried workers are largely excluded from the formal financial system. Even micro and small enterprises, find it difficult to have an access to formal sources of finance and thus are largely excluded from financial system. Over 40% of India working population earn

but have no saving. Financial inclusion provides protection to poor from the control of the spurious money lenders.

Financial inclusion is an economic condition in which individuals and companies access to financial services are not denied and that the majority of individual can take advantage of the available financial services and they seek to include poor households in the formal financial system. This shows that financial inclusion is a process that ensures ease of access, availability, and benefits of the formal financial system for all economic actors and ensures that the public can access financial services as a whole as well as the existence of efforts aimed at removing all forms of barriers to public access in utilizing financial services.

In addition, financial inclusion is also an intervention strategy that seeks to overcome market friction that hinders financial markets from operating to the poor or underprivileged. This intervention aims to attract the unbanked population into the formal financial system, so that they have the opportunity to access formal financial services, promote a culture of saving, increase access to credit, and introduce efficient payment mechanisms .Policymakers are required to create effective opportunities for financial inclusion, capable of accelerating the introduction of innovative technologies, regulatory reforms, and infrastructure acquisitions that reduce transaction costs and enable faster, more efficient, and convenient delivery of financial services .However, it does not necessarily have a positive influence in all cases. Based on these findings, the researcher assumes that financial inclusion will allow MSMEs to access more financial services at affordable costs, so it can improve MSMEs' performance.

Extent to Financial Exclusion in Globally

As per the report of the World Bank, in survey of 148 economics approximately 2.5 million people do not have a bank account and totally excluded from mainstream financial services and products. They do not have access to affordable financial services which is an ultimate tool for overcoming poverty and minimize income inequalities. As per the world bank report only 50 percent adults population have an account in formal financial institutions while rest of remain unbanked.

Governments Initiatives

The government has taken various initiatives indirectly through the regulators, government promoted schemes through its various ministries. Some such initiatives have been listed below.

- **Induction of SHG-2:-** The original SHG as initialized by NABARD had certain limitations. This led to NABARD preparing a strategy to revitalize the SHG movement leading with the induction of SHG-2 model.
- **Women SHGs Development Fund:** - The Union Budget 2011-2012 proposed a

“Women’s SHG’s Development Fund” with a corpus of Rs.500 crore. The GoI created this fund to empower women and promote their SHGs. The responsibility of managing the fund is of NABARD. It managed the same through two of its major microfinance funds, namely Financial Inclusion Fund (FIF) and the Financial Inclusion Technology Fund (FITF).

- **Swarnjayanti Gram Swarozgar Yojana (SGSY):-** It is a centrally sponsored scheme that follows the mechanism of forming SHGs of rural poor households, providing capacity building training and linking groups to banks. SGSY is primarily designed to promote self-employment oriented income generating activities for the Below Poverty Level (BPL) households in rural areas.
- **National Rural Livelihood Mission (NRLM):-** Established in June 2010 by the Ministry of Rural Development (MoRD), GoI. It is based on the success of Indira Kranti Patham (IKP), a poverty alleviation program being implemented in Andhra Pradesh.

The Key Strategies of NRLM Are to

- Implement the program with greater emphasis on federations of SHGs
- Provide flexibilities to states for designing specific action plans for poverty alleviation,
- Introduce interest subsidy for encouraging repayments of loans and provide multiple doses of credit
- Improve training and capacity building efforts by setting up skill training institutes in each district
- Facilitate market linkages
- Improve monitoring and evaluation process.
- **The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS):-** This scheme aims to enhance the livelihood of the rural people by guaranteeing at least one hundred days of wage employment in a financial year to a rural household whose adult members volunteer to do unskilled manual work. As the payments are made through the bank/post office accounts, in 2010-11, nearly 10 crore bank/post office accounts have been opened.
- **Aadhaar- Unique Identification Authority of India (UIDAI):-** The GoI has embarked an initiative to provide an individual identification number to every citizen of India and in 2009; it established the UIDAI to issue these cards on behalf of the GoI. This number provided by UIDAI will serve as a proof of identity and address, anywhere in India. The Aadhaar number will also enable people to have access to services such as banking, mobile phone connections and other government and non-government services in due course. In addition, the UIDAI

has introduced a system in which the unbanked population will be able to open an account during enrollment with Aadhaar without going to a bank. The individual will be able to access such bank accounts through a micro-ATM network with large geographic reach.

Conclusion

Even though enough efforts are being made by all stake holders viz Regulator, Government, Financial Institutions and others, the efforts are not yielding the kind of result expected. The regulator has to create a suitable regulatory environment that would keep the interest of all the stakeholders. The concern of banks about profitability is to be addressed by the regulator as the entire process of financial inclusion would be a kind of social work in the first few years. The concerns of the government about the reach, feasibility and implementation of government policies to the last mile needs to be addressed. The easy availability of financial services to the last mile user, the people in tier 3 to tier 6 in entirety needs to be addressed. The bank's concerns can be addressed by leveraging ICT, designing innovative products and service models. A structured expansion and appropriate regulatory norms addressing the bank's concern and inclusion.

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SUSTAINABLE BUSINESS PRACTICES IN START-UPS

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Abstract

A sustainable startup refers to a startup that involves the development of products and services for fulfilling the needs of the present generation without hampering the future generation's ability to fulfil their needs. This initiative is to encourage the young entrepreneurs to greatly involve in the entrepreneurship for better future. According to the program, around 1.25 lakh bank branches will encourage youth. Entrepreneurs by giving them loan. This campaign will create new jobs for the people in India. This scheme will provide employment in long run. Success of this program may happen with overcome some barriers like rigid licensing system, lack of banks support, absence of tax holiday CSR engagement within the business models of start-ups is based on a combination of financial and social capital, while financial benefits act as a continuous motivator for CSR engagement from inception.

Keywords: Start-ups; Sustainability - CSR - Sustainable business models - Entrepreneurial orientation - Stakeholders

Introduction

Every country around the globe has understood the importance of reducing its carbon emissions. Brands have come up with eco-friendly products for people, Services are ensuring that they reduce carbon footprints. The world never had environmental concerns back in the day. Since the industrial revolution has begun, there has been an excessive load on the usage of natural resources. Carbon emits resources like crude oil, coal, etc has seen a massive spike in usage. Burning of these fuels creates carbon to rise in the air and that links to climatic issues, It has affected ozone layer depletion, and It has affected the ice sheets around the poles. The Governments across the countries have brainstormed on steps that can be taken to deal with such issues. However, companies have understood the impact and have begun with eco-friendly solutions towards their products. Some companies have come up with an idea to have their products and services entirely on an eco-friendly concept. The industry has seen massive growth in the previous decade. From Tesla and SpaceX to remote industries preparing toothbrushes, there are a number of startups with Eco-Friendly concepts. The electricity that used to get generated by coal plants has now been reduced. There are companies that have started with windmills, hydroelectric, and

Solar based energy solutions. These have not only reduced energy expenses but have also helped us reduce carbon footprints. India has promised to considerably reduce their carbon footprint by the year 2030.

Understanding the Importance of Sustainable Practices

Sustainable practices are crucial for green startups for several reasons. First, adopting eco-friendly strategies allows businesses to minimize their environmental footprint and contribute to a healthier planet. This is vital in today's world, with growing awareness of the severe consequences of climate change and resource depletion. Sustainable practices help meet global goals, such as the United Nations' Sustainable Development Goals (SDGs), which play a crucial role in global efforts to combat climate change and create a more sustainable future.

Second, sustainable practices boost a green startup's brand image and customer loyalty. Consumers are increasingly seeking environmentally responsible products and services. By incorporating sustainable practices into your business strategy and clearly communicating your efforts, you can attract and retain customers who value corporate social responsibility.

Third, focusing on sustainability can lead to cost savings and improved long-term viability. Implementing energy-efficient measures, reducing waste, and using sustainable resources can reduce expenses and enhance long-term growth prospects. Moreover, green startups that adopt sustainable practices can gain a competitive advantage, differentiating themselves from competitors and increasing market share.

Lastly, employee attraction and retention are essential benefits of sustainable practices. Companies that prioritize sustainability are more likely to attract skilled and motivated employees who value contributing to a better world. Furthermore, organizations with strong environmental values often report higher employee satisfaction and loyalty, ensuring long-term stability and committed staff members who drive the company's success.

Adopting Green Technology Solutions

Green technology solutions significantly contribute to the success of sustainable startups. These technologies allow businesses to reduce energy consumption, minimize waste, and optimize processes. Here are some green technology solutions to consider for your green startup:

Renewable Energy Sources: Utilizing solar, wind, or other renewable energy sources for your business operations can drastically cut your environmental impact and lower your energy bills. You can either install your own renewable energy systems or purchase green energy from local suppliers.

Energy-Efficient Devices: Replacing old, inefficient devices with energy-efficient ones can lead to substantial energy savings. Look for energy star certified products, and make sure to use energy-saving settings when available.

Cloud Computing: Cloud computing enables businesses to access software, storage, and computing power on a shared or virtualized platform, significantly reducing energy requirements for local servers and hardware. However, select cloud service providers that prioritize environmental sustainability.

Internet of Things (IoT): IoT devices can monitor and optimize resource usage in real-time, reducing electricity, water, and material consumption. IoT sensors and systems can also help identify inefficiencies in your operations, allowing you to implement targeted solutions.

Green Web and App Development: Sustainable web and app development include optimizing code to minimize energy consumption on the user's device and reducing data storage requirements. Utilizing eco-friendly development platforms, like AppMaster.io, can help you create web and mobile apps with minimal environmental impact.

Eco-Friendly Supply Chain Management

Effective supply chain management is a critical component of a green startup's overall sustainability strategy. Supply chains can have a significant environmental impact due to production processes, transportation, and waste generation. By implementing eco-friendly supply chain management practices, you can reduce emissions, waste generation, and resource consumption. Below are some strategies to create a more sustainable supply chain:

Sustainable Suppliers: Partner with suppliers that share your commitment to sustainability. Look for eco-friendly certifications, renewable energy usage, and waste reduction in their operations. As a startup, it's essential to set expectations and standards for suppliers at the outset of your business journey.

Reducing Packaging Waste: Seek ways to minimize packaging waste by using recycled, biodegradable, or reusable materials. Encourage suppliers to adopt eco-friendly packaging and invest in container return programs to reduce both waste generation and costs associated with purchasing new materials.

Circular Economy Model: Embrace the circular economy concept by focusing on resource efficiency and waste reduction. Design products that are durable, reusable, and recyclable, and implement systems for waste collection and recycling. Collaborate with your suppliers and customers to create a closed-loop system for material recovery and reuse.

Green Logistics and Transportation: Optimize transportation and logistics processes to reduce the environmental impact of shipping. This can include better route planning, using

fuel-efficient vehicles, working with eco-friendly logistics partners, and encouraging suppliers to consolidate shipments. Additionally, consider investing in electric vehicles or hybrid technologies as your fleet expands.

Start up

By incorporating eco-friendly practices into your supply chain management, you can minimize negative environmental impacts, reduce costs, and enhance your brand's reputation as a responsible and sustainable business. The key is to collaborate closely with suppliers, customers, and other stakeholders to maximize the potential for a greener supply chain, benefiting all parties involved and the planet.

Energy Efficiency in the Workplace

Reducing energy consumption and improving energy efficiency in the workplace are critical steps for green startups pursuing sustainable growth. By implementing energy-saving practices and technologies, businesses can significantly lower operating costs, reduce carbon emissions, and contribute to a healthier environment.

Here are some strategies to boost energy efficiency in the workplace:

Switch to energy-efficient lighting: Replace traditional incandescent, halogen, and CFL bulbs with energy-saving LED lights, which consume less electricity and last longer. Consider adding motion sensors to decrease energy usage by ensuring lights turn off when rooms are empty.

Optimize natural light: Utilize daylight as much as possible by maximizing window exposure, installing skylights, and using light-colored wall paints and furnishings that help reflect light. Natural sunlight not only conserves energy but also stimulates productivity and enhances employee well-being.

Choose energy-efficient appliances: Select office equipment and electronics, such as computers, printers, and air conditioning units, with an ENERGY STAR rating or equivalent energy-efficiency certification. These products consume less energy and help reduce utility bills.

Implement an energy management system: Monitor and control your organization's energy usage through an energy management system. This software can track consumption patterns, identify inefficiencies, and suggest actionable energy-saving measures.

Regular maintenance: Keep heating, ventilation, and air conditioning (HVAC) systems well-maintained to ensure optimal performance and energy efficiency. Clean and replace filters regularly, and address issues like leaks and drafts for better insulation.

Strategies for Integrating Sustainability into the Startup Culture

Integrating sustainability into the startup culture can seem like a daunting task, but there are many simple strategies that startups can implement to get started. The key is to make sustainability a priority and to embed it into the core values and operations of the business.

Here are some strategies for integrating sustainability into the startup culture:

1. **Start at the top:** The leadership team must lead by example and make sustainability a priority. This includes setting clear sustainability goals and communicating them to all employees.
2. **Incorporate sustainability into decision-making:** Sustainability should be a key consideration in all decision-making processes, from product development to procurement.
3. **Engage employees:** Encourage employees to get involved in sustainability initiatives and to suggest ways to reduce waste and emissions.
4. **Make sustainability a part of the employee experience:** Provide training and resources to help employees understand the importance of sustainability and how they can contribute.
5. **Collaborate with suppliers and partners:** Work with suppliers and partners to reduce waste and emissions throughout the supply chain.
6. **Measure and track progress:** Regularly track and measure progress against sustainability goals, and make adjustments as needed.
7. **Communicate progress:** Regularly communicate progress on sustainability initiatives to employees, customers, and stakeholders to build momentum and support.

Best Environmental Startups to Watch in 2023

Biome Makers. Recovering soil health is an essential step towards a more sustainable future. ...

Aurora Solar. As the demand for alternative energy sources increases, solar energy companies are more popular than ever. ...

Tree app

EcoCart

Bluebird Climate.

Conclusion

In today's world, sustainability is more important than ever. With climate change and environmental degradation becoming increasingly pressing issues, it's crucial that businesses take steps to reduce their impact on the environment. These startups work on the principle of sustainability and also encourage people to walk toward the path of a

sustainable lifestyleEco-friendly startups are an excellent means to build a better present and future. These startups preserve the environment for us and our future generations and bring up revolutionary technologies that can cause a boom in the country's economy.

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FINANCIAL INCLUSION FOR MSMEs

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Abstract

MSMEs, or micro, small, and medium-sized businesses, are the foundation of all economic growth. Through the improvement of household wealth, the creation of jobs, and the eradication of poverty, they support local economic development. Despite playing such a crucial role, MSMEs have limited access to financing, and research on the positive effects of financial inclusion on the performance of micro, small, and medium-sized businesses is few. The vast majority of MSME business owners that use fintech products in their operations demonstrate how these owners have used financial services, namely savings accounts, to have an influence on expanding financial inclusion. Micro, small, and Medium Enterprises (MSMEs) are important resources for generating employment and driving economic growth, but they are still too tiny and unorganized to have much of an influence. In India, almost 95% of businesses are categorized as tiny, which creates the odd "missing middle" problem. Lack of accessible financing is one of the main obstacles to MSMEs expanding.

Keywords: MSMEs, Economic Development, Economic Growth, Employment.

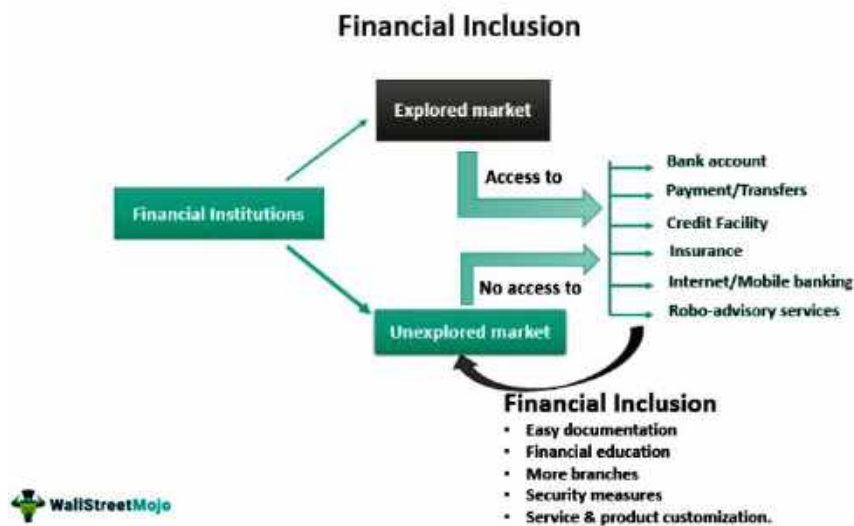
Introduction

India's social fabric has undergone a series of transformations since Independence. After the liberalisation of the economy in the 1990s, the market opened up and employment opportunities grew, as did the spending power and standard of living of the average Indian.

As financial access grew, so did social mobility. However, certain sections have lagged behind due to myriad reasons ranging from social barriers to a lack of access to education and financing. One of these sections is made up of a multitude of micro, small and medium enterprises (MSMEs), which form the foundation of the economy.

Financial inclusion refers to providing good quality financial products and services everyone can access and afford. Such provision should be irrespective of company size or an individual's financial condition. It aims at providing an equal economic opportunity for sustainable growth.

The micro, small and medium enterprises (MSMEs) sector contributes significantly to the manufacturing output, employment and exports of the country. The contribution of MSME to total GDP has been steadily rising. The table below shows the significance of MSME to the economy.



Recognizing the contribution and potential of MSME sector, the definitions and coverage of the MSE sector were broadened significantly under the Micro, Small and Medium Enterprises Development (MSMED) Act, 2006 which recognized the concept of “enterprise” to include both manufacturing and services sector besides, defining the “medium” enterprises. Government of India has taken different institutional and policy measures for facilitating credit to MSMEs in the last few decades. Institutional measures include creation of institutions such as Industrial Development Bank of India (IDBI), Small Industries Development Bank of India (SIDBI), National Bank for Agriculture and Rural Development (NABARD), Export Import Bank of India (EXIM Bank), State Finance Corporation (SFC)s, State Industrial Development Corporation (SIDC)s, National Small Industries Corporation (NSIC) and various other facilities.

Barriers to MSME Growth

The MSME sector faces several barriers to their growth and to realizing their full potential.

- Lack of availability of adequate and timely credit
- High cost of credit
- Collateral requirements
- Limited access to equity capital
- Problems in supply to government departments and agencies
- Procurement of raw materials at a competitive cost
- Problems of storage, designing, packaging and product display
- Lack of access to global markets
- Inadequate infrastructure facilities, including power, water, roads, etc.

- Low technology levels and lack of access to modern technology
- Lack of skilled manpower for manufacturing, services, marketing, etc.
- Multiplicity of labour laws and complicated procedures associated with compliance of such laws
- Absence of a suitable mechanism which enables the quick revival of viable sick enterprises and allows unviable entities to close down speedily
- Issues relating to taxation
- While the above list provides key barriers for MSME growth in general, these constraints play out more severely for microenterprises, particularly access to finance.

Challenges Faced by Msme in Securing Financing in India

Lack of Credit History: One of the primary challenges faced by MSMEs in securing financing is the lack of a credit history. Unlike large companies, MSMEs do not have an established track record and hence find it difficult to secure loans from banks and other financial institutions. This lack of credit history makes MSMEs a risky investment for lenders, which makes it challenging for them to obtain financing.

Inadequate Collateral: Another significant challenge for MSMEs is inadequate collateral. Banks and other financial institutions often require collateral for loans, which can be a challenge for MSMEs as they may not have assets to pledge as collateral. This requirement can limit the amount of financing that MSMEs can secure, which can hinder their growth and development.

Lack of Awareness About Government Schemes: The Indian government has launched various schemes and initiatives to promote MSME financing, but lack of awareness about these schemes remains a significant challenge. MSMEs often do not have access to information about these schemes, which can limit their ability to take advantage of them.

High Interest Rates: MSMEs also face high interest rates on loans, which can make it difficult for them to repay loans and can limit their ability to invest in their businesses. High-interest rates can also make it difficult for MSMEs to secure financing in the first place, as lenders may perceive them as risky investments. **Initiatives Taken by the Government and Private Sector:** To address the challenges faced by MSMEs in securing financing, the Indian government and private sector have taken various initiatives.

Government Initiatives

The Indian government has launched several initiatives to promote MSME financing. Some of these initiatives include:

- **Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE):** The CGTMSE scheme provides collateral-free credit to MSMEs. The scheme guarantees up to 85% of the loan amount, which reduces the risk for lenders and makes it easier for MSMEs to secure financing.
- **Pradhan Mantri Mudra Yojana (PMMY):** The PMMY scheme provides loans up to Rs. 10 lakhs to MSMEs. The scheme has three categories of loans: Shishu (up to Rs. 50,000), Kishore (up to Rs. 5 lakhs), and Tarun (up to Rs. 10 lakhs). The loans do not require collateral and are available to both new and existing MSMEs.
- **Stand-Up India:** The Stand-Up India scheme provides loans up to Rs. 1 crore to SC/ST and women entrepreneurs for setting up new ventures in the manufacturing, services, or trading sectors. The scheme aims to promote entrepreneurship among these communities and provides support through the entire loan process.
- **Private Sector Initiatives:** Apart from government initiatives, the private sector has also taken steps to promote MSME financing. Some of these initiatives include:
- **Online Lending Platforms:** Several online lending platforms have emerged in recent years that offer MSMEs an alternative to traditional bank financing. These platforms use technology to assess creditworthiness and provide loans quickly and efficiently.
- **Collaborations with Government Initiatives:** Many private sector entities have partnered with government initiatives such as the CGTMSE scheme to provide financing to MSMEs. These collaborations have helped increase awareness about government schemes and make it easier for MSMEs to access financing.

Financial Inclusion and MSMEs

The lack of financial capital accounted for 21% of the weight out of 100 causes of illness. In 2006, Rakesh Mohan clarified. Regarding the critical evaluation of the investment cap, loan support, and fiscal incentives to priority sectors in the Small Scale Industries (SSI) strategy. He drew attention to the fact that India is not in a better situation than other developing countries and proposed that banks may enhance the financing of economic activity in the nation by liberalizing financial services more. They must establish a financing foundation from a larger deposit base and make profitable investments on (SSI) in order to meet the rising demand for credit.

Basic Pillars of the MSME Finance Policy Model

1. Legal and Regulatory Framework
2. MSME's Access to Financing Policy
3. Credit Infrastructure

4. Alternative Financing Infrastructure
5. Market Efficiency
6. Priority Sectors.

Digital Financial Inclusion of Women in MSMEs

Digital financial inclusion (DFI), especially for vulnerable groups like women, youth and micro, small and medium enterprises (MSMEs) is a core topic for discussions in international forums such as the G20. With a growing focus on the adoption of financial technology and digital payments systems by both individuals and businesses, the global digital payments market is expected to grow at an estimated compound annual growth rate (CAGR) of over 13 percent between 2022 and 2026. As access to, and usage of digital financial services increases, it can help promote gender equality by enabling affordable transfers, increasing women's bargaining power in case of social security transfers, increasing women's resilience to financial, economic and health shocks.

Yet, there continues to be several gaps in DFI of women, and thus, there has been growing prioritisation of DFI for women at a policy and programmatic level across G20 countries and in the G20 forum. With India entering the Troika in 2021 and taking over the G20 Presidency for 2023, there is a need for the country to focus on both the achievements and the issues related to DFI of women and MSMEs in India. To participate actively in the discussions, there is need to have a clear understanding of the issue and India's strengths. The Centre and state governments, the Reserve Bank of India (RBI), and National Bank of Agriculture and Rural Development (NABARD) have introduced several schemes and initiatives to facilitate DFI of women and MSMEs. Some of these schemes, such as the Pradhan Mantri Jan DhanYojana (PMJDY), Stand-Up India, and Pradhan Mantri MUDRA Yojana (PMMY), which have provided better access to digital finance to women, can also be showcased in the G20. Yet, there are hardly any survey-based studies on where the country stands, its achievements and gaps in DFI, especially with reference to the MSME women entrepreneurs and employees.

MSME-Financial Inclusion Base Set

Financial inclusion is measured across several dimensions. The dimensions are accessibility, corresponding to the range of financial services available, next is the usage, the extend to which customers make use them, and last one is the quality of the services, how well it caters to the needs, yet another addition to the last one is how does financial inclusion influence the decision of economic agents and increase economic well-being. The data are classified into demand-side and supply -side data. The demand-side comes from the needs from individuals and supply-side comes from the providers of financial service.

The Base Set is intended to be used in conjunction with at least the AFI Core Set of Financial Inclusion Indicators to provide an overall assessment of the state of financial

inclusion in a country. Over the two decades, three key aspects in economic development have created the conditions to develop the basic set of MSME finance indicators based on the growing recognition and emphasis on 1. The evidence-based policy that policy decisions will achieve expected outcomes. 2. Wider recognition of the important role that MSMEs play in the economic growth 3. Inability of MSMEs to harness their potentialities, due to lack of access and usage of appropriate financial products and services. Hence, to improve MSMEs access to financial services in order to promote inclusive economic growth, there is a need for rigorous and timely data on financial access and usage. The effective policies can be drafted if the financial inclusion status can be assessed. The MSME finance Base set is a limited set of indicators that aims to give a comprehensive view of the state of financial inclusion for MSMEs in a given country, with an emphasis on access to credit.

Present Challenges of MSME Finance to Rural Entrepreneurs

The response of Indian MSME sector and RBI through Financial inclusion strategies for the challenges during post COVID period can be based on the study done by a Foundation 6 on the “Third National Multi-Institutional Survey on MSMEs in India highlights green shots in MSME sector”, which says that the emergency fund need has gone up to 82% in June 2021 from 68.6% in April 2020, although 79% have not yet availed the scheme of Rs.3 lakh crore of collateral free loans for MSMEs. Few other major challenges faced by MSME include physical infrastructure bottlenecks; absence of formalisation; inertia to technology adoption; capacity building; backward and forward linkages; lack of access to credit and risk capital; and the perennial problem of delayed payments, among others. However, to counteract these challenges, additional advantages like giving additional incentives, moratorium, restricting of loans, etc.,

Conclusion

Financial inclusion requires particular attention by every developing economy, like India and a continuous focused concentration by the Financial sector consisting of RBI and MSME sector in order to sustain the development process taking place through their continued efforts on the availability of credit first to the financially excluded sections of the society in general and to the MSME Entrepreneurs. This study concludes that the financial inclusion index year after year reflects that there is reduction in the financial exclusion and MSME sector makes continued efforts to reduce financial exclusion through provision of credit to the MSMEs entrepreneurs and the role of National Financial policy reduces the financial exclusion and also helps in reducing MSME financial inclusion.

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AN INSIGHT ON DIGITAL INDUSTRY 4.0

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Abstract

Industry 4.0 stands for the fourth industrial revolution which is defined as a new level of organization and control over the entire value chain of the life cycle of products. Digitalization and modernization of the manufacturing process is the need for today's industry. The manufacturing industries are currently changing from mass production to customized production. The rapid advancements in manufacturing technologies and applications in the industries help in increasing productivity. It is geared towards increasingly individualized customer requirements. Industry 4.0 is visionary realistic concept that includes the Internet of Things, Industrial Internet, Smart Manufacturing and Cloud-based Manufacturing.

Keywords: *Industry 4.0, Digital, Cyber Security*

Introduction

Industrial Revolution, subsequent revolutions have resulted in manufacturing, from water and steam powered machines to electrical and digital automated production which makes manufacturing process more complicated, automatic and sustainable so that people can operate machines simply, efficiently and persistently. The term Industry 4.0 stands for the fourth industrial revolution which is defined as the new level of organization and control over the entire value chain of the life cycle of products, it is geared towards increasingly individualized customer requirements. Industry 4.0 is fulfilling individual customer needs which affects areas like order management, research and development, manufacturing commissioning, delivery up to the utilization and recycling of products. The main difference between industry 4.0 and Computer Integrated Manufacturing is the concern of the human role in production environment. Industry 4.0 has an important role of human worker in performing the production whereas CIM is considered as workerless production. The Industry 4.0 promotes the connection of physical items such as sensors, devices and enterprise assets, both to each other and to the Internet. Designing and drafting methods in all disciplines should be reviewed and their suitability to be checked for a modern, interdisciplinary approach model for product development and transferred to a common, integrated and interdisciplinary methods, process and IT solution. The production process is divided into small value-oriented units which shares information of the consecutive process steps only which helps in increasing flexibility and probably results in reduction of complexity of coordination.

Pioneers of Industry 4.0

The nine pillars of Industry 4.0 will transform isolated and optimized cells production into a fully integrated, automated, and optimized production flow. This leads to greater efficiency and change in traditional production relationships among suppliers, producers, and customers as well as between human and machine.

Big Data and Analytics

The collection and comprehensive evaluation of data from many different sources production equipment and systems as well as enterprise and customer-management systems will become standard to support real-time decision making.

Autonomous Robots

Robots are becoming more autonomous, flexible, and cooperative day by day and at certain they will interact with one another and work safely side by side with humans and learn from them. An autonomous robot is used to perform autonomous production method more precisely and also work in the places where human workers are restricted to work. Autonomous robots can complete given task precisely and intelligently within the given time limit and also focus on safety, flexibility & versatility.

System Integration

Integration and self-optimization are the two major mechanisms used in industrial organization. The model of Industry 4.0 is essentially outlined by three dimensions of integration:

- Horizontal integration across the entire value creation network
- Vertical integration and networked manufacturing systems
- End-to-End engineering across the entire product life cycle.

Digital integration and automation of manufacturing processes in the vertical and horizontal dimension implies as well as automation of communication and cooperation especially along standardized processes.

The Industrial Internet

The Internet of Things means a worldwide network of interconnected and uniform addressed objects that communicate via standard protocols. Internet of Things should also know as Internet of Everything which consists of Internet of Service ,Internet of Manufacturing Services , Internet of People , an embedded system and Integration of Information and Communication technology (IICT) .

Cyber Security And Cyber Physical Systems (CPS)

With the increased connectivity and use of standard communications protocols that come with Industry 4.0, the need to protect critical industrial systems and manufacturing lines from cyber security threats increases dramatically.. The strong connection of the physical, the service and the digital world can improve the quality of information required for planning, optimization and operation of manufacturing systems.

The Cloud (Cloud Computing)

Cloud-based IT-platform serves as a technical backbone for the connection and communication of manifold elements of the Application Centre Industry 4.0. With industry 4.0, organization needs increased data sharing across the sites and companies i.e., achieving the reaction times in milliseconds or even faster.

Additive Manufacturing

With Industry 4.0, additive-manufacturing methods will be widely used to produce small batches of customized products that offer construction advantages, such as complex, lightweight designs. High-performance, decentralized additive manufacturing systems will reduce transport distances and stock on hand.

Augmented Reality

Augmented reality-based systems support a variety of services, such as selecting parts in a warehouse and sending repair instructions over mobile devices. Industry can use of augmented reality to provide workers with real-time information to improve decision making and work procedures.

Issues and Challenges in Industry 4.0

The discovery of new technologies has made industry development from the early adoption of mechanical systems to today's highly automated assembly lines, in order to be responsive and adaptive to current dynamic market requirements and demands. Challenges like embedment, predictability, flexibility and robustness to unexpected conditions.

Intelligent Decision-Making and Negotiation Mechanism

In smart manufacturing system needs more autonomy and sociality capabilities as key factors of self organized systems whereas the today's system has 3C Capabilities i.e., lack of autonomy in the systems.

Manufacturing Specific Big Data and Analytics

It is a challenge to ensure high quality and integrity of the data recorded from manufacturing system. The annotations of the data entities are very diverse and it is an increasing challenge to incorporate diverse data repositories with different semantics for advanced data analytics.

System Modelling and Analysis

In system modelling, to reduce dynamical equations and conclude appropriate control model, systems should be modelled as self-organized manufacturing system. The research is still going on for complex system.

Cyber Security

With the increased connectivity and use of standard communications protocols that come with Industry 4.0, the need to protect critical industrial systems and manufacturing lines and system data from cyber security threats increases dramatically.

Modularized and Flexible Physical Artefacts

When processing a product, Equipment for machining or testing should be grouped and worked together for distributed decision making. So, there is a need of creating modularized and smart conveying unit that can dynamically reconfigure the production routes.

Opportunities in Industry 4.0

India is very much eager to implement Industry 4.0 and several measures have been adopted. India is also prepared to face global competition by undertaking the Make in India and skill development programs. It is all set to lead the world with Smart Manufacturing. The following are the opportunities for industry 4.0 in India:

- **Young Population:** India offers the ideal atmosphere for first time young job seekers to pursue opportunities in emerging fields of interest in the Indian manufacturing industry – consumer electronics, automotive, aeronautics and aerospace.
- **Favorable Policies:** The 'Make in India' program is India's plan of action to encourage Indians to create products for the world market. India has the resources, policy and workforce in place..
- **Skilled workforce:** With a strong high school and university ecosystem, Indian students are sought after by multinationals all over the world. Fast Changing times and a slow adaptive to education system however, have rendered man qualities gained in academics Redundant in today's work environment.

Conclusion

With the help of faster computers, smarter machines, smaller sensors, cheaper data storage and transmission could make machines and products smarter to communicate with each and learn from each other. With these challenges, India has several opportunities for industry 4.0 implementation. Such opportunities are large young population ready to go for digitization, central government policies like Make in India and skill development, significant experience in developing IT- related infrastructure, Companies collaboration with educational institutes etc.

PIONEERING SUSTAINABILITY: GOVERNMENT INITIATIVES AND PROGRESSIVE POLICY REFORMS

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Abstract

Through the prism of governmental action and progressive policy changes, "Pioneering Sustainability: Government Initiatives and Progressive Policy Reforms" explores the dynamic world of sustainability. This in-depth investigation aims to illuminate the ways in which governments all around the world are leading initiatives and putting reforms into place to solve urgent environmental, social, and economic concerns. The presentation opens by emphasising the urgency of sustainability in the modern world and the need for international cooperation. It then goes on to look at numerous cutting-edge government programmes that are actively influencing a future that is more sustainable. These programmes cover a wide range, from incentives for renewable energy and mitigation plans for climate change to measures for biodiversity preservation and circular economy regulations. The research paper analyses the mechanisms behind the policy changes that have been crucial in advancing sustainability agendas. It examines the complex interactions between laws, rules, and public-private partnerships, illuminating how these components can spark transformational change. The necessity of data-driven decision-making in the field of sustainability is also emphasised in the article. It emphasises how big data and technology are increasingly being used by governments to track progress, evaluate the effects of policies, and adjust tactics for maximum efficacy. In addition to highlighting success stories, the study recognises the difficulties and barriers governments have in their pursuit of sustainability. These difficulties range from limited resources to political dynamics and opposition from the general public. Overall, "Pioneering Sustainability" presents a compelling portrait of governments acting as change agents in the effort to create a more sustainable world. It honours their contribution to creating laws and programmes that promote social progress as well as environmental preservation. For researchers, policymakers, and anyone else interested in comprehending the crucial part played by the government in promoting sustainability on a worldwide scale, this report is an invaluable resource.

Keywords: Sustainability, Government Initiatives, Policy Reforms, Environmental Challenges, Climate Change Mitigation, Renewable Energy, Biodiversity Conservation

Introduction

Meeting current requirements without sacrificing the potential of future generations to meet their own needs is known as sustainability. It includes a multifaceted strategy to balance the three pillars of sustainability—the economy, society, and the environment—which are:

- **Sustainability from an environmental standpoint:** This principle is concerned with preserving and safeguarding the natural environment, including ecosystems, biodiversity, and natural resources. It involves lowering emissions, protecting resources, and preventing climate change.

- **Social Sustainability:** The well-being of people and communities is emphasised in social sustainability. It entails making sure that everyone has access to necessities like food, clean water, healthcare, and education, as well as fostering social justice, diversity, and inclusivity.
- **Economic Sustainability:** Maintaining a healthy, stable economy is important to economic sustainability. It involves promoting long-term economic growth that doesn't harm the environment or prey on societal weaknesses, responsible resource management, and sustainable corporate practises.

Importance of Sustainability

Sustainability is of paramount importance for several compelling reasons:

- **Preservation of Ecosystems:** Sustainable practises support the maintenance of vital ecosystems and biodiversity, ensuring that different species can continue to thrive and provide services like pollination and clean water.
- **Climate Change Mitigation:** Sea-level rise, extreme weather, and temperature increases are some of the effects of climate change that must be mitigated. Sustainability initiatives are also essential for preventing these effects. Sustainable business practises help the switch to renewable energy sources and minimise greenhouse gas emissions.
- **Resource Conservation:** Resources should be managed responsibly to reduce waste and stop resource depletion, which is a goal of sustainability. Given that many natural resources are limited, this is particularly crucial.
- **Social Equity:** In order to alleviate inequities and raise everyone's quality of life, sustainable development places a high priority on social equality and inclusivity. This is true regardless of a person's financial status.
- **Economic Stability:** By lowering the risks connected to resource shortage, environmental harm, and social unrest, sustainable economic practises help to ensure long-term economic stability.
- **Global Interconnectedness:** In today's interconnected world, the decisions made by one country or region can have a significant impact on those of other countries. Sustainable development promotes global collaboration and recognises the interdependence of nations.
- **Inter-generational Responsibility:** According to sustainability, it is our duty to leave behind a planet that can meet the needs and ambitions of next generations. To leave a lasting legacy for our heirs is morally required.
- **Resilience:** Sustainable systems are typically more equipped to withstand crises, whether they be social, economic, or environmental. They are better able to adjust to shifting conditions and bounce back quicker.

- **Innovation and Efficiency:** The pursuit of sustainability frequently results in innovation and improved efficiency across a number of industries, spurring economic growth and job creation.

In conclusion, sustainability is essential for the survival of our planet, its people, and the next generation. It provides a framework for responsible and ethical decision-making in the search of a better, more sustainable future and offers a holistic approach to addressing urgent global concerns, from environmental degradation to social inequality.

Historical Context of Sustainability Policies

The historical context of sustainability policies in India is marked by a gradual evolution of environmental and sustainable development concerns. Here is an overview of the historical milestones and developments that have shaped sustainability policies in India:

Pre-Independence Era (Before 1947)

Traditional practices: Crop rotation, agroforestry, and water management techniques are just a few of the sustainable agricultural and land-use methods with a long history in India. **British colonial exploitation:** Resource extraction for British businesses caused the British colonial rule to have a severe environmental impact, such as deforestation and deterioration of natural resources.

Post-Independence (1947-1970s)

Early environmental awareness: Jawaharlal Nehru, the country's first prime minister, emphasised the value of environmental preservation and sustainable development. To develop and carry out environmental policies, the Indian government established organisations like the Ministry of Environment and Forests (MoEF) in 1985.

1970s-1980s

Legal foundations: India passed important environmental laws including the Air (Prevention and Control of Pollution) Act (1981) and the Water (Prevention and Control of Pollution) Act (1974).

Bhopal Gas Tragedy (1984): The industrial disaster in Bhopal raised awareness about the need for stringent regulations on hazardous industries and emergency response mechanisms.

1990s

Economic liberalisation: India's early 1990s economic reforms sped up industrialization, which posed environmental issues.

Earth Summit (1992): India took part in and signed the United Nations Framework Convention on Climate Change (UNFCCC) at the Rio de Janeiro Earth Summit, demonstrating its dedication to international environmental issues

2000s

India created its National Environmental Policy in 2006, emphasising sustainable development and the incorporation of environmental considerations into development planning. Renewable energy focus India started encouraging renewable energy sources, such wind and solar electricity, to lessen its reliance on fossil fuels.

2010s

India's national development objectives were matched with the Sustainable Development Goals (SDGs) of the United Nations, placing particular emphasis on the preservation of biodiversity, clean energy, sanitation, and poverty reduction.

Swachh Bharat Abhiyan (Clean India Mission): Launched in 2014, the Swachh Bharat Abhiyan (Clean India Mission) programme sought to advance garbage disposal and sanitation standards throughout the nation.

Paris Accord (2015): India pledged to lowering its carbon emissions intensity and ratified the Paris Agreement on climate change.

2020s and Beyond

The COVID-19 pandemic brought to light the significance of environmental and public health sustainability, refocusing attention on sustainable practises in urban design, healthcare, and preparation for disasters.

Green initiatives: With a focus on electric vehicles and public transportation, India has remained a proponent of renewable energy, afforestation, and sustainable mobility.

A complex interaction of historical, cultural, economic, and environmental variables has defined India's journey towards sustainability policies. Although there has been progress, the nation still needs to implement new and all-encompassing sustainability policies to address issues including air pollution, water scarcity, and climate change.

Challenges and Obstacles

- **Political Resistance and Opposition:** governmental opposition and resistance: Many sustainability efforts encounter opposition from governmental bodies, special interests, or sectors with competing interests. Politicians could be reluctant to enact changes that might harm their chances of winning re-election or might encounter opposition from influential group.
- **Short-Term Focus and Political Cycles:** Governments frequently run on short electoral cycles, which can cause them to prioritise current concerns above long-

term sustainability objectives. Continual, long-term commitment is frequently necessary for sustainability programmes.

- **Budget Constraints:** The allocation of resources to sustainability efforts may be constrained by economic considerations, particularly when there are no obvious immediate economic benefits or when the economy is struggling.
- **Lack of Expertise and Institutional Capacity:** Government organisations might not have the institutional resources or the requisite knowledge to properly design, execute, and monitor complicated sustainability policies.
- **Public Awareness and Behavioural Change:** Aligning public attitudes and behaviour with sustainability objectives can be difficult. Public engagement and education frequently need a lot of time and money.
- **Global Interdependence:** Cooperation with other countries is crucial because sustainability is a global concern. It can be challenging to balance national interests with aims for sustainability at the global level, particularly when it comes to mitigating climate change.
- **Legal and Regulatory Framework:** Ineffective or incompatible laws and rules can thwart sustainability efforts. It can take some time to update and connect the legal system with sustainability objectives.
- **Data and Monitoring:** Accurate data and reliable monitoring systems are essential for effective policymaking. The evaluation of policy efficacy may be hampered by a lack of data or monitoring infrastructure.
- **Cultural and Societal Factors:** Societal values and cultural norms may have an impact on how well sustainability programmes are received and implemented. When developing projects, policymakers must take the cultural context into account.
- **Technological and Infrastructure Challenges:** Some sustainability solutions call either cutting-edge technology or alterations to the built environment. These adjustments can be expensive and technically difficult to implement.
- **Unforeseen Events and Environmental Uncertainties:** Natural disasters, environmental crises, and unforeseen events can thwart sustainability efforts and necessitate adaptable responses.
- **Policy inertia:** When it comes to introducing and putting into practise new, more sustainable policies, inertia from existing policies and practises can be a problem.
- **Conflict of Interest:** Dealing with sustainability frequently entails taking on businesses or ways of doing things that have a stake in the current quo. It can be difficult to balance these interests with environmental objectives.

- **Monitoring and Enforcement:** Even with sound regulations in place, ensuring compliance and achieving intended results depend on efficient monitoring and enforcement.
- **Equity and Social Justice:** Equity and social justice should be promoted via sustainability policies. It can be difficult to prevent vulnerable populations from bearing an unfairly disproportionate weight of sustainability efforts.

These obstacles highlight how complicated sustainability efforts are, and how to overcome them requires careful planning, stakeholder involvement, and adaptive governance. Governments and policymakers must overcome these challenges to develop sustainability changes that are successful and long-lasting.

Predicting Opportunities and Challenges for the Future

- **Scenario Planning:** To foresee upcoming sustainability concerns, such as those connected to the effects of climate change, resource shortages, and population changes, governments should engage in scenario planning exercises. Making proactive policy is aided by this
- **Adaptive Governance:** Create frameworks for adaptive governance that permit policies to change in response to evolving conditions, ensuring that they continue to be effective in the face of unforeseen obstacles.

Increasing Government Engagement

To organise and prioritise sustainability activities, create specialised sustainability ministries or departments at the national and regional levels.² **Political Leadership:** Encourage political leaders to set ambitious sustainability goals and communicate the importance of sustainability to the public.

Strengthening International Cooperation

- **Global Partnerships:** establish more effective collaborations with other nations and international organisations to address transnational sustainability issues including climate change and biodiversity preservation.
- **Capacity Building:** Help developing nations increase their capability to adopt sustainable measures and fulfil their international obligations.

Policy Innovation

- **Incentive-based policies:** Create laws that offer incentives for eco-friendly behaviour, such as tax rebates for eco-conscious companies or financial support for the use of renewable energy sources.
- **Regulatory Sandboxes:** Establish regulatory sandboxes to make it easier to test and apply cutting-edge sustainability technology and solutions.

Leveraging Technology and Data

- **Big Data for Sustainability:** Make advantage of artificial intelligence and big data analytics to learn more about resource use, environmental effects, and developing sustainability trends.
- **Digital Infrastructure:** Spend money on this to promote smart cities and effective resource management.

Enhancing Public Engagement

- **Sustainability Education:** To increase knowledge and promote a culture of sustainability from a young age, sustainability education should be incorporated into school curricula.
- Establish methods for public participation and feedback on sustainability policies to make sure they reflect the values and requirements of citizens.

Balancing Economic Growth and Sustainability

- **Green Finance:** Encourage the use of green financing to finance sustainability projects, such as through green bonds and sustainable investment funds.
- **Circular Economy:** Promote sustainable patterns of consumption and production by putting circular economy concepts into practise.

Fostering Multisectoral Collaboration

- **Public-Private Partnerships:** Promote public-private partnerships so that sustainability projects can benefit from the resources, know-how, and creativity of the business sector.
- **Multi-Stakeholder Platforms:** Establish multi-stakeholder forums for discussions and joint decision-making comprising the executive branch, private sector, civil society, and academic institutions.

Encouraging Sustainable Production and Consumption

- **Extended Producer Responsibility:** To guarantee that manufacturers are accountable for the whole lifecycle of their products, more extended producer responsibility legislation are needed.
- **Resource Efficiency Standards:** Adopt standards and labelling for resource efficiency to direct customers towards sustainable options.

Adaptation and Resilience to Climate

- **Infrastructure that is Climate-Proof:** Spend money on infrastructure that is climate-proof and can endure harsh weather and increasing sea levels.

- **Ecosystem-Based Adaptation:** To increase resilience, promote ecosystem-based adaptation techniques including wetland restoration and afforestation.

Evaluating and Learning from Successes and Failures

- Conduct routine sustainability audits and reviews to see how well policies and programmes are working.
- **Peer Learning:** Encourage cross-regional and cross-national sharing of best practises and lessons learnt.

Policy Recommendations

- **Carbon Pricing:** Use carbon pricing tools like carbon taxes or cap-and-trade programmes to encourage the reduction of emissions.
- **Renewable energy sources:** Accelerate the switch to renewable energy sources by setting clear goals and providing incentives.
- **Green Building Standards:** To lower energy consumption in the construction industry, enforce green building standards and rules.
- **Sustainable Transportation:** To cut emissions from the transportation sector, invest in the infrastructure of public transportation and support electric automobiles.
- **Agricultural practises** Support environmentally responsible agricultural practises to lessen the impact of food production on the environment.

Call to Action and Conclusion

- **The Importance of Sustainability:** Stress that maintaining the environment for present and future generations is a need, not a choice.
- **Collective Responsibility:** Make it clear that everyone has a part to play in achieving sustainability, including governmental bodies, corporations, the private sector, and individuals.
- **Call to Action:** Urge all parties involved to act decisively in accordance with the suggestions to hasten the transition to a sustainable future.

A road map for governments and stakeholders to navigate the opportunities and difficulties in the pursuit of sustainability is provided by this comprehensive set of future directions and recommendations, which tackles all facets of sustainability policy and governance.

Conclusion

The present paper has examined the crucial part that progressive policy reforms and government actions have played in advancing sustainability. It is clear from an analysis of historical settings, difficulties, and potential future paths that governments play a critical role in promoting sustainable development and addressing important global issues.

Governments have made major efforts to include sustainability into their policy frameworks throughout history as well as developed their understanding of it. Governments have been crucial in developing sustainability agendas, from early environmental awareness to the creation of specialised environmental ministries. The road to sustainability, however, is paved with difficulties. Strong barriers are frequently posed by political opposition, financial limitations, and the intricate interactions between environmental, social, and economic issues. These obstacles are not insurmountable, though, and governments are capable of leading the way in the search for sustainable solution. There are many opportunities for governments to further their sustainability agendas in the future. Success depends on foreseeing and proactively solving new difficulties, promoting international cooperation, embracing technological improvements, and involving the general public. A sustainable future also requires combining economic growth with sustainability, fostering sustainable consumption and production practises, and strengthening climatic resilience. The suggestions made in this paper serve as a guide for governments and stakeholders as they continue to push the boundaries of sustainability in light of these factors. Actionable policy initiatives that can advance include carbon pricing, switching to renewable energy sources, green building requirements, and eco-friendly agricultural practises, to name just a few. Sustainability is ultimately necessary for the health of our world and future generations, not only as a choice. Governments must take the initiative in this effort, but they cannot do so on their own. Transparency, commitment to shared responsibility, and cross-sector and international collaboration are essential for establishing a more sustainable society. In nutshell governments are essential to advancing sustainability, and it is our common duty to encourage them and hold them responsible for the laws and deeds that will determine the course of our planet's development. We can progress towards a more resilient and sustainable world where the demands of the present and the future are satisfactorily addressed with resolve and concerted effort.

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A STUDY ON DIGITAL INDIA AND INDUSTRY 4.0

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Abstract

Industry 4.0 represents the coming fourth industrial revolution, which will lead the way to the Internet of Things, Data and Services. To help industrial companies successfully become true digital enterprises in the Industry 4.0 era, this study aims to survey the essential implications of the digital transformation by conducting focus group discussions. Seven major implications for industrial companies are explored, and six critical issues are identified by experts. For anyone involved in digital transformation research and those seeking strategies to enter the global Industry 4.0 ecosystem, this study should offer some necessary fundamentals in terms of theoretical analysis and problem resolution.

Keywords: Industry 4.0, Digital Enterprises, Digital Transformation, Focus Group

Introduction

The manufacturing industry is currently experiencing huge changes. Industry 4.0 represents the coming fourth industrial revolution, leading the way to the Internet of Things, Data and Services. As show in Table 1, while Industry 3.0 focused on the automation of single machines and processes, Industry 4.0 focuses on the end-to-end digitization of all physical assets and integration into digital ecosystems with value chain partners. To help industrial companies successfully become true digital enterprises, this study aims to survey the essential implications of digital transformation in the Industry 4.0 era.

Focus Group Research Method

A focus group is one of the most important qualitative research techniques. In a focus group, the researcher is looking for more open feedback, as opposed to comparisons of potential results, as in quantitative research methods. A focus group also allows participants to express clear ideas and share feelings that do not typically come out in a quantitative survey or paper-based test. Because of the open conversation among group members, topics and discussion are more free-flowing, and members can react to the comments of others. Based on the benefits mentioned above, we invited ten participants to join the focus group discussions and investigate the essential implications of digital transformation in Industry 4.0.

Digitization Drives Great Leaps in Performance

Companies in every industry sector expect significant cost reductions. The cost savings can be achieved by implementing smart manufacturing initiatives. Such systems combine data from within the companies – from sensors all the way through to enterprise resource planning (ERP) systems – with information from horizontal value chain partners. For example, companies that deploy cloud-based planning systems to become better integrated

with horizontal value chain partners may improve efficiencies and reduce inventories. In addition, revenues from digitizing the product and service portfolio will grow significantly in future.

Digital Integration Deepens Customer Relationships

As Industry 4.0 develops, it will greatly enrich opportunities to retain and improve customer relationships. Digital integration with customers and new technological opportunities to move production closer to customers will enable the greater individualization and customization of products. The use of data analytics will substantially improve customer relationships and customer intelligence along product lifecycles. Moreover, the greater integration of data between manufacturers and customers will open up new collaboration opportunities.

Digital Culture Drives Transformation

Industry 4.0 has massive implications for company organization. The major challenges may center on internal issues, such as digital culture and training, rather than external issues, such as rights standards, infrastructure, intellectual property protection, and data security. Without the right digital culture and training, the talents will not want to stay. Hence, industry companies need to retain and train employees who are comfortable working in a digital environment. All employees need to think and act like digital natives, willing to experiment with new technologies and to learn new ways of operation. Increasingly important for decision-making as a means of controlling and improving overall business planning and manufacturing operations.

Companies Should Develop Robust Data Analytics Capabilities

Industrial companies should understand that it is critical to have data analytics capabilities in order to successfully drive digital transformation. To reach excellence in data analytics, industrial companies will require access to a wide variety of skill sets, including those of data scientists and algorithm architects. They will also need process expertise, advanced algorithms and workflow integration for decision support.

Companies should Accelerate Globalization but with Distinct Regional Flavors

Many applications will be closely linked to local companies because customized products often require regional manufacturing capabilities. However, the fourth industrial revolution binds companies and countries more tightly together through worldwide supply chains and data networks and will increasingly promote globalization. Companies in emerging economies can leverage digitization to increase efficiency in their horizontal value chains, working efficiently within a global manufacturing network to supply key components, products and systems.

It is Time to Commit to Big Investments

Within the next several years, the advanced implementation of Industry 4.0 will become a qualifier to compete and will also likely to be seen by investors as a qualifier for funding. A major focus of this investment will be digital technologies, such as sensors and connectivity devices, as well as software and applications, such as manufacturing execution systems (MESs). Companies are also investing significantly in training their employees, hiring new specialists, and driving organizational change.

Discussions

To move forward with Industry 4.0, acquiring and rolling out digital capabilities across companies is important. In order to lead tomorrow's competitive digital landscape, companies will require the commitment of top management and a clear vision. The participants also suggested the following six critical issues:

- The Industry 4.0 strategy will shape every further step companies take on the path towards becoming fully digital enterprises, so it is important to evaluate digital maturity and set clear targets for the next several years.
- It is important for companies to create the right pilot projects. Possible options include vertical integration within one or two manufacturing sites, including digital engineering and real-time data- integrated manufacturing planning. Horizontal integration with selected key suppliers is another option.
- Map out in detail what capabilities companies need. The most successful approaches consider which capabilities are needed to enable new digital business models and internal digitization.
- Make sure to maintain a strong focus on building digital trust. The goal should be to ensure information security and trust in a collaborative environment by providing for the end-to-end management of risks, threats and, security issues.
- Identifying and gathering the right data, deploying them for the right purposes, and effectively analyzing them will be critical in making the right Industry 4.0 decisions.
- Actively plan an ecosystem approach. First movers achieve breakthrough performance by going a step further to understand consumer needs and use digital technologies to create and deliver value to the customer via an integrated, innovative solution.

Conclusion

Industry 4.0 digitizes and integrates processes vertically across the entire organization, from product development and purchasing to manufacturing, logistics, and service. All data about operations processes, process efficiency, and quality management, as well as operations planning are available in real time, supported by augmented reality, and optimized in an integrated network. Horizontal integration goes beyond the internal operations of suppliers to customers and all key value chain partners. This study went to the

heart of companies considering their progress towards becoming digital enterprises. Thanks to the focus group discussions, we have distilled the results of our research into seven distinct, essential implications. In addition, we have also explored the six critical issues suggested by the experts. The analysis results may provide references to the development and implementation of digital transformation in the future.

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SUSTAINABILITY AND SUCCESS OF MSME IN INDIA

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Abstract

The micro, small and medium Enterprises (MSMEs) are the growth accelerators of the Indian Economy and for promoting equitable development. The MSME contributes about 30% of the country's gross domestic product (GDP). In terms of exports, they are an integral part of the supply chain and contribute about 40% of the overall exports. Micro Small and Medium Enterprises (MSME) sector has emerged as a highly vibrant and dynamic sector of the Indian economy over the last five decades. MSMEs not only play crucial role in providing large employment opportunities at comparatively lower capital cost than large industries but also help in industrialization of rural & backward areas, thereby, reducing regional imbalances, assuring more equitable distribution of national income and wealth. MSMEs are complementary to large industries as ancillary units and this sector contributes enormously to the socio-economic development of the country. The study aims to analyse the sustainability and success of MSME in India.

Keywords: Sustainable, MSMEs, Employment, Technology.

Introduction

Micro, Small and Medium Enterprises (MSME) are the backbone of the socio-economic development of our country. MSMEs continue to lead the country towards economic growth; the Government of India has from time to time announced various schemes to support the development of this sector.

Micro, small and medium sized enterprises are vital in achieving the Sustainable Development Goals. Efforts to enhance access to finance for SMEs across key sectors of national economies are an important element of implementation of the Sustainable Development Goals (SDGs). Recently, in view of the economic hardship caused by covid 19, the government has announced few schemes under "Aatmanirbhar Bharat" i.e. Self-reliant India initiative. Accordingly. The criterion for classifying MSME has also been revised.

Under the revised criterion, the combined factors of 'Investment in plant and machinery and "Turnover is required to be considered to determine whether a business should be classified as a micro, small or a medium enterprise. In contrast, earlier the classification of an MSME unit was based only its investment in plant and machinery, and also depending on whether the enterprise was in the manufacturing sector or in the services sector.

Objectives of the Study

- To know the Performance of MSMEs from 2013-2014 to 2017-2018
- To give suggestions for future growth of MSMEs in India.

Review of Literature

Paramasivan. C & Mari Selvam. Paramasivan. C & Mari Selvam. P (2013) Progress and Performance of Micro, Small and Medium Enterprises in India, article revealed that Micro, Small and medium enterprises are the back bone of the economic development of the country, which concentrates to meet the local as well as the global demands in a unique characters of the products and services. In India, these sectors performed well and spread all over the country according to the availability of resources and traditional methods. MSME enterprises performing in a constant manner even in the globalisation era with the competitive advantages. These sectors could able to achieve the sustainable development of the country with self-reliance aspects. Hence this paper concludes that the progress and performance of the MSME is a significant manner during the study period.

Subsina Syal (2015) entitled Role of MSME in the growth of Indian Economy. This article concluded that the MSME sector of India is the gateway of global on the strength of competitive and factors like export promotion, reservation policy, tooling & technology, manpower training, technology and managerial skills gave enormous opportunities for growth and better performance in the economy. He also pointed out the facilitation from the government is required to minimize the transaction costs of technology upgradation, market penetration, modernisation of infrastructure etc.

Parthajeet Das (2017) Micro, Small and Medium Enterprises (MSME) in India Opportunities, Issues & Challenge. This article pointed out that MSMEs over the years have assumed greater Significance in our burgeoning national economy by contributing to employment generation and rural industrialization. This sector possesses enough potential and possibilities to push button accelerated industrial growth in our developing economy and well poised to support national programme like 'Make in India. This sector has exhibited enough resilience to sustain itself on the strength of our traditional skills and expertise and by infusion of new technologies, capital and innovative marketing strategies. Appropriate strategies should be evolved for creation of an enabling ecosystem where these enterprises are able to access the benefits meant for them under a formal and friendly ecosystem and are further capable of meeting the emerging challenges of a globally competitive order.

Sonia Mukherjee (2018) Challenges to Indian micro small scale and medium enterprises in the era of globalization. Article has suggested that more efforts in the form of higher investment in advanced technology and research and development, higher usage of digital and technology enabled platform, transfer of technology, more investment in human resources, improved access to finance, reduced infrastructural gaps, lesser stringent

business regulations can help in improving the competitiveness of the MSMEs. The Indian MSME sector needs more information, orientation and facilities for protecting their intellectual powers and show a positive approach towards creation, protection and management of IPR to compete in the global market and experience a business growth.

Rashesh Shah (2020) powering MSMEs in the next decade of growth, in this paper pointed out that MSMEs are the backbone of a resilient national economy, Prioritising their development is critical to the future of the country. The government has come out with a variety of enabling mechanisms over the last few years and need more such measures, especially in the current environment. The next decade will be the metamorphosis of India from an Emerging power to an established economic powerhouse and MSMEs will be an important cog in the wheel on this journey.

Shreeharipaliath (2020)) How to strengthen Indian's small business a post lockdown Economy suggested that in the aftermath of the Covid-19 epidemic, India now faces the crises of unemployment and business closure, particularly in the micro, small and medium enterprise, or MSME, sector. The MSME sector must be strengthened by Identifying micro, small and medium enterprises and their workers developing a vulnerability assessment framework of MSME sectors; increasing the capacity of the Samadhaan system to expeditiously clear government dues; improving the creditworthiness of small businesses.

Research Methodology

The study is based on quantitative in nature using secondary data. The secondary data were collected from Annual Report of MSME from 2013-2018.

Analysis & Interpretation

The following tables reveal the analysis and interpretation of results

Table-1 Status of MSME Units, Employment and Investments in India

S.No.	Year	Total Working Enterprises(In Lakh)	Employment (In Lakh)	Investment (Crore)
1	2013-2014	488.46	1,114.29	1,363,700.54
2	2014-2015	510.57	11,731.32	1,471,912.94
3	2015-2016	453.63	1,901.42	753,847.80
4	2016-2017	361.76	1,370.24	947,693.00
5	2017-2018	633.88	1,109.89	1,014,761.10
	Average	489.66	17,227.16	55.61,915.38

Source: MSNE Annual report 2013-2018

From the above table shows that the average growth rate of Total Working Enterprises is 489.66, Employment 17,227.16 and Investment is \$5.61, 915.38 from 2013-2014 to 2017-2018.

Table 2 Share of MSME exports in Total Exports

S.No.	Year	% Share in Export
1	2013-2014	42.38
2	2014-2015	44.76
3	2015-2016	50
4	2016-2017	50
5	2017-2018	49

Source: MSME Annual report 2013-2018

From the above table shows share of MSME exports in total exports in the year 2013-2014, 42.38% and it has been Increased to 49% in the year 2017-2018.

Table 3 Share of MSME Sector in GVA

Year	% Share in GVA
2013-2014	32.26
2014-2015	31.86
2015-2016	31.60
2016-2017	31.80
2017-2018	32.00

Source: MSME Annual report 2013-2018

From the above table, it is observed that share of MSME sector in GVA in the year 2013-2014, 32.26% and it has been slightly decreased to 32.00% in the year 2017-2018, GVA is important because it is used to adjust GDP, which is a key indicator of the state of a nation's total economy.

Table 4 Share of MSME Sector in Total GDP

Year	% Share in GDP
2013-2014	29.76
2014-2015	29.39
2015-2016	28.77
2016-2017	29.20
2017-2018	28.90

Source: MSME Annual report 2013-2018

From the above table, it is observed that share of MSME sector in total GDP in the year 2013-2014, 29.76% and it has been decreased to 28.90% in the year 2017-2018.

Findings

- The average growth rate of total working enterprises is 489.66, Employment 17, 227, 16 and Investment is 55, 61,915.38 from 2013-2014 to 2017-2018.
- Share of MSME exports in total exports has been increased from 42.38% to 49% from the year 2013- 2014 to 2017-2018.
- Share of MSME sector in GVA in the year 2013-2014, 32.26% and it has been slightly decreased to 32.00% in the year 2017-2018.
- Contribution of MSME sector in total GDP in the year 2013-2014, 29.76% and it has been decreased to 28.90% in the year 2017-2018.

Suggestions

- The government can play a crucial role in creating domestic manufacturing capabilities by leveraging proposed public procurement and projects.
- Efforts should be made to develop self-sufficient clusters of manufacturing competence, with Cluster Administrative Authorities, empowered to provide single window clearances to entrepreneurs and Investors.
- Disruptive technology, while leading to job losses in traditional areas, also presents new job opportunities.
- India has already taken several steps; due to which case of doing business in India has improved significantly (India's ranking in case of doing business report has improved from 142 in 2014 to 63 in 2020).
- However, still some reforms are needed in regard, especially in the field of land, labour reforms and in enforcing contracts.
- With the advancement of technology and the up-gradation of small business keeping in mind the future of the Indian Economy.
- Government has taken many new initiatives and makes policies for the development of MSMEs with sustainability.

Conclusion

The significance of the MSMEs sector can be noted from the fact that it is the second-largest Employment provider, after agriculture in India. In India, at present, there are nearly 56 million such enterprises in various industries, employing close to 124 million people. In order to revive the Indian economy amid Covid-19 Pandamie, the government has announced an economic package under Aatmunirbhar Bharat Abhiyan. Like other sectors of the Indian economy. MSMEs have been hit badly due to lockdown imposed by the government to tackle Covid-19 pandemic. In such a situation, providing merely a

stimulus package may not be effective, until adequate reforms are carried out to solve its pressing problems and to utilize its potential.

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SIGNIFICANCE OF MSMEs IN ACHIEVING THE SUSTAINABLE DEVELOPMENT GOALS (SDGs)

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Abstract

Nature is a quintessential part in our life which underpins our economy, and indeed our existence. However, our environment has been exploited by our very own hands directly or indirectly which leads to a plethora of long-lasting negative socioecological on a country. To overcome the Impacts, the concern of ability has taken a centre stage at national as well as global platform with the help of better eco-friendly technologies. Adhering to responsible business conduct guidelines is the biggest contribution that companies can deliver for a sustainable development. The efforts include Sourcing renewable materials, operations with carbon-free energy and creating products with a lower carbon footprint that help preserve the long term viability of our Planet's resources. While the large Enterprises have access to resources and knowledge it is the MSMEs that contribute to almost half of the manufacturing output and major number of employment opportunities which requires the most attention. MSMEs are catalysts of our Indian economy to bring about sustainable development by its increasing entrepreneurial activities. This paper studies the contribution of MSMEs in Indian economy and their role in achieving the sustainable development goals in our country.

Keywords : *Sustainability , Nature , Eco-friendly , Carbon Footprint.*

Introduction

MSMEs are micro small and medium enterprises that engage in the service sector or the manufacturing , processing , production and preservation of goods. The distinctive feature of MSME are less capital investment and high labour absorption. MSME contribute more than 29% to the GDP and responsible for 50% of the country's total exports that places a crucial role in the development of the Indian economy. Sustainable development is the only goal applicable to either developed or developing country like India. In connection to that, ministry of MSME provide numerous assistance to promote entrepreneurship and act as apex body for strategically formulate schemes for the sustainable development of the sector. We live in a environment that directly or indirectly depends on nature that's why there is a need of industrialisation and environment to go parallel. Sustainable growth increases the business and eventually more success since people now vote for green and eco-friendly products and services they use. Sustainable Consumption and Production (SCP) is about "the use of services and related products which respond to basic needs and bring a better quality of life while minimizing the use of natural resources, improving resource efficiency, increasing use of renewable energy

resources, reducing release of toxic materials and emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of the future generations."

Role of MSMEs in Achieving Sustainable Development and Goals Goal 1 : Poverty Alleviation

The main focus of the goal is to eradicate and reduce poverty based on national definitions. Goal 1 has seven targets, including ensuring access to social protection, access to economic resources/assets, improving climate and disaster resilience of the poor, mobilising resources and strengthening national and international policies to address poverty.

As indicated by the World Bank, in excess of 650 million individuals live in destitution throughout the world, which is 11% of the total population. Over 80% of individuals in South Asia and Sub-Saharan Africa live below the poverty line. This problem of poverty has remained the greatest challenge in the world. Although India is considered one of the fastest growing economy, it accounts for 20.6 per cent of the world's poor. MSMEs by employing the poor and jobless ensure that they earn money to survive. This helps in assuring their minimum survival needs. MSMEs in India employs over 60 million people in around 11 lakh establishment all over India. With an increased number of sustainable MSMEs, more employment opportunities could be created.

Goal 2 : Zero Hunger

MSMEs make up the majority of agricultural and food producers and ensure a sustainable food production system. Agro - based MSMEs have a major role in creating and maintaining a sustainable food supply (Blue Orchard Academy, 2017). The government initiatives such as Kisan Sampada Yojana entails in itself great opportunities for food production and processing at low cost by MSMEs.

Goal 3 : Good Health and Well-Being

Health issues like maternity mortality, child mortality, etc. are still not well addressed in rural landscapes. MSMEs as part of their CSR programmes could help organize awareness campaigns, healthcare facilities, arrange ambulance facilities, free medical checkups, etc. in the rural areas. To ensure good health around society, MSMEs have to be careful about the disposal of waste from their establishment. They must ensure that they do not pollute their surrounding localities which ultimately leads to many disease problems in the locality. In 2016 only, household and outdoor air pollution led to some 7 million deaths worldwide (Division for Sustainable Development Goals (DSDG), n.d.).

Goal 4 : Quality Education

Education is not only about schooling. It about learning new things and acquiring new skills at any age. MSMEs educate rural youths by imparting skills in them. Everyone who is employed in a microenterprise has to learn and acquires new skills for efficient working. Nowadays, employee training programmes under the aegis of skill India is training workers to improve their craft. Also, as a part of their social responsibility obligations, MSMEs are helping to open schools in rural and backward areas.

Goal 5 : Gender Equality

MSMEs could also assist in promoting gender equality and women's empowerment by providing entrepreneurship opportunities to women's (Kamal-Chaoui, 2017). In India, a huge number of microenterprises are led by women. According to MSME Annual report, around 123 lakh proprietary enterprises are owned by female entrepreneurs. Women have become dependent and are successful in their entrepreneurial endeavours. Also, various training programmes have trained them in their skills and have made them at par with men in terms of employability.

Goal 6 : Clean Water and Sanitation

The goal is to make sure the availability of water, sustainable management of water and sanitation for all. MSMEs Working in the locality could help to a great extent in dealing with the water and sanitation related activities. They could provide water to the locals from their plant as they usually have a rich source of water for their operations. MSMEs Could help improve water quality by reducing contamination, wiping out dumping activities and limiting the release of dangerous residue materials. Also, they could support and strengthen the participation of local communities in improving water efficiency, water management and sanitation management in the locality. On the same lines, as a part of their CSR obligations, they could help conserve and restore water by making ponds and dams.

Goal 7 : Affordable and Clean Energy

MSMEs with their innovative methods have been able to lower the cost of operations and have contributed to energy efficiency. The government is promoting MSMEs in the area of affordable energy. MSME ministry has issued guidelines and inviting projects on setting up of production units based on LED-based lighting systems, automatic voltage stabilizers, electric solar cooler, electric transmission line hardware, distribution transformers, solar panels etc. Thousands of MSMEs are getting certification from the ministry and are working in the field of producing energy efficient products. This will ultimately help the portion of renewable energy in the total energy mix. India's Unnat Jyoti by Affordable LED for All (UJALA) is a great example of providing affordable energy. In such an initiative, MSMEs are playing an important role.

Goal 8 : Decent Work and Economic Growth

The target is to provide full and productive employment to all. Although the number of unemployed people has reduced significantly over the years, people in many developing countries like India are still unemployed in large number. The role of the MSME sector in employment generation in India is indisputable. The sector is the second largest employment provider after agriculture. It employs over 110 million people in nearly 60 million establishments (Ministry of MSME, 2018), thereby providing employment and decent work opportunities to a large number of people. The sector helps in increasing labour productivity and decreasing the unemployment rate. This, in turn, helps reduce the quantum of migration of rural poor. The sector has been able to generate and provide employment to a large population in the period of global recession and economic slowdown (Development Alternatives, 2018). It is estimated that India will need 15 million new jobs per year for the next 15 years. (Bhattacharya & Bijapurkar, 2017) (Development Alternatives, 2018). This much amount of job creation is unimaginable without the contribution of MSMEs.

Goal 9 : Industry , Innovation and Infrastructure

The aim is to Build a strong infrastructure, encourage inclusive and sustainable industrialization and nurture innovation. MSMEs have a big part in industrialization progress of India and have helped in raising the industries share in employment, export and Gross Domestic Product (GDP). The rise in the number of manufacturing units is showing good signs for the economy in the current scenario. Due to lack of resources, MSME entrepreneurs continue to find new ways of doing complicated things in simple ways, which ultimately leads to low-cost innovations. This is why MSMEs are considered as innovation hubs. As economist William Baumol has asserted that new and small firms have been the major source of disruptive innovation in last decade's because new and small firms work outside prevailing paradigms and without strong links to current products and technologies((Kamal-Chaoui, 2017). The MSME entrepreneurs are helpful in making good infrastructures in the area where they exist. As a part of social responsibility, they are also engaged in making schools, roads, hospitals etc.

Goal 10 : Reduce Inequality

MSMEs have been contributing to reducing income inequalities within and among countries. By providing employment to local folks, these MSMEs increases their income level, improve their standard of living and make them self-dependent. MSMEs also have a major share in export and manufacturing output of the country. The MSMEs accounts for 45 per cent of the total export from the country and 40 per cent of the total manufacturing output in the country, thereby, helping the country to grow at a brisk pace and improving

the Financial Soundness Indicator (FSI) of the nation while competing with most of the developing and developed countries. MSMEs have not only contributed to increase the earnings of workers and entrepreneurs but also to the nation at large.

Goal 11 : Sustainable Cities and Communities

The goal is to make the human habitat safe, resilient and sustainable. Most of the MSMEs operate near the residential establishments in cities as well as villages. They affect human lives around them in one way or the other. When industries are set up in the far reach areas, they themselves ensure a well-developed infrastructure. So, they build roads, ensures water availability and take electricity to far reach areas with them. As a result, those areas get a good transportation infrastructure, water supply and electricity supply. While promoting industrialization, they are also helping in urbanization. MSMEs can help cities become more inclusive through projects like urban regeneration project that lay emphasis on SME development ((Kamal-Chaoui, 2017). MSMEs with their diverse range of operations are helping in making sustainable cities and communities in different ways. MSMEs engaged in waste recycling and solid waste management are some good examples in this regard.

Goal 12 : Responsible Consumption and Production

Resources are scares but human wants are unlimited. The pace of growth in human population calls for careful use of available resources. Sustainable consumption and production are all about the use of resources for the satisfaction of human needs with minimum wastage. It implies the development of efficient technologies, increased use of renewable resources, lessening of toxic residue outflow etc. MSMEs are more flexible than large enterprises and could adopt sustainable consumption processes and production patterns. The various processes used in production must be made efficient to reduce wastages. MSMEs could implement Lean manufacturing systems while following various pollution control standards

Goal 13 : Climate Action

Issues like global warming and ozone layer depletion have put a major threat to the lives of humans on the planet. India has to contribute to minimizing the air pollution, global warming and ozone layer depletion through Intentionally Nationally Determined Contributions (INDC). If India has to fulfil its INDC commitments then it is important to control environmental degradation and ecological imbalances in the country, which is mostly a result of industrial activities. MSMEs have to adopt Green Manufacturing initiatives and have to be environmentally conscious in using resources. Some MSMEs are using solid waste management as business opportunities and using them as marketable opportunities.

Goal 14 : Life Below Water

It is related to Conservation and sustainable use the oceans, seas and marine resources. Use of water resources and their disposal is a matter of concern for not only large but Micro, Small and Medium Enterprises. Units established near the coastal areas and river banks must adhere to the Air quality law, Water quality law, Waste management law, Environmental cleanup law etc. they must not indulge in the practice of dumping of wastes in water bodies.

Goal 15 : Life on Land

It is associated with Protection, restoration and promotion of sustainable use of terrestrial ecosystems, sustainable management of forests, combating desertification, and halting and reversing land degradation and biodiversity loss. The MSMEs located in rural areas near forests are exploiting most of the forest resources. It becomes their responsibility to protect the wildlife in them. It is their duty not to disturb the forest ecosystem. Tree plantation activities must be promoted by them in return for the resource they use. They must also ensure that their operation does not harm the vegetation and do not result in land degradation. If the MSMEs operate in agro-business, then they must promote sustainable agricultural business practices.

Goal 16 : Peace, Justice and Strong Institution

It involves building accountable institutions at every level. MSMEs do employ a large share of human capital. They must follow the labour laws of the country and comply with their norms. MSMEs should not indulge in child labour employment. Also, the treatment of female employees must be fair and their exploitation must be stopped. The laws administering the workers must be adhered to and labour must not be disassociated with their rights.

Goal 17 : Partnership for the Goals

To implement all the policies leading towards sustainable development, institutions within the country must partner with each other. Partnership in the private and public sector must be to achieve self-sufficiency. Also, many of the informal enterprises' partners with formal enterprises to create value. This partnership is essential given the fact that they together create a better value chain. It could be possible that governments could provide better exposure to the MSMEs of our country to the MSMEs of another country so that they could learn innovative methods of operations from one another.

Conclusion

SDGs are ambitious goals directed towards a better future for planet and people. However, achieving them within a span of fifteen years is not an easy task. Various nations including India through various commitments are working towards these goals. There are many dimensions to sustainable development which could be achieved through contributions of organisations and individuals in different forms. MSME sector is one of the sectors which carry a huge potential to affect the progress of most of these goals. The diversity and flexibility in operational capabilities of MSMEs make them an important player in this endeavour. If MSMEs thrive in the upcoming years, it will certainly help in generating more employment, reducing poverty, reducing regional imbalance, promoting equality etc. and thereby making a substantial contribution in achieving the SDGs. It is needed that problems of MSME are addressed diligently through appropriate government interventions and entrepreneurial abilities are nourished well in this competitive era.

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DIGITAL INDIA AND INDUSTRIES 4.0

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Abstract

Industry 4.0 is a present day issue that concerns today's industrial production as a whole. . It's an opportunity to radically change the way industry responds to the needs of society. The advancement of industry 4.0 will be driven by an interconnected progressive environment. The opportunities for disruption are huge and those left behind will feel it acutely. Industry 4.0 talks about the use of sensors, connectivity, artificial intelligence techniques, machine learning, CPS, Machine machine communication, and so on to develop smart factories, smart inventory management systems, and smart supply chain management. The adoption of digitalization and industry 4.0 practices is expected to play a very important role in the growth and development of Small and medium enterprises. The purpose of the paper is to summarize major government initiatives towards the digitalization of SMEs in India and to study the impact of digital transformation on SME's growth prospects. This study may provide evidence of the state of digitalization and industrial revolution 4.0 adoption in Indian SMEs with additional information as to the significant factors that affected their adoption. It is suggested that this piece of work can be made an important contribution to guide future research on digitalization and SME's adoption of industrial revolution 4.0 practices.

Keywords: Digital Trends, Network, Digital India, Industries, Enterprise.

Introduction

The Digital India approach is the flagship scheme of the Indian government. It is an effort to reduce the gap between the government and the public by integrating the government with its public electronically. The programme aims to render government services to the citizens electronically and reduce paper use. Apart from replacing paper, it also aims to provide high-speed internet services in the rural parts of India and connect them with the mainstream so that the benefits of the government can easily be provided to them. The government has aimed to provide broadband services to around 2.5 lakh villages across the country. Digital India also aims to disseminate digital awareness and digitally literate every country's citizen.

The coordinating ministry of the programme includes the Ministry of Electronics and Information and Technology (Meity). It is implemented by all the ministries and

departments of the government, both at the centre and state levels. At the national level, it constitutes a Digital India Advisory Group chaired by Cabinet Secretary.

Digital India, launched by the Government of India in 2015, is a visionary program with the primary goal of transforming the country into a digitally empowered society and knowledge economy. This initiative holds immense importance in the context of India's socio-economic development, bridging the digital divide, and positioning the nation as a global technology powerhouse. This essay explores the multifaceted importance of Digital India.

The Vision of the Digital India Programme

1) Digital Infrastructure as Utility to Every Citizen

The concept of the programme is to establish digital infrastructural facilities for the delivery of government services digitally. It aims to create a digital identity of the citizens that will be unique to every citizen for their whole life and that can be easily authenticable. Ensuring easy access to Common Service Centres and safe Cyber spaces for the public.

2) Governance and Services on Demand

To integrate different ministries and departments for better coordination in the delivery of services by the government. Make all government services available to the public through online platforms. To move citizens towards online and cashless financial transactions. To transform government services digitally for ease of doing business in the country. Ensuring availability of every citizen on the Cloud.

3) Digital Empowerment of citizens

By making every citizen digitally literate, primarily rural people. By making available digital services in vernacular languages. By ensuring the universal accessibility of all digital resources.

The 9 Key Pillars of Digital India

The Indian government focuses on nine pillars to achieve the objectives of the Digital India Programme. They are:

1) Broadband Highways

Under this, there are three sub-components- Broadband for All Rural

Its target is to cover 2,50,000 Gram Panchayats with broadband connection by December 2016. The outlay of the project is estimated to be around 32,000 cr., and the Department of Technology is its nodal department.

Broadband for All Urban

Under this, Virtual Network Operators will deliver services, and communication infrastructures will be compulsory in new urban buildings.

National Information Infrastructure

In this, cloud data centres of central government and states will be integrated with SWAN, NKN, NOFN, and NOPN networks. It will help connect 100, 50, 20, and 5 government offices/ service centres at state, district, block, and panchayat levels.

2) Universal Access to Phone Connectivity

It focuses on increasing mobile connectivity more inclusively by covering around 42,300 villages; still, untouched by this service.

Department of Telecommunication will be the nodal agency of the mission, and the deadline to complete this task is between FY 2014-2018.

3) Public Internet Access Initiative

It has two sub-components: Common Service Centres-

Common Service Centres (CSCs) are the points that benefit citizens by providing various government services online. Under this, it aimed to increase the number of CSCs from 1,35,000 to 2,50,000 with the motive of one CSC at each Gram Panchayat.

The Deity will be responsible for the implementation of the initiative.

The government has targeted to develop 1,50,000 Post Offices into multi-service centres, and the Department of Posts will act as the nodal agency for this mission.

4) e-Governance: Reforming Government through Technology

It is the program to re-engineer the government working manner using IT. It involves shifting from manual to digital databases so that all government processes can be digitized.

Guiding Principles for the transformation are: Online repositories for the documents like educational certificates, voter IDs, driving licenses, etc., should be made mandatory to ease citizens from submitting their documents in hard copy. System for online application and its tracking should be made. Government services should be integrated with their respective platform, like UIDAI, UPI, etc., to disseminate services efficiently.

A proper automatic Public Grievance Redressal system should be established for the public's complaints.

5) e-Kranti - Electronic Delivery of services

Transforming e-Governance for Transforming Governance is the vision of e-Kranti. It aims to make all government services available to the country's citizens electronically via an integrated system. It will help deliver services more transparent, efficient, and reliable.

Through this, the government is working to provide all the benefits possible with the help of technology.

A total of 44 Mission Mode Projects have been sanctioned under the mission, out of that 10 of them are recently announced under the mission, like Technology for Education= e-Education Technology for Health= e-Health Technology for Farmers, Technology for Security, Technology for Financial Inclusion, Technology for Justice, Technology for Planning, Technology for Cyber Security, etc.

6) Information for All

The vision behind this initiative is to provide information about every work and decision of the government in real-time through online platforms.

To serve the same purpose, "MyGov." was launched, allowing public engagement in certain things' decision-making and providing real-time information. It channelizes the communication link between the public and the government. The establishment of Open data platforms will be encouraged to make the public data more accessible easily.

7) Electronics Manufacturing

Complete digitization can be attained only with adequate availability of electronics. Due to this, Electronic manufacturing has been made one of the pillars of the mission. For achieving electronics adequacy, the focus should be on the following points:

Net Zero Import should be prioritized by boosting domestic manufacturing of electronics.

There should be a focus on aspects related to manufacturing that are required to increase production, like taxation, incentives to manufacturers, Incubation, Skill development, etc.

Strengthening existing electronics manufacturing units to increase domestic production.

8) IT for Jobs

The Digital India program will help increase employment and create new employment opportunities. It will create jobs in the IT industry for both skilled and semi-skilled labour. Under this, IT job training will be provided to 1 cr?students of rural areas and towns over five years.

To increase the penetration of ICT in the northeastern region, BPOs will be established in each northeastern district.

Telecom Service Provider will train 5 lakh rural working people to make them digitally literate.

9) Early Harvest Programme

EHP includes projects that can be implemented relatively within a short period, and the effects of their implementation can be seen shortly. It has projects like:

- IT Platforms for Messages
- Government Greetings to be e- Greetings
- Biometric Attendance
- Wi-fi in all Universities
- Secure E-mail within the Government
- Standardized Government E-mail Design
- Public Wi-fi Hotspots
- School Books to be e-Books
- SMS-based weather information, disaster alerts
- National Portal for Lost and Found Children

These projects have eased the life of the citizens; it has helped in rendering services digitally, from sending messages to making online attendance, providing students and the public with Wi-fi facilities and making available textbooks online, and providing SMS-based weather forecasts to farmers and other related stakeholders.

Effects of the Digital India Programme

The Digital India mission is one such initiative that has brought changes in the life of an ordinary individuals. Every person uses the services offered under the Digital India initiative daily. It has impacted every sector of the economy.

Effects on Technology

Digital India is the result of the advancement of technology. It has opened the scope of growth of technology in the country by normalizing the use of technology in day-to-day life. It is helping India shift from a labour-intensive economy to a technology-driven one. It has created the demand for the advancement of technological infrastructure.

Effects on Economy

Digital India has made India a leading country in online transactions with the help of UPI. It has supported the growth of macroeconomic factors like GDP, employment, etc.

Effects on Social Sector

Social Sectors such as healthcare and education have evolved significantly with Digital India's help. Education has shifted from physical space to online platforms; some have become significant unicorns like Byju's and PhysicsWala. In the healthcare sector, the government started e-Sanjeevani, an Online OPD facility. All these became possible just because of the online revolution, which drastically increased the services' reach.

Effects on Agriculture

Linking farmers with digital services was challenging, but the government worked seamlessly to make farmers comfortable with the technology. Digital India eased the life of the farmers by providing real-time weatherforecasts and crop-related information directly from experts in the respective field.

Effects on the Banking Sector

Digitization has revolutionized the banking sector. It has reduced the workload of the bankers with digital India products and policies; various banking operations can now be done online. Every bank provides the services of e-banking.

E-Banking is a relief for both customers as well as banking staff. Now, customers are not required to visit the bank for tasks such as depositing and withdrawing money, getting bank statements, etc. Bankers are relieved from the work pressure due to the presence of many customers every time.

Challenges of Digital India

A Large Number of the Digitally Illiterate Population

The biggest challenge of the mission is to provide digital literacy to the public irrespective of their educational background. Executing a literacy and awareness campaign on such a large scale is a humongous task. Digital literacy is mainly required to be disseminated in the rural parts of the country.

Connecting Rural and Remote Areas

The Digital India program target will only be achieved when it has penetration in rural and remote areas. These areas pose different challenges like acceptance by the public, terrain, climate, etc., which can prove to be a hurdle in connectivity.

Coordination issues between Central and State Governments

The Digital India programme is a central sector scheme, and for the plan's successful implementation, it is vital to have good coordination between central and state governments. Some conditions can prove to be a problem with the scheme's implementation.

Cyber Crime

The more people will move to online platforms and become digital, the threat of cybercrime will rise simultaneously. People are moving towards online platforms for services like banking, document storage, etc., and their data can be in danger. Government should have a robust solution to safeguard people from such fraud for the successful execution of the scheme.

Establishing Faith in Technology

Various people still don't fully believe in technology, especially in money-related matters. They still prefer to go to the bank for transfer, withdrawal, or deposit of a large amount of money, and it is because they are scared of the failure of technology and not aware of where to go in such situations. Therefore, to establish faith in technology, the government will have to do a dual task: create awareness campaigns to burst myths about technology and encourage them to use it. Secondly, the government should make a body to hear the grievances and address the problems of the public in case of such technological failures and frauds.

Costly Implementation

Transforming India into a digital economy requires immense infrastructure development like fibre optics, IT infrastructures, data centres, etc. For such infrastructural development, a large amount of financial investment is needed. The arrangement of funds for the programme is one of the significant challenges for the Indian government. The government has earmarked a total financial outlay of Rs. 1,13,000 Cr. for the scheme.

Net Neutrality

Net neutrality is one of the critical aspects of making this scheme effective. In our country, there is not 100% net neutrality. In India, people don't have so much money to have subscriptions and access to everything; as a result, they cannot use many services, raising the need for net neutrality.

Net neutrality will provide real meaning to digital India, where all the services of different platforms will be open to the public and can be accessed without any extra charge.

Institutional Framework and Management structure of Digital India Programme

Digital India is the dream project of the Indian government. It has been prepared with utmost care and devotion. The institutional and management structure includes key ministers and noted departments of the concerned ministries, including the Prime Minister, in its implementation structure.

Monitoring Committee on Digital India

This committee works under the chairmanship of the Prime Minister of India. This committee includes representatives from various concerned ministries/ departments. The committee's main task is to monitor the execution of the Digital India Programme at regular intervals.

Digital India Advisory Group

The Minister of Communications and IT is the group's chairman, along with other members from related ministries of state/UT governments and some from different line ministries. It provides the necessary insights and advice on policies and strategic steps to the Monitoring Committee on Digital India for the successful implementation of the scheme.

Apex Committee

The head of this committee is the Cabinet secretary of the Government of India. It executes and monitors the accurate implementation of the policies and strategies advised by the Advisory Group. It forms the coordination and integrates different government initiatives related to Digital India, as per need.

Expenditure Finance Committee (EFC)/ Committee on Non-Plan Expenditure (CNE)

This committee is responsible for the financial approvals for the projects under Digital India Programme. It also fixes the financial terms and conditions of participation by the states. This committee is headed by Secretary (Expenditure).

Council of Mission Leaders on Digital India

This council works as a platform for sharing the previous and new initiatives related to e-Gov under Digital India Mission. It will also present various ICT projects and initiatives of Deity to other governments and departments. The council is headed by the Secretary (Deity).

At the State level, the State Committee on Digital India is headed by the state's Chief minister.

After that, there is the State/UT Apex Committee on Digital India under the chairmanship of the Chief Secretaries of the states.

Opportunities for Digital India Programme

It is an initiative to transform the country with IT. It aims to make every citizen of the country a user of core digital services by providing them with good digital literacy.

It will increase the reach of high-speed internet to the villages, and for that, around 7 lakh Km of broadband cable is being installed to connect 2.5 lakh villages to the internet.

Digital India provides the opportunity to transform; with the internet's reach, the villages' schools can access smart classrooms.

It has removed the Indians from the counter. Services like e-ticketing, e-commerce, e-Catering, e-healthcare, etc., are now available online. In earlier times, people had to stand in queue for hours for such tasks. It has made life easy, and anyone can use these services from their home.

It facilitates faceless work in offices which has helped curb corruption, and the process has become more efficient and effective.

The Future of Digital India

Digital India is a campaign that can boost India's GDP growth and be a pioneering factor in attaining the mark of a \$5 trillion economy by 2025. It will transform the image of India of being outdated and help in shifting from only an agriculture-based economy to an IT-based economy. This mission will uplift the intellectual and social quotient of the individual. It will improve the country's citizens with an increase in their literacy level.

Digital India will lead to a decrease in the cases of corruption and other offences like money laundering, tax evasion, etc. It will help in the faster resolution of pending cases in the system.

It will change the education system, where students can get an education and learn skills from anywhere. It will make education relatively less costly, reducing the need for extensive infrastructure.

The Importance of Digital India in Transforming the Nation

- **Bridging the Digital Divide:** Digital India is pivotal in bridging the digital divide that exists across India's diverse population. It aims to ensure that the benefits of the digital revolution reach every corner of the country, regardless of geographical location or socio-economic status. Initiatives like BharatNet and Common Service Centers (CSCs) have been instrumental in extending internet connectivity to rural and underserved areas, enabling citizens to access information and services that were previously inaccessible.
- **E-Governance and Transparency:** The program emphasizes the use of technology in governance, leading to increased transparency, efficiency, and accessibility of government services. Digital platforms, such as the National Portal of India and MyGov, have made it easier for citizens to engage with the government, access information, and participate in policymaking. This transparency reduces corruption and enhances accountability in public administration.
- **Economic Growth and Innovation:** Digital India has played a significant role in fostering economic growth and innovation. It has encouraged entrepreneurship and the development of a vibrant startup ecosystem. Initiatives like "Startup India" have provided support and incentives for young entrepreneurs, leading to the creation of job opportunities and positioning India as a global technology and innovation hub.
- **Digital Literacy and Education:** The program recognizes the importance of digital literacy in the modern world. It promotes digital education and literacy through initiatives like the National Digital Literacy Mission (NDLM) and platforms like

SWAYAM. These initiatives empower individuals with essential digital skills, enhancing employability and promoting lifelong learning.

- **Efficiency and Convenience:**Digital India has made government services more accessible and convenient for citizens. With initiatives like Digital Locker and e-Signature, individuals can securely access and store their important documents online. This reduces bureaucracy, simplifies paperwork, and saves time and effort for citizens.
- **Resilience and Adaptability:**The COVID-19 pandemic highlighted the importance of a robust digital infrastructure. Digital India demonstrated its adaptability and resilience by leveraging digital platforms to ensure uninterrupted education, healthcare access, and essential services during the crisis. This adaptability positions India for future challenges.

Conclusion

Digital India is not just a government initiative; it is a vision for the future of the nation. It has immense importance in terms of inclusivity, transparency, economic growth, education, and adaptability. By continuing to invest in digital infrastructure and innovation, India is on the path to becoming a global digital leader and achieving the vision of a digitally empowered New India. In this essay, we explored the multifaceted aspects of the Digital India initiative, which is transforming India into a digitally empowered society and knowledge economy. We discussed the significance of Digital India in bridging the digital divide, promoting e-governance, spurring economic growth, enhancing digital literacy, and adapting to the challenges of the COVID-19 pandemic. Digital India is playing a pivotal role in shaping the vision of a New India. It fosters inclusivity by bridging socioeconomic disparities, empowers citizens through digital literacy, promotes transparency and efficiency through e-governance, drives economic growth and innovation by nurturing entrepreneurship, and enhances financial inclusion through digital payment initiatives like UPI. In conclusion, Digital India is not just a program; it's a vision for a digitally inclusive and empowered India. Its impact on governance, education, entrepreneurship, and economic growth is undeniable. To realize the full potential of this vision and ensure a prosperous future, India must stay dedicated to the path of digital transformation and adapt to the evolving digital landscape.

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ANALYZING THE IMPACT OF GOVERNMENT POLICIES ON SUSTAINABLE PRACTICES IN INDIAN MSMEs

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Abstract

The present study explores into the multifaceted relationship between government policies and the adoption of sustainable practices within the Micro, Small, and Medium Enterprises (MSME) sector in India. MSMEs form the backbone of India's economy, contributing significantly to GDP, employment, and exports. Ensuring their sustainability is crucial for overall economic development. With sustainability emerging as a pivotal driver of economic growth and environmental stewardship, it is imperative to scrutinize the effectiveness of existing policy frameworks in catalyzing sustainable initiatives among MSMEs. This research endeavors to provide a comprehensive understanding of how government policies influence sustainable practices within this critical economic segment, and further aims to offer practical recommendations for refining policy structures to foster enhanced sustainability. It addresses the critical need to balance economic growth with environmental conservation, ensuring a more resilient and sustainable future for the country. Sustainable practices have broader benefits, including improved health, livelihoods, and community well-being. Sustainability is increasingly valued in global markets. Understanding policy-driven sustainable practices enhances the competitiveness of Indian MSMEs.

key words: sustainability, government policies, economic growth and development

Introduction

However, the Indian Micro, Small, and Medium Enterprises (MSMEs) sector plays a pivotal role in the country's economic development, it also associated with environmental challenges due to resource-intensive operations. Within the MSME sector, there has been a rising understanding of the necessity of sustainable practices in recent years to reduce negative environmental effects and guarantee long-term survival. This shift to sustainability has been impacted by a number of government programs and efforts that support sustainable business practices. The primary objective of this research project is to comprehensively assess how government regulations affect Indian MSMEs' adoption and implementation of environmentally sound practices.

Problem Statement:

Recently, it has become more crucial than ever for businesses to adopt environmentally friendly business practices in order to slow down environmental deterioration, save resources, and ensure long-term economic sustainability. Government policies are extremely important in influencing how businesses, including MSMEs, behave in terms of sustainability. Despite numerous policy initiatives aimed at promoting sustainability within the Indian MSME sector, there remains a gap in understanding the tangible impact of these policies on actual sustainable practices adopted by MSMEs. This gap in knowledge hampers effective policy formulation and implementation, hindering progress towards the eco-friendly business objectives.

Research Objectives of the Study:

- To evaluate the current government efforts, rules, and programs that have an impact on sustainable business practices in India's MSMEs.
- To examine the degree to which Indian MSMEs have adapted environmentally friendly procedures in light of specific government initiatives and interventions.
- To look into the financial effects of government policies on MSMEs, including cost savings, market competitiveness, and potential for growth and innovation in sustainable practices.

Impact of Government Initiatives:

Several government policies and initiatives in India were targeted at promoting sustainability within the MSME sector.

i. National Manufacturing Policy (NMP) (2011):

The NMP was introduced in 2011 with the goal of enhancing the manufacturing sector's contribution to India's GDP and adding millions of new jobs to the industry. It strives to support creativity, raise levels of competition, and promote longevity in manufacturing operations. The NMP emphasized resource efficiency and sustainability in the manufacturing sector, fostering the adoption of greener processes and technology.

Impact of NMP on MSMEs:

The strategy places a strong emphasis on the value of technology advancement, which is especially pertinent to MSMEs. This is critical for MSMEs since these businesses must increase their total production and efficiency, which depends on having a competent workforce. The strategy acknowledges the necessity for reliable infrastructure, such as industrial parks and clusters, which can help MSMEs by fostering an environment that is favorable for growth.

ii. Green Credit Scheme:

Launched by the MSMEs, this scheme encourages banks to provide preferential interest rates to MSMEs adopting eco-friendly technologies, thereby incentivizing sustainable practices. The Green Credit Scheme encourages banks to finance projects that have a positive impact on the environment. It aims to promote sustainable and environmentally-friendly practices in various industries.

Impact of Green Credit Scheme on MSMEs:

By implementing green practices, MSMEs can reduce their environmental footprint and potentially lower operational costs in the long run. Access to credit through this scheme can facilitate the adoption of such practices. Embracing sustainability can be a competitive advantage for MSMEs in the market. The Green Credit Scheme supports MSMEs in adopting practices that align with modern consumer preferences for eco-friendly products and services.

iii. Revised Industrial Policy (2014):

The policy advocates for sustainable industrial development by promoting energy efficiency, waste management, and pollution control in MSMEs. It also encourages technology upgradation for cleaner production processes. The Revised Industrial Policy of 2014 aims to accelerate industrial growth promotes investment, improve competitiveness, and foster innovation in the Indian industrial sector. It seeks to create an environment conducive to sustainable economic development.

Impact of Revised Industrial Policy (2014) on MSMEs:

The strategy places a strong emphasis on programs to increase capacity and improve skills, both of which are essential for improving the workforce capacities of MSMEs. For MSMEs to increase their total productivity and competitiveness, a competent workforce is crucial. The strategy specifies steps to increase MSMEs' access to credit and financing, which is essential for their development and growth.

iv. Credit Linked Capital Subsidy Scheme (CLCSS):

The adoption of ecologically conscious tools and procedures in MSMEs is made possible by CLCSS's funding for technology modernization and upgrading. CLCSS was created to encourage MSMEs to upgrade their technology by giving them upfront capital subsidies for the growth and upgrading of their machinery and equipment.

Impact of CLCSS on MSMEs:

The money provided by CLCSS for the modernization of technology and advancement allows MSMEs to implement environmentally friendly tools and practices. By providing them with upfront capital subsidies for the expansion and upgrading of their machinery and equipment, CLCSS was established to encourage MSMEs to modernize their technologies.

v. Make in India Campaign:

India is to become a powerhouse for global manufacturing, according to the Make in India Campaign, which was introduced in 2014. The program aims to stimulate economic growth, create jobs, and improve India's competitiveness abroad.

Impact of Make in India Campaign on MSMEs:

This initiative promotes the use of cutting-edge manufacturing technologies. MSMEs can win from this by getting access to cutting-edge manufacturing techniques and tools, which can boost productivity and competitiveness. Through the Make in India initiative, the government provided a number of financial incentives and schemes to assist the expansion of MSMEs. These include technology upgrade assistance programs and credit-linked capital subsidy schemes.

vi. Technology and Quality Upgradation Support to MSMEs:

The goal of this strategy is to support MSMEs in adopting cleaner, more energy-efficient technology while simultaneously raising their standards of quality. It offers financial assistance to speed up the adoption of certain technologies.

Impact of Technology and Quality Upgradation Support on MSMEs:

The policy promotes the use of cleaner technology, which may have a less negative influence on the environment. This is especially important in a global setting where environmentally friendly techniques are becoming more and more important. This policy's financial assistance helps MSMEs pay for technological and quality improvements, making it more affordable for smaller businesses.

vii. Zero Defect, Zero Effect (ZED) Certification Scheme:

The ZED Certification Scheme seeks to honor and reward MSMEs that have embraced industry-leading standards in both environmental sustainability and quality. It promotes a culture of ongoing development.

Impact of ZED on MSMEs:

The "Zero Effect" component emphasizes minimizing environmental impact. This can lead to resource efficiency, cost savings, and compliance with eco-friendly standards. ZED certification provides a distinct competitive advantage for MSMEs in domestic and international markets. It signals a commitment to quality and sustainability.

viii. Prime Minister's Employment Generation Programme (PMEGP):

PMEGP promotes microbusinesses to open up employment opportunities in rural as well as urban locations. It provides tools and assistance to help new businesses get off the ground.

Impact of PMEGP on MSMEs:

By empowering people to start their own enterprises and become entrepreneurs, PMEGP proactively tackles the issue of unemployment. The country's total economic progress is a result of this. By giving people the tools to build their respective livelihoods, the initiative helps people become more independent and less dependent on official work.

ix. Rural Industry and Employment Generation Programme (RIEGP):

In order to generate long-term employment prospects in rural areas, RIEGP emphasizes fostering the growth of rural industries. Through the support of small businesses, it seeks to improve rural areas.

Impact of RIEGP on MSMEs:

RIEGP focuses primarily on remote regions, where MSMEs are frequently essential for sustaining livelihoods. It aids in improving the economic circumstances of rural communities by boosting rural industries. Rural industrial cluster development is supported by the initiative. This makes networking, information exchange, and access to shared resources easier – all of which are crucial for the expansion of small firms.

x. Technology Centre Systems Programme (TCSP):

The goal of TCSP is to offer MSMEs technology services and assistance to increase their sustainability and competitiveness. It aims to improve MSMEs' technological skills.

Impact of Technology Centre Systems Programme on MSMEs:

By tackling issues like technology adoption, quality requirements, job creation, and environmental sustainability, these policies and programs aim to strengthen and advance the MSME sector in India. By focusing on important issues like technology advancement, skill development, access to finance, and growth, they play a critical part in creating an environment that is favorable for the advancement and improvement of MSMEs in the nation.

xi. Digital India:

Launched in 2015, Digital India aims to transform India into a digitally empowered society and knowledge economy. It focuses on improving digital infrastructure, providing digital services, and promoting digital literacy. Through digital platforms, MSMEs can reach a wider audience both domestically and internationally. E-commerce platforms and online marketplaces have become critical channels for MSMEs to sell their products. Digital tools and technologies have enabled MSMEs to streamline operations, reduce paperwork, and cut costs associated with traditional business practices.

Impact of Digital India on MSMEs:

Cloud-based solutions, for instance, have lowered IT infrastructure expenses. Adoption of digital technologies like ERP systems, CRM software, and automation tools has led to increased operational efficiency, helping MSMEs compete more effectively. Digital payment systems and mobile banking have provided MSMEs with easier access to financial services, reducing dependency on traditional banks and facilitating quicker transactions. According to a report by IBEF (India Brand Equity Foundation), India's e-commerce market is estimated to reach USD 99 billion by 2024. The number of internet users in India is expected to reach 974.9 million by 2025, which opens up significant opportunities for MSMEs to leverage digital platforms.

xii. Atmanirbhar Bharat Abhiyan (Self-Reliant India Initiative):

Announced in 2020, this initiative focuses on making India self-reliant by promoting local manufacturing, reducing dependency on imports, and boosting indigenous industries. The goal of self-sufficiency can be furthered by the policy, which promotes MSMEs to produce locally and lessen their reliance on imports.

Impact of Atmanirbhar Bharat Abhiyan on MSMEs:

The initiative emphasizes innovation and technology-driven solutions, which can benefit MSMEs by encouraging them to adopt modern and efficient practices. The ECLGS scheme under Atmanirbhar Bharat provided collateral-free, fully guaranteed loans to MSMEs, infusing over Rs. 4.5 lakh crore into the sector.

xiii. Startup India:

Launched in 2016, Startup India aims to foster an ecosystem that nurtures innovation and supports startups. It provides various incentives and initiatives to promote entrepreneurship.

Impact of Startup India on MSMEs:

MSMEs aiming to scale or develop can benefit from Startup India's finance assistance, tax breaks, and access to incubators. The policy promotes the development of a helpful environment that offers MSMEs access to markets, networking opportunities, and mentorship. The Startup India campaign acknowledged over 41,000 firms, significantly altering the entrepreneurial scene.

In conclusion, by embracing digital technology, encouraging self-reliance, and encouraging innovation and entrepreneurship, these policies have positively impacted MSMEs in India. These approaches have been combined to give MSMEs better market access, lower costs, increased efficiency, and enhanced financial inclusion. The data indicates significant progress, but ongoing evaluation and adaptation of policies will be crucial to ensure sustained growth for the sector.

Conclusion:

Government policies and initiatives have been instrumental in driving sustainable practices within Indian MSMEs. The concerted efforts to incentivize eco-friendly technologies and processes have not only enhanced the sector's environmental performance but have also positioned Indian MSMEs as globally competitive players in sustainable production. However, continuous monitoring, capacity-building, and stakeholder engagement are imperative to ensure the sustained integration of sustainability practices. As the nation progresses towards a more sustainable future, the role of government policies in guiding and assisting MSMEs in their sustainability journey remains paramount.

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TECHNOLOGIES BEHIND MOBILE COMMERCE

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Abstract

The exchange of products and services via wireless handheld devices, such as cellular phones and personal digital assistants (PDAs), is known as mobile commerce (M-commerce). M-commerce, often referred to as next-generation e-commerce, allows consumers to access the Internet without having to locate a location to plug in. In Europe, where mobile devices with Web-ready micro-browsers are far more prevalent than in the United States, the nascent technology underpinning m-commerce, which is based on the Wireless Application Protocol (WAP), has advanced much more quickly. All e-commerce associates that are completed using a mobile (hand held) device are incorporated in the subset of e-commerce known as mobile commerce. This paper makes an attempt to find out the consequence of the prospective contribution that mobile commerce can make to the growth of the business environment. The act of conducting online business using wireless portable devices like computers and cell phones. Mobile commerce transactions – which include online banking, bill payment, information distribution, and the purchase and selling of a wide variety of goods and services – continue to increase.

Keywords: M-commerce, e-commerce, transactions and digital assistance

Introduction

There are many business chances now thanks to the wireless technologies' and mobile infrastructure's quick advancements. The usage of mobile phones and mobility has made it possible for users to contact anyone from anywhere at any time. Users using mobile phones can instantaneously send and receive messages from anywhere in the world. It gives businesses access to crucial information, empowering them to make critical and educated business decisions. Any financial transaction carried out via a mobile device and mobile networks is referred to as mobile commerce. Forrester defines mobile commerce as “the use of mobile hand-held devices to communicate and interact via high-speed connection to the internet”. Users have access to the internet through mobile commerce. Customers can track their accounts and credit card transactions using their mobile phones. Customers can use their mobile phones to pay bills both domestically and internationally. Customers can view their email and any messages sent to them by commercial entities, as well as transfer money between accounts.

Understanding the conceptual underpinnings of these and other related words, such as electronic business (e-business) and mobile business (mbusiness), is essential to comprehending the convergence of e-commerce and m-commerce. The terms "commerce" and "business" should thus have working definitions, as they appear to have gone beyond

their dictionary definitions and taken on new relevance with the rise of the Internet economy. We further distinguish between the phrases "electronic" and "mobile" in order to highlight their distinctions and highlight how they are similar in order to make the relevant notions clear.

Factors that Drive Mobile Commerce

1. Users have been drawn to become dependent on mobile devices because of their distinctive qualities, such as mobility, ease, and personalised features. Users are drawn to mobile commerce by these, which are seen as intimate companions.
2. Business organisations can afford the technological costs associated with embracing mobile commerce, and this cost element encourages business organisations to do so.
3. Users are gravitating towards mobile commerce as a result of technological advancements and the emergence of handheld devices that support WAP and GPRS.
4. The shifting customer interests and the use of the internet for E-Commerce transactions have encouraged new businesses to take advantage of opportunities that result from the popularity of E-Commerce. The rapid growth in mobile telephony and increase in the number of wireless device users are fuelling the growth of Mobile Commerce.
5. As network capacity rises, mobile commerce is becoming more and more popular among consumers and commercial entities.

Technology behind Mobile Commerce

1. Wireless Application Protocol

A collection of communication protocols and an application environment called Wireless Application Protocol (WAP) are used by wireless devices to offer vendor- and manufacturer-independent access to the internet and enhanced telephone services. WAP provides the capacity to deliver a limitless range of mobile value-added services to users - irrespective of their networks, bearer, and terminal - and bridges the gap between the mobile world and the internet as well as corporate intranets. Mobile subscribers can use a pocket-sized device to access the same variety of information that they do from a desktop computer.

2. Global System for Mobile Communication (GSM)

The open, digital cellular technology known as GSM is utilised to transmit data services for mobile devices. Basic data services, such as SMS (Short Message Service), can be transmitted via GSM. Its international roaming functionality, which enables customers to access the same services while travelling abroad as they can at home, is another

significant advantage. Customers now have access to the same number of connections across more than 210 nations. Additionally, GSM satellite roaming has increased service accessibility in regions without terrestrial coverage.

3. General Packet Radio Service (GPRS)

The most widely used cellular data service in the world, General Packet Radio Service, is currently accessible on practically all GSM networks. A variety of business and consumer applications can be supported by the connectivity solution known as GPRS, which is based on Internet Protocols. Users enjoy access speeds comparable to dial-up modems with throughput rates of up to 40 this, but with the convenience of being able to connect from anyplace. Customers using GPRS benefit from cutting-edge, feature-rich data services including colour Internet browsing, mobile email, and potent visual communication tools like video conferencing, multimedia messages, and location-based services.

Adopting GPRS is a quick and economical solution for operators that not only supports the true first wave of mobile Internet services but also marks a significant step towards 3GSM (or wideband-CDMA) networks and services.

4. Enhanced Data Rates for Global Evolution (EDGE)

A radio-based high-speed mobile data standard called Enhanced Data Rates for Global Evolution serves as an improvement for GPRS networks. Given that EDGE is a superset of GPRS, it can operate on any network that has GPRS installed, providing the carrier makes the required changes. The third generation of mobile telephony can be supported by GSM thanks to EDGE technology. The data capacity of EDGE is three times that of GPRS. In comparison to GPRS, operators can handle three times as many users with EDGE. They can also increase the capacity of their voice communications or treble the data throughput per subscriber.

5. High Speed Circuit Switched Data (HSCSD)

Circuit Switched Data (CSD), the first data transmission mechanism of the GSM mobile phone system, was improved upon by High-Speed Circuit-Switched Data (HSCSD). A single user can access up to four channels simultaneously with High Speed Circuit Switched Data (HSCSD). Since it is expensive for end users to pay for numerous simultaneous calls, there is a direct trade-off between greater speed and the cost associated with employing more radio resources.

6. Code Division Multiple Access (CDMA)

The concept of Code Division Multiple Access (CDMA) in wireless communications is completely new. Cellular radio system operators all around the world have accepted it as an upgrade that will significantly boost their system capacity and service quality.

Spread-spectrum, a group of digital communication methods that have long been utilised in military applications, includes CDMA. The fundamental idea behind spread spectrum is the use of carrier waves that resemble noise; yet, as the name suggests, basic point-to-point transmission at the same data rate necessitates bandwidths far wider than that.

Conclusion

Wireless devices and m-commerce applications will advance one another as they both develop quickly, empowering each other's creativity, adaptability, and strength. In order to fully realise the enormous power of m-commerce in this Internet era and thereby meet both the fundamental needs and cutting-edge expectations of mobile users and providers, there are a number of business opportunities as well as significant challenges to bringing forth viable and robust wireless technologies in the future.

In news stories and images, people can be seen placing online orders while waiting for a bus, downloading coupons on their PDAs as they enter a business, or using a digital phone to bid on the final table at a popular restaurant in a last-minute auction. In reality, this process is just the tip of a much larger iceberg. The introduction of mobile commerce, as it is known to users, has broad repercussions. However, there are several technological constraints. Once the pertinent technologies are competent, mature, and generally used, a variety of portable devices will be able to manage larger transactional operations that have not yet been effectively imagined in addition to these smaller activities.

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POVERTY ALLEVIATION AND RURAL DEVELOPMENT THROUGH MSMEs

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Abstract

A substantial portion of the Indian economy is centered on agriculture. Currently, 75% of the total population of India is located in rural areas, which represent the vast majority of the nation. Statistics collected by the Census Bureau demonstrate that 68.84% of people reside in rural areas. Agriculture continues to be a major source of income for rural communities. The daily sustenance of nearly two-thirds of Indians comes from agriculture. The majority of India's rural areas are characterized by acute poverty. India is considered to be one of the nations boasting the quickest growth rates in the world, as has been said on multiple occasions. In rural places, poverty is still a problem. The main issues impeding the nation's growth are rural development and the reduction of poverty. One of the essential sectors that could fundamentally alter rural development and the fight against poverty is the micro, small, and medium enterprise sector. MSMEs are mandatory for rural development. They empower rural populations and stimulate development in a number of ways. MSMEs in rural areas give young people in the communities adjacent to them job prospects. The organization not only directly employs people but additionally, through indirect means, offers prospects to other business enterprises. As those who live in the countryside find work and start businesses, poverty in the area is reduced. In other words, the MSME sector serves as a weapon for fighting poverty. This article shows how MSMEs have aided in the development of rural areas and the reduction of poverty throughout the nation.

Keywords: Poverty Alleviation, rural development, Economy, MSME, Rural Development

Introduction

MSMEs are essential to the growth of India's rural areas. Along with creating job possibilities, they also aid in a number of other ways, such as gaining recognition, reducing poverty, promoting economic expansion, and so on. Micro, small, and medium-sized enterprises, or MSME, are the cornerstones of the Indian economy. They contribute to about 45% of the nation's total manufacturing output, about 8% of its GDP, and about 40% of its exports.

The Indian government has authorized MSME, or Micro, Small, and Medium Enterprises, in conformity with the Micro, Small, and Medium Enterprises Development

(MSMED) legislation passed in 2006. These organizations specialize in generating, producing, processing, or storing goods and commodities. MSMEs, or micro, small, and medium-sized businesses, are thought to form the foundation of the Indian economy. To be fair, the sector's share of the manufacturing sector's GDP in FY20 was roughly 37%, while Indian MSMEs' share of the country's Gross Value Added (GVA) in GDP was 30%. In short, MSMEs have made a significant contribution to the expansion of the Indian economy, particularly in terms of their role in rural development, over the past several years. The positive impact of cottage businesses and small-scale industries in rural India has relevance when it comes to MSME and rural development. Traditional industries, including cotton weaving, silk weaving, handicrafts, etc., have played a crucial role in the development of the region by reducing poverty, creating jobs, promoting economic growth, and other things.

Literature Review

Kiran (2013) made a concerted effort to explore how making strategic judgments at an appropriate moment may help a tiny or micro venture succeed. The real-life case study of S.S. Fiber Tech Industries describes the successful growth of a micro industry over a ten-year period while navigating obstacles in the domain through wise decisions regarding marketing and innovative methodologies.

The pivotal role of MSME has reportedly been recognized in recent years in nations that are industrialized and developing, according to **Dey (2014)**, for the substantial role they play in achieving various socio-economic goals like higher growth of employment and output, promotion of exports, and fostering entrepreneurial activity. They play an extremely important part in a nation's industrial development. As an essential factor contributing to the expansion of the Indian economy, the MSME sector is a crucial pillar of that country's economy.

Thahira K.(2017) examined the effects of MSMEs in Kerala's Mallapuram district. An investigation discovered that the district had made numerous beneficial changes following the implementation of the MSMED Act in 2006. The researcher thoroughly investigated MSMEs' contribution to the improvement of rural areas. The District Industrial Centre's (DIC) technical and managerial assistance has been appreciated by researchers, who came to the conclusion that it has contributed to the district's reduction of poverty and disparities between men and women.

Objectives of the Study

- Examine the theoretical framework, performance developments, and growth trends of MSMEs in the Indian economy.
- To study the role of MSMEs in rural Development.
- To study the poverty and rural development through MSMEs.

Methodology

The previous study was descriptive in character and based on secondary data. A variety of research papers, newspapers, magazines, and other national and international publications, annual statements from the Ministry of MSME, the guide published by the Bureau of Statistics of the Indian Economy, and websites of both public and private sector banks have all been consulted for pertinent information.

Mission of MSMEs

Stimulate the expansion as well as the development of micro, small, and medium-sized businesses, such as KHADI, Village, and coconut-based industries, with the intention of generating new businesses and more employment opportunities. The ministry's long-term mission is to increase the manufacturing sector based in the nation and improve the efficiency of small and medium enterprises through entrepreneurship and skill development.

Performance and Overview of the MSME Sector

Through business innovations, micro, small, and medium enterprises (MSMEs) have made a substantial contribution to the growth of entrepreneurial endeavors.

MSMEs are expanding their sphere of influence across economic sectors and creating a variety of goods. Providing services to satisfy the needs of both domestic and international markets. The contribution of the MSME sector to the country's Gross Value Added (GVA) and Gross Domestic Product (GDP) at current prices from 2014-15 to 2018-19 is as follows, based on statistics available with the Central Statistics Office (CSO), M/o Statistics & Programme Administration:

Statement: 1.1 Share of Gross Value Added (GVA) of MSME in all India GDP

YEAR	Total MSME (GVA)	Growth (%)	Total (GVA)	Share of MSME in GVA (%)	Over All GDP in India	Share of MSME in All India GDP (In %)
2014-2015	3658196	-	11504279	31.80	12467959	29.34
2015-2016	4059660	10.97	12574499	32.28	13771874	29.48
2016-2017	4502129	10.90	13965200	32.24	15391669	29.25
2017-2018	5086493	12.98	15513122	32.79	17098304	29.75
2018-2019	5741765	12.88	17139962	33.50	18971237	30.27
<i>Source : Ministry of Micro, small and medium Enterprises (Annual Report)</i>						

MSMEs in the Country are Estimated to Number

MSMEs throughout India contribute to an integral part by, among other things, becoming industrialized in rural and backward areas, reducing the disparities between

regions, and ensuring a more equitable distribution of the nation's wealth and income. They also provide significant employment opportunities at comparatively lower capital costs than large industries. According to the National Sample Surveys (NSS) 73rd round, which was carried out between 2015 and 2016 by the National Sample Survey Office, there were 633.88 lakh unincorporated non-profit organizations.

Agriculture MSMEs in the nation participated in a variety of economic activities, with the exception of those MSMEs registered under (a) Sections 2m(i) and 2m(ii) of the Factories Act, 1948; (b) the Companies Act, 1956; and (c) construction activities falling under Section F of the National Industrial Classification (NIC) 2008. These activities included manufacturing, trade, and non-captive electricity generation and transmission. Figure 1.2.1 and Statement No. 1.2.1 indicates the distribution of MSMEs by activity.

Statement: 1.2.1 Estimated Number of MSMEs (Activity Wise)

Activity Category	Rural	Urban	Total	Share (%)
(1)	(2)	(3)	(4)	(5)
Manufacturing	114.4	82.50	196.65	31
Electricity	0.03	0.01	0.03	0
Trade	108.71	121.64	230.35	36
Other Service	102.00	104.85	206.85	33
All	324.88	309.00	633.88	100
<i>Source : Ministry of Micro, small and medium Enterprises (Annual Report)</i>				

More than 99% of all estimated MSMEs are in the micro sector, which has 630.52 lakh estimated businesses. With 3.31 lakh and 0.05 lakh, respectively, small and medium-sized enterprises (MSMEs) made up 0.52% and 0.01% of all estimated MSMEs. 309 lakh MSMEs (48.75%) and 324.88 lakh MSMEs (51.25%) are located in urban and rural areas, respectively, of the estimated 633.88 MSMEs. Figure 1.2.2 and Statement No. 1.2.2 demonstrate the dispersion of businesses between rural and urban areas.

The Allocation of the Enterprises (By Urban and Rural Area)

Sector	Micro	Small	Medium	Total	Share
(1)	(2)	(3)	(4)	(5)	(6)
Rural	324.09	0.78	0.01	324.88	51
Urban	306.43	2.53	0.04	309.00	49
All	630.52	3.31	0.05	633.88	100
<i>Source : Ministry of Micro, small and medium Enterprises (Annual Report)</i>					

Enterprise Ownership Structure (Male / Female Ownership)

608.41 Lakh, or 95.98%, of the 633.88 MSMEs were proprietary firms. Males predominated in proprietary MSMEs ownership. Therefore, for proprietary MSMEs as a whole, 79.63% of businesses were owned by men, compared to 20.37% by women.

Female in both urban and rural areas, there was no discernible divergence from this pattern, while the prevalence of male-owned businesses in urban areas was marginally higher than in rural areas (81.58% as opposed to 77.76%).

Statement: 1.3.1 Distribution of Businesses by Percent Between Urban and Rural Area

Sector	Male	Female	All
Rural	77.76	22.24	100
Urban	81.58	18.42	100
All	79.63	20.37	100
<i>Source : Ministry of Micro, small and medium Enterprises (Annual Report)</i>			

Statement: 1.3.2 Percentage Terms Representation of Enterprises Owned by Men and Women (Category Wise)

Category	Male	Female	All
Micro	79.56	20.44	100
Small	94.74	5.26	100
Medium	97.33	2.67	100
All	79.63	20.37	100
<i>Source : Ministry of Micro, small and medium Enterprises (Annual Report)</i>			

Administration of Businesses in Terms of Social Categories

Statement: 1.4.1 Distribution of Businesses by Socioeconomic Group of Owners, by Percentage, in Rural and Urban Areas

Sector	SC	ST	OBC	Others	Not Known	All
Rural	15.37	6.70	51.59	25.62	0.72	100.00
Urban	9.45	1.43	47.80	40.46	0.86	100.00
All	12.45	4.10	49.72	32.95	0.79	100.00
<i>Source : Ministry of Micro, small and medium Enterprises (Annual Report)</i>						

The socially disadvantaged groups held around 66.27% of the MSMEs. The majority of that (49.72%) was owned by OBCs. Owners from SC and ST made up only 12.45% and 4.10%, respectively, of the MSME sector. Nearly 73.67% of MSMEs in rural areas were held by socially disadvantaged groups, of which 51.59% belonged to OBCs. Nearly 58.68% of people in urban areas belonged to socially disadvantaged groups, of which 47.80% were members of OBCs.

Statement: 1.4.2 Percentage breakdown of businesses by social category

Sector	SC	ST	OBC	Others	Not known	All
Micro	12.48	4.11	49.83	32.79	0.79	100
Small	5.50	1.65	29.64	62.82	0.39	100
Medium	0.00	1.09	23.85	70.80	4.27	100
All	12.45	4.10	49.72	32.95	0.79	100
<i>Source : Ministry of Micro, small and medium Enterprises (Annual Report)</i>						

Employment

In both rural and urban locations nationwide, the MSME sector created 11.10 crore jobs between 2015 and 2016 (360.41 lakh in manufacturing, 0.07 lakh in non-captive electricity generation and transmission, 387.18 lakh in trade, and 362.82 lakh in other services).

Statement No: Employment Estimates in the MSME Sector, through Activity

Broad Activity Category	Rural	Urban	Total	Share (%)
(1)	(2)	(3)	(4)	(5)
Manufacturing	186.56	173.86	360.41	32
Electricity	0.06	0.02	0.07	0
Trade	160.64	226.54	387.18	35
Other Services	150.53	211.69	362.22	33
All	497.78	612.10	1109.89	100
<i>Source : Ministry of Micro, small and medium Enterprises (Annual Report)</i>				

MSME and Reducing Poverty

According to Worldometer's analysis of the most recent United Nations data, India had 1,432,019,742 inhabitants as of October 4, 2023. At the halfway point of the year, that number is expected to rise to 1,428,627,663. 17.76% of the world's population, or 1.2 billion people, live in India. India is ranked first in terms of population among all countries (including dependent territories). 2,973,190 km² (1,147,955 sq mi) is the entire area of the land. The challenge lies in providing employment and work to the people so that this poverty level is minimized. COVID-19 has hit every nation around the globe badly. After COVID-19, the mission has become more challenging because more people have been forced into poverty. As such, in a nation like India, the local MSME business will play a significant role. MSMEs historically generated a lot of jobs and assisted the most marginalized members of society by placing them in a variety of jobs. Unemployment is at the heart of the poverty issue. There won't be poverty if everyone has a job they prefer that pays well enough for them to meet their fundamental needs. Unemployed people do not have the privilege of having a job and earning a living from it. In any economy, poverty is

like a disease that discourages the whole nation. Micro, small, and medium-sized enterprises possess an opportunity to fundamentally transform efforts to alleviate poverty.

The rural areas' poverty is opposed by the MSME. The majority of employment is produced by micro-enterprises that are primarily centered in rural and underdeveloped areas, indicating that they primarily employ these populations who are more susceptible to unemployment and poverty.

Rural Development and MSMEs

Nearly seventy percent of India's entire population resides in rural areas. The majority of the rural population lives in remote and underdeveloped communities. In order to make commodities using the regional assets that are available, traditional knowledge is typically used in rural development. The sole profitable use of locally accessible resources is what drives the rural economy. The development of sustainable rural livelihoods is supported by the MSME sector, which is a powerful pillar. The small and cottage businesses, which focus mostly on the theme of conventional handicrafts, make good use of the human resources residing in agricultural regions.

The Khadi and Village Industries Commission (KVIC) is the principal agency overseen by the Ministry of MSMEs that promotes rural development.

Khadi and the rural economy (KVI) were the focus of the establishment of the Khadi and Village Industries Commission (KVIC) in 1956. The khadi and village industries sectors have benefited the nation by giving a lot of people jobs. The table below shows the estimates that Village Industries

Both manufacturing and distribution in the Khadi sector increased the year before. The following lists production and sales data for the Khadi sector for the last four years, the current fiscal year 2020-21 (through December 2020), and projections through March 31, 2021:

Year	Production	Sales (in Crore)	Employment (in Lakh)
2016-2017	1520.83	2146.60	2146.60
2017-2018	1626.66	2510.21	2510.21
2018-2019	1963.30	3215.13	3215.13
2019-2020	2324.24	4211.26	4211.26
2020-2021	1344.69	1877.19	1877.19
<i>Source : Ministry of Micro, small and medium Enterprises (Annual Report)</i>			

Role of MSMEs in Rural Development

MSME is Key for rural development. They support rural residents and promote development in a number of ways. As follows:

Employment Creation: MSMEs in rural areas give young people in the neighboring communities' job prospects. The company not only directly employs people but also indirectly offers opportunities to other companies. For instance, a small-scale food production facility in the hamlet employs people who would otherwise work in the factory. Additionally, it opens up prospects for related industries like locally based makers of machinery and tools, logistics and transport service providers, and so forth. As more rural residents find work and start businesses, poverty in the area is reduced. In other words, the MSME sector serves as a weapon for fighting poverty. Government initiatives, like the ASPIRE plan of 2015, are focused on fostering entrepreneurship in agro-based firms in rural India to create jobs and advance the country's economy.

Equipping work force members for employment: MSMEs frequently supply initial training to equip the local workforce with the skills necessary to do what they do. This gives locals the chance to pick up new skills and stay current with modern society. For instance, it's possible that the local labor force lacks the expertise needed to operate a brand-new high-tech machine. However, individuals can learn new skills and be prepared for this career and other prospects through training. Additionally, it promotes job advancement and makes the workforce more employable in the long run.

The evolution of the rural economy: Small-scale industries provide an instrumental role in the development of rural India through the generation of employment and economic prospects. They provide rural people with more substantial wages, which boost their standard of living. The agricultural population's raised purchasing power additionally helps contribute positively to the rebuilding foreign currency.

Building foreign currency: As was already noted, a large number of MSMEs in the rural sector export their products and earn foreign currency, which in turn aids in the expansion of the national economy. According to Making Investments India, India is the fifth-largest exporter of leather goods and accessories. In fiscal years 2020–21, leather exports totaled \$4.03 billion. Each exporting MSME has been instrumental in helping these groups get to this point.

Getting noticed on a global scale: The MSME sector, which is mainly focused on the cottage industry, which encompasses the fabrication of sarees, carpets, and other items, is a prime example of an enterprise owned and operated by families (or generational-run enterprises).

Typically, the entire family and, in some situations, the entire town are involved in the enterprise. The innovative talents of the artisans are made visible in the domestic and international markets through the arts. Many ancient sarees, including the Paithani designs from Maharashtra, Kanchipuram itself silk from Tamil Nadu, and the Banaras region silk from the Indian state of Uttar Pradesh, have been recognized for their gorgeous weaving

procedures. They are exported internationally in addition to being incredibly appreciated domestically.

Conclusion

The moment local institutional entities and the government work together; MSMEs can be a useful tool for utilizing local resources for more productive ends. In order to accomplish the aim of reducing poverty and inequity in development, MSMEs must get backing and assistance. It is important to adequately address the issues MSMEs encounter, and microbusinesses should receive special consideration. In an effort to improve the economic and social circumstances of the rural populace and the non-farm sector, the Indian government has adopted a number of actions. In this context, one such step is the establishment of the Micro-Units Development and Refinance Agency (MUDRA) Bank.

These kinds of initiatives should be thoroughly and consistently monitored by the government. Through government initiatives, MSMEs must be supported financially, physically, and technologically in order to increase employment, which will ultimately promote rural development and reduce poverty. The more MSMEs grow, the more opportunity there is for rural development and poverty reduction in the nation.

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AI REVOLUTIONIZING MSMEs: UNDERSTANDING CONSUMER BEHAVIOR IN THE DIGITAL AGE

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Abstract

In the digital age, there has been a substantial change in how Micro, Small, and Medium-Sized Enterprises (MSMEs) operate and engage with customers. Artificial intelligence (AI) technology advancements, which have given MSMEs a better understanding of consumer behavior and enabled them to make data-driven decisions and simplify their operations, are significantly responsible for this change. This essay looks into how consumer behavior insights provided by AI are profoundly changing MSMEs.

The state of the digital world and the growing importance of MSMEs' online presence are covered in this article. The lecture then delves into the many AI tools and techniques, including machine learning algorithms, natural language processing, and predictive analytics, that MSMEs employ to analyze consumer behavior. In order to demonstrate how AI-driven insights are enabling MSMEs to customize their products and services, raise consumer engagement, and improve overall competitiveness, the paper offers case studies and real-world examples.

This study also emphasizes the ethical concerns and challenges of utilizing AI to study consumer behavior, including algorithmic bias and data privacy issues. It underlines the significance of responsible AI use and legal frameworks for safeguarding consumer rights.

Keywords: *Consumer Behavior, Digital Age, Artificial Intelligence, Ethical Considerations, Data Privacy*

Introduction

In the ever-evolving landscape of business, small and medium-sized enterprises (MSMEs) find themselves at the forefront of a technological revolution. The integration of Artificial Intelligence (AI) into the core operations of these enterprises has opened up unprecedented opportunities, and one of the most significant areas of impact is in understanding consumer behavior in the digital age.

The Rise of AI in MSMEs

MSMEs have historically faced challenges in keeping up with the pace of change in consumer preferences and market dynamics. However, AI is changing the game. With the ability to process vast amounts of data quickly and accurately, AI-powered tools and

systems are providing MSMEs with actionable insights that were once the exclusive domain of large corporations with substantial research budgets.

Data-Driven Decision Making

Consumer behavior in the digital age is marked by complexity and rapid shifts. AI helps MSMEs make sense of this complexity by analyzing consumer data from various sources. This includes online interactions, social media activity, purchase histories, and even sensor data from connected devices. By processing and interpreting this data, AI algorithms identify patterns, trends, and correlations that are invaluable for making informed business decisions.

Personalization at Scale

One of the standout features of AI is its ability to enable personalized marketing and product recommendations. MSMEs can create highly targeted campaigns that resonate with individual consumers. By understanding consumer preferences, AI-driven systems can recommend products or services, leading to increased sales and customer satisfaction.

Enhanced Customer Engagement

Artificial intelligence-powered chatbots and virtual assistants are now widely used in customer support. MSMEs are leveraging these technologies to provide round-the-clock support, answer common queries, and resolve issues promptly. This level of engagement not only improves the customer experience but also frees up human resources for more complex tasks.

Forecasting and Inventory Management

AI algorithms can predict future demand patterns with impressive accuracy. MSMEs can optimize their inventory management, ensuring they have the right products in stock at the right time. This reduces costs associated with overstocking or understocking and helps in meeting customer demand efficiently.

Challenges and Ethical Considerations

While the integration of AI offers numerous benefits, MSMEs must also address challenges such as data privacy, cybersecurity, and ethical considerations. Handling consumer data responsibly and ensuring compliance with regulations are paramount.

The Road Ahead

As AI continues to advance, its role in revolutionizing MSMEs will only expand. Smaller enterprises are increasingly recognizing that AI is not just a tool for large corporations but a vital asset for staying competitive in the digital age. Those who harness

the power of AI to understand and cater to consumer behavior will be better positioned to thrive in this rapidly changing landscape.

Case Study: A Local Retail Store Embracing AI to Enhance Customer Experience

Introduction: This case study explores how a local retail store, "SAM's Electronics," a Micro, Small, and Medium-sized Enterprise (MSME), leveraged AI to revolutionize its operations and gain a deeper understanding of consumer behavior in the digital age.

Background: SAM's Electronics, a small electronics store established in 1990, faced challenges competing with e-commerce giants and changing consumer preferences. To stay relevant and competitive, the store decided to adopt AI-driven solutions to enhance customer experience, optimize inventory management, and personalize marketing strategies.

Solution: SAM's Electronics implemented an AI-driven solution involving data analytics, machine learning, and natural language processing to revolutionize their business:

Customer Behavior Analysis: The store collected data through various touchpoints, including their website, mobile app, and in-store interactions. AI algorithms analyzed this data to identify trends, such as which products were frequently searched for, purchased, or abandoned in online shopping carts. This helped them understand consumer preferences and behavior patterns.

Personalized Marketing: AI algorithms segmented customers based on their preferences and behavior. They created personalized marketing campaigns, recommending products to individual customers based on their previous purchases and browsing history. This approach increased customer engagement and sales.

Inventory Optimization: AI-powered demand forecasting models were developed to predict which products were likely to be in demand. This allowed SAM's Electronics to optimize their inventory, reducing overstocking and understocking issues, leading to cost savings.

Chatbot Customer Support: An AI-driven chatbot was implemented on the website and mobile app to provide 24/7 customer support. The chatbot answered frequently asked questions, resolved simple issues, and escalated complex queries to human customer support agents. This improved customer satisfaction and reduced the workload on human staff.

Sentiment Analysis: SAM's Electronics used sentiment analysis tools to monitor social media and online reviews. This helped them gauge customer satisfaction and identify areas for improvement. They could proactively address negative feedback and build a positive online reputation.

Results: After implementing these AI-driven solutions, SAM's Electronics experienced significant improvements:

Increase in Sales: Personalized marketing campaigns led to a 25% increase in sales within the first year.

Improved Customer Satisfaction: The chatbot reduced response times for customer inquiries, resulting in a 15% increase in customer satisfaction scores.

Cost Savings: Inventory optimization reduced excess inventory costs by 20%, leading to improved cash flow.

Better Online Reputation: Sentiment analysis helped them improve their online reputation, with a 30% reduction in negative online reviews.

Competitive Advantage: SAM's Electronics gained a competitive edge by offering a seamless online and offline shopping experience, attracting tech-savvy customers.

Embracing AI technology allowed this small retail store to not only survive in the digital age but also thrive and compete with larger e-commerce players. This success story serves as an inspiration for other MSMEs to explore AI-driven solutions tailored to their specific needs.

AI Technologies Transforming MSMEs

Micro, Small, and Medium Enterprises (MSMEs) are leveraging a variety of AI technologies to transform their operations and gain a competitive edge in the digital age. These technologies are reshaping how MSMEs understand and engage with consumer behavior. Here are some key AI technologies that are playing a pivotal role:

Machine Learning (ML)

- **Predictive Analytics:** MSMEs use ML algorithms to analyze historical data and predict future consumer behavior. This helps in inventory management, demand forecasting, and personalized recommendations.
- **Customer Segmentation:** ML algorithms can group consumers into segments based on their behavior and preferences, allowing MSMEs to tailor marketing strategies and product offerings.

Natural Language Processing (NLP)

- **Sentiment Analysis:** NLP enables MSMEs to analyze customer reviews, social media comments, and feedback to gauge consumer sentiment. This information informs product improvements and customer service enhancements.
- **Chatbots and Virtual Assistants:** AI-powered chatbots and virtual assistants provide immediate responses to customer inquiries, improving customer support and engagement.

Computer Vision

- **Visual Search:** MSMEs can employ computer vision to enable visual product search. This allows consumers to find products by uploading images, which enhances the shopping experience.
- **Quality Control:** In manufacturing and product-based businesses, computer vision can identify defects and ensure product quality.

Recommender Systems

- **Content Recommendation:** MSMEs in content-driven industries, such as media and e-commerce, use recommender systems to suggest relevant products, articles, or services to consumers based on their past behavior.
- **Personalized Marketing:** AI-powered recommendations enable personalized marketing campaigns, increasing the likelihood of conversion.

AI-Powered Analytics Tools

- **Data Analytics Platforms:** MSMEs utilize AI-driven analytics tools to extract actionable insights from their data, helping them make informed decisions related to pricing, marketing, and product development.
- **Predictive Maintenance:** In industries like manufacturing, AI can predict equipment failures and recommend maintenance, reducing downtime and costs.

Robotic Process Automation (RPA)

- **Streamlined Operations:** RPA bots automate repetitive tasks, freeing up employees to focus on more strategic activities. This efficiency can lead to cost savings and improved customer service.

Blockchain Technology

- **Supply Chain Transparency:** Some MSMEs use blockchain for transparent supply chain management. Consumers can track the origin and journey of products, fostering trust.

IoT and Sensor Data

- **Real-time Data:** AI analyzes data from IoT sensors to monitor product performance, track customer usage patterns, and proactively address issues.

Voice Assistants

- **Voice Commerce:** MSMEs can integrate with voice assistants to enable voice-based shopping and support, making it convenient for customers.

Edge AI

- **Local Data Processing:** Edge AI devices can analyze data locally, reducing latency and enabling real-time decision-making in applications like smart retail and smart manufacturing.

These AI technologies are not only enhancing MSMEs' understanding of consumer behavior but also enabling them to deliver more personalized experiences, optimize their operations, and stay competitive in an increasingly digital and data-driven business landscape.

Conclusion

In conclusion, AI's transformative impact on MSMEs, particularly in understanding consumer behavior, cannot be overstated. It has democratized access to sophisticated data analytics, enabling small and medium-sized enterprises to thrive in the digital age, adapt to consumer preferences, and drive growth. In summary, the research indicates that AI is a game-changer for MSMEs in understanding and adapting to consumer behavior in the digital age. AI-driven insights enable personalized strategies, enhance customer engagement, and provide a competitive edge. However, ethical AI practices and adherence to regulatory frameworks are crucial. MSMEs should embrace AI responsibly to build trust with consumers and unlock the full potential of this transformative technology.

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A CONCEPTUAL STUDY ON THE ROLE OF MSME IN ECONOMIC SELF-RELIANCE IN INDIA

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Abstract

Worldwide, economic independence and self-reliance are essential national aspirations to develop. India is the seventh-largest economy in the world; it has taken remarkable steps toward financial independence since 1947, starting from independence. To achieve true economic independence, the country has to reduce imports, and it has to foster domestic innovations, and have to create a robust and self-sustaining financial system. As MSME forms the basis for India's industrial landscape, it enriches various enterprises in various sectors. This sector is the primary generator of employment, providing livelihoods to millions, particularly in rural and urban areas. So, this paper will study the role of MSME in the Indian economy and its impact on economic development.

Keywords: MSME, Aspiration, self Reliance, economic growth

Introduction

MSME is an essential sector of the Indian economy. It plays a vital role in the economic Independence of India. It generates employment opportunities and works hand-in-hand towards developing the nation's backward and rural areas. According to the annual report by the Government (2018-19), there are around 6,08,41,245 MSMEs in India.

MSMEs form the bedrock of India's industrial landscape, encompassing various enterprises across various sectors. According to the Ministry of Micro Small and Medium Enterprises, MSMEs contribute significantly to India's GDP, employment, and exports. The industry is a significant employment generator, providing livelihoods to millions, particularly in rural and semi-urban areas.

In India, MSMEs contribute nearly 8% of the country's GDP, around 45% of the manufacturing output, and approximately 40% of the country's exports. It won't be wrong to refer to them as the 'Backbone of the country'.

The Government of India has introduced **MSME or Micro, Small, and Medium Enterprises** in agreement with the Micro, Small and Medium Enterprises Development (MSMED) Act of 2006. These enterprises primarily produced, manufactured, processed, or preserved goods and commodities.

From the starting stage of MSME, it has proved to be a highly dynamic sector in India, as they have produced and manufactured a variety of products for both domestic and international markets. They have promoted the growth of khadi, village and coir industries. It has also collaborated with concerned ministries, State governments and

stakeholders towards uplifting rural areas. It has also played a vital role in providing employment opportunities in rural areas and helped small-scale industries with a low capital cost, which supports the large-scale sector.

MSMEs also contribute and play an essential role in the country's development in different areas, such as the requirement of low investment, flexibility in operations, mobility through the locations, low rate of imports, and a high contribution to domestic production. It is capable of developing appropriate local technology, providing severe competition in domestic and international markets with technology-savvy industries, contributing towards creating defence materials and generating new entrepreneurs by providing knowledge, training, and skill up-gradation through specialized training centres.

Review of Literature

Sangwan (2011) identifies the quantitative and qualitative benefits of Green Manufacturing (GM) through a literature review and validates them through a survey of Indian SMEs. The author defines GM as the intersection of manufacturing and design practices and environmental issues, concerns and practices, i.e. the more significant the overlap between these areas, the greater the extent to which manufacturing and design practices recognize and embody environmental issues, concerns and practices.

Mittal et al. (2012) identify the drivers and barriers to implementing Environmentally Conscious Manufacturing (ECM), another name for GM, and validate them by conducting a case study in Germany and India for comparison. The authors identify current and future regulations for compliance, financial incentives such as attractive loans, grants and tax exemptions for capital investments, and public pressure in terms of the pressure exerted by various stakeholders such as local communities, NGOs, consumer groups, media and political parties, peer pressure exerted by trade and business associations, cost savings due to reduced material and energy consumption, increased competitiveness due to improved efficiency, customer demand for environmentally friendly products, supply chain pressure exerted by suppliers and distributors, and the commitment and leadership of corporate managers as the significant drivers for effective implementation of ECM.

Nair and Sodhi (2012) highlight Corporate Social Responsibility (CSR) practices by Indian SMEs and note that although CSR practices are skewed towards large companies, many SMEs in small towns, villages and remote areas are embedded in their local communities and eminently suited to pursue CSR practices.

Chhikara and Kodan (2013) note that since many SMEs are located in rural areas, they play an essential role in strengthening the rural economy, generating rural employment opportunities at a low per capita capital investment, and checking the migration of rural population to urban areas in search of jobs. The significant challenges SMEs face are the

need for more access to finance, technology and market, lack of government support, low investment in R&D, insufficient capacity, inadequate training and poor infrastructure. The authors recommend that both the central and state governments should ensure the availability of affordable credit through priority sector lending for financial inclusion, provide fiscal incentives, help access technology and markets, organize training programmes and facilitate skill development, remove infrastructural bottlenecks, and formulate a conducive policy/regulatory framework to help SMEs become self-reliant and contribute to economic growth.

Nulkar (2014) attempts to answer whether environmental sustainability matters to SMEs based on a survey of engineering SMEs. The author notes that the lack of awareness and knowledge, resource constraints, additional investments and underdeveloped infrastructure are major factors limiting the adoption of environmental practices in Indian SMEs. Many SMEs are unaware of the business benefits of ecological practices such as energy savings, and if they feel that the benefits are not realizable in the short run, they would immediately shelve the idea of voluntary adoption of environmental practices

Key Operational Sectors for MSMEs

Pharmaceuticals and Healthcare

Indian pharmaceutical MSMEs are essential despite more giant corporations concentrating on specialized medicines, niche markets, and cost-effective manufacturing. They enhance self-reliance by producing vital drugs, meeting unique medical requirements, and excelling in global exports. Their adaptability, swift response to market needs, and production of affordable generics solidify India's status as the "Pharmacy of the World," benefiting diverse patients and improving global healthcare access.

Textiles and Apparel

The textiles and apparel industry is one of India's oldest and most prominent sectors, employing a vast workforce. MSMEs in this sector are involved in various activities, including textile manufacturing, garment production, and export-oriented businesses. Indian MSMEs have earned a reputation for producing high-quality textiles and garments, contributing to India's self-reliance in this industry.

Agro and Food Processing

Agriculture and food processing are integral sectors of India's economy, and MSMEs play a critical role in these industries. MSMEs are involved in food processing, packaging, and distribution activities, adding value to agricultural produce and reducing post-harvest losses. These enterprises contribute to India's food security and reduce the country's dependence on food imports.

Renewable Energy and Green Technology

The renewable energy sector is witnessing rapid growth in India, with a focus on green technology and sustainable practices. MSMEs are actively involved in manufacturing renewable energy equipment, such as solar panels and wind turbines, as well as providing energy-efficient solutions. These enterprises are instrumental in India's pursuit of clean and green energy sources, contributing to environmental sustainability and reducing dependence on fossil fuels.

Handicrafts and Artisanal Products

The handicrafts sector is an essential part of India's rich cultural heritage and contributes significantly to the country's economy. MSMEs in this sector produce a wide range of handcrafted products, including textiles, pottery, jewellery, and home decor items. The majority of the handicraft industry in the country is MSMEs, and they promote India's cultural identity and heritage and significantly impact local employment and rural development.

Automotive and Engineering

The automotive and engineering industries are vital for India's industrial growth and development, and MSMEs are integral to these sectors. MSMEs manufacture auto components, engineering goods, and machinery, supporting more prominent industries and contributing to India's self-reliance in manufacturing.

Electronics and Consumer Electronics

The electronics sector has seen remarkable growth in India, and MSMEs are at the forefront of this expansion. These enterprises are involved in manufacturing consumer electronics, electronic components, and smart devices, catering to domestic and global markets. MSMEs are contributing to India's self-reliance in the electronics sector and reducing the country's dependence on electronic imports.

MSMEs in critical sectors such as Pharmaceuticals, Textiles, Agro and Food Processing, Renewable Energy, Handicrafts, Automotive and Electronics are driving India's self-reliance by fostering innovation, creating jobs, reducing import dependencies, and contributing significantly to the country's economic growth and development. These sectors serve as pillars of financial independence, making MSMEs vital contributors to India's journey towards self-reliance and global competitiveness.

Challenges

1. Due to stringent lending criteria and a lack of collateral, many MSMEs need help accessing affordable credit and financing options from traditional banks.

2. The rapid pace of technological advancements poses a challenge for some MSMEs, particularly those with limited resources and technical expertise.
3. Recruiting and retaining skilled talent remains challenging for MSMEs, especially when competing against larger enterprises with more attractive compensation packages.
4. MSMEs often operate in highly competitive markets, facing competition from larger domestic companies and international players.
5. For MSMEs, navigating complex tax structures, frequent regulation changes, and the administrative burden of compliance can strain limited resources and divert attention from core business activities.

Opportunities

1. The Indian Government has launched several initiatives to support MSMEs, providing access to finance, skill development programs, and incentives for innovation. Schemes like 'Startup India' and 'Make in India' offer opportunities for MSMEs to thrive and contribute to the nation's economic growth and self-reliance.
2. Growing global demand for Indian goods and services presents opportunities for MSMEs to expand their market reach and increase exports. E-commerce platforms and digital trade facilitation have made it easier for MSMEs to access international markets and cater to a diverse customer base.
3. Forming collaborations and joining industry clusters can create a supportive ecosystem for MSMEs to pool resources, share knowledge, and access new markets. Groups provide a platform for collective bargaining power, enabling MSMEs to negotiate better terms with suppliers and buyers.
4. Focusing on niche markets and specialized products can help MSMEs differentiate themselves and reduce direct competition. Innovating and offering unique solutions can attract loyal customers and open new revenue streams.
5. Embracing digital technologies can enhance MSMEs' efficiency, reduce operational costs, and improve customer service. Adopting digital tools like customer relationship management (CRM) systems and enterprise resource planning (ERP) software can streamline processes and boost productivity.
6. Government procurement policies that promote sourcing from MSMEs can create a significant market opportunity for these enterprises. Participating in government tenders and contracts can provide a stable and reliable source of revenue for MSMEs.

Social Impact and Inclusivity

Employment Generation and Empowerment

MSMEs are significant employers, providing livelihoods to millions across diverse societal sections. They play a crucial role in rural and semi-urban areas, creating jobs that uplift local communities and reduce migration to urban centres

Fostering Skill Development and Training

MSMEs are training grounds for individuals with limited formal education or specialized skills. By providing on-the-job training and skill development programs, these enterprises enhance the employability of their workforce and contribute to a more skilled and adaptable labour force. This, in turn, strengthens the overall human capital of the country, making India's workforce more competitive and self-reliant. MSMEs also promote learning and knowledge-sharing among employees, encouraging a culture of continuous improvement and innovation.

Reviving Traditional Arts and Crafts

MSMEs in sectors such as handicrafts and artisanal products play a vital role in preserving India's rich cultural heritage. These enterprises empower artisans and craftsmen to showcase their skills and heritage to a global audience by promoting traditional art and craft techniques. Moreover, MSMEs often adopt ethical and sustainable practices, ensuring fair wages and working conditions for artisans and helping sustain these age-old crafts, which might otherwise face challenges in the face of mass-produced alternatives.

Contributing to Local Development

MSMEs are deeply connected to the communities in which they operate. From supporting local education and healthcare to implementing environmental conservation projects, these enterprises invest in initiatives with a positive social impact. By addressing local needs and challenges, MSMEs contribute to inclusive growth and community development, making a tangible difference in people's lives.

Conclusion

The journey towards economic independence and self-reliance is dynamic, and MSMEs are at their heart. Their resilience, innovation, and inclusivity have driven India's progress toward self-reliance. As the Government continues to implement policies and provide support, Indian MSMEs are poised to play an even more significant role in shaping the nation's future and elevating India's standing on the global stage. By nurturing these enterprises and enabling their growth, India can achieve its dream of becoming an economically independent nation.

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A STUDY ON ROLE OF MICRO, SMALL AND MEDIUM ENTERPRISES (MSME's) IN RURAL ECONOMIC DEVELOPMENT OF INDIA

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Abstract

Micro, small and medium enterprises (MSMEs) are backbone of the Indian economy nevertheless, it face continuous financing challenges. The contribution of Indian MSMEs to Gross Value Added (GVA) in the country's GDP in financial year 20 stood at 30% while the sector's contribution in manufacturing segment revolved around 37% in the same year. The contribution of Indian MSMEs to Gross Value Added (GVA) in the country's GDP in financial year 20 stood at 30% while the sector's contribution in manufacturing segment revolved around 37% in the same year. In last few years the role of MSMEs in rural development has been unmatched and Government schemes, like the ASPIRE scheme of 2015, is centered on supporting entrepreneurship in agro-based businesses in rural India for employment generation and economic development. Traditional businesses such as cotton weaving, silk weaving, handicrafts, etc., have been instrumental in the growth of the region, by ways of eradicating poverty, generating employment, contributing towards economic growth and so on. The paper aims to highlights the how small industries are helping the rural development.

Keywords: *Rural Development, Employment opportunity, Government Schemes*

Introduction

MSME sector is the backbone of our economy and plays a significant role in economic development. It is acknowledged worldwide that MSMEs are important contributors to a nation's economic and social development. It not only helps to bring employment opportunities but also help to creation of wealth and alleviating poverty from the rural regions in developing countries. Rural India is home to 70% of the total population of the country. The rural population resides mainly in far reach and backward villages. According to the 2011 census nearly 800 million people in rural areas lives in more than 600,000 villages (Elbers&Lanjouw, 2019). According to the reports published by IBEF1, The manufacturing sector in India employs the largest amount of workers after the agricultural sector and contributes the most to the national GDP of India among all of the other economic sectors. It employs 12% of the total employable population in India, of which a sizeable workforce are employed with MSME. In addition due to liberalisation of trade and export, the MSME2 sector has exhibited considerable growth and hence attracted more and

more attention from the unemployed population in India where capital is rare and the labour pool is huge. The MSME sector stands as a strong pillar for the growth of rural sustainable livelihood. The human capital residing in the rural areas are well utilized by the tiny and Cottage industries mainly working on the theme of traditional handicrafts.

Review of Literature

In this study the research found that after the enactment of the MSMED Act, 2006 many positive changes were seen in the district and the study explored in detail the role of MSMEs in rural development. Researcher applauded the technical and managerial support provided by the District Industrial Centre (DIC) and concluded that it has helped to reduce poverty and gender inequality in the district (Thahira K., 2017) studied the role of entrepreneurship and role of government support initiatives for entrepreneurs in rural development. The study suggests that rural entrepreneurship programmes should be such that they promote innovation and inspire the youth to choose entrepreneurship as a career. They also opined that incentives and monetary benefits to the farmers would encourage rural entrepreneurs (Patil&Patil, 2016).

Objectives of the Study

To study the significant role of Micro, Small and Medium Enterprises for Rural Development in Indian economy.

Research Methodology

The present study is based on the secondary data published by various agencies and organization which is based on secondary data. The present study makes use of data and information provided by various journals, Magazines, web-pages, annual reports of Ministry of MSME, Report of the 73 rd National Sample Survey, ILO working paper etc.

MSMEs Promote Rural Development

MSMEs have a big role to play in rural development. They help rural population and facilitate development in various ways.

Employment Generation

MSMEs in rural areas create employment opportunities for youth in the nearby villages. Apart from direct employment, the business also creates opportunities for other businesses indirectly. A small-scale food manufacturing unit in the village generates employment for workers in the factory. Additionally, it also creates opportunities for allied sectors such as local raw material suppliers, machinery and tool manufacturers, logistics and transport service providers, and so on. As the rural population gets employment and business, it helps in eradicating poverty in the region. In other words, MSME sector acts as tool for poverty eradication.

Making Workforce Employable

MSMEs provide initial training to enable the local workforce to undertake specific jobs. This gives local people an opportunity to learn new skills and be relevant with current time and age. The local workforce may not have the skills required to work on a new high-tech machine. However, with training they can be taught and acquire new skills and be ready for this job and similar opportunities. Also, it helps the workforce to be more employable in the future and grow in their careers.

Economic Development of the Rural Area

The role of small-scale industries in rural India development is enormous and its generating employment and creating business opportunities and also provide better earnings that translates to better quality of life for the rural population. As the buying capacity of the rural population increases, it leads to the economic development of the region too.

Getting Recognition on the Global Map

The MSMEs sector, especially the cottage industry like saree weaving, carpet weaving etc., are classic examples of family run businesses (or generational businesses). Generally, the entire family is engaged in the business and in some cases, the whole village. Through the arts, the artisans' creativity gets exposure in the national and global markets. Many traditional sarees such as Banaras silk from Uttar Pradesh, Kanchipuram silk sarees from Tamil Nadu, Paithani from Maharashtra, etc., are known for delicate work. They are not only popular in the country but are also exported globally.

Generating Foreign Exchange

As mentioned, many MSMEs in the rural sector are engaged in exports and generate foreign exchange, in turn helping the national economy to grow. For example, India is the 5th largest exporter of leather goods and accessories, according to Invest India. Leather exports reached \$4.03 billion in FY 2020-21. Each exporting MSME has contributed to reach this milestone.

Self-Reliance or Aatmairbharata

As the MSMEs in the rural areas mostly source raw materials and workforce locally, they are aligned with the central government's mission of self-reliant India or Aatmanirbhar Bharat.

Conclusion

MSMEs have a big role to play in rural development. There may be several challenges that MSMEs in the rural areas face, but with the right strategy and approach you can grow

your rural business too. MSMEs can be an effective medium to use local resources for more productive purposes with the coordination of government and local institutional bodies. It is required that MSMEs must be backed and supported in the mission to reduce poverty and unevenness in the development. The problems faced by MSMEs must be addressed properly and special attention should be given to Micro enterprises. The Government of India has taken a slew of measures and is striving to improve the economic and social conditions of the rural population and non-farm sector. Through government interventions in the form of financial, infrastructural and technological support, MSMEs must be strengthened create more employment which would ultimately lead to rural development and poverty alleviation. More the MSMEs flourish, more it paves the way for poverty alleviation and rural development in the country.

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ROLE OF MSME IN ECONOMIC SELF RELIANCE

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Abstract

The Micro, Small and Medium enterprises (MSME) sector has emerged as a dynamic sector of the Indian economy and an essential driver of economic process. It considerably helps in developing entrepreneurship and generates second largest employment prospects. With a vast network of sixty-three million three hundred eighty thousand enterprises, more than forty per cent of exports, over twenty-eight per cent of the Gross Domestic Product and generating employment for about one hundred eleven million people, the MSME sector contributes in a significant way to the development of the Indian economy. The world economy is growing at a slower rate thus a lot of emphasis is required on developing MSME sector to extend employment opportunities specifically for young people. India is known as a land of entrepreneurs and contribution of MSME sector cannot be ignored while discussing the key issue of employment generation. India has also achieved the distinction of being one of the most industrially developed states. It has five per cent of the total Indian population and contributes about a quarter of India's products exports. The industrial sector of the state comprises of over eight hundred giant industries and six hundred three thousand Micro, Small and Medium Enterprises (MSME) which give employment to three million eight hundred fifty-one thousand people of the country. This research paper focuses on the contribution of MSME sector in Indian economy and makes clear the importance of India as a state in fostering entrepreneurship through MSME sector.

Keywords: MSME, Entrepreneurship, Self-Reliance Indian Economy.

Introduction

Introduction Micro, Small and Medium Enterprises (MSME) sector has emerged as a highly vibrant and dynamic sector of the Indian economy over the last five decades. The MSME also play an important role in the development of the economy with their effective, efficient, flexible and innovative entrepreneurial spirit. The MSME sector contributes notably to the country's overall industrial production output, employment and exports. It is recognized with generating the maximum employment growth as well as accounting for a major share of industrial production and exports. They have distinctive advantages due to their size and they required low investment. They have relatively high capital-labour ratio and they require a minimum gestation period. They try to capture and focus smaller markets; they make sure a fairer distribution of national income. They make possible an effective utilization of capital and skill resources and they motivate the growth of industrial entrepreneurship. The MSME sector in India is vast heterogeneous in terms of the size, variety of product and services and level of technology. This sector is large contributes to the socioeconomic development of the country. The MSME sector is an important pillar of Indian economy as it contributes greatly to growth of Indian economy with a vast network of around 30 million units, creating employment of about 70 million,

manufacturing more than 6000 products, contributing about 45% to manufacturing output and about 40% of exports, directly and indirectly. This sector even assumes greater importance now as the country moves towards a faster and inclusive growth agenda. MSME sector is the backbone of national economic edifice and has unremittingly acted as the fulcrum for the Indian economy, providing it resilience towards global financial shocks and hard times. With approximately 63.4 million units throughout the geographical expanse of the country, MSMEs contribute around 6.11% of the manufacturing GDP and 24.63% of the GDP from service activities as well as 33.4% of India's manufacturing output. Further, there is a vision to enhance MSMEs contribution to India's GDP to over 50% from the current 29% and that for the Indian economy to scale the \$5 trillion mark, the contribution of the MSME sector will be crucial.

The Vision & Mission of Msme

Vision

To emerge as a global leader in advanced manufacturing research and development, innovation and to create an ecosystem for an inclusive balanced and sustainable development of the state.

Mission

To retain India position as a global manufacturing hub and to achieve higher and sustainable industrial growth through capital infusion technology transfer world class industrial infrastructure skill up gradation and benchmarking of policies and practices to best Global standards

Background Information on MSME

Today's MSMEs have their roots in local-level business activities in villages and also in ancient urban centres. Ancient India was experiencing sustained growth in these activities, even during the phase of a lot of political upheaval across the subcontinent. These businesses and enterprises were instrumental in fulfilling the local needs of the population. These enterprises also contributed significantly to the exports of goods to other countries, which resulted in great economic wealth for the country. These activities considerably declined during British rule, as significantly cheap products flooded the Indian market.

We can understand the history and evolution of MSMEs in India through three separate time periods. These time periods are "pre-British rule", "pre-independence", and "post-independence".

The pre-British period of the Indian economy was primarily agrarian. A vast part of the subcontinent had villages that were self-sufficient to a certain extent. Village-level artisans were able to provide for local needs. They had limited market access due to geographic factors during that period. However, urban centres (places of pilgrimage, administrative

places, and trade towns) had a high level of economic activities, including the production of various goods. They primarily met the needs of the local market. However, a significant portion of this production is exported. Local producers were producing textiles, utility-oriented handicrafts, silk cloths, muslin, shawls, carpets, wooden works, artistic glass works, and coloured glass works. Apart from these, ornaments made in India, jewellery, brass-works, ivory work, and several other notable products gained prominence and achieved significant admiration across the world. The political landscape was largely supportive; however, as political uncertainty and fragmentation increased, these activities also faced some difficult times. Despite this, they have remained relevant and growing.

The Mughal Empire started declining and the political prominence of the East India Company (EIC) grew. British rule started taking shape, and during the same time, the industrial revolution in Europe and America attained great heights. Therefore, new manufacturing processes were implemented in these areas for the mass production of goods. This mass production required raw materials and market access for finished goods. The EIC was well aware of this opportunity and used its prominence to exploit the Indian subcontinent for both purposes. During this period, raw materials became more dominant than finished goods for export. As mass-produced goods flooded the Indian market, locally produced goods and their manufacturers started to lose their business. This leads to the systemic destruction of local manufacturing as they lose both local and foreign markets. This effect was primarily visible in urban centres and trading towns. Village-level artisans also started facing heat; however, they were slightly less affected by this destruction. This leads to bad shapes for all industries in India. As British rule transitioned from the EIC to the British monarchy, the industrialization of India also brought mass production units in the country, which further aggravated the situation of local manufacturers. This period was not good for local industries and became a victim of unfair market situations. This consequently leads to the destruction of any future growth or evolutionary prospects of these industries.

The GOI established the “Small Scale Industries Board” (SSIB) in 1955. The SSIB provided a formal definition of small-scale industries in India. This definition used power consumption, number of employees, and quantum of capital as defining factors. This definition has undergone several changes over the course of history. In 1977, a new class of small industries was identified, named as “Tiny Industries.” This was done to address the needs of entrepreneurs who run very small enterprises and primarily cater to local markets. The definition of tiny industries has also undergone several changes as a need arises.

Today’s MSME originated from the local needs of the village and trade centres of that time. They also witnessed a great cycle of growth and recognition. Going forward, systemic destruction was also witnessed in the British era. Later, as political and

geographical landscapes transformed, these units also began witnessing a much more favourable market scenario. The government began to focus on the systematic development of these units. Various national- and state-level policies, rules, and regulations have emerged. The Indian government created the Ministry of Small-Scale Industries and Agro and Rural Industries (SSI and ARI) in October 1999. The core objective of this ministry was to create a more conducive environment for MSMEs. Later, as industries grew, this ministry was split into two separate ministries in September 2001: the Ministry of Small-Scale Industries (SSI) and the Ministry of Agro and Rural Industries (ARI). In the year 2006 MSME Act was passed, next year both ministries merged into a single ministry that is “Ministry of Micro, Small and Medium Enterprises” on 9th May 2007.

The evolution of these enterprises during these three phases has laid the groundwork for today’s MSME structural makeup. These distinct events shape today’s MSME market. The Indian MSME sector is yet to realize its full potential to reduce poverty and unemployment in India.

Features of MSME in Economy Self Reliance

1. MSMEs work for the welfare of the workers and artisans. They help them by giving employment and by providing loans and other services.
2. MSMEs provide credit limit or funding support to banks.
3. They promote the development of entrepreneurship as well as up-gradation of skills by launching specialized training centres for the same.
4. They support the up-grading of developmental technology, infrastructure development, and the modernization of the sector as a whole
5. MSMEs are known to provide reasonable assistance for improved access to the domestic as well as export markets.
6. They also offer modern testing facilities and quality certification services.
7. Following the recent trends, MSMEs now support product development, design innovation, intervention, and packaging.

Role of MSME in Indian Economy

Since its formation, the MSME segment has proven to be a highly dynamic Indian economy sector. MSMEs produce and manufacture a variety of products for both domestic as well as international markets. They have helped promote the growth and development of khadi, village, and coir industries. They have collaborated and worked with the concerned ministries, state governments, and stakeholders towards the upbringing of rural areas.

MSMEs have played an essential role in providing employment opportunities in rural areas. They have helped in the industrialization of these areas with a low capital cost

compared to the large industries. Acting as a complementary unit to large sectors, the MSME sector has enormously contributed to its socio-economic development.

MSMEs also contribute and play an essential role in the country's development in different areas like the requirement of low investment, flexibility in operations, mobility through the locations, low rate of imports, and a high contribution to domestic production.

With the capability and capacity to develop appropriate local technology, provide fierce competition in domestic and international markets, technology-savvy industries, a contribution towards creating Défense materials, and generating new entrepreneurs by providing knowledge, training, and skill up-gradation through specialized training centres.

Importance of MSMEs for Indian Economy

Employment: It is the second largest employment generating sector after agriculture. It provides employment to around 120 million persons in India.

Contribution to GDP: With around 36.1 million units throughout the geographical expanse of the country, MSMEs contribute around 6.11% of the manufacturing GDP and 24.63% of the GDP from service activities.

MSME ministry has set a target to up its contribution to GDP to 50% by 2025 as India becomes a \$5 trillion economy.

Exports: It contributes around 45% of the overall exports from India.

Inclusive growth: MSMEs promote inclusive growth by providing employment opportunities in rural areas especially to people belonging to weaker sections of the society.

For example: Khadi and Village industries require low per capita investment and employs a large number of women in rural areas.

Financial inclusion: small industries and retail businesses in tier-II and tier-III cities create opportunities for people to use banking services and products.

Promote innovation: It provides opportunity for budding entrepreneurs to build creative products boosting business competition and fuels growth.

Thus, Indian MSME sector is the backbone of the national economic structure and acts as a bulwark for Indian economy, providing resilience to ward off global economic shocks and adversities.

Objectives of MSME in Economy Self Reliance

To promote e-Governance for empowering citizens, promoting the inclusive and sustainable growth of the Electronics, IT & ITeS industries, enhancing India's role in Internet Governance, adopting a multipronged approach that includes development of human resources, promoting R&D and innovation, enhancing efficiency through digital services and ensuring a secure cyber space.

Objectives

- e-Government: Providing e-infrastructure for delivery of e-services
- e-Industry: Promotion of electronics hardware manufacturing and IT-ITeS industry
- e-Innovation / R&D: Implementation of R&D Framework - Enabling creation of Innovation/ R&D Infrastructure in emerging
- areas of ICT&E/ Establishment of mechanism for R&D translation
- e-Learning: Providing support for development of e-Skills and Knowledge network
- e-Security: Securing India's cyber space
- e-Inclusion: Promoting the use of ICT for more inclusive growth
- Internet Governance: Enhancing India's role in Global Platforms of Internet Governance.

Review of Literature

There has been limited research on sustainability in Indian MSMEs till date. Of course, of late, the number of publications has increased. A chronological review of literature, 2011 onwards, on Indian MSMEs follows. Sangwan (2011) identifies the quantitative and qualitative benefits of Green Manufacturing (GM) through a literature review, and validates them through a survey of Indian SMEs. The author defines GM at the intersection of manufacturing and design practices, and environmental issues, concerns and practices, i.e. the greater the overlap between these areas, the greater the extent to which manufacturing and design practices recognize and embody environmental issues, concerns and practices. The author notes from the literature that the benefits of GM may range from cost reduction, improvement in productivity and product quality, safer and cleaner facilities, reduced environmental and health risks, better working conditions, and improved employee morale to customer loyalty, opening of new markets, higher market share, innovativeness, competitiveness, and improved corporate image and relations with stakeholders. The author also highlights that one of the far-reaching implications of GM is the lifecycle approach (LCA) to production, i.e. to take into account the environmental impacts of the entire lifecycle of a product starting from design, sourcing and manufacturing to storage, distribution, use, collection, inspection and recovery/disposal, and if properly implemented, LCA may result in reduced waste/effluent treatment/disposal costs, energy and cost savings from recycling and reuse activities, reduced penalties and liabilities, and lower regulatory compliance costs. In another study, Mittal et al. (2012) identify the drivers and barriers for the implementation of Environmentally Conscious Manufacturing (ECM), another name for GM, and validate them by conducting a case study in Germany and India for comparison. The authors identify current and future regulations for compliance, financial incentives such as attractive loans, grants and tax exemptions for capital investments, public pressure in

terms of the pressure exerted by various stakeholders such as local communities, NGOs, consumer groups, media and political parties, peer pressure exerted by trade and business associations, cost savings due to reduced material and energy consumption, increased competitiveness due to improved efficiency, customer demand for environmentally friendly products, supply chain pressure exerted by suppliers and distributors, and the commitment and leadership of corporate managers as the major drivers for an effective implementation of ECM. Nair and Sodhi (2012) highlight Corporate Social Responsibility (CSR) practices by Indian SMEs, and note that although CSR practices are skewed towards large companies, many SMEs being located in small towns, villages and remote areas are embedded in their local communities and eminently suited to pursue CSR practices. The authors present the findings of five case studies on the best CSR practices by Indian SMEs. The authors note that many SMEs do not see the immediate relevance of environmental and social issues to their businesses, and are focused on the short-term survivability of their enterprises. However, CSR does pay off in the long run, and has proven to have brought in business advantages in terms of staff recruitment, development, commitment, morale, motivation and retention, customer loyalty, new product development, access to new markets, energy savings, innovation, competitiveness, visibility, image and reputation that would not have been achievable otherwise. The authors mention that the nature and level of CSR implementation in SMES are influenced by factors such as sector, size, age, history, whether family- or non-family owned/managed, position in the value chain and nature of client relationships. The ethical orientation and moral responsibility of owners/managers are cited by the authors as the main drivers of CSR implementation in SMEs. On the other hand, the lack of resources is cited by SMEs as the main barrier to CSR adoption. The five case studies presented by the authors mention the following CSR practices: abolition of child labour, child education, health checkup, promotion of women entrepreneurship, widow stipend programme, orphan girl marriage assistance unit, raising funds for social causes through people participation, and promoting sustainable livelihoods while protecting the environment in rural and remote areas. The authors note that increased supply chain pressures, i.e. buyers'/exporters' stringent environmental and social requirements enforced on their suppliers would encourage more and more SMEs to adopt CSR practices.

Research Methodology

This research has done based on method of Descriptive study. The required data has collected from various secondary sources i.e., internet websites of government and other private domains, magazines, journals, general opinion of industry experts and other publications etc. This data was then analyzed and reviewed for conclusions.

Conclusion

In conclusion, the MSME sector has an important role to play in achieving the goals of the self-reliant India scheme. This will not only help in dealing with the economic conditions arising out of Covid-19 but will also pave the way for India's long-term economic-industrial development. With the change in the definition of small and cottage industries by the government, these industries will get a free environment for their development. A healthy environment will be created for the development of small and cottage industries by giving collateral free loans, giving financial assistance to distressed units, arranging online marketing, simplification of rules and laws, etc. In the current globalized economic conditions MSME sector needs adequate financial and technical support so that they can make their place not only in the domestic market but also in the global market. The present market based system has not only presented challenges before the small and cottage industries but has also opened doors of possibilities. The need is to identify these possibilities and take the development of MSME sector as a movement. Only by doing this the dream of self-reliant India can be realized and the ultimate goal of inclusive development can be achieved.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMES: A PATHWAY TO SELF-RELIANT INDIA - FINANCIAL INCLUSION FOR MSMES

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Abstract

This abstract provides a succinct preview of a paper presentation to be delivered at an upcoming conference, focusing on the crucial theme of "Financial Inclusion for Micro, Small, and Medium Enterprises (MSMEs)." MSMEs are recognized as vital contributors to economic growth and employment generation worldwide. However, their full potential is often hampered by limited access to financial services. This paper explores the significance of financial inclusion for MSMEs, the challenges they face, and innovative strategies to promote their financial empowerment. The paper begins by underscoring the pivotal role of MSMEs in the global economy and their unique challenges in accessing formal financial services. It highlights the adverse effects of financial exclusion on MSMEs, which range from stunted growth to limited resilience during economic shocks. In addressing these challenges, the paper delves into diverse strategies employed by governments, financial institutions, and non-governmental organizations. It explores the role of digital technologies, alternative credit scoring methods, and tailored financial products in expanding financial inclusion. Additionally, it investigates the importance of financial literacy programs and capacity-building initiatives to equip MSMEs with the knowledge and skills needed to leverage financial services effectively.

Drawing from international case studies and success stories, this presentation aims to inspire policymakers, academics, and practitioners to collaborate in creating an enabling environment that fosters financial inclusion for MSMEs. By doing so, we can harness the untapped potential of MSMEs to drive economic development, job creation, and inclusive prosperity on a global scale.

Keywords: *Economic growth, Innovative strategies, Financial empowerment, Global economy, Job opportunity.*

Introduction

India has vibrant and responsive MSMEs that play a dynamic and responsible role in the economic growth and development of any country by increasing trade, creating the best employment opportunities and developing the latest skills through effective, efficient and innovative entrepreneurial spirit in India. MSMEs are a pillar of every economy and an engine of economic growth that promotes the impartial development of all. Touted as India's growth engine, Micro, Small and Medium Enterprises (MSMEs) play an important role in India's economic development and strengthen the country's entrepreneurship. The proportion of MSMEs in India is approximately 6.3 billion enterprises that contribute significantly to employment and economic growth. According to the ministry's MSME annual report, MSMEs account for about 30 percent of India's GDP and employ more than 110 million people. Therefore, the Government of India aims to promote and support SMEs through the Micro, Small and Medium Enterprises (MSMED) Act 2006 provides various grants, programs and incentives to this sector and tries to solve some of the most important problems related to MSMEs such as lack of finance, lack of management skills etc. The main objectives of the law are to manage cluster development, train entrepreneurs, develop infrastructure and encourage financial access to the sector. As an alternative to economic growth, many problems still hinder MSMEs. The internal factors that hinder the development of MSMEs are the weakness of capital, production, product marketing and human resources. Capital is usually obtained only from the owners' own money, while production and marketing are done only according to the knowledge available to them. Marketing is usually only by word of mouth, so its growth rate is not too fast. External factors hindering the development of MSMEs are the development and promotion of MSMEs and the limited access of people to financial institutions. Limited public access to financial institutions affects MSME capital because MSME entrepreneurs find it difficult to access capital from these financial institutions. Facilities and information required for MSME activities can be found in several offices. Using technology is a challenge for MSMEs to survive in this era. The main purpose of using technology is to facilitate every transaction made. Today, the technology commonly used to process transactions is fintech. Technology services, or financial technology, is a possible alternative for financial institutions and their users to provide and receive services. Fintech can play a role in introducing services to users who previously did not use traditional institutions or existing services. According to the 'BLinC Invest MSME Lending Report 2022', the formal credit sector, which includes banks and NBFCs, covers less than 15 percent of the total MSME credit requirement, with a huge credit gap of Rs 25 trillion. The MSME sector that can potentially be effectively addressed with the help of data and new technologies such as AI and machine learning models.

Significance of Financial Inclusion for MSME

The aim is to give these companies the means to grow, innovate and make a significant contribution to economic development, job creation and poverty reduction. It plays a central role in building stronger and more inclusive economies. When they have access to financial services, they can grow their businesses, create jobs and contribute to overall economic growth. Financial inclusion helps MSME owners, many of whom are marginalized or poor, gain access to credit, savings and insurance. This, in turn, can raise their standard of living and reduce poverty. Financial services enable MSMEs to invest in the technology, infrastructure and human resources that are critical for business expansion and competitiveness. This helps them take advantage of opportunities and diversify their product or service offerings so that MSMEs can interact with formal financial institutions, collect credit history and increase creditworthiness. Thus, it will be easier to obtain larger loans in the future, which can boost economic growth. Financial inclusion ensures that marginalized and underserved populations, including women and minority entrepreneurs, have equal access to financial services. It promotes a fairer distribution of wealth and opportunity. Financial inclusion of MSMEs is crucial for economic development, poverty reduction, business growth and overall social well-being. It strengthens small businesses, promotes entrepreneurship and creates a more inclusive and stable economy.

Digital Lending: The Role of Financial Inclusion for MSME

Removing barriers to market access: The barriers faced by SMEs, the adoption of digital lending has transformed the financial landscape by removing barriers that prevent individuals from accessing credit. However, compared to digital lending, traditional lending was mainly based on a lot of paperwork, information requirements and qualification requirements, making it difficult to get a loan. However, digital loans have taken hold among SMEs, which is why the platforms have reduced the application processes even more than usual. As a result, individuals and organizations in underserved areas can access loans conveniently and fairly.

Greater efficiency and speed: The faster and more efficient adoption of digital loans in the lending process is one of the many benefits that have created a lot of buzz in the sector. Unlike traditional lending, which requires submission of huge piles of paperwork followed by a lengthy tracking and approval process; digital lending platforms have created a niche by simplifying their operations. Loan applications and processes have been completely online since their inception, eliminating the need for physical bank visits. Additionally, the use of new-age technologies such as machine learning and data analytics have reduced approval times from weeks to days.

Offering tailored loan products and flexibility: Fintech's cutting-edge technology and digital capabilities have enabled digital lending platforms to offer a host of loan solutions

specifically targeted to the needs of MSME borrowers. Depending on the type of business, digital lenders have offered a variety of flexible and customized loan options, be it short-term or long-term loans for personal or professional use. In this context, borrowers can choose loan terms, repayment plans and loan amounts that suit their financial needs and goals. In addition, fintech companies offer unique products to their MSME customers and help them move forward more efficiently by using new technologies such as artificial intelligence, machine learning and data analytics.

Promoting financial education and empowerment: To streamline the lending process and empower SMEs, digital lending platforms go beyond lending through financial education and empowerment. Despite various financial initiatives, consumers in underserved areas lack sufficient information about the loan application process. So, by providing interactive tools, educational content and personalized financial advice, lenders help borrowers improve their financial literacy, develop responsible borrowing habits and improve their overall financial well-being. Additionally, a focus on empowerment and education helps people develop long-term financial resilience and make smart financial decisions that go beyond borrowing.

Challenges, Barriers, and Risks Associated with Financial Inclusion for MSME's

Financial inclusion of micro, small and medium-sized enterprises faces a number of challenges, many of which can vary from region to region and country to country. These challenges can hinder MSMEs' access to financial services and their ability to grow and succeed. Here are some of the common challenges facing financial inclusion for MSMEs.

Lack of collateral: Although MSMEs make an important contribution to the economic development of the country, many banks and financial institutions are wary of lending to this sector. The process of availing MSME loans involves complex documentation, the need for collateral, strict repayment terms and high interest rates. Since micro and MSME enterprises do not have assets to take as collateral, such enterprises opt for unsecured MSME loans from lenders who do not require collateral for their financing.

Lack of credit history: MSMEs do not have established experience MSME entrepreneurs often do not have sufficient financial knowledge to make the right business decisions. Without financial literacy, MSMEs cannot choose the right lenders for their business, leading to higher interest rates and low credit scores. Poor financial decisions can also lead to working capital and cash flow problems. Understanding SME loans and financing is important because SMEs have to rely on external financing solutions during times of crisis.

Lack of awareness about government schemes: The Government of India has launched various programs and initiatives to promote MSME financing, but lack of awareness

remains a major problem. SMEs often do not have access to the information available from these systems, which can limit their ability to take advantage of them.

Higher interest rate: MSMEs also face high lending rates, which can make it difficult to repay loans and limit their ability to invest in businesses. High interest rates can also make it difficult for SMEs to obtain financing, as lenders may view them as risky investments. The Indian governments have taken various initiatives to address the challenges faced by SMEs in accessing finance.

- Credit guarantee fund Trust for Micro and Small enterprises (CGTMSE)
- Pradhan Mantri Mudra Yojana (PMMY)
- Stand up India

Lack of liquidity: As suppliers of large organizations, most MSMEs depend on the success of these companies and on the credit payment terms they set. Payment delays or customer downtime can reduce cash flow and cause serious liquidity problems for MSMEs. Most of the MSME capital goes into day-to-day operations, leaving MSME short of cash in case of late payments. In order to obtain sufficient capital to continue operations, SMEs are looking for faster and easier sources of financing. Because they only focus on financing day-to-day operations, they do not have sufficient resources for long-term investments that could expand their business. Lack of liquidity can be addressed through better financial literacy and MSME programs that encourage high return on investment.

By addressing these challenges, countries can unlock the potential of their MSME sector and promote economic growth and job creation.

To Understand How Fintechs are Improving their Ability to Meet the Credit Needs of MSME Borrowers, Let's Take a Look at How they are Changing the Game

Fintechs have emerged as new enablers of change in the country's MSME space. Leveraging emerging technologies such as AI, ML and Big Data, Fintechs are bringing significant change to underserved MSMEs. As businesses deal digitally, their digital footprint expands, creating vast amounts of data that can be used to identify patterns and derive relevant actionable insights. Using AI and ML, raw and complex data is innovatively modeled to create efficient workflows and drive decision making.

Better risk assessment: AI and ML algorithms can analyze a borrower's credit history, financial statements and other data points to accurately assess a borrower's creditworthiness. This can reduce the risk of default and allow the lender to offer loans to small and medium-sized businesses that may not have been creditworthy before.

Customized loan products: AI and ML algorithms can use information about a borrower's financial history and behavior to offer customized loan products that meet their specific needs. This can help SMEs obtain credit lines tailored to their business needs.

Faster and more cost-effective loan processing: AI and ML algorithms can perfectly and quickly analyze large volumes of data to assess the creditworthiness of the borrower, reducing the time of processing a loan application. This can be especially useful for entities, ie. SMEs that need urgent funds to finance their business, as well as for the lender to reduce customer service costs.

Financial Literacy is Extremely Important for Micro, Small and Medium-Sized Enterprises for Several Reasons

There are some aspects that are being totally ignored by financially unlettered people but are pivotal for the success of a business. Financial literacy is a key skill for SMEs as it enables them to make informed decisions, secure funding, manage risk and achieve long-term success in a dynamic business environment. It's an investment that pays off in better financial health and sustainability.

Good financial management: SMEs often operate on tight budgets and limited resources. Financial literacy provides business owners and managers with the skills and knowledge needed to effectively manage their finances. They can budget, allocate resources and make informed financial decisions, improving financial stability and sustainability. This includes budgeting, cash flow management and financial planning. If SMEs understand these concepts well, they are more likely to make informed financial decisions and allocate resources wisely.

Availability of financing: SMEs often need external financing to grow and expand their operations. Lenders and investors are more likely to provide capital to companies with strong financial awareness. Understanding financial statements, cash flow management and financial forecasting can increase your chances of getting a loan or attracting investors. Financial literacy is crucial when applying for external funding such as loans or investments. Lenders and investors often assess the financial capacity of SMEs before extending financial support. A company with good preparation and a good understanding of financial principles has a higher probability of obtaining financing on favorable terms.

Risk mitigation: Understanding financial risks is essential for SMEs. Financial literacy helps owners and managers identify potential financial difficulties, such as over-leveraging of working capital or poor management. With this knowledge, they can take proactive steps to reduce risk and ensure the long-term sustainability of the business. Contact accountants and legal experts who can provide guidance on risk management strategies. By implementing these risk management strategies, MSME can improve their business performance due to financial problems and uncertainty.

Strategic decision-making: SMEs must make strategic decisions such as pricing, expansion and investment in new technologies. Financial literacy provides the tools to assess the financial impact of those decisions, enabling SMEs to make choices that align

with their long-term goals and profitability. Stay abreast of financial trends, regulations and best practices through continuous education and professional development. Effective financial intermediation literacy and strategic decision-making can help small and medium-sized businesses navigate challenges, seize opportunities and achieve long-term success.

The government should take initiatives to empower SME owners by providing them with knowledge of basic financial management techniques, accounting concepts and debt systems so that they can achieve the skills needed for sound business operations. Training programs can be implemented in collaboration with public and private sector institutions and should focus on dissemination of various financial systems and financial advisory services so that they can better understand the financial requirements of the company and choose appropriate options. Online portals with free information sources on finance, accounting, debt settlement, counseling services and networking opportunities should be launched and promoted.

How are AI and ML Changing the Financial Services Industry?

Productive technology tools like AI can address the sector-specific challenges of MSMEs to obtain loans with a faster and better onboarding process. This includes faster decision making, better loan commitment at lower costs, better risk management, better compliance, fraud detection, credit monitoring, debt settlement and more. For example, AI/ML-based bank statement analyzers evaluate operational bank statement data and convert it into intelligent information that can be customized for each lender.

Automate the entire loan sanction and payment process from document review to credit check etc. helps achieve significant cost optimization while also removing bias from the application evaluation process. Analyzing the creditworthiness of applicants based on their digital footprint helps lenders not only apply for loans digitally, but also extend loan amounts to eligible applicants.

Conclusion

Financial inclusion of micro, small and medium enterprises can have some important results and implications. The financial growth of MSME financial inclusion can contribute to overall economic growth by enabling financing for expansion, investment, and innovation. This can lead to job creation and increased economic activity. Poverty Alleviation providing access to financial services for MSMEs, especially in rural areas, can help lift people out of poverty and improve their living standards. Innovation and productivity When MSMEs have access to credit and financial resources, they are more likely to invest in technology and infrastructure that can increase productivity and competitiveness Risk reduction financial inclusion can help MSMEs better manage financial risks, such as market fluctuations or unexpected costs, through insurance and

savings products. Financial literacy Effective financial literacy initiatives should also focus on improving the financial literacy of MSMEs. They make informed decisions and avoid potential pitfalls. The regulatory framework of governments and financial institutions must create an enabling regulatory environment that promotes financial inclusion by ensuring protection of MSMEs against predatory practices. Leveraging technology, especially the digitization of mobile banking and digital payments, and AI and ML changing financial service industry, it can significantly improve the financial inclusion of MSMEs by providing them with convenient and cost-effective financial services. Market access financial participation can facilitate access to larger markets, both domestically and internationally, enabling SMEs to expand and improve their competitiveness. Monitoring and evaluation Regular monitoring and evaluation of financial inclusion programs is essential to assess their impact and make necessary changes to ensure their effectiveness. In conclusion, financial inclusion of MSMEs can promote economic growth, reduce poverty, promote innovation, and improve the resilience of these businesses.

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THE ROLE OF MICRO, SMALL, AND MEDIUM ENTERPRISES (MSMES) IN ATTAINING THE SUSTAINABLE DEVELOPMENT GOALS (SDGS)

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Abstract:

This research focuses on the significance of micro, small, and medium-sized businesses (MSMEs) for achieving the SDGs. MSMEs are the foundation of many economies. India is not an anomaly in this regard. In India, over a million small and medium-sized firms (MSMEs) produce over 6,500 diverse goods and services. There are over 64 million micro, small, and medium-sized companies (MSME) in India alone. These micro, small, and medium-sized businesses employ around 12 crore people. MSMEs play a significant role in the larger company ecosystem. Start-ups and young enterprises, which are often tiny or micro firms, are the principal source of net job creation in many countries and the driving force behind private-sector innovation and sustainability. The United Nations has set Sustainable Development Goals (SDGs), and MSMEs, due to their dynamic and adaptive nature, are an important sector in achieving these objectives. Given the worldwide relevance of MSMEs, the United Nations General Assembly has designated June 27 as International MSME Day. 'Small Businesses, Big Impact' is a theme that highlights the role that micro, small, and medium-sized enterprises (MSMEs) play in the larger goal of sustainable development. This research examines the contributions of MSMEs to each of the SDGs by breaking down the ways in which these organizations are involved in the global economy, providing services (such as education, health care, water and sanitation), consuming energy, and leaving an environmental footprint. Using these lenses, it is possible to establish both causal and correlative relationships between MSMEs and the seventeen goals.

Keywords: MSMEs, SDGs, Innovation, Economic Growth, Job Creation

Introduction

To succeed in the environment and industrialization, we must employ green technology for sustainable development. Environmental sustainability involves making environmentally responsible decisions and adopting steps to conserve nature to ensure the environment can support our existence. It's an essential concern now that people realize how much corporations and people may harm the environment and wildlife. It is not only about decreasing trash or energy use; it is about building methods that will make businesses sustainable and help save the world with improved eco-friendly technologies.

Recently, sustainability has become a worldwide priority, and the Government of India has made multiple national and international promises to conserve the environment through various projects. The government's 'Make in India' with 'Zero Defect & Zero Effect' initiative encourages MSMEs to improve product and process quality without harming the environment and balances economic growth with sustainability and social inclusion. All economic sectors agriculture, manufacturing, and services must contribute to sustainable nation-building.

Objectives of Research

- To study the role of Micro, Small and Medium Enterprises in achieving Sustainable Development Goals.

Analysis - Role of MSMEs in fulfilling the SDGs

Goal 1. End poverty in all its forms everywhere

In 2013, 783 million people, or 11% of the worldwide population, lived below the severe poverty criterion, according to the latest estimate. Most impoverished people in emerging nations are unemployed or cannot earn enough to escape poverty. The struggle against poverty has relied on private sector job development. Over the past 30 years, the private sector has helped reduce the percentage of developing world people living in poverty from 52% to 22%. MSMEs greatly boost private sector employment. MSMEs produced four out of five formal sector roles in developing countries, accounting for 90% of total employment. Informal businesses employ the poor and disenfranchised. In lower income nations, many MSMEs are informal and provide a livelihood for the base of the pyramid, 4 billion individuals earning less than US \$3000 a year. 7 Over 70% of developing nations' workforce works in the informal sector, either self-employed or in unregistered firms.⁸ The informal economy allows underprivileged women and youth to make money due to its flexibility. The majority of informal sector workers lack social security, rights at work, and decent working conditions, according to the ILO. Informal enterprises can help legalize MSMEs and give social security to their employees. Given the size of informal employment, especially in developing nations, supporting MSMEs' formalization will help achieve Goal 1.

Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Climate-smart agriculture practices can improve farmer production and agricultural value chain sustainability. Food waste-reducing technology in India and Rwanda has cut post-harvest losses by over 60% and raised smallholder farmers' earnings by over 30%. In 2030, the Business and Sustainable Development Commission believes that tackling food

and agriculture issues in accordance with the SDGs may be worth US \$1.8 trillion. This encompasses food waste reduction, agriculture digital services, farming technologies, micro-irrigation, forest ecosystems, and land restoration. The Agri-Food Chain Coalition of Europe identified new plant breeding methods and products, animal diets and specialty feed ingredients to reduce animal farming's environmental impact, agricultural technologies, including genetically modified organisms to develop new seeds, carbon-reducing agricultural machinery, and handling plants and fertilizers through MSMEs, which are already operating in these new sectors, but supporting MSME capacity-building and technology access for small and medium agriculture-based firms will help accomplish Goal 2.

Goal 3. Ensure healthy lives and promote well-being for all at all ages

The health industry faces several challenges, including pharmaceutical inefficacy, communicable diseases, non-communicable diseases, and an aging population. Emerging nations also lack talents, commodities, and resources. These obstacles must be overcome to achieve the goal. According to the Business and Sustainable Development Commission, these issues might be worth \$1.8 trillion by 2030, based on current pricing. Risk pooling, activity services, cost-effective surgery, improved disease management, telehealth, remote patient monitoring, counterfeit drug detection, electronic medical records, advanced genomics, weight management programs, and healthcare training are essential. Micro, small, and medium businesses (MSMEs) are crucial in many fields. By helping current MSMEs and start-ups leverage these economic opportunities, the goal may be realized. Healthcare spending growth may improve company prospects and extend MSMEs' service areas. The WHO recommends gradually increasing financial contributions to meet Sustainable Development Goals (SDG) health objectives. In the 'ambitious scenario', the WHO predicts that these investments must rise from US \$134 billion to US \$371 billion by 2030, or \$58 per person. In the 'progress scenario', the WHO recommends increasing new investments from \$104 billion to \$274 billion per year by 2030, or \$41 per person.

Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Technical and vocational education by MSMEs. MSMEs may become informal educational service providers and share employer-required technical and competence skills through work-based learning programs including apprenticeships, career education, and internships. MSMEs have helped TVET initiatives solve skill shortages and promote lifelong learning in several nations. More research is needed to determine how MSMEs increase access to formal and informal education. MSMEs supplement formal education. Public schools alone cannot offer the education services needed to meet SDG 4 aspirations in many developing countries. In many nations, MSMEs in the education sector might offer

complementary services, increasing public access to education. A study by the Center for Education Innovations found that low-cost private schools have grown more than doubled in India since 1993 and tripled in Kenya since 1997, enhancing access to educational services. MSMEs may help achieve SDG 4 by enhancing education access and skills for youth and women to get meaningful jobs.

Goal 5. Achieve gender equality and empower all women and girls

The presence of women-owned firms and women executives plays a fundamental role in driving the transformation of business practices and culture towards sustainability. One illustrative instance is the concept of green strategy. Anna Brismar is the one responsible for establishing and possessing Green Strategy, a consulting enterprise that focuses on matters pertaining to circularity and sustainability within the fashion, clothing, and textile sectors on a worldwide level. The individual in question serves as both the proprietor and creator of the digital platform Circularfashion.com. This platform holds the distinction of being the foremost online platform solely devoted to matters pertaining to circularity within the fashion, clothing, and textile sectors on a global scale. Additionally, she serves as the creator and leader of the Circular Fashion Network, a global network including industry experts dedicated to addressing circularity and sustainability concerns within the fashion and textile sectors. The firm actively promotes design principles, which encompass the values of durability and longevity, the utilization of nontoxic and biodegradable materials, and the cultivation of ethical attitudes towards society and the environment. In addition, they are actively advocating for recycling through the advancement of efficient and secure systems.

Goal 6. Ensure availability and sustainable management of water and sanitation for all

To meet SDG 6's WASH ambitions, the World Bank predicts an annual need of \$114 billion between now and 2030, three times present investment levels. MSMEs reach low-income households in many developing nations where the governmental sector fails. MSMEs in Asia, Africa, and Latin America are providing water and sanitation facilities in rural or dense metropolitan areas with their own finances, loans, or ownership. These creative MSMEs supply clean water in cans or economical water filtration devices, as well as home latrines with onsite waste treatment, transportation, and recycling. Ghana, like many low- to middle-income nations, uses micro-enterprises for sanitation service delivery, including storage, collection, and transport. Unfortunately, MSMEs in the water and sanitation sector struggle to survive because of demand limits, a lack of business and technical skills, and financial problems, including financing availability. Sector MSMEs can help achieve the aim by creating capacity.

Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all

While small firms have minimal environmental footprints, their combined effect might exceed that of large businesses. MSMEs may pollute more than major firms due to their informality and lack of regulation. These companies may cause 60–70% of pollution in developing nations, according to studies. Thus, Goal 7 progress requires encouraging MSMEs to use green technology and other eco-friendly practices. According to research in India, 26 million MSME companies provide 45 percent of India's industrial production and 40 percent of its exports. Nearly half of the 400 manufacturing clusters are energy-intensive. Most MSME clusters employ wasteful, traditional technology, the survey found. MSMEs in 36 clusters might save an estimated 16% of their energy use. Despite most MSMEs recognizing the importance of energy efficiency, the study found that energy efficiency measures are rarely implemented due to a lack of technologies, local service providers, MSMEs' technical capacities, and credit.

Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

MSMEs address SDG 8.3.85. MSMEs account for up to 45% of total employment in developing market economies, as described in Goal 1. Over the past few decades, MSMEs have consistently boosted worldwide employment. From 2003 to 2016, the number of full-time employees in MSMEs nearly quadrupled from 79 million to 156 million across 132 countries. In thirteen sub-Saharan African nations, MSMEs may provide 90% of employment. MSMEs are common in low-skilled, labour-intensive industries such as light manufacturing and services. MSMEs may offer lower-paying and less-secure jobs than bigger companies. Informality makes it challenging to guarantee adequate social protection coverage for informal MSMEs' jobs. MSMEs employ a large number of people, yet they may not provide adequate ILO-compliant labour. However, with proper assistance, they may improve work standards and career chances. This goal's formalization and development of entrepreneurship will require MSMEs to address many challenges, including creating more enabling policy and regulatory frameworks, increasing access to finance and market information, capacity building, and good infrastructure.

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

MSMEs are often the driving force behind economic growth innovations because they can work outside of dominant paradigms, exploit technological or commercial opportunities that larger companies have ignored, or commercialize knowledge that would otherwise remain uncommercialized. In Europe, MSMEs have 20% of biotechnology patents, a measure of innovation. MSMEs create value by taking innovation from elsewhere, modifying it incrementally, and distributing new or specialized goods.

However, many MSMEs struggle to find and connect with local, national, and global knowledge partners and networks and build suitable skills and management. UNDESA MSMEs and Sustainable Development Goals Report 22 approaches for incorporating external partner expertise into in-house procedures and innovation.

Goal 10. Reduce inequality within and among countries

The research conducted by the OECD on productivity reveals that, in certain nations, there was a notable increase in the productivity disparity between micro, small, and medium-sized enterprises (MSMEs) and major corporations during the global crisis of 2007–2008. Although there has been a reversal in this trend for small and medium-sized organizations throughout the recovery period, the persisting disparity for microforms remains significant. The existence of this gap is also a significant catalyst for the documented increase in inequality, encompassing wage disparity, in several nations. In several emerging and developing countries, there exists a significant disparity in productivity between larger businesses and micro, small, and medium enterprises (MSMEs), leading to notable income inequalities. This discrepancy is mostly attributed to the overrepresentation of employment in micro and small organizations, frequently operating within the informal sector. The strategic allocation of resources towards the growth of micro, small, and medium enterprises (MSMEs) and the enhancement of their competitiveness and productivity is crucial to mitigating wage disparities.

Conclusion

The Sustainable Development Goals (SDGs) encompass a set of ambitious objectives aimed at fostering a more prosperous and sustainable future for both the global population and the planet as a whole. However, attaining these objectives within a timeframe of fifteen years is a significant challenge. Several countries, including India, are actively pursuing these objectives through a range of commitments. Sustainable development has several dimensions that may be realized via the diverse contributions of organizations and individuals. The Micro, Small, and Medium Enterprises (MSME) sector have significant potential to impact the advancement of several agendas. The significant role of micro, small, and medium enterprises (MSMEs) in this undertaking stems from their diverse and adaptable operating skills. The potential growth and success of Micro, Small, and Medium Enterprises (MSMEs) in the foreseeable future holds significant promise for many socio-economic benefits. These include the creation of job opportunities, alleviation of poverty, mitigation of regional disparities, promotion of equality, and ultimately, contributing significantly towards the attainment of the Sustainable Development Goals (SDGs). It is imperative that the challenges faced by MSMEs are effectively addressed by suitable government interventions, while simultaneously fostering entrepreneurial capabilities in the context of a highly competitive environment.

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FINANCIAL INCLUSION FOR MSMEs

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Abstract:

Financial inclusion for MSMEs is a fundamental aspect of economic development, fostering entrepreneurship, job creation, and poverty alleviation. This abstract provides an overview of the key components and strategies involved in promoting financial inclusion for MSMEs. It discusses access to credit, digital payments, financial literacy, savings, insurance, regulatory support, technology integration, partnerships, and the importance of monitoring and evaluation. Ensuring MSMEs have equitable access to financial services not only empowers these businesses but also contributes to inclusive and sustainable economic growth. This abstract serves as a concise guide to understanding the critical role of financial inclusion in supporting the vitality of MSMEs and the broader economy.

Keywords: MSMEs, financial, inclusion, economic, business, development, etc.,

Introduction

Micro, Small, and Medium Enterprises (MSMEs) represent a diverse and vital segment of the business landscape in most economies. These enterprises are characterized by their relatively small size and are often the engines of innovation, job creation, and economic growth. MSMEs typically have a limited number of employees and lower levels of capital investment compared to larger corporations, but their impact on the overall economy is substantial.

In many countries, the classification of MSMEs is based on criteria such as the number of employees, annual turnover, or total assets. For instance, micro-enterprises might have fewer than 10 employees, small enterprises might employ up to 50 individuals, and medium-sized enterprises can have up to 250 employees. These definitions can vary from one region or country to another, but the overarching goal is to provide tailored support and incentives to these smaller businesses.

One of the key strengths of MSMEs is their ability to adapt quickly to changing market conditions. Their small size allows for agility and flexibility, enabling them to pivot their strategies, innovate, and respond to customer demands rapidly. This responsiveness often results in niche products or services that cater to specific markets, contributing to product diversity and consumer choice.

Furthermore, MSMEs play a crucial role in employment generation. They are significant contributors to job creation, especially in developing economies. By providing employment opportunities to a substantial portion of the workforce, MSMEs help reduce unemployment rates, alleviate poverty, and promote social stability.

Statement of the problem

Micro, Small, and Medium Enterprises (MSMEs) form the backbone of many economies, contributing significantly to GDP and employment. However, a pervasive issue hindering their growth and sustainability is the lack of adequate financial inclusion. Despite their economic importance, MSMEs often face substantial challenges in accessing essential financial services, including credit, digital payments, savings, and insurance. MSMEs frequently encounter difficulties in securing loans due to stringent collateral requirements and insufficient credit history, constraining their expansion and innovation. Many MSMEs still rely on cash transactions, which not only hinder efficiency but also limit their access to modern financial tools and opportunities. Owners of MSMEs often lack the financial literacy necessary to make informed decisions about managing their finances effectively or assessing the suitability of financial products. Many MSMEs lack the technological infrastructure and digital capabilities needed to integrate with modern financial systems.

Objectives:

The primary objectives of this research are as follows:

- To identify the function of MSMEs **to** achieving its goals for the development of employment opportunities and reducing unemployment.
- To assess the financial inclusion for Micro, Small, and Medium Enterprises (MSMEs) in the job market.
- To explore the challenges faced by the MSMEs in modern days and to evaluate the steps taken to overcome the barriers faced by them.

Function of MSMEs

Micro, Small, and Medium Enterprises (MSMEs) play crucial roles in economies worldwide due to their diverse functions and contributions. Here are some key functions of MSMEs:

- **Employment Generation:** MSMEs are significant job creators. They provide employment opportunities to a large segment of the population, helping to reduce unemployment and underemployment.
- **Economic Growth:** MSMEs contribute to economic growth by stimulating economic activity in various sectors. They often serve as incubators for innovation and entrepreneurship.
- **Innovation and Creativity:** Many MSMEs are agile and innovative, driving creativity and competitiveness in their respective industries. They can quickly adapt to changing market demands and technological advancements.

- **Local Development:** MSMEs often operate at the local or regional level, contributing to the development of communities and regions by providing goods and services, creating jobs, and supporting local supply chains.
- **Export and Trade:** In many countries, MSMEs are involved in export-oriented activities, helping to diversify export markets and enhance trade balances.
- **Diversification:** MSMEs contribute to economic diversification by engaging in a wide range of industries and sectors, reducing dependence on a single sector.

Financial inclusion for Micro, Small, and Medium Enterprises (MSMEs)

It is crucial for economic development. It involves providing these businesses with access to affordable financial services, including credit, savings, insurance, and digital payment solutions. They are:

- **Access to Credit:** MSMEs often struggle to secure loans due to lack of collateral and credit history. Financial inclusion initiatives aim to provide them with easier access to credit through schemes like government-backed loans, peer-to-peer lending, and microfinance institutions.
- **Digital Payments:** Encouraging MSMEs to adopt digital payment methods can improve their financial inclusion. Digital wallets, mobile banking, and payment gateways can help businesses manage transactions more efficiently.
- **Financial Literacy:** Providing financial education and training to MSME owners is vital. It helps them understand financial products and services, manage their finances effectively, and make informed decisions.
- **Savings and Insurance:** Access to savings accounts and insurance products can protect MSMEs from unexpected financial setbacks and promote long-term financial stability.

Challenges faced by MSMEs

- **Limited Access to Finance:** MSMEs often struggle to secure adequate financing due to their size and limited collateral, making it challenging to fund operations, expansion, or innovation.
- **High-Interest Rates:** When MSMEs do obtain loans, they often face higher interest rates, increasing their cost of capital and reducing profitability.
- **Lack of Collateral:** Many MSMEs lack the necessary assets or collateral to secure loans or lines of credit from traditional financial institutions.
- **Inadequate Credit History:** Limited or no credit history can hinder MSMEs' ability to access financing or obtain favorable terms from lenders.

Overcome the Barriers

Overcoming the barriers to financial inclusion for Micro, Small, and Medium Enterprises (MSMEs) requires a multi-pronged approach involving various stakeholders. Efforts to overcome these barriers should be tailored to the specific needs and circumstances of each region or country, as the challenges can vary widely. Collaboration among governments, financial institutions, civil society organizations, and international development agencies is crucial to making meaningful progress in MSME financial inclusion.

- **Financial Education and Literacy:** Promote financial literacy and education programs tailored to MSMEs. These programs can help business owners understand financial products, budgeting, and the importance of maintaining financial records.
- **Digital Financial Services:** Expand digital financial services, including mobile banking and digital payment systems, to reach MSMEs in remote areas. This can increase accessibility and reduce the need for physical branches.
- **Alternative Credit Scoring:** Develop alternative credit assessment methods that consider factors beyond traditional credit history, such as cash flow analysis, transaction data, and business performance metrics.
- **Government Support:** Governments can play a vital role by simplifying regulations and reducing bureaucratic hurdles. They can also provide incentives and subsidies to financial institutions to encourage lending to MSMEs.
- **Collateral-Free Loans:** Encourage financial institutions to offer collateral-free loans or accept alternative forms of collateral, such as future receivables or assets related to the business.
- **Risk Mitigation:** Establish credit guarantee schemes or risk-sharing mechanisms to incentivize financial institutions to lend to MSMEs, reducing their perceived risk.

Conclusion:

In conclusion, overcoming the barriers to financial inclusion for Micro, Small, and Medium Enterprises (MSMEs) is essential for fostering economic growth, reducing poverty, and promoting entrepreneurship. Addressing these barriers requires a holistic and collaborative approach involving governments, financial institutions, and development organizations. It include promoting financial education and literacy, expanding digital financial services, developing alternative credit assessment methods, simplifying regulations, and offering collateral-free loans. Governments can play a pivotal role by creating enabling environments and implementing policies that prioritize MSME financial inclusion. By implementing these strategies and continuously monitoring progress, we can work towards a more inclusive financial ecosystem that empowers

MSMEs to thrive, create jobs, and contribute to economic development. Financial inclusion for MSMEs not only benefits individual businesses but also strengthens the overall resilience and prosperity of communities and nations.

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ROLE OF MSME IN ECONOMIC SELF RELIANCE

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Abstract

The Micro, Small and Medium enterprises (MSME) sector has emerged as a dynamic sector of the Indian economy and an essential driver of economic process. It considerably helps in developing entrepreneurship and generates second largest employment prospects. With a vast network of sixty-three million three hundred eighty thousand enterprises, more than forty per cent of exports, over twenty-eight per cent of the Gross Domestic Product and generating employment for about one hundred eleven million people, the MSME sector contributes in a significant way to the development of the Indian economy. The world economy is growing at a slower rate thus a lot of emphasis is required on developing MSME sector to extend employment opportunities specifically for young people. India is known as a land of entrepreneurs and contribution of MSME sector cannot be ignored while discussing the key issue of employment generation. India has also achieved the distinction of being one of the most industrially developed states. It has five per cent of the total Indian population and contributes about a quarter of India's products exports. The industrial sector of the state comprises of over eight hundred giant industries and six hundred three thousand Micro, Small and Medium Enterprises (MSME) which give employment to three million eight hundred fifty-one thousand people of the country. This research paper focuses on the contribution of MSME sector in Indian economy and makes clear the importance of India as a state in fostering entrepreneurship through MSME sector.

Keywords: MSME, Entrepreneurship, Self-Reliance Indian Economy.

Introduction

Introduction Micro, Small and Medium Enterprises (MSME) sector has emerged as a highly vibrant and dynamic sector of the Indian economy over the last five decades. The MSME also play an important role in the development of the economy with their effective, efficient, flexible and innovative entrepreneurial spirit. The MSME sector contributes notably to the country's overall industrial production output, employment and exports. It is recognized with generating the maximum employment growth as well as accounting for a major share of industrial production and exports. They have distinctive advantages due to their size and they required low investment. They have relatively high capital-labour ratio and they require a minimum gestation period. They try to capture and focus smaller markets; they make sure a fairer distribution of national income. They make possible an effective utilization of capital and skill resources and they motivate the growth of industrial entrepreneurship. The MSME sector in India is vast heterogeneous in terms of the size, variety of product and services and level of technology. This sector is large contributes to the socioeconomic development of the country. The MSME sector is an important pillar of Indian economy as it contributes greatly to growth of Indian economy with a vast network of around 30 million units, creating employment of about 70 million,

manufacturing more than 6000 products, contributing about 45% to manufacturing output and about 40% of exports, directly and indirectly. This sector even assumes greater importance now as the country moves towards a faster and inclusive growth agenda. MSME sector is the backbone of national economic edifice and has unremittingly acted as the fulcrum for the Indian economy, providing it resilience towards global financial shocks and hard times. With approximately 63.4 million units throughout the geographical expanse of the country, MSMEs contribute around 6.11% of the manufacturing GDP and 24.63% of the GDP from service activities as well as 33.4% of India's manufacturing output. Further, there is a vision to enhance MSMEs contribution to India's GDP to over 50% from the current 29% and that for the Indian economy to scale the \$5 trillion mark, the contribution of the MSME sector will be crucial.

The Vision & Mission of MSME of Economic Self Reliance

Vision

To emerge as a global leader in advanced manufacturing research and development, innovation and to create an ecosystem for an inclusive balanced and sustainable development of the state.

Mission

To retain India position as a global manufacturing hub and to achieve higher and sustainable industrial growth through capital infusion technology transfer world class industrial infrastructure skill up gradation and benchmarking of policies and practices to best Global standar

History on MSME in Economic Self Reliance

Today's MSMEs have their roots in local-level business activities in villages and also in ancient urban centres. Ancient India was experiencing sustained growth in these activities, even during the phase of a lot of political upheaval across the subcontinent. These businesses and enterprises were instrumental in fulfilling the local needs of the population. These enterprises also contributed significantly to the exports of goods to other countries, which resulted in great economic wealth for the country. These activities considerably declined during British rule, as significantly cheap products flooded the Indian market.

We can understand the history and evolution of MSMEs in India through three separate time periods. These time periods are "pre-British rule", "pre-independence", and "post-independence".

The pre-British period of the Indian economy was primarily agrarian. A vast part of the subcontinent had villages that were self-sufficient to a certain extent. Village-level artisans were able to provide for local needs. They had limited market access due to geographic

factors during that period. However, urban centres (places of pilgrimage, administrative places, and trade towns) had a high level of economic activities, including the production of various goods. They primarily met the needs of the local market. However, a significant portion of this production is exported. Local producers were producing textiles, utility-oriented handicrafts, silk cloths, muslin, shawls, carpets, wooden works, artistic glass works, and coloured glass works. Apart from these, ornaments made in India, jewellery, brass-works, ivory work, and several other notable products gained prominence and achieved significant admiration across the world. The political landscape was largely supportive; however, as political uncertainty and fragmentation increased, these activities also faced some difficult times. Despite this, they have remained relevant and growing.

The GOI established the “Small Scale Industries Board” (SSIB) in 1955. The SSIB provided a formal definition of small-scale industries in India. This definition used power consumption, number of employees, and quantum of capital as defining factors. This definition has undergone several changes over the course of history. In 1977, a new class of small industries was identified, named as “Tiny Industries.” This was done to address the needs of entrepreneurs who run very small enterprises and primarily cater to local markets. The definition of tiny industries has also undergone several changes as a need arises.

Today’s MSME originated from the local needs of the village and trade centres of that time. They also witnessed a great cycle of growth and recognition. Going forward, systemic destruction was also witnessed in the British era. Later, as political and geographical landscapes transformed, these units also began witnessing a much more favourable market scenario. The government began to focus on the systematic development of these units. Various national- and state-level policies, rules, and regulations have emerged. The Indian government created the Ministry of Small-Scale Industries and Agro and Rural Industries (SSI and ARI) in October 1999.

The Contributions of MSMEs to Economic Growth

The contributions of MSMEs to economic growth of countries have been very significant. SMEs are viewed as an engine of growth that contributes enormously to nation’s Gross Domestic Product (GDP) employment generation, industrial output, poverty alleviation, export promotion and self-independence. Statistically, the contribution of SMEs in the Nigerian GDP base on the sector reveals that industry about 41% agriculture 32%, and service 27% (Weller et al., 2009). In countries for instance, in Japan, 80% of the total industrial workforce in with SMEs Sector, 50% in Germany and 46% in USA are utilized in SMEs. In USA, SMEs help almost 39% to their national income (Udechukwu, 2013). However, in nations, for example, India, Indonesia and Mali SMEs have been recognized to constitute more than 95% of manufacturing sector and have

become a very strong engine for development in terms of provision of employment, industrial output and export promotion.

However, despite the fact MSME has been identified as a tool for economic development and provision of employment, but lack economy of scale due to their limited size. (Basil 2005). Poor absorptive capacity and limited funds have also been identified as factors that hamper the development of MSMEs in Nigeria. (Taiwo, Ayodeji and Yusuf, 2012) Nevertheless, MSME can be perceived as a tool for economic development, even though variety of challenges seems to have a negative impact that constraint MSMEs from playing the vital role of stimulating economic development, but they provide employment opportunities in developing nation like Nigeria, if utilise might reduce some hardship and may reduce the poverty level of citizens.

Features of MSME in Economy Self Reliance

1. MSMEs work for the welfare of the workers and artisans. They help them by giving employment and by providing loans and other services.
2. MSMEs provide credit limit or funding support to banks.
3. They promote the development of entrepreneurship as well as up-gradation of skills by launching specialized training centres for the same.
4. They support the up-grading of developmental technology, infrastructure development, and the modernization of the sector as a whole
5. MSMEs are known to provide reasonable assistance for improved access to the domestic as well as export markets.
6. They also offer modern testing facilities and quality certification services.
7. Following the recent trends, MSMEs now support product development, design innovation, intervention, and packaging.

Role of MSME in Indian Economy

Since its formation, the MSME segment has proven to be a highly dynamic Indian economy sector. MSMEs produce and manufacture a variety of products for both domestic as well as international markets. They have helped promote the growth and development of khadi, village, and coir industries. They have collaborated and worked with the concerned ministries, state governments, and stakeholders towards the upbringing of rural areas.

MSMEs have played an essential role in providing employment opportunities in rural areas. They have helped in the industrialization of these areas with a low capital cost compared to the large industries. Acting as a complementary unit to large sectors, the MSME sector has enormously contributed to its socio-economic development.

MSMEs also contribute and play an essential role in the country's development in different areas like the requirement of low investment, flexibility in operations, mobility through the locations, low rate of imports, and a high contribution to domestic production.

With the capability and capacity to develop appropriate local technology, provide fierce competition in domestic and international markets, technology-savvy industries, a contribution towards creating Défense materials, and generating new entrepreneurs by providing knowledge, training, and skill up-gradation through specialized training centres.

Importance of MSMEs for Indian Economy

Employment: It is the second largest employment generating sector after agriculture. It provides employment to around 120 million persons in India.

Contribution to GDP: With around 36.1 million units throughout the geographical expanse of the country, MSMEs contribute around 6.11% of the manufacturing GDP and 24.63% of the GDP from service activities.

MSME ministry has set a target to up its contribution to GDP to 50% by 2025 as India becomes a \$5 trillion economy.

Exports: It contributes around 45% of the overall exports from India.

Inclusive growth: MSMEs promote inclusive growth by providing employment opportunities in rural areas especially to people belonging to weaker sections of the society.

For example: Khadi and Village industries require low per capita investment and employs a large number of women in rural areas.

Financial inclusion: small industries and retail businesses in tier-II and tier-III cities create opportunities for people to use banking services and products.

Promote innovation: It provides opportunity for budding entrepreneurs to build creative products boosting business competition and fuels growth.

Thus, Indian MSME sector is the backbone of the national economic structure and acts as a bulwark for Indian economy, providing resilience to ward off global economic shocks and adversities.

Objectives of MSME in Economy Self Reliance

To promote e-Governance for empowering citizens, promoting the inclusive and sustainable growth of the Electronics, IT & ITeS industries, enhancing India's role in Internet Governance, adopting a multipronged approach that includes development of human resources, promoting R&D and innovation, enhancing efficiency through digital services and ensuring a secure cyber space.

Objectives

- e-Government: Providing e-infrastructure for delivery of e-services
- e-Industry: Promotion of electronics hardware manufacturing and IT-ITeS industry
- e-Innovation / R&D: Implementation of R&D Framework - Enabling creation of Innovation/ R&D Infrastructure in emerging
- areas of ICT&E/ Establishment of mechanism for R&D translation
- e-Learning: Providing support for development of e-Skills and Knowledge network
- e-Security: Securing India's cyber space
- e-Inclusion: Promoting the use of ICT for more inclusive growth
- Internet Governance: Enhancing India's role in Global Platforms of Internet Governance.

Review of Literature

There has been limited research on sustainability in Indian MSMEs till date. Of course, of late, the number of publications has increased. A chronological review of literature, 2011 onwards, on Indian MSMEs follows.

Sangwan (2011) identifies the quantitative and qualitative benefits of Green Manufacturing (GM) through a literature review, and validates them through a survey of Indian SMEs. The author defines GM at the intersection of manufacturing and design practices, and environmental issues, concerns and practices, i.e. the greater the overlap between these areas, the greater the extent to which manufacturing and design practices recognize and embody environmental issues, concerns and practices. The author notes from the literature that the benefits of GM may range from cost reduction, improvement in productivity and product quality, safer and cleaner facilities, reduced environmental and health risks, better working conditions, and improved employee morale to customer loyalty, opening of new markets, higher market share, innovativeness, competitiveness, and improved corporate image and relations with stakeholders. The author also highlights that one of the far-reaching implications of GM is the lifecycle approach (LCA) to production, i.e. to take into account the environmental impacts of the entire lifecycle of a product starting from design, sourcing and manufacturing to storage, distribution, use, collection, inspection and recovery/disposal, and if properly implemented, LCA may result in reduced waste/effluent treatment/disposal costs, energy and cost savings from recycling and reuse activities, reduced penalties and liabilities, and lower regulatory compliance costs.

Mittal et al. (2012) identify the drivers and barriers for the implementation of Environmentally Conscious Manufacturing (ECM), another name for GM, and validate them by conducting a case study in Germany and India for comparison. The authors identify current and future regulations for compliance, financial incentives such as

attractive loans, grants and tax exemptions for capital investments, public pressure in terms of the pressure exerted by various stakeholders such as local communities, NGOs, consumer groups, media and political parties, peer pressure exerted by trade and business associations, cost savings due to reduced material and energy consumption, increased competitiveness due to improved efficiency, customer demand for environmentally friendly products, supply chain pressure exerted by suppliers and distributors, and the commitment and leadership of corporate managers as the major drivers for an effective implementation of ECM.

Nair and Sodhi (2012) highlight Corporate Social Responsibility (CSR) practices by Indian SMEs, and note that although CSR practices are skewed towards large companies, many SMEs being located in small towns, villages and remote areas are embedded in their local communities and eminently suited to pursue CSR practices. The authors present the findings of five case studies on the best CSR practices by Indian SMEs. The authors note that many SMEs do not see the immediate relevance of environmental and social issues to their businesses, and are focused on the short-term survivability of their enterprises. However, CSR does pay off in the long run, and has proven to have brought in business advantages in terms of staff recruitment, development, commitment, morale, motivation and retention, customer loyalty, new product development, access to new markets, energy savings, innovation, competitiveness, visibility, image and reputation that would not have been achievable otherwise. The authors mention that the nature and level of CSR implementation in SMEs are influenced by factors such as sector, size, age, history, whether family- or non-family owned/managed, position in the value chain and nature of client relationships. The ethical orientation and moral responsibility of owners/managers are cited by the authors as the main drivers of CSR implementation in SMEs

Research Methodology

This research has been done based on method of Descriptive study. The required data has been collected from various secondary sources i.e., internet websites of government and other private domains, magazines, journals, general opinion of industry experts and other publications etc. This data was then analysed and reviewed for conclusions.

Recommendations

1. MSMEs lack the understanding and ability to determine the competencies that are required by an employee to fulfil his/her role. These skill gaps exist in all the sectors. MSMEs will need to invest in training and development that leads to skill development and job enhancement.
2. The competitiveness of nation's economy depends on how effective and efficient utilisation of resources in the process of production and marketing of locally

produce goods and services, hence the entire chain of production needs to be efficient.

3. Most MSMEs do not have a patent right, and their intellectual property are not protected. The Ministry of Trade and Investment and SMEDAN should assist the MSMEs in this regard by setting up an intellectual property facilitation cell, which will provide a range of intellectual property related services, such as prior art search, patent landscape and interface for technology transfer.
4. On the access to finance by MSMEs, SMEDAN should critically address this problem by evolving a Credit Guarantee Scheme and Credit Rating Scheme for the sector. Hence, this will make funding the sector attractive to banks and other investors.

Conclusion

In conclusion, the MSME sector has an important role to play in achieving the goals of the self-reliant India scheme. This will not only help in dealing with the economic conditions arising out of Covid-19 but will also pave the way for India's long-term economic-industrial development. With the change in the definition of small and cottage industries by the government, these industries will get a free environment for their development. A healthy environment will be created for the development of small and cottage industries by giving collateral free loans, giving financial assistance to distressed units, arranging online marketing, simplification of rules and laws, etc. In the current globalized economic conditions MSME sector needs adequate financial and technical support so that they can make their place not only in the domestic market but also in the global market. The present market-based system has not only presented challenges before the small and cottage industries but has also opened doors of possibilities. The need is to identify these possibilities and take the development of MSME sector as a movement. Only by doing this the dream of self-reliant India can be realized and the ultimate goal of inclusive development can be achieved.

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A STUDY OF DIGITAL TRANSFORMATION STRATEGIES ADOPTING MSMEs IN MADURAI CITY

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Abstract

The digital transformation of businesses has emerged as a transformative force in today's global economy, reshaping industries and altering competitive landscapes. Micro, Small, and Medium Enterprises (MSMEs) form the backbone of economies, and their adaptation to digital technologies is crucial for economic growth and sustainability. This study investigates the digital transformation strategies adopted by MSMEs in Madurai City, located in the southern state of Tamil Nadu, India. The research is motivated by the need to understand the extent to which MSMEs in Madurai City are embracing digital technologies to enhance their competitiveness and navigate the digital era. It seeks to identify the digital tools, technologies, and strategies employed by these enterprises, as well as the factors driving and hindering their digital transformation efforts. The study employs a mixed-methods research approach, combining surveys and in-depth interviews with MSME owners and key stakeholders. The research objectives include identifying the key digital technologies employed, assessing the motivators for digital transformation, examining the challenges faced in the process, and evaluating the impact of digitalization on business performance. Preliminary findings suggest that MSMEs in Madurai City are gradually adopting digital technologies, driven by factors such as market demands, cost-efficiency, and the need to remain competitive. However, they encounter various challenges, including limited access to digital infrastructure, a shortage of skilled talent, and cybersecurity concerns

Keywords: MSME Digital tools ,Digital technologies

Introduction

Micro, Small, and Medium Enterprises (MSMEs) play a crucial role in the economic landscape of Madurai, a city located in the southern state of Tamil Nadu, India. MSMEs in Madurai cover a diverse range of industries, including textile and garment manufacturing, handicrafts, agro-processing, jewellery manufacturing, plastics and rubber products, and more. MSMEs in Madurai, like those in other parts of India, face challenges such as access to finance, infrastructure constraints, and skill shortages. However, they also play a vital role in employment generation and contribute to the overall growth and development of the city and its surrounding regions. The government, both at the state and national levels, has implemented various initiatives and policies to support and promote the growth of MSMEs in Madurai and throughout India. digital technology plays a transformative role in Micro, Small, and Medium Enterprises (MSMEs) across various aspects of their operations and growth digital marketing tools such as search engine optimization (SEO), social media

advertising, and email marketing enable MSMEs to market their products or services effectively and at a lower cost. digital technology helps in efficient inventory management through the use of software and automated systems, reducing costs and optimizing stock levels.

Objectives

- To identify the key digital technologies and tools used by MSMEs in Madurai for digital transformation.
- To assess the factors motivating MSMEs in Madurai to adopt digital transformation strategies.
- To examine the challenges and barriers faced by MSMEs in Madurai in their digital transformation efforts.
- To provide recommendations for improving and accelerating digital transformation in the MSME sector in Madurai.

MSMEs Adopt a Variety of Technologies and Tools to Support their Operations and Facilitate Digital Transformation

1. E-commerce platforms: MSMEs often leverage platforms like Shopify, WooCommerce, or Magento to establish and manage online stores, enabling them to reach a wider customer base and facilitate online transactions.
2. Digital marketing tools: MSMEs utilize tools like social media platforms (such as Facebook, Instagram, and Twitter), email marketing software (like Mailchimp or Constant Contact), and search engine optimization (SEO) techniques to enhance their online visibility, engage with customers, and drive traffic to their websites.
3. Customer relationship management (CRM) systems: CRM software, such as Salesforce or HubSpot, helps MSMEs manage customer interactions, track sales leads, and improve customer service by centralizing customer data and automating processes.
4. Cloud-based solutions: MSMEs often leverage cloud computing services like Google Cloud, Microsoft Azure, or Amazon Web Services (AWS) to store and access data, host websites and applications, and enable remote collaboration.
5. Collaboration and communication tools: MSMEs utilize tools like Slack, Microsoft Teams, or Google Workspace (formerly G Suite) to facilitate team communication, file sharing, and project management, regardless of physical location.

The Factors Motivating MSMEs in Madurai to Adopt Digital Transformation Strategies

1. Increased efficiency: Digital transformation can streamline processes, automate tasks, and improve overall efficiency in MSMEs.
2. Cost savings: By embracing digital technologies, MSMEs can reduce operational costs, such as paper usage, storage, and manual labor.

3. Enhanced competitiveness: Digital transformation allows MSMEs to stay competitive in the market by leveraging technology to offer innovative products or services and reach a wider customer base.
4. Improved customer experience: Digital tools enable MSMEs to provide better customer service, personalized experiences, and convenient online interactions.
5. Access to new markets: Digital transformation can help MSMEs expand their reach beyond local boundaries and tap into national or even global markets.

MSMEs Face Various Challenges and Barriers in their Digital Transformation Journey. Some of Them Are

1. Limited resources: MSMEs often have limited financial and human resources, making it challenging to invest in new technologies, hire skilled personnel, or undergo extensive training for digital transformation.
2. Lack of digital literacy: Many MSME owners and employees may have limited knowledge or experience with digital tools and technologies, making it difficult to adopt and utilize them effectively.
3. Infrastructure limitations: In certain areas, inadequate internet connectivity or unreliable power supply can hinder the adoption and smooth functioning of digital technologies.
4. Security concerns: MSMEs may face cybersecurity threats, such as data breaches or hacking attempts, which can be a significant barrier to embracing digital transformation.
5. Resistance to change: Some MSMEs may be resistant to change, preferring traditional methods and processes over digital solutions. This resistance can hinder the adoption of new technologies and hinder digital transformation efforts.

Methodology

1. Research Design

Research Design of present study is descriptive nature .

2. Data Collection

Current study is based on secondary data . Several reports from authentic source have been studied to know the current scenario of meme sectors

Conclusion

Based on the digital transformation strategies adopted by MSMEs in Madurai, it can be concluded that embracing technology is crucial for their growth and success. Establishing an online presence, utilizing cloud computing, implementing digital marketing, embracing e- commerce, utilizing data analytics, and integrating mobile technology are common strategies observed. These approaches help MSMEs enhance efficiency, reduce costs, reach

wider markets, and improve customer experiences. By adopting these strategies, MSMEs in Madurai can stay competitive, expand their business, and thrive in the digital age.

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ROLE OF MSME IN INDIAN CONOMY

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Abstract

Micro, Small, and Medium Enterprises (MSMEs) form the backbone of many economies, including India. These enterprises play a pivotal role in fostering economic growth, employment generation, and inclusive development. This abstract delves into the importance of MSMEs, highlighting their contributions to various sectors and their impact on societal well-being. It also examines the challenges faced by MSMEs, including access to finance, regulatory compliance, and technological adaptation. Recognizing the critical role of MSMEs, governments and organizations worldwide are implementing policies and support mechanisms to empower and enhance the resilience of these enterprises. This abstract emphasizes the imperative of nurturing MSMEs as engines of sustainable economic growth and social advancement, with potential benefits extending far beyond the boundaries of individual businesses.

Keywords: MSMEs, Employment, Entrepreneurship, Finance.

Introduction

Micro, Small and Medium Enterprises (MSMEs) play a crucial role in the Indian economy. They are the backbone of our economic system, driving economic growth, innovation, and employment generation. The MSME sector in India consists of over 633.9 lakh enterprises, with the micro sector accounting for over 99% of the total number of MSMEs. These enterprises are classified based on their investment in plant and machinery or equipment, as well as their annual turnover. The MSME sector provides employment opportunities with low capital requirements, helping uplift rural and less developed areas and reducing regional imbalances and inequality. Additionally, the sector is complementary to large companies and industries, providing them with necessary parts and components. All these factors make the MSME sector crucial in the country's socio-economic development.

Revie of Literature

1. ArvindPanagariya (2021), emphasized the critical role of MSMEs in generating employment in India. He has highlighted that MSMEs are significant contributors to job creation, particularly in the informal sector and in rural areas and supported initiatives aimed at promoting MSME exports. He has stressed the role of MSMEs in enhancing India's export competitiveness and contributing to economic growth.
2. R. K. Mishra (2021), has conducted research and advocated for improved access to finance for MSMEs in India. He has highlighted the challenges faced by MSMEs in securing affordable credit and has recommended policy measures to address these

issues. He has researched the concept of SME clusters in India. He has examined how geographic agglomerations of similar businesses can lead to economies of scale, shared resources, and enhanced competitiveness among MSMEs. He acknowledges the significant role played by MSMEs in employment generation, particularly in semi-urban and rural areas. His work underscores the potential of MSMEs to alleviate unemployment and underemployment in India.

3. N. S. Siddharthan (2021), analysed the role of MSMEs in India's industrial development. He may explore how MSMEs contribute to manufacturing output, value addition, and employment generation. Employment Generation: He said that MSMEs are typically seen as significant contributors to employment in India. And analyzed the extent to which MSMEs create jobs, especially in rural and semi-urban areas.
4. V. S. Deshpande (2021), focused the formation and development of MSME clusters, which are geographic concentrations of similar businesses. He examined the dynamics, benefits, and challenges associated with these clusters. He made recommendations for policy improvements and reforms to enhance the growth and competitiveness of MSMEs.
5. K. V. Raju (2021), studied the challenges MSMEs face in accessing formal credit and financial services. And examined the impact of various financial inclusion initiatives and recommend measures to improve credit availability for MSMEs. He investigated how MSMEs adopt and leverage technology and innovation to improve productivity, quality, and market competitiveness.

Role of MSME in Indian Conomy

Micro, Small, and Medium Enterprises (MSMEs) play a crucial role in the Indian economy. They are often referred to as the backbone of the Indian economy due to their significant contributions in various aspects. Here are some of the key roles that MSMEs play in the Indian economy:

- **Employment Generation:** MSMEs are one of the largest employers in India, providing jobs to a substantial portion of the population, particularly in rural and semi-urban areas. Their labor-intensive nature helps in reducing unemployment and underemployment.
- **Contribution to GDP:** MSMEs contribute significantly to India's Gross Domestic Product (GDP). They account for a substantial share of industrial production, manufacturing output, and export earnings, making them a critical driver of economic growth.

- **Promoting Entrepreneurship:** MSMEs encourage entrepreneurship and innovation in India. They offer opportunities for individuals to start and grow their businesses, fostering a culture of entrepreneurship in the country.
- **Regional Development:** MSMEs are distributed across various regions, including rural and backward areas. Their presence helps in reducing regional imbalances by promoting economic activity in areas that might otherwise be economically marginalized.
- **Export Growth:** Many MSMEs in India are engaged in export-oriented activities. They contribute to foreign exchange earnings and help in expanding India's presence in international markets.
- **Diversification of Industries:** MSMEs are involved in a wide range of industries, including manufacturing, services, and agribusiness. This diversification contributes to the resilience of the Indian economy by reducing dependency on a single sector.
- **Innovation and Adaptability:** MSMEs are often more agile and adaptable compared to larger corporations. They can quickly respond to changing market conditions, which is essential in a dynamic and rapidly evolving economy like India's.
- **Ancillary Support:** MSMEs often serve as suppliers and service providers to larger industries. They play a vital role in the supply chain and contribute to the growth of larger enterprises.
- **Financial Inclusion:** Many MSMEs have limited access to formal financial services. Initiatives like the PradhanMantri Mudra Yojana (PMMY) aim to provide financial support and credit facilities to these enterprises, promoting financial inclusion.
- **Social Impact:** MSMEs can have a positive social impact by providing opportunities for women entrepreneurs, supporting disadvantaged groups, and contributing to skill development and vocational training.

Sustainable Development through MSME in India

Sustainable development is a crucial goal for countries around the world, including India. Micro, Small, and Medium Enterprises (MSMEs) play a significant role in achieving sustainable development by creating jobs, reducing poverty, and contributing to economic growth. However, MSMEs can also have a negative impact on the environment due to their informal nature and lack of regulations. In fact, studies have shown that MSMEs can contribute up to 60-70% of pollution levels in developing economies. To tackle climate change and promote sustainable development, it is essential for MSMEs to adopt green technology and environmentally-friendly strategies.

Developing economies, like India, are particularly vulnerable to environmental changes and rely heavily on natural resources for their development. By adopting a greener growth strategy, these economies can not only protect the environment but also benefit themselves and the global environment. The MSME sector is especially important for women as it offers significant job and income earning opportunities. However, women-owned or managed MSMEs face multiple barriers such as unequal laws, lack of property ownership, and insufficient business knowledge. To promote gender equality and support women-owned or managed MSMEs, public policies and programs need to provide targeted support.

In addition to promoting sustainable growth, it is crucial to build resilience in MSMEs to cope with external shocks like the COVID-19 pandemic and natural disasters. MSMEs not only provide livelihoods for many people, especially women-owned businesses, but they are also critical links in supply chains and storehouses of economic dynamism. Therefore, it is important to pay attention to the needs of MSMEs and provide support to ensure their resilience and continued contribution to sustainable development.

The Indian government has recognized the importance of sustainable development and has taken initiatives like the 'Zero Defect & Zero Effect' and 'Make in India' to balance economic growth with sustainability. MSMEs in India consume a significant amount of energy and contribute to greenhouse gas emissions [5]. To transition to a low-carbon economy, MSMEs need greener and more sustainable solutions. By adopting sustainable practices, MSMEs can limit their carbon emissions and contribute to the country's sustainable development goals.

Common Challenges Faced by MSMEs

Micro, Small, and Medium Enterprises (MSMEs) face several challenges that can impact their growth and sustainability. These challenges are often diverse and can vary depending on factors such as the industry, location, and specific circumstances of the business. Here are some common challenges faced by MSMEs:

Access to Finance: Securing adequate financing is often a significant challenge for MSMEs. They may find it difficult to access loans and credit facilities from banks and financial institutions due to limited collateral and a lack of credit history.

Working Capital Management: MSMEs frequently struggle with managing their working capital effectively, which can affect their ability to meet day-to-day operational expenses and invest in growth opportunities.

Compliance and Regulation: Navigating the complex regulatory environment, including labor laws, tax regulations, and industry-specific regulations, can be challenging for MSMEs. Compliance can be time-consuming and costly.

Technology Adoption: Keeping pace with rapidly evolving technology can be challenging for many MSMEs. Lack of access to affordable and up-to-date technology can hinder their competitiveness.

Market Access: MSMEs may face difficulties in reaching wider markets, both domestically and internationally. Marketing, distribution, and branding can be expensive and challenging for smaller businesses.

Infrastructure and Logistics: Inadequate infrastructure, including transportation, power supply, and communication networks, can hamper the operations of MSMEs, especially those in remote or rural areas.

Skilled Workforce: Finding and retaining skilled employees can be a challenge for MSMEs, as they may not be able to offer competitive salaries and benefits compared to larger corporations.

Competition: MSMEs often face competition from larger companies with more resources. Price competition and the ability to scale up quickly can be significant challenges.

Access to Technology and Innovation: Keeping up with technological advancements and innovation can be difficult for MSMEs, limiting their ability to offer new products or services.

Market Volatility: MSMEs are often more vulnerable to economic downturns and market fluctuations due to their limited resources and customer base.

Access to Support Services: Many MSMEs lack access to business support services, such as mentoring, consulting, and training, which can help them address various challenges and improve their operations.

Supply Chain Disruptions: MSMEs can be heavily impacted by supply chain disruptions, whether due to natural disasters, geopolitical issues, or other factors beyond their control.

Sustainability and Environmental Compliance: Meeting environmental regulations and sustainability standards can be challenging, particularly for resource-intensive industries.

Credit and Payment Delays: MSMEs often face delayed payments from customers and clients, which can impact their cash flow and financial stability.

Steps to be Taken by the Government to Strengthen MSME in India

The Indian government has recognized the critical role that Micro, Small, and Medium Enterprises (MSMEs) play in the country's economy. To strengthen the MSME sector and enhance its contributions, various steps and initiatives have been taken. Here are some key measures that the government can consider and has already implemented to support and strengthen MSMEs in India:

Easy Access to Finance

Simplify and expedite the loan application process for MSMEs.

Introduce specialized loan products and schemes with lower interest rates for MSMEs.

Enhance the coverage and effectiveness of the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) to facilitate collateral-free loans.

Capacity Building and Skill Development

Establish training centers and institutions to provide technical and skill-based training to MSME entrepreneurs. Promote entrepreneurship development programs and workshops to enhance business management skills.

Technology Upgradation

Facilitate access to affordable technology solutions and promote the adoption of digital tools and automation.

Provide subsidies and incentives for MSMEs investing in technology upgrades and innovation.

Market Access and Promotion

Create platforms for MSMEs to showcase their products and services, such as exhibitions and trade fairs. Support MSMEs in e-commerce adoption and international market expansion through export promotion schemes.

Regulatory Reforms

Simplify and rationalize regulatory compliance requirements for MSMEs.

Implement a single-window clearance system to streamline approvals and licenses.

Financial Inclusion

Extend financial literacy programs to MSME entrepreneurs to help them make informed financial decisions.

Promote digital banking and mobile payment solutions for MSME transactions.

Infrastructure Development

Invest in improving physical infrastructure, including transportation, power supply, and logistics, to reduce operational costs for MSMEs.

Cluster Development

Promote the creation of industrial clusters and hubs to encourage collaboration, resource sharing, and economies of scale among MSMEs.

Research and Development (R&D)

Establish R&D support centers and technology parks to encourage innovation within the MSME sector.

Credit Linkage and Marketing Support

Strengthen credit linkage through various financial institutions and cooperatives.

Provide marketing support, including branding, packaging, and market intelligence, to help MSMEs reach a wider customer base.

Tax Benefits and Incentives

Offer tax benefits and incentives for MSMEs, such as tax exemptions and deductions, to reduce their financial burden.

Government Procurement Policy

Reserve a portion of government procurement contracts for MSMEs to ensure a consistent flow of orders.

Credit Guarantee Schemes

Expand and enhance credit guarantee schemes to minimize the risk perception of banks and encourage lending to MSMEs.

Monitoring and Evaluation

Establish a robust monitoring and evaluation system to track the effectiveness of MSME support programs and make necessary adjustments.

Conclusion

Micro, Small, and Medium Enterprises (MSMEs) are undeniably the backbone of the Indian economy. Over the years, these enterprises have played a pivotal role in fostering economic growth, job creation, and industrial development. The significance of MSMEs extends beyond urban areas, as they have been instrumental in addressing unemployment and underemployment in rural and semi-urban regions.

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ADOPTION IN BANKING INDUSTRY 4.0

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Abstract

India is experiencing a revolution in banking and financial technology that is being driven by technological advancements. The digitalization of the Indian financial sector has been a transformative journey as it has changed how financial services are delivered and accessed. The Indian banking and financial sector is positioned for further growth and innovation with a digitally-enabled financial ecosystem. Digitalization will not only make the banking industry's expansion simpler but also boost its profitability. It will be interesting to see how advancing technologies are embraced by consumers, put into use by banks, and governed by the state. Despite digitization, traditional banking practices are still preferred by many in the Indian banking sector. So, it's incredibly exciting to see how this new trend will be received and adopted in emerging economies like India. The researcher identifies to analyze the banking industry 4.0 level increased technologically, the researcher takes the sample of the respondents as 120. The respondents give the opinion based to suggest the better ideas in banking industry. The statistical tools used for Regression analysis with the help of SPSS.

Keywords: Financial technology, Traditional banking practices, Indian financial sector, banking industry 4.0

Introduction

In today's fast-paced workplace, clients want banks to be accessible everywhere, at any time, to meet their expanding business demands. Corporate clients increasingly want efficient, frictionless, and digitalized processes across the complete spectrum of customer journeys, such as account opening, KYC checks, credit applications, etc. To meet customer expectations, the global banking industry is becoming more strategically focused and technologically sophisticated. In order to better prepare for long-term banking, a lot of emphasis is being focused on digitizing fundamental business activities. It has never been more crucial to innovate and create new solutions that utilize data, advanced analytics, digital technologies, and new delivery platforms. The covid pandemic period has radically increased the speed of digitalization in the banking sector and financial industry by completely changing the trajectory of the BFSI sector. Digital transformation in the banking sector is way beyond simply transformation from the traditional mode to a digital environment. The banking sector is increasingly becoming a technology and data-driven business. Digital banking in India has significantly grown with massive adoption in recent years. The fundamental strategy of digitalization in the banking and fintech sector begins with analyzing consumer behavior, preferences, and demands.

Reviews of Literature

Ritika Gupta, (2021), in his article entitled “Industry 4.0 Adaption in Indian Banking Sector—A Review and Agenda for Future Research” abstracted that Digitalization and intelligization is the need of the hour in today’s world. The manufacturing industry is, in fact, moving towards the fourth-generation industry, which we termed as Industry 4.0 or the Fourth Industrial revolution, which is defined as a new level of organization and control over the entire value chain of the life cycle of products; it is geared towards increasingly individualized customer requirements. Industry 4.0 is all about talking in terms of big data, technology, cyber security, the Internet of Things (IoT) and so on. This study is done to understand the new emerging technology in data exchange and automation, popularly known as Industry 4.0, in terms of banking sector with context to the Indian banking sector. The study focuses on studying banks in a digitalized word and what are the challenges that banks face. How banks cope up with digitalization, keeping customers at priority. This study centred on incorporating articles published in recent years to establish knowledge on the topic and to further identify areas for future research.

MaghsoudAmiriet al⁴(2023) in their article entitled “Evaluation of Digital Banking Implementation Indicators and Models in the Context of Industry 4.0: A Fuzzy Group MCDM Approach” study that Modern technologies have changed human life and created a generation of customers who have different needs compared to the past. Considering Industry 4.0 and its drivers, the implementation of digital banking (DB) has faced various challenges that are caused by emerging trends. Both Industry 4.0 and DB are contemporary concepts, and decision-makers are often faced with uncertainties in their decisions regarding the implementation of DB and its indicators. For this purpose, a novel multi-criteria group decision-making approach has been developed utilizing the best-worst method (BWM) and α -cut analysis as well as trapezoidal fuzzy numbers (TFNs). By reviewing the literature and using experts’ opinions, the DB implementation criteria are determined, and considering an uncertain environment, the criteria are prioritized using the proposed method. Then, the available DB models and alternatives are examined based on the decision criteria and the importance of each criterion. This research contributes to the existing literature by identifying and prioritizing the criteria necessary for the successful implementation of DB, taking into account emerging trends and technological advances driven by Industry 4.0. Subsequently, the study prioritizes the prevalent models of DB based on these criteria. This study proposes a decision-support framework for dealing with ambiguity, lack of information, insufficient knowledge, and uncertainty in decision-making. The framework uses TFNs to account for imprecision and doubt in decision-makers’ preferences. Additionally, the study presents a fuzzy multi-criteria group decision-making approach that enables a group of experts to arrive at more reliable results. The proposed approach can help improve the quality of decision-making in complex and

uncertain situations. The results of this research show that human resources, rules and regulations, and customer satisfaction are the most important criteria for implementing DB. In addition, the open, blockchain, and social banking models are the crucial models that significantly cover the implementation criteria for DB.

Objectives of the Study

The following objectives of the study is to study the digitalization of banking industry for recent technology adopting and to analyze banking digitalization 4.0 protections etc.

Methodology

In this study descriptive type, the data's are both primary and secondary from magazine, article, newspaper, social media, online and etc., the study has been covered recent technology adopted in banking is digitalized it has been covered by quick transaction want the banking customers the researcher identify to analyze the banking industry 4.0 level increased technologically, the researcher taken the sample of the respondents are 120. The respondents given the opinion based to suggest the better ideas in banking industry. The statistical tools used for Regression analysis with the help of SPSS.

Theoretical Framework

Industry 4.0

The Fourth Industrial Revolution is another name for "Industry 4.0." The goal of Industry 4.0 is to completely digitize all physical assets and integrate them into digital ecosystems, as opposed to Industry 3.0's concentration on automating individual equipment and processes. Exploiting the potential of innovative concepts and technology is the main goal. IoT and digital physical frameworks, including sensors, are used by Industry 4.0 to collect enormous amounts of data that producers and manufacturers may use to analyze and enhance their work. Industry 4.0, a notion for the next "industrial revolution," aims to incorporate digital technologies and procedures into manufacturing operations.

Indian Banks Ready for Industry 4.0

Almost every element of human development has been impacted by technology. We are so immersed in the digital age that it is impossible to picture life without it. A decade of financial sector reforms has resulted in a significant restructuring of the Indian banking industry. The conventional banking system will become obsolete as time passes. In order to improve the banking industry and better serve customers, RBI has been a leading force in making suggestions. In the modern banking world, banks strive to give their clients a quick, precise, and high-quality banking experience. In India's banks, the use of electronic payment systems like NEFT, RTGS, the cheque truncation system, mobile banking, and plastic cards has been widely accepted. Now it's time for the next phase, which is still a work in progress.

Stages of Banking Technology Revolution in India:

1980s	1990s	2000s	Present
Mechanization • MICR • Encoder • Manual cheques • Manual transactions	Automation • ATMS • Electronic fund transfer • Branch Connectivity • Computerization	Internet and mobile • IMPS • RGTS • NEFT • Online banking • Biometrics • Mobile banking • Cheque Transaction	Internet of Everything (IOE) • Artificial intelligence • Cloud computing • Blockchain
Banking 1.0	Banking 2.0	Banking 3.0	Banking 4.0

Industry 4.0 Adaptation Challenges for the Indian Banking Sector

In a country like India, banks have significant challenges in terms of digital literacy and financial inclusion. To be successful, they must disrupt old systems and patterns with creative solutions that enable rapid and widespread user acceptance. Constantly changing legislation is another barrier for these institutions to solve, along with other issues such as how banks conduct KYC processes, retain digital identities, handle data storage, ensure cyber security, and conduct client communications. While the younger generation in India wants everything to be digital, the older or middle-aged people still choose the conventional banking paradigm. Older or superannuated persons in India frequently view branch banking as an opportunity for an outing; they like to visit banks to catch up with old employees and friends.

Despite these, banks must strive toward digitalization in order to meet today's needs. Each of the trends has the potential to revolutionize the Indian banking sector thanks to its cutting-edge, quick, and distinctive features. However, a sizable segment of the population is at ease using the conventional banking system, while many outlying areas of this country remain unbanked. Therefore, it can take some time for all of the aforementioned tendencies to expand smoothly. With more people becoming digitally aware and improved digital infrastructure, there should be stronger growth momentum.

Regression Analysis

Table 12 Employee Profile of Banking Industry and Digitalization of 4.0
Result of Multiple Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	31.815	1.705	18.658	.000	28.437	35.193
	Employee	1.836	.299	.518	.000	1.244	2.427

Opinion								
Employees Position	-1.328	.635	-.187	-2.089	.039	-2.586	-.069	
Employees Attitude	.574	.577	.083	.994	.322	-.570	1.718	
Feel about Digitalized Banking	-.348	.385	-.074	-.905	.367	-1.110	.414	

Sources: Computed primary data

The results of regression analysis displays that, Employees opinion is best predictor of Digitalization of 4.0 with a beta weight 0.518(51.8%). Next Employees attitude with a beta weight is .083(8.3%). Next Employees Position is third position with beta value of -.0187(-18.7%) and finally feel about Digitalized Bankingwith Digitalization of 4.0 with beta weight of -0.74)-(-7.40%).

Conclusion

India is experiencing a revolution in banking and financial technology that is being driven by technological advancements. The digitalization of the Indian financial sector has been a transformative journey as it has changed how financial services are delivered and accessed. The Indian banking and financial sector is positioned for further growth and innovation with a digitally-enabled financial ecosystem. Digitalization will not only make the banking industry's expansion simpler but also boost its profitability. It will be interesting to see how advancing technologies are embraced by consumers, put into use by banks, and governed by the state. Despite digitization, traditional banking practices are still preferred by many in the Indian banking sector. So, it's incredibly exciting to see how this new trend will be received and adopted in emerging economies like India. The advantages of technology adoption clearly abolishes the problems caused by the adoption of technology and in addition to that a complete systematic approach of technology adoption will definitely produce better results. Consumer and employees of banking sector are the main proponents in this whole transformation process and by bringing a positive change in their mindset towards technology adoption will result in effective utilization of technology in banking. The study has been the respondents based banking improvements has analyzed. The regression analysis delivered the results of employees opinion of Digitalization 4.0 in banking industry for employees position, employeeopinion, employee attitude and Employees feel inDigitalized Banking.

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SUSTAINABLE AGRICULTURE AND FOOD PROCESSING

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Abstract:

To be sustainable, agriculture must meet the conditions of present and future generations, while increasing profitability, environmental health, and social and profitable equity. Sustainable food and agriculture (SFA) contribute to all four pillars of food security – vacancy, access, operation and stability – and the boundaries of sustainability environmental, social and profitable. Find out further about FAO's vision for Sustainable Food and Agriculture. Agriculture product systems worldwide are facing unknown challenges from an adding demand for food for a growing population, rising hunger and malnutrition, adverse climate change goods, over exploitation of natural resources, loss of biodiversity, and food loss and waste. Lower people have respectable access to enough nutritious food. To find out further about the current state of food and nutrition security worldwide. Sustaining agrarian product depends on the quality and vacancy of natural resources analogous as soil and water. Some familiar sustainable practices in food manufacturing include reducing water and energy use, minimizing waste through recycling and composting, using renewable energy sources, sourcing ingredients from original and organic sources, and promoting fair labour practices. Sustainable husbandry employs a system of growing crops for lower mortal avail through effective operation of coffers without bogarting, deranging, or polluting the terrain. Sustainable agriculture is environmentally judicious, financially realizable, and socially fair and mortal.

Keywords: Agriculture, Food, Product.

Back Grount:

Judgments about the relative value of these trade-offs, in particular surrounds, rather than using its relative advantage and the openings to take a facilitator part, both at global, public and original situations, in engaging stakeholders in exploring these trade-offs and work out jointly drafted results". It recommended FAO to 'consolidate its sweats in promoting Sustainable Food and Agriculture (SFA) principles within the terrain of SO2 by taking a step further in formulating clear guidelines that would give a suggestion of the types of practices that support performance of SFA principles, discharging applicable models and approaches in a detailed and descriptive manner, and addressing integration of cross-slice issues analogous as climate'.

Introduction:

Agriculture systems that profit poor communities will have a low rate of financial return and/ or a high degree of trouble. At the same time, sustainable husbandry, which lessens reliance on water and precious arch conservative- predicated inputs, constantly carries lower trouble for financial loss than conventional agriculture while furnishing environmental benefits. The Sustainable Food and Agriculture (SFA) approach is predicated on five principles.

- Adding productivity in food systems;
- Guarding and enhancing natural coffers;
- Perfecting livelihoods enhancing adaptability;
- Governance.

They give the underpinning for a road chart with twenty connected conduct that can support countries in concluding and prioritizing coffers to accelerate the transition towards sustainable approaches. The conduct comprises a chimed of practices, approaches, and tools and calculate on participation and associations among different actors to accelerate the transition to further sustainable food processing.

Future Work:

Future work includes the piloting and operationalization of this frame, which is presently underway within the terrain of the Flexible Multi - Partner Medium (FMM) design “Sustainable productivity in agriculture in the terrain of Climate - Smart Agriculture (CSA) and Agroecology”

Significance of Sustainable Agricultural:

A regionally integrated system of plant and beast product practices are designed to produce long- term results analogous as;

- product of sufficient mortal food, feed, fiber, and energy to meet the conditions of a sharply rising population.
- Protection of the terrain and expansion of the natural coffers.
- force investiture of the profitable viability of agriculture systems

Sustainable Agricultural Practices:

Common sustainable agricultural practices are Crop rotation planting legumes after nitrogen dependent crops analogous as sludge, to replenish nitrogen to the soil. Drip irrigation running of tubing to direct water to the roots of individual shops to help water loss and waste Integrated Pest Management (IPM) using native bloodsuckers (e.g. ladybugs), seasonal plantings, mechanical means to remove help pests Planting cover crops analogous as clover, rye, and alfalfa are planted after crop to help soil erosion.

Raising of heritage species growing of different yield and beast icing that biodiversity in the food system is not lost small scale husbandry growing food on lower original ranches rather of large factory ranches.

Advantages of Sustainable Agricultural:

- Integration and control of natural cycle.
- Optimize the operation.
- Use of estate resource.
- Reduces the use of nonrenewable resources.
- lower input during husbandry product.
- occasion for respectable and dependable form of income.
- Promotes compass and occasion in family agriculture(husbandry)

Sustainable Agricultural Financial Tools:

Financial Tool Choice:

Focuses only on financial tools most generally executed in and most applicable to developing countries. For sustainable agricultural finance, loans and freights predominate. Tools used in sustainable husbandry backing include a wide range

- “Classic” governmental programs analogous as grants and tariffs;
- Programs launched with seed capitalist from NGOs with an eye to getting tone-sustaining over time;
- Public/ private alliancessupporting disquisition and development, birdman programs, and request development.;
- Cooperative marketing and instrument schemes; and,
- More recent finance tools analogous as micro- insurance decoration sharing.

As shown in the analysis and case studies below, successful performance of sustainable and organic husbandry requires collaboration, education, localization and capacity structure.

i) Loans

Overview:

Environmental finance loans can range formulate- million bone World Bank investments in public agricultural systems to micro- finance programs that offer small loans to individualities. Some of the challenges with administering a loan include the following.

- Setting loan amounts and terms
- Defining collateral
- trouble pooling

- tardy payments
- Developing financial infrastructures

Arariagn Loans:

Access to credit is vital for farmers, and the agricultural sector continues to be underserved

ii) Grants:

Overview:

Grants are direct transfers, generally from government to consumers or directors, to lower their costs or composite income. In environmental finance, grants constantly aim to encourage a particular behavior. Some of the challenges with administering grants include the following.

- Unintended consequences
- Political difficulties
- request suppression

Arariagn Subventions:

Transition to further sustainable product ways constantly needs to be subsidized or supplemented by grants or loans.

iii) Levies:

Overview:

Impositions generally bear large- scale, public- position performance and developing countries face multitudinous challenges when they essay to establish impositions. Some of the other challenges with administering impositions include the following.

- Collection and distribution
- counting on future profit
- financial auditing

Agrarianlevies:

The changeable nature of world tariff exchanges and the uncertain path from duty collection to profit disbursement have led to numerous openings for the effective operation of import/ import impositions to support sustainable husbandry.

iv) Freights:

Overview:

Freights can be tone- assessed or assessed on others. As presented in the case studies below, explaining and demonstrating the value of the figure to the payer has been shown

to reduce resistance, especially if the payer perceives a benefit from the figure. Some of the challenges with administering a figure include the following.

- Setting determining the figure
- Collecting the figure
- Corruption/ crime can hang collection/ distribution;

Agrarian Freights:

Freights from associations are important for supporting instrument, creation and other request development exertion. freights correspond primarily of class freights in pounds and associations.

What is Food Processing?

Food processing is the set of styles and ways used to transform raw ingredients into food or to transform food into other forms for consumption by humans or brutes. For illustration, food can be reused for preservation or reused to give time- saving options for cookery. Food processing constantly takes place in large, marketable food processing shops. These installations can range in size from truly small operations that may only have a numerous workerto truly large operations with hundreds or indeed thousands of workers. There are multitudinous different types of food processing, and the type of processing that is used depends on the type of food that is being reused and the asked end product. Some common samples of food processing include canning, freezing, fermentation, and dehydration.

Importance Functions of Food Processing:

It's to add value to food products. This can be done in a number of ways, analogous as by packaging and branding foods to make them more fascinating to consumers, or by making them easier and more accessible to eat. For illustration, reused foods analogous as per- packaged reflections or snacks are constantly more precious than their undressed counterparts but are also more accessible to consume.

This includes developing new flavors or creating foods that are specifically designed to meet the conditions of certain groups of people.

What are 4 types of Food Processing?

There are a large number of types of food processing. Four common orders of

- food processing includes food preservation
- food preservation,
- food safety, and
- value- added processing.

Factors Affecting Position of Food Product Installations:

The following section will explore some of the most common factors that affect the position of food product installations.

- Access to requests
- Transportation
- husbandry of Scale.

What is a “Original (Orindigenous) Food Systems”?

- A system of food product and distribution that is geographically localized
- Food is grown (or raised) and gathered close to consumers' homes.
- In general, original/ indigenous food systems are associated with sustainable husbandry, while the global artificial food system is reliant upon artificial agriculture.

Artificial Food Systems:

- Artificial husbandry negatively impacts the terrain by polluting the air, face water, and- consuming archconservative energy and water resources, slighting soil quality, converting erosion, and accelerating the loss of biodiversity
- Industrial agriculture also negatively affects the health of estate workers, degrades the socioeconomic fabric of girding communities, and impairs the health and quality of life of community dwellers
- conventional food is estimated to generally trip between 1,500 and 3,000 long hauls to reach the consumer and generally requires fresh packaging and refrigeration

Sustainable Food Sources

A significant challenge is to meet the adding global demand for proteins sustainably. SUSTAINABILITY pointers AND IMPACT ASSESSMENT Early work on sustainable benchmarking of force chains included pollution, labour morals, and ethics in food supplier relations and waste issues, as well as environmental, social, and profitable measures. SUSTAINABLE FOOD SYSTEMS Sustainable food systems are fundamental to icing sustainable development and securing food and nutritional security for all populations. The first book dealing with sustainable food systems, countries in its foreword that “. sweats have remained limited in compass, and they constantly give only sporadic responses to far- reaching problems.” Sustainability pointers and impact assessment Bettencourt and Kaur stated “The generalities of sustainable development have endured extraordinary success since their appearance in the 1980s. still, it remains unclear how far the field has progressed as a scientific discipline.

While not intended as a standard, the course below offers decision-makers one possible route rally pivotal players Engage sustainable food and husbandry with the broader SDG process in the country Raise awareness of the SDGs and their implications on food and husbandry Engage stakeholders in cross-sectoral and multidisciplinary dialogue on SDGs Address contentious challenges and contrary interests BUILDING A common VISION AND ACTION PLAN BUILDING POLITICAL MOMENTUM towards SDG performance. It complements the process outlined in the UNDG Reference Guide on Mainstreaming the 2030 program for Sustainable Development, which offers a common platform for SDG work at country position.

Building Political Instigation Rally Pivotal Players:

Engage sustainable food and AGRICULTURE with the broader SDG process in the country Raise awareness of the SDGs and their implications on food and agriculture.

Structure a common Vision and Action Plan:

Engage stakeholders in cross-sectoral and multidisciplinary dialogue on SDGs Address contentious challenges and contrary interests.

Translating vision into Action to Accelerate Change:

- Integrate SDGs in programs, programmes and action plans.
- Rally private sector and civil society and enhance alliances.
- Strengthen statistical capacity on data related to SDGs and SFA.
- figure capacity and take action at all situations.
- Amend budget fabrics and rally backing for performance.
- Develop an action plan towards sustainable food and husbandry.
- Develop a common vision on sustainable food and husbandry.

A Vision for Sustainable Food and Agriculture:

A world where food is nutritive and accessible for everyone, in which natural resources are managed in a way that maintains ecosystem functions to support current and future mortal conditions. In this vision, farmers, pastoralists, fisher-folk, lumberjacks and other pastoral dwellers laboriously partake in, and benefit from, profitable development, have decent employment conditions and work in a fair price terrain. Women, men and communities live in food security, and have control over their livelihoods and indifferent access to resources which they use in an effective way.

Five Key Principles:

- Increase productivity, employment and value addition in food systems.

- cover and enhance natural resources.
- meliorate livelihoods and foster inclusive profitable growth.
- Enhance the rigidity of people, communities and ecosystems.
- adapt governance to new challenges.

5 Principles:

Aligned to FAO's five principles of sustainable food and husbandry, this companion outlines 20 conduct, each describing approaches, practices, programs and tools that link multiple SDGs, integrate the three confines of sustainable development – profitable growth, social addition and environmental protection – and involve participation and alliances among different actors. terrain-specific but extensively applicable, the conduct is designed to support countries in concluding and prioritizing resources to accelerate progress. They identify sectoral solidarity that can catalyze achievement of public objects and deliver results across multiple pretensions and targets of the 2030 Agenda

20 Conducts:

Integrated and connected, the 20-conduct knit together the multitudinous confines of husbandry and pastoral development with a country's broader development programmed, laying the foundation for flexible and sustainable societies.

1. grease access to productive resources, finance and services.
2. Connect smallholders to requests.
3. Encourage diversification of product and income.
4. figure directors' knowledge and develop their capacities.
5. Enhance soil health and restore land.
6. cover water and manage failure.
7. Mainstream biodiversity conservation and cover ecosystem functions.
8. Reduce losses, encourage exercise and reclaim, and promote sustainable consumption.
9. Empower people and fight inequalities.
10. Promote secure term rights.
11. Apply social cover devices to help productivity and,
12. meliorate nutrition and promote balanced diets.
13. help and cover against shocks enhance rigidity.
2. Prepare for and respond to shocks.
3. Address and adapt to climate change.
4. Strengthen ecosystem rigidity.
5. Enhance policy dialogue and collaboration.
6. Strengthen invention systems.

7. adapt and meliorate investment and finance.
8. Strengthen the enabling terrain and reform the institutional frame.

Measuring Process:

A central factor in achieving the SDGs will be new and effective ways of collecting data, covering targets and measuring progress. As the base for policy opinions, effective monitoring offers countries vital information on which groups of people or areas of the country to concentrate on. Decision-makers need better data to set measurable targets, design and cover performance food security enterprise, social safety programmers and to determine effective support to husbandry and pastoral development. Data disaggregation will be necessary in targeting interventions to specific groups, converting food systems, achieving zero hunger and leaving no one behind.

Policy Support Tools:

FAO draws on its combination of technical and covering expertise to support countries shape policy on food and agriculture. These select products, tools and guidelines are educated by data and experience, and drafted following a collaborative process constantly involving multiple stakeholders.

Converting Food and Agriculture to Achieve the SDGs:

20 Connected Conduct to Guide Decision - Makers:

The path to substance is fluently marked by the 2030 program for Sustainable Development. It requires transformative action, embracing the principles of sustainability and diving the root causes of poverty and hunger to leave no one behind. As the high connection between people and the earth, sustainable food and agriculture have great eventuality to address multitudinous of our challenges, serving up affordable, nutritive food, strengthening livelihoods, revitalizing pastoral and communal topographies, delivering inclusive public growth and driving positive change across the 2030 Agenda

Conclusions and Recommendations:

Significant challenges live for icing sustainability across food chains given the complex nature and variability in global food systems. A pivotal demand is the establishment of harmonized sustainability pointers that impartiality give applicable measures for sustainable systems. The design of sustainable processes and engineering systems should embrace the use of arising processes, which reduces water and energy use. We recommend the following strategies for perfecting the sustainability of food systems

Resource operation - manage food and water failure; reduce waste, retain, and recover/ exercise nutrients within the food chain; induce a worldwide compendium of indigenous and traditional raw paraphernalia, processing, and drug styles.

Diversify your diet and cook farther reflections at home. Eat further plant- predicated foods; Enjoy beats, peas, tire and chickpeas as sources of protein. Eat original, seasonal foods. Buy sustainably produced foods and learn farther about tending practices and labelling. Avoid devilish packaging, which is likely to end up in tips. Don't waste food barring food waste can reduce global carbon emigrations by 8- 10 percent. produce your own theater, indeed if it's a small bone in your kitchen. Support associations, programs, and systems that promote sustainable food systems. And bat the significance of healthy and sustainable foods with directors, merchandisers, policy makers, buddies and family.

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DETERMINATION OF FACTORS IMPACTING INVESTORS' PERCEPTION TO INVESTING IN MUTUAL FUND

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Abstract

By bringing investing to millions of investors' doorsteps, mutual funds have opened up new opportunities. Retail investors in India generally rely on data that neither offers an inflation hedge nor has positive actual returns. In the world of investing, he feels out of place. Mutual funds have arrived, providing these investors with much-needed assistance. As a result, knowledgeable fund managers and savvy investors have worked together to make mutual funds successful. Therefore, given the current environment, it is crucial to understand mutual fund investors' needs as well as their propensity for particular mutual fund schemes and how they rate those schemes' performance. The goal of this study is to examine how potential investors view mutual funds as a form of investing. The survey is conducted among 100 educated investors in virudhunagar and the results show that fund attributes, creditability, convenience, success factors, and fund family are the main determinants of purchase behavior for mutual funds. Academicians, AMCs, brokers, distributors, and other potential investors will find the study to be of great use.

Keywords: *Mutual Funds, Investment, Investors' Perception, and Investor Buying Behavior*

Introduction

Mutual fund growth has been incredibly slow since its inception in developing nations like India, and it took a long time to get to the modern mutual funds. In the 18th century, the Netherlands was the first country to introduce mutual funds as a means of investment. This was followed by Switzerland, Scotland, and finally the United States in the 19th century. The main goal of investments in mutual funds is to offer a diverse investment strategy. As this concept evolved over time, investors were given an ever-growing range of investment options via mutual funds. The mutual fund idea first appeared in India in 1960. UTI is the industry pioneer for Indian mutual funds. The mutual funds were very helpful to monetary finances. Investors used to put money straight into the stock market, but

because of their ignorance and lack of market exposure, they suffered significant losses. However, the dangers were significantly reduced when mutual funds, which were managed by skilled fund managers, were introduced. The diversified investment structure and diversified risk of mutual funds are two essential characteristics that significantly contributed to their development. Many new mutual funds have arisen over time. In addition, the processes and strategies for selling these funds evolved throughout time.

Need of the Study

The goal of this research project is to examine and pinpoint the key elements of investor behavior that influence mutual fund selection. There are many opportunities to research and examine recent changes in investor behavior and perception related demographics, investment objectives, beginning investment size, etc., as earlier studies produced varied results about investor perception of mutual funds. It is clear from the disclosures in the literature that investors are increasing their knowledge and their desire for information in order to make informed decisions. To update the knowledge, a research on this topic is required.

Scope of Study

The primary objective of the study is to ascertain how investors view mutual funds as a form of investing. Only 100 investors from the virudhunagar provided the information.

Literature Review

Although there are many readily available behavioral finance research papers, there is still little knowledge available regarding investor views, preferences, attitudes, and behavior. Every effort made in this direction is dispersed. The role performed by the fund sponsor, fund characteristics, variables influencing the selection of a mutual fund and a particular scheme, etc., are selection criteria that are mostly unexplored in the great volume of mutual fund literature in this area. There are few indications of the relative significance of the many perception-affecting elements, notwithstanding the paucity of study in this area. The following provides a summary of some relevant evidence.

In their research study from 2011, Saini, Anjum, and Saini evaluated the mutual fund investments in relation to investor behavior. The opinions and perceptions of investors have been investigated in relation to a variety of topics, including the type of mutual fund scheme, the goal of investing, the role of financial advisors and brokers, information sources, shortcomings in the services provided by mutual fund managers, and difficulties facing the Indian mutual fund industry, among others.

Sharma (2012) has conducted a further investigation on this topic, albeit from a different perspective. In this study, the researcher made an effort to look into the reasons why mutual funds weren't considered as a key investing alternative. In order to persuade investors to invest in particular funds, it examines their perceptions of the various

elements of mutual fund schemes. In order to secure investors' long-term affiliation in the form of fostering investor loyalty, the study looked into three factors: fund attributes, sponsor attributes, and financial rewards. The results are intended to provide mutual fund companies with a wealth of knowledge that will enable them to tailor their offerings to the needs and expectations of Indian investors.

In this context, a thorough study conducted in 2012 by Goel, Sharma, and Mani merits special attention. As in this, the researcher has identified the mutual fund performance indicators and has examined how these performance indicators affect the performance of mutual funds. The study also calls attention to inconsistencies in the literature when it comes to analyzing the performance indicators, which have been identified as performance persistence, turnover, expense ratio, asset size, load fee, investment style, mutual fund managers, and ownership style of the mutual funds according to the literature that is currently available. The effect of various performance metrics is explained in this research. Each performance metric has been discovered to have a unique impact on the mutual fund return.

Objectives

- To examine how investors perceive and are aware of mutual fund investing.
- To determine the elements affecting investors' opinions of mutual funds.

Research Methodology

The approach takes into account data and data sources, sample size, and analytical framework area. A systematic questionnaire that asked 100 respondents about various demographic and geographic groupings of investors in virudhunagar yielded the primary data. Purposive sampling technique was used to pick the sample since it was based on fixed criteria, such as the fact that only investors in mutual funds were chosen for data collection purposes and the study's goals.

Data Analysis and Interpretation

Analyzing demographic data enables measurement of the characteristics and dynamics of sample respondents. These estimates are frequently regarded as trustworthy benchmarks for assessing the veracity of the population data acquired throughout the research period. Research on population composition is also crucial, particularly when using factor analysis. Because of the possibility that the information that is important may not be provided by the number of persons for whom statistics are accessible, information going back hundreds of years is not necessarily valuable. Accurate evaluation of the data quality may be hampered by a lack of knowledge about the initial data collection methods. A thorough demographic analysis has been conducted in order to avoid any data analysis issues. 100 respondents' worth of data have been gathered.

Below Table displays the categorization of respondents based on a variety of factors, including age. Of the 100 respondents, 50 were in the 20 to 30 age range, 35 were in the 40 to 60 age range, and 15 were over the age of 60. There were 42 females and 58 males, in that order. According to the classification of respondents' educational backgrounds, there were 15 professionals, while 45 and 40 respondents, respectively, were graduates and postgraduates. According to their profession, 21 respondents worked for the government, 43 for the private sector, 19 were professionals, and 12 were self-employed. 80 respondents were classified as long-term investors under the category of investors, whereas 11 and 9 respondents fell into the day trader and both categories, respectively. 33 respondents had less than three years of investing experience, 42 had between three and five years, and the remaining 25 had five years or more of investing experience.

Approximately, 40 respondents invested less than Rs. 1 lakh, 37 respondents invested between Rs. 1 lakh and Rs. 2 lakh, and 25 respondents invested between Rs. 2 lakh and Rs. Based on the source of the investment, 92 respondents were in the group of both, five respondents had invested borrowed money, and seven respondents had invested their own resources. According to classification based on the amount of money ever invested in mutual funds, 83 respondents have invested, while 17 respondents have never invested. On the question of whether they would advise others to invest in mutual funds, 73 respondents said they would, while 27 said they would not.

Basis	Category	No. of Respondents
Occupation	Government employees	21
	Private Sector employees	43
	Professional	19
	Business	17
Monthly Income	Below Rs 20,000	22
	Rs 20,000 – Rs 40,000	50
	Rs 40,000 & above	28
Type of investor	Hereditary Investor	27
	New Generation Investor	73
Category of Investor	Long - Term Investor	80
	Day Trader	11
	Both	9
Experience in Investing	Less than 3 years	33
	3-5 years	42
	5 years & above	25
Approximate size of investment as on date	Below Rs. 1 lakh	40
	Rs. 1 lakh - Rs. 2 lakhs	37
	Rs. 2 lakhs & above	25

Source of investment	Own savings	92
	Borrowings	5
	Both	3
Money invested in mutual fund ever	Yes	63
	No	37
Recommend investing in mutual funds	Yes	73
	No	27

Findings

- The study's findings are as follows: 73% of respondents said that their peer group should consider investing in mutual funds because they believe it to be a profitable source of capital. 40% of those surveyed have investments worth less than Rs 1 lakh, indicating that those with little investment capacity choose mutual funds.
- The main finding of this study is that investors' perceptions of unconventional investment routes have evolved, and they have changed positively and progressively.
- The qualities of the fund, its credibility, the ease of the process, and varying success rates are important considerations for investors when investing in mutual funds. The first component discovered is fund characteristics, which explains 35.410% of the variance.
- Credibility, the second found factor, with a variance explained of 16.736%. This element takes into account aspects including brand perception, preferred information sources, prior results, and transparency. Convenience, the third factor studied, with a variance explained of 10.902%. This aspect takes into account elements like switching options, prompt grievance procedures, and prompt service.
- Success factors, the fourth identified factor, with an 8.544% variance explained. This aspect takes into account elements like research, offer document simplicity, and service excellence. Fund family, the fifth identified factor, with a variance explained of 7.379%. This consideration encompasses elements such as managerial structure, huge funds, and outsourcing.

Conclusion

The study's findings indicate that the Indian mutual fund business is still in its infancy, but the good news is that there are many potential for it to develop. Success is dependent on both large returns and the skill of the fund managers. The MF should be simple to buy and sell either directly on the market or through a broker. Mutual funds have emerged as a significant component of the financial markets and, up until now, have provided investors with consistent and sustainable returns. According to the study, investors' perceptions depend on a variety of demographic parameters, including gender. The demographic composition shows that the female market is underutilized and that higher-income

individuals are not given enough attention. The research's conclusions also included information on the variables affecting investors' perceptions. It shows that aspects with a greater influence on investors' perceptions are fund qualities, creditability, convenience, success factors, and fund family.

These elements provide them with the necessary boost during the investment process. Therefore, in order to attract more investors, fund managers must enhance these attributes in their securities. Only 100 people participated in the current study to examine investing habits. By including a larger sample size and other features that can be regarded as pertinent in the Indian mutual fund business, this research can be furthered. The primary data collection for examining investor attitudes and perceptions of mutual funds as an investment option is restricted to Virudhunagar, however it is possible to expand this study to other regions of the nation to examine the attitudes of more investors.

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ROLE OF MSME IN ECONOMIC SELF RELIANCE

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Abstract

The Micro, Small and Medium enterprises (MSME) sector has emerged as a dynamic sector of the Indian economy and an essential driver of economic process. It considerably helps in developing entrepreneurship and generates second largest employment prospects. With a vast network of sixty-three million three hundred eighty thousand enterprises, more than forty per cent of exports, over twenty-eight per cent of the Gross Domestic Product and generating employment for about one hundred eleven million people, the MSME sector contributes in a significant way to the development of the Indian economy. The world economy is growing at a slower rate thus a lot of emphasis is required on developing MSME sector to extend employment opportunities specifically for young people. India is known as a land of entrepreneurs and contribution of MSME sector cannot be ignored while discussing the key issue of employment generation. India has also achieved the distinction of being one of the most industrially developed states. It has five per cent of the total Indian population and contributes about a quarter of India's products exports. The industrial sector of the state comprises of over eight hundred giant industries and six hundred three thousand Micro, Small and Medium Enterprises (MSME) which give employment to three million eight hundred fifty-one thousand people of the country. This research paper focuses on the contribution of MSME sector in Indian economy and makes clear the importance of India as a state in fostering entrepreneurship through MSME sector.

Keywords: MSME, Entrepreneurship, Self-Reliance Indian Economy.

Introduction

Introduction Micro, Small and Medium Enterprises (MSME) sector has emerged as a highly vibrant and dynamic sector of the Indian economy over the last five decades. The MSME also play an important role in the development of the economy with their effective, efficient, flexible and innovative entrepreneurial spirit. The MSME sector contributes notably to the country's overall industrial production output, employment and exports. It is recognized with generating the maximum employment growth as well as accounting for a major share of industrial production and exports. They have distinctive advantages due to their size and they required low investment. They have relatively high capital-labour ratio and they require a minimum gestation period. They try to capture and focus smaller markets; they make sure a fairer distribution of national income. They make possible an effective utilization of capital and skill resources and they motivate the growth of industrial entrepreneurship. The MSME sector in India is vast heterogeneous in terms of the size, variety of product and services and level of technology. This sector is large contributes to the socioeconomic development of the country. The MSME sector is an important pillar of Indian economy as it contributes greatly to growth of Indian economy with a vast network of around 30 million units, creating employment of about 70 million, manufacturing more than 6000 products, contributing about 45% to manufacturing output

and about 40% of exports, directly and indirectly. This sector even assumes greater importance now as the country moves towards a faster and inclusive growth agenda. MSME sector is the backbone of national economic edifice and has unremittingly acted as the fulcrum for the Indian economy, providing it resilience towards global financial shocks and hard times. With approximately 63.4 million units throughout the geographical expanse of the country, MSMEs contribute around 6.11% of the manufacturing GDP and 24.63% of the GDP from service activities as well as 33.4% of India's manufacturing output. Further, there is a vision to enhance MSMEs contribution to India's GDP to over 50% from the current 29% and that for the Indian economy to scale the \$5 trillion mark, the contribution of the MSME sector will be crucial.

The Vision & Mission of MSME

Vision

To emerge as a global leader in advanced manufacturing research and development, innovation and to create an ecosystem for an inclusive balanced and sustainable development of the state.

Mission

To retain India position as a global manufacturing hub and to achieve higher and sustainable industrial growth through capital infusion technology transfer world class industrial infrastructure skill up gradation and benchmarking of policies and practices to best Global standards

Background Information on MSME

Today's MSMEs have their roots in local-level business activities in villages and also in ancient urban centres. Ancient India was experiencing sustained growth in these activities, even during the phase of a lot of political upheaval across the subcontinent. These businesses and enterprises were instrumental in fulfilling the local needs of the population. These enterprises also contributed significantly to the exports of goods to other countries, which resulted in great economic wealth for the country. These activities considerably declined during British rule, as significantly cheap products flooded the Indian market.

We can understand the history and evolution of MSMEs in India through three separate time periods. These time periods are "pre-British rule", "pre-independence", and "post-independence".

The pre-British period of the Indian economy was primarily agrarian. A vast part of the subcontinent had villages that were self-sufficient to a certain extent. Village-level artisans were able to provide for local needs. They had limited market access due to geographic factors during that period. However, urban centres (places of pilgrimage, administrative places, and trade towns) had a high level of economic activities, including the production of various goods. They primarily met the needs of the local market. However, a significant

portion of this production is exported. Local producers were producing textiles, utility-oriented handicrafts, silk cloths, muslin, shawls, carpets, wooden works, artistic glass works, and coloured glass works. Apart from these, ornaments made in India, jewellery, brass-works, ivory work, and several other notable products gained prominence and achieved significant admiration across the world. The political landscape was largely supportive; however, as political uncertainty and fragmentation increased, these activities also faced some difficult times. Despite this, they have remained relevant and growing.

The Mughal Empire started declining and the political prominence of the East India Company (EIC) grew. British rule started taking shape, and during the same time, the industrial revolution in Europe and America attained great heights. Therefore, new manufacturing processes were implemented in these areas for the mass production of goods. This mass production required raw materials and market access for finished goods. The EIC was well aware of this opportunity and used its prominence to exploit the Indian subcontinent for both purposes. During this period, raw materials became more dominant than finished goods for export. As mass-produced goods flooded the Indian market, locally produced goods and their manufacturers started to lose their business. This leads to the systemic destruction of local manufacturing as they lose both local and foreign markets. This effect was primarily visible in urban centres and trading towns. Village-level artisans also started facing heat; however, they were slightly less affected by this destruction. This leads to bad shapes for all industries in India. As British rule transitioned from the EIC to the British monarchy, the industrialization of India also brought mass production units in the country, which further aggravated the situation of local manufacturers. This period was not good for local industries and became a victim of unfair market situations. This consequently leads to the destruction of any future growth or evolutionary prospects of these industries.

The GOI established the “Small Scale Industries Board” (SSIB) in 1955. The SSIB provided a formal definition of small-scale industries in India. This definition used power consumption, number of employees, and quantum of capital as defining factors. This definition has undergone several changes over the course of history. In 1977, a new class of small industries was identified, named as “Tiny Industries.” This was done to address the needs of entrepreneurs who run very small enterprises and primarily cater to local markets. The definition of tiny industries has also undergone several changes as a need arises.

Today’s MSME originated from the local needs of the village and trade centres of that time. They also witnessed a great cycle of growth and recognition. Going forward, systemic destruction was also witnessed in the British era. Later, as political and geographical landscapes transformed, these units also began witnessing a much more favourable market scenario. The government began to focus on the systematic development of these units. Various national- and state-level policies, rules, and regulations have emerged. The Indian government created the Ministry of Small-Scale

Industries and Agro and Rural Industries (SSI and ARI) in October 1999. The core objective of this ministry was to create a more conducive environment for MSMEs. Later, as industries grew, this ministry was split into two separate ministries in September 2001: the Ministry of Small-Scale Industries (SSI) and the Ministry of Agro and Rural Industries (ARI). In the year 2006 MSME Act was passed, next year both ministries merged into a single ministry that is “Ministry of Micro, Small and Medium Enterprises” on 9th May 2007.

The evolution of these enterprises during these three phases has laid the groundwork for today’s MSME structural makeup. These distinct events shape today’s MSME market. The Indian MSME sector is yet to realize its full potential to reduce poverty and unemployment in India.

Features of MSME in Economy Self Reliance

1. MSMEs work for the welfare of the workers and artisans. They help them by giving employment and by providing loans and other services.
2. MSMEs provide credit limit or funding support to banks.
3. They promote the development of entrepreneurship as well as up-gradation of skills by launching specialized training centres for the same.
4. They support the up-grading of developmental technology, infrastructure development, and the modernization of the sector as a whole
5. MSMEs are known to provide reasonable assistance for improved access to the domestic as well as export markets.
6. They also offer modern testing facilities and quality certification services.
7. Following the recent trends, MSMEs now support product development, design innovation, intervention, and packaging.

Role of MSME in Indian Economy

Since its formation, the MSME segment has proven to be a highly dynamic Indian economy sector. MSMEs produce and manufacture a variety of products for both domestic as well as international markets. They have helped promote the growth and development of khadi, village, and coir industries. They have collaborated and worked with the concerned ministries, state governments, and stakeholders towards the upbringing of rural areas.

MSMEs have played an essential role in providing employment opportunities in rural areas. They have helped in the industrialization of these areas with a low capital cost compared to the large industries. Acting as a complementary unit to large sectors, the MSME sector has enormously contributed to its socio-economic development.

MSMEs also contribute and play an essential role in the country’s development in different areas like the requirement of low investment, flexibility in operations, mobility

through the locations, low rate of imports, and a high contribution to domestic production.

With the capability and capacity to develop appropriate local technology, provide fierce competition in domestic and international markets, technology-savvy industries, a contribution towards creating Défense materials, and generating new entrepreneurs by providing knowledge, training, and skill up-gradation through specialized training centres.

Importance of MSMEs for Indian Economy

Employment: It is the second largest employment generating sector after agriculture. It provides employment to around 120 million persons in India.

Contribution to GDP: With around 36.1 million units throughout the geographical expanse of the country, MSMEs contribute around 6.11% of the manufacturing GDP and 24.63% of the GDP from service activities.

MSME ministry has set a target to up its contribution to GDP to 50% by 2025 as India becomes a \$5 trillion economy.

Exports: It contributes around 45% of the overall exports from India.

Inclusive growth: MSMEs promote inclusive growth by providing employment opportunities in rural areas especially to people belonging to weaker sections of the society.

For example: Khadi and Village industries require low per capita investment and employs a large number of women in rural areas.

Financial inclusion: small industries and retail businesses in tier-II and tier-III cities create opportunities for people to use banking services and products.

Promote innovation: It provides opportunity for budding entrepreneurs to build creative products boosting business competition and fuels growth.

Thus, Indian MSME sector is the backbone of the national economic structure and acts as a bulwark for Indian economy, providing resilience to ward off global economic shocks and adversities.

Objectives of MSME in Economy Self Reliance

To promote e-Governance for empowering citizens, promoting the inclusive and sustainable growth of the Electronics, IT & ITeS industries, enhancing India's role in Internet Governance, adopting a multipronged approach that includes development of human resources, promoting R&D and innovation, enhancing efficiency through digital services and ensuring a secure cyber space.

Objectives

- e-Government: Providing e-infrastructure for delivery of e-services
- e-Industry: Promotion of electronics hardware manufacturing and IT-ITeS industry

- e-Innovation / R&D: Implementation of R&D Framework - Enabling creation of Innovation/ R&D Infrastructure in emerging
- areas of ICT&E/ Establishment of mechanism for R&D translation
- e-Learning: Providing support for development of e-Skills and Knowledge network
- e-Security: Securing India's cyber space
- e-Inclusion: Promoting the use of ICT for more inclusive growth
- Internet Governance: Enhancing India's role in Global Platforms of Internet Governance.

Review of Literature

There has been limited research on sustainability in Indian MSMEs till date. Of course, of late, the number of publications has increased. A chronological review of literature, 2011 onwards, on Indian MSMEs follows. Sangwan (2011) identifies the quantitative and qualitative benefits of Green Manufacturing (GM) through a literature review, and validates them through a survey of Indian SMEs. The author defines GM at the intersection of manufacturing and design practices, and environmental issues, concerns and practices, i.e. the greater the overlap between these areas, the greater the extent to which manufacturing and design practices recognize and embody environmental issues, concerns and practices. The author notes from the literature that the benefits of GM may range from cost reduction, improvement in productivity and product quality, safer and cleaner facilities, reduced environmental and health risks, better working conditions, and improved employee morale to customer loyalty, opening of new markets, higher market share, innovativeness, competitiveness, and improved corporate image and relations with stakeholders. The author also highlights that one of the far-reaching implications of GM is the lifecycle approach (LCA) to production, i.e. to take into account the environmental impacts of the entire lifecycle of a product starting from design, sourcing and manufacturing to storage, distribution, use, collection, inspection and recovery/disposal, and if properly implemented, LCA may result in reduced waste/effluent treatment/disposal costs, energy and cost savings from recycling and reuse activities, reduced penalties and liabilities, and lower regulatory compliance costs. In another study, Mittal et al. (2012) identify the drivers and barriers for the implementation of Environmentally Conscious Manufacturing (ECM), another name for GM, and validate them by conducting a case study in Germany and India for comparison. The authors identify current and future regulations for compliance, financial incentives such as attractive loans, grants and tax exemptions for capital investments, public pressure in terms of the pressure exerted by various stakeholders such as local communities, NGOs, consumer groups, media and political parties, peer pressure exerted by trade and business associations, cost savings due to reduced material and energy consumption, increased competitiveness due to improved efficiency, customer demand for environmentally friendly products, supply chain pressure exerted by suppliers and distributors, and the

commitment and leadership of corporate managers as the major drivers for an effective implementation of ECM. Nair and Sodhi (2012) highlight Corporate Social Responsibility (CSR) practices by Indian SMEs, and note that although CSR practices are skewed towards large companies, many SMEs being located in small towns, villages and remote areas are embedded in their local communities and eminently suited to pursue CSR practices. The authors present the findings of five case studies on the best CSR practices by Indian SMEs. The authors note that many SMEs do not see the immediate relevance of environmental and social issues to their businesses, and are focused on the short-term survivability of their enterprises. However, CSR does pay off in the long run, and has proven to have brought in business advantages in terms of staff recruitment, development, commitment, morale, motivation and retention, customer loyalty, new product development, access to new markets, energy savings, innovation, competitiveness, visibility, image and reputation that would not have been achievable otherwise. The authors mention that the nature and level of CSR implementation in SMES are influenced by factors such as sector, size, age, history, whether family- or non-family owned/managed, position in the value chain and nature of client relationships. The ethical orientation and moral responsibility of owners/managers are cited by the authors as the main drivers of CSR implementation in SMEs. On the other hand, the lack of resources is cited by SMEs as the main barrier to CSR adoption. The five case studies presented by the authors mention the following CSR practices: abolition of child labour, child education, health checkup, promotion of women entrepreneurship, widow stipend programme, orphan girl marriage assistance unit, raising funds for social causes through people participation, and promoting sustainable livelihoods while protecting the environment in rural and remote areas. The authors note that increased supply chain pressures, i.e. buyers'/exporters' stringent environmental and social requirements enforced on their suppliers would encourage more and more SMEs to adopt CSR practices.

Research Methodology

This research has done based on method of Descriptive study. The required data has collected from various secondary sources i.e., internet websites of government and other private domains, magazines, journals, general opinion of industry experts and other publications etc. This data was then analyzed and reviewed for conclusions.

Conclusion

In conclusion, the MSME sector has an important role to play in achieving the goals of the self-reliant India scheme. This will not only help in dealing with the economic conditions arising out of Covid-19 but will also pave the way for India's long-term economic-industrial development. With the change in the definition of small and cottage industries by the government, these industries will get a free environment for their development. A healthy environment will be created for the development of small and

cottage industries by giving collateral free loans, giving financial assistance to distressed units, arranging online marketing, simplification of rules and laws, etc. In the current globalized economic conditions MSME sector needs adequate financial and technical support so that they can make their place not only in the domestic market but also in the global market. The present market based system has not only presented challenges before the small and cottage industries but has also opened doors of possibilities. The need is to identify these possibilities and take the development of MSME sector as a movement. Only by doing this the dream of self-reliant India can be realized and the ultimate goal of inclusive development can be achieved.

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DIGITAL INDIA CAMPAIGN FOR TECHNOLOGIES AND CONNECTIVITY

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Abstract

It is a well-known fact that digital India is the outcome of many innovations and technological advancements. These transform the lives of people in many ways and will empower the society in a better manner. The Digital India Programme, an initiative of the Indian Prime Minister will transpire new development in every sector. The motive behind the concept is to build participative, transparent, and responsive system. The Digital India drive is a dream project of the Indian Government to remodel India into a knowledgeable economy and digitally empowered society, with good governance for citizens by bringing synchronization and co-ordination in public accountability, digitally connecting, and delivering the government programs and services to mobilize the capability of information technology across government departments. Today, every nation wants to be fully digitalized and this programme strives to provide equal benefit to the user and service provider. Hence, an attempt has been made in this paper to understand Digital India – as a campaign where technologies and connectivity will come together to make an impact on all aspects of governance and improve the quality of life of citizens.

Keywords: Development, Digital, E-governance, Government, Internet access.

I. Introduction

The Digital India Mission is a flagship initiative launched by the Government of India with the aim of harnessing the power of digital technology to transform the country into a digitally empowered society and knowledge economy. In an era marked by rapid technological advancements and the widespread integration of digital platforms into various aspects of our lives, the term “Digital India” resonates as more than just a catchphrase. It embodies a vision of transformative change, where technology acts as a catalyst for growth, inclusivity, and progress on an unprecedented scale. The Digital India Initiative holds the potential to reshape the very fabric of our nation, fostering innovation, connectivity, and empowerment across every stratum of society.

Digital India Mission is sometimes also referred to as Digital India Programme which was launched in July 2015 by Prime Minister Narendra Modi. Digital India Programme envisions comprehensive digital infrastructure, increased digital literacy, and widespread digital access across all sectors, from governance and education to health and financial services. The Digital India initiative seeks to bridge the digital divide, promote digital inclusion, and leverage technology to enhance the quality of life for all citizens while promoting economic growth and innovation.

Digital India for New India is a vision to create a new India where all citizens have access to the benefits of digital technology. This includes access to education, healthcare, financial services, and government services. It also includes the ability to participate in the digital economy and to create new opportunities for oneself. The objectives are,

- To understand the concept of Digital India
- To discuss about the visions of Digital India
- To explain the scope of Digital India
- To understand the pillars and initiatives of Digital India
- To study the impact of Digital India on the Indian society

To achieve these objectives, the paper is divided into various sections. Section II explains the concept of Digital India. Section III explains the visions of Digital India. The next section shows the scope of Digital India. Section V explains the pillars of Digital India. Section VI Initiatives under Digital India and VII assesses the proposed impact of Digital India on the society. References form the last section of the paper.

II. Digital India

Digital Technologies, which include Cloud Computing and Mobile Applications, have emerged as catalysts for quick economic growth and citizen empowerment across the globe. Digital technologies are being increasingly used by us in everyday lives, from retail stores to government offices. They help us connect with each other and also share information on issues and concerns faced by us.

Honourable Prime Minister envisions transforming our nation and creating opportunities for all citizens by harnessing digital technologies. His vision is to empower every citizen with access to digital services, knowledge and information. Digital India is the next big thing that India is witnessing. It aims at profoundly touching the lives of everyone with the transformation travelling the paths of both rural and urban India. Today, the world has transformed from a knowledge savvy to techno knowledge savvy. Think of something and it is available in one click. So, Digital India is a step by the government to inspire and connect Indian Economy to such a knowledge savvy world. The program targets to make Government services available to people digitally and enjoy the benefit of the newest information and technological innovations. It brings out various schemes like E-Health, Digital Locker, E-Sign, Education etc. and nationwide scholarship portal. The program strives to provide equal benefit to the user and service provider. The consumers will be benefited by way of saving time, money, physical & cognitive energy spent in lengthy government processes.

The Digital India Programme has been launched with an aim of transforming the country into a digitally empowered society and knowledge economy. The Digital India would ensure that Government services are available to citizens electronically. It would

also bring in public accountability through mandated delivery of government's services electronically; a Unique ID and ePramaan based on authentic and standard based interoperable and integrated government applications and data basis.

Digital India is a dream project of the government for the citizens and Industries of India which could help in connecting the various past and present projects to bring India to a global platform. Through this project government services are available for urban and rural citizens digitally or electronically. It will help to achieve digital innovation and create positive impact in the people living in rural and urban areas. It will attract investment in all product manufacturing industries. Andhra Pradesh is the first State to have opted this implementation. The Digital India project aims to transform our country into a digital economy with participation from rural or urban citizens and businesses. This will ensure that all government services and information are available anywhere, anytime, on any device that is easy-to-use, highly available and secured. Digital India Project removes digital gap between the rural and urban India.

III. Vision of Digital India Initiative



Figure 1: Three visions of Digital India

Here is what the government of India aims to achieve through Digital India initiative.

- **Infrastructure:** The Digital India initiative has a vision to provide high speed internet services to its citizens in all Gram Panchayats. Bank accounts will be given priority at individual level. People will be provided with safe and secure cyber space in the country.
- **Governance and Services:** Government services will be available online where citizens will be ensured easy access to it. Transactions will be made easy through electronic medium.

- **Digital Empowerment of Citizens:** This is one of the most important factors of the Digital India initiative to provide universal digital literacy and make digital sources easily accessible. The services are also provided in Indian languages for active participation.

IV. Scope of Digital India

The overall scope of this programme is To develop India for a knowledgeable future by developing central technology for allowing; revolution this covers many departments under one Umbrella Programme; On being transformative, that is to realize IT (Indian Talent) + IT (Information Technology) = IT (India Tomorrow). The programme weaves together a large number of thoughts and ideas into a single, extensive vision, and making the mission transformative in totality. The Digital India Programme will pull together many existing schemes which would be refocused, restructured and implemented in a synchronized manner for their transformative impact. Digital India targets to provide the much-needed sense to the following nine pillars of growth areas.

V. Nine Pillars of Digital India

The idea of Digital India is to bring abroad commitments to invest towards this initiative so that the investments would be utilized towards making internet devices and smart phones at an affordable price in India which would help in generating jobs, reduction in the time and cost of importing them from abroad. Digital India comprises of various initiatives under the single programme each targeted to prepare India as a knowledge economy and for bringing good governance to citizens through synchronized and coordinated engagement of the entire Government. Nine projects have been undertaken which are shown in the diagram given below:

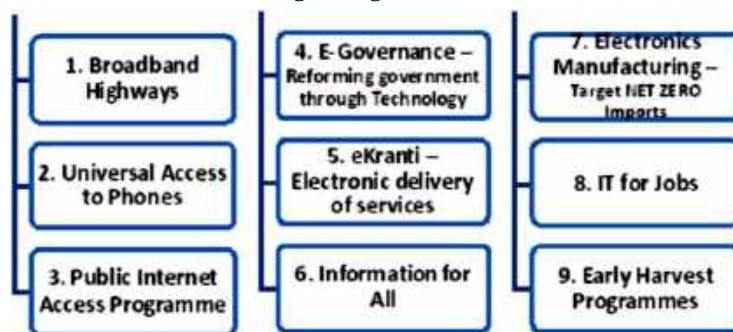


Figure 2: Nine Projects of Digital India

- **Highways to have broadband services:** The first step is to provide high speed broadband highways through fiber optics that connect all the remote areas, government departments, universities, research and development etc. Web based

portals and Mobile apps will be developed to access online information while on the move.

- **Easy access to mobile connectivity:** The government is taking steps to ensure that by 2018 all villages are covered through mobile connectivity. The aim is to increase network penetration and cover gaps in all 44,000 villages. General public will access the online government services with the help of handheld devices. Nation is ready to be well-connected, efficient, and more productive in every aspect.
- **IT Training for Jobs:** The government is preparing to provide training and teaching skills to the youth for employment opportunities in the IT sector. BPO industries will be established for the fastest growing segment of the Information Technology Enabled Services industry. It offers eservices 24/7 in every field and gives more jobs potentials. This initiative seeks to train 10 million people in towns and villages for IT sector jobs in five years. It also aims to train 0.3 million agents to run viable businesses delivering IT services.
- **Manufacturing of electronics:** This milestone will create a huge base for electronics manufacturing in India with the aid of digital technologies and skills. Target NET ZERO Imports is a striking demonstration of intent. This ambitious goal requires coordinated action on many fronts.
- **Provide public access to internet:** Virtuous technologies that support cost containment, collaboration, security, services-on-the-go, social-connect, and in-built intelligence that deliver remote access to any information or service available across the domain. This change will open new doors of e-services to every citizen. The government aims to provide internet services to 2.5 lakh villages which comprises of one in every Panchayat by March 2017 and 1.5 lakh post offices in the next two years. These post offices will become Multi Service centres for the people.
- **E-Governance:** This governance will transform every manual work into fully automation system. It will revolutionize the system in the following ways:
 1. Online access to applications i.e. availability of all databases and information in electronic format.
 2. Effortlessly tracking of assignments.
 3. Interface between departments for superior production of work.
 4. Quickly respond, analyze and resolve persistent problems and many more.
- **E-Kranti:** This Kranti will fully focus on digital knowledge program where education, health, farming, rights, financial and many more services will be delivered on a very high bandwidth. Physical boundaries no longer are a limitation when almost everyone and everything is a digital handshake away.

- **Global Information:** Hosting data online and engaging social media platforms for governance is the aim of the government. Information is also easily available for the citizens.
- MyGov.in is a website launched by the government for a 2-way communication between citizens and the government. People can send in their suggestions and comment on various issues raised by the government, like net neutrality.
- Early harvest programs: This programme will generate short timeline projects where every manual service is altered by e-service. E-services like:
 1. Implementation of Wi-Fi in all the universities.
 2. Public Wi-Fi Sports to access online information.
 3. Educational books to e-books.
 4. People will use the e-services for entertainment, weather information, latest updates etc.
 5. Replacement of manual attendance to Biometric procedure

VI. Initiatives Under Digital India

Some of the facilities provided under the initiative of Digital India are as follows:

- **Digi Locker:** Digital Locker facility helps citizens to digitally store their significant documents like PAN card, passport, mark sheets and degree certificates. Digital Locker offers secured access to Government issued documents. It uses authenticity services provided by Aadhaar. It is targeted at eliminating the use of physical documents and enables sharing of verified electronic documents across government agencies. Three key stakeholders of DigiLocker are Citizen, Issuer and requester.
- **Attendance.gov.in:** Attendance.gov.in is a website, launched by PM Narendra Modi to keep a record of the attendance of Government employees on a real-time basis. This initiative started with implementation of a common Biometric Attendance System (BAS) in the central government offices located in Delhi.
- **MyGov.in:** MyGov.in is a platform to share inputs and ideas on matters of policy and governance. It is a platform for citizen engagement in governance, through a "Discuss", "Do" and "Disseminate" approach.
- **SBM Mobile app:** Swachh Bharat Mission (SBM) Mobile app is being used by people and Government organisations for achieving the goals of Swachh Bharat Mission.
- **e-Hospital:** The e-Hospital application provides important services such as online registration, payment of fees and appointment, online diagnostic reports, enquiring availability of blood online etc.
- **National Scholarship Portal:** National Scholarship Portal is a one step solution for end to end scholarship process right from submission of student application,

verification, sanction and disbursal to end beneficiary for all the scholarships provided by the Government of India.

- **E-Sign framework:** e-Sign framework allows citizens to digitally sign a document online using Aadhaar authentication.

VII. Proposed Impact of Digital India

- **Economic impact:** According to analysts, the Digital India plan could boost GDP up to \$1 trillion by 2025. It can play a key role in macro-economic factors such as GDP growth, employment generation, labour productivity, growth in number of businesses and revenue leakages for the Government. As per the World Bank report, a 10% increase in mobile and broadband penetration increases the per capita GDP by 0.81% and 1.38% respectively in the developing countries. India is the 2nd largest telecom market in the world with 915 million wireless subscribers and world's 3rd largest Internet market with almost 259 million broadband users. There is still a huge economic opportunity in India as the tele-density in rural India is only 45% where more than 65% of the population lives. Future growth of telecommunication industry in terms of number of subscribers is expected to come from rural areas as urban areas are saturated with a tele-density of more than 160%.
- **Social impact:** Social sectors such as education, healthcare, and banking are unable to reach out to the citizens due to obstructions and limitations such as middleman, illiteracy, ignorance, poverty, lack of funds, information and investments. These challenges have led to an imbalanced growth in the rural and urban areas with marked differences in the economic and social status of the people in these areas. Modern Information and Communications Technology (ICT) makes it easier for people to obtain access to services and resources. The penetration of mobile devices may be highly useful as a complementary channel to public service delivery apart from creation of entirely new services which may have an enormous impact on the quality of life of the users and lead to social modernization. The poor literacy rate in India is due to unavailability of physical infrastructure in rural and remote areas. This is where m- Education services can play an important role by reaching remote masses. According to estimates, the digital literacy in India is just 6.5% and the internet penetration is 20.83 out of 100 populations. The digital India project will be helpful in providing real-time education and partly address the challenge of lack of teachers in education system through smart and virtual classrooms. Education to farmers, fisher men can be provided through mobile devices. The high speed network can provide the adequate infrastructure for online education platforms like Massive Open Online Courses (MOOCs).

- Mobile and internet banking can improve the financial inclusion in the country and can create win-win situation for all parties in the value-chain by creating an interoperable ecosystem and revenue sharing business models. Telecom operators get additional revenue streams while the banks can reach new customer groups incurring lowest possible costs. Factors such as a burgeoning population, poor doctor patient ratio (1:870), high infant mortality rate, increasing life expectancy, fewer quality physicians and a majority of the population living in remote villages, support and justify the need for tele medicine in the country. M-health can promote innovation and enhance the reach of healthcare services. Digital platforms can help farmers in know-how (crop choice, seed variety), context (weather, plant protection, cultivation best practices) and market information (market prices, market demand, logistics).
- Environmental impact: The major changes in the technology space will not only brought changes to the economic system but will also contribute to the environmental changes. The next generation technologies will help in lowering the carbon footprint by reducing fuel consumption, waste management, greener workplaces and thus leading to a greener ecosystem. The ICT (Information and Communications Technology) sector helps in efficient management and usage of scarce and non-renewable resources. Cloud computing technology minimizes carbon emissions by improving mobility and flexibility. The energy consumption can be decreased from 201.8 terawatt hour (TWH) in 2010 to 139.8 TWH in 2020 by higher adoption of cloud data centers causing a 28% reduction in carbon footprint from 2010 levels.

VIII. Conclusion

A digitally connected India can help in improving social and economic condition of people through development of non-agricultural economic activities apart from providing access to education, health and financial services. However, it is important to note that ICT (Information and Communications Technology) alone cannot directly lead to overall development of the nation. The overall growth and development can be realized through supporting and enhancing elements such as literacy, basic infrastructure, overall business environment, regulatory environment, etc. The Digital India program is just the beginning of a digital revolution, once implemented properly it will open various new opportunities for the citizens.

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EFFICIENCY OF ORGANISATIONAL PERFORMANCE AND LEADERSHIP OF SMALL SCALE BUSINESS IN THOOTHUKUDI TOWN

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Abstract

Small Scale Business is responsible for the majority of industrial units in an economy like India. As a result of small firms, there are over 40% of all industrial units. The percentage of all Indian exports that go to small enterprises is roughly 45%. Convenience stores, small grocery stores, bakeries or delicatessens, hair salons or trade, restaurants for people, hotels, photographers, very small-scale manufacturing, and Internet-related enterprises like web design and programming are examples of small-scale businesses. Given that effective leadership is crucial to the existence of any commercial activity, both small and large business organizations have recently suffered from poor leadership due to inefficiency and lack of focus. It is therefore crucial that organizational performance and leadership are needed. Every company organization has the necessary education and training to operate efficiently. This study relates to both primary and secondary data and some of the statistical tools were used for testing the hypothesis. This article discusses the enhancing and discouraging factors that affect the organizational performance of small businesses and comes to the conclusion that it is the duty of every leader to create an organization that will operate efficiently because the extent to which a corporation succeeds depends on how well its leaders set expectations for their subordinates.

Keywords: *Small Scale Business, Leadership, Organizational Performance, Education and Training*

Introduction

Small Scale business indicates that Corporations, Partnerships, or Sole Proprietorships that are smaller in size than a regular-sized firm or Corporations and have fewer employees and lower yearly revenue. Small-scale businesses are considered to be "small" insofar as they qualify for favorable tax treatment and can submit applications for government assistance. The number of employees is one of the most frequently used metrics, even if small businesses can also be categorized using other criteria including annual revenues, shipments, sales assets, or by annual gross or net revenue or net profits.

While a person maintains a regular job with an employer or takes care of family members in the home, many small enterprises can be created at a minimal cost and on a part-time basis. Many small scale enterprises that generate modest incomes in developing nations are sole proprietorships, such as those that sell goods from a market stall or prepare food to be sold on the street. Small firms can market with lower expenses thanks to internet marketing. Small business owners typically have more personal interactions with their clients and consumers than do huge businesses because they see their customers every week in person.

Review of Literature

Sh. Sohan Lal (2023) in his study entitled “A Study on Challenges of Small Scale Industries in India”, has analysed Small businesses are essential to a nation's development. More than 40% of the Indian economy's gross industrial value added is accounted for by it. State borders are not an obstacle for small firms to serve regional need. Additionally, the government has launched a number of initiatives and rewards to encourage SSI and build institutional infrastructure for SSI.

Shashank B.S and SureshramanaMayya (2021) in their study entitled “A Conceptual Study on Performance of Small-Scale Industries in India” has analysed SSIs are crucial to regional development as a result. Subsidies are predicted to increase, enhancing SSIs for export competitiveness. To maintain and strengthen their operations, SSIs in India are increasingly concentrating on improved production techniques, penetrating marketing tactics, and management skills. The ability to be dynamic, adaptable, and creative must also be developed. The SSIs' promoters need to be well-educated, informed about current world events, and supportive in their efforts to obtain the necessary skills.

DilipJagdale and Sarang Shankar Bhola (2014) in their study entitled “Entrepreneurial Leadership and Organizational Performance with reference to Rural Small Scale Engineering Industry in Pune District” has analysed the Indian economy is supported by small-scale businesses. This sector plays a critical role in creating significant job possibilities at a capital cost that is significantly lower than that of large enterprises. It also aids in the industrialization of rural and underdeveloped areas, which helps to reduce regional imbalances and ensures a more fair distribution of wealth and income across the country. Small businesses today are dealing with a variety of issues in the areas of operations, finance, and marketing. The number of failing industries keeps rising. One of the causes of this is the entrepreneur's management style.

Statement of the Problem

The specific research issue being evaluated in this study was managers' misuse of leadership abilities at the expense of organizational effectiveness. Some managers need to

locate the growth of small businesses and exhibit the leadership qualities needed in a dynamic business climate. Because of this, it is anticipated that adopting particular leadership styles and an entrepreneurial mindset may improve their organizational performance. Age, gender, experience, qualifications, and designation can also have an impact on an individual's perspective and, consequently, on their subordinates or staff.

Objectives of the Study

1. To know the demographic profile of the respondents.
2. To study the leadership style of respondents in small scale business.
3. To identify the factors influencing on organisational performance in small scale business.

Hypothesis of the study

1. There is no significant relationship between the age of the respondents and their enhancing factors of organisational performance in small scale business.
2. There is no significant relationship between the nature of business and their enhancing factors of organisational performance in small scale business.
3. There is no significant relationship between the experience of the business and their contrary factors of organisational performance in small scale business.

Methodology

This study is conducted with the help of both primary and secondary data. Primary data were collected through questionnaires. Secondary data were collected through books, websites, published articles, magazines and journals.

Sampling Design

The study is mainly based on survey method and it is relevant only in Thoothukudi town. The researcher selected 135 respondents from the small scale business units by adapting convenience sampling method. A structured questionnaire was used to collect the relevant data.

Limitations of the study

1. The researcher has collected the data for limited respondents.
2. This study has used for limited statistical tools only.

Result and Discussion

This section shows the analysis and interpretation of data used for the study.

Table No.1 - Demographic factors

Factors	Sub-category	Frequency	Percentage
Age (in years)	21-30	95	70.3
	31-40	31	23
	41-50	05	3.7
	Above 50	04	3
	Total	135	100
Gender	Male	105	77.8
	Female	30	22.2
	Total	135	100
Educational Qualification	School level	36	26.7
	Under graduate	45	33.3
	Post graduate	30	22.2
	Professional	36	26.7
	Total	135	100
Area of Residence	Rural	70	51.9
	Urban	56	41.5
	Semi-urban	9	6.7
	Total	135	100

Source: Primary data

Table 1 shows that out of 135 respondents, majority of the respondents are belongs to the age group of 21 – 30 it indicates for 70.3%, majority of the respondents are male it indicates for 77.8%, majority of the respondents are under graduates it indicates for 33.3% and majority of the respondents are resident in rural area it indicates for 51.9%.

Table No.2 - Business factors

Factors	Sub-category	Frequency	Percentage
Nature of Business	Candle industry	16	11.9
	Bakery	13	9.6
	Jaggery production	12	8.9
	Others	94	69.6
	Total	135	100
Experience in small scale business	Less than 2 years	80	59.3
	2-10 years	40	29.6
	11-15 years	9	6.7
	More than 15 years	6	4.4
	Total	135	100

Number of workers employed	Less than 3 workers	75	55.6
	3-6 workers	38	28.1
	7-10 workers	10	7.4
	More than 10 workers	12	8.9
	Total	135	100
Location of the Business	With residence	71	52.6
	Far away from residence	23	17
	Near-by residence	41	30.4
	Total	135	100
Maintenance of Savings	Banks	87	64.4
	Chit funds	18	13.3
	Insurance	6	4.4
	Own business	24	17.8
	Total	135	100
Employee Promotion	Year of service	77	57
	Input to the company	32	23.7
	In Favourers	7	5.2
	Others	19	14.1
	Total	135	100

Source: Primary data

Table 2 shows that out of 135 respondents, majority of the respondents are doing small level of retail businesses it belongs to the others category and it indicates for 69.6%, majority of the respondents are experienced business activity for less than 2 years it indicates for 59.3%, majority of the respondents are to be employed for less than 3 workers of their business it indicates for 55.6%, majority of the respondents are doing their business in residence it indicates for 52.6%, majority of the respondents are maintaining of savings in banks it indicates for 64.4% and majority of the respondents are to be promoting employee for year of service it indicates for 57%.

Table No.3 – Study factors

Factors	Sub-category	Frequency	Percentage
Enhancing factors of Organisational Performance	Recruitment of well educated	42	31.1
	Participative leadership and proper motivation of the staff	43	31.9
	Research and development	33	24.4
	Free flow of information and personal recognition	17	12.6

	Total	135	100
Contrary factors of Organisational Performance	Lack of good equipment	67	49.6
	Insufficient staff and fund	29	21.5
	Autocracy and bad leadership	13	9.6
	Lack of attention to the staff	26	19.3
	Total	135	100

Source: Primary data

Table 3 shows that out of 135 respondents, majority of the respondents are enhancing the factors of organisational performance is participative leadership and proper motivation of the staff it indicates for 31.9% and majority of the respondents are contrary the factors of organisational performance is lack of good equipment it indicates for 49.6%.

One-way ANOVA

Table No.4 - Age of the respondents and their enhancing factors

H0: There is no significant relationship between the age of the respondents and their enhancing factors of organisational performance in small scale business.

Factors	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	48.164	3	16.055	116.658	.000
Within Groups	18.029	131	.138		
Total	66.193	134			

Source: Primary data

Table 4 shows that there is no significant relationship between the age of the respondents and their enhancing factors of organisational performance in small scale business. Significant value (.000) is less than the level of significance (0.05). Hence the null hypothesis is accepted.

Chi-Square Test

Table No.5 - Nature of business and their enhancing factors

H0: There is no significant relationship between the nature of business and their enhancing factors of organisational performance in small scale business.

Factors	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	130.384 ^a	9	.000
N of Valid Cases	135		

Source: Primary data

Table 5 shows that there is no significant relationship between the nature of business and their enhancing factors of organisational performance in small scale business. Significant value (.000) is less than the level of significance (0.05). Hence the null hypothesis is accepted.

Table No.6 – Experience of the business and their contrary factors

H0: There is no significant relationship between the experience of the business and their contrary factors of organisational performance in small scale business.

Factors	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	155.156 ^a	9	.000
N of Valid Cases	135		

Source: Primary data

Table 6 shows that there is no significant relationship between the experience of the business and their contrary factors of organisational performance in small scale business. Significant value (.000) is less than the level of significance (0.05). Hence the null hypothesis is accepted.

Conclusion

Understanding the socioeconomic background, including the respondents' residential area, gender, age, educational background, family type, and size, will help us better understand the impact of leadership and organizational performance in small businesses in Thoothukudi Town. These kinds of data will aid shops in developing effective business plans. In order to accomplish the goals of the company, leadership is crucial. As a result, there is a clear link between organizational goal achievement and the effectiveness of leadership.

The study also demonstrates the necessity to alter the impact of leadership as it becomes required in an organization to improve performance. Organizations are created with a clear purpose and goal in mind. People join organizations to meet their needs, and by doing so, they help the organization operate better and accomplish its goals. Since the amount to which a corporation thrives depends on both the leader's chosen leadership style and the expectations of the subordinates, it is the duty of every leader to create an organization that will run efficiently. The paper's conclusion explains how organizational performance has drawn significant attention because of the importance of leadership abilities.

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MICRO, SMALL AND MEDIUM ENTERPRISES (MSMEs) AND SUSTAINABLE DEVELOPMENT OF WOMEN IN TRIPURA: SPECIAL REFERENCE TO GANDACHARA SUB-DIVISION

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Abstract:

The Indian economy is paying attention on MSMEs as a means of achieving sustainability through utilizing locally available resources for manufacturing. The policies of economic liberalization had influence for the risen of MSMEs in India. Economic Liberalization policies 1991 encourage the steady growth rate of Industrialization in India. Rural and urban women are toward withinthe entrepreneurship development activities with government support. The Micro Small and Medium Enterprises (MSMEs) sector has played an important role to develops the economy. This sector has always been considered essential driver of economic process. The objective of the study was to find out the How sustainable development of women will be possible through the MSMEs? This MSME has been contributing to the Sustainable development of the women in Tripura State Special reference to Gandachara Sub-division. This paper also followed throughout the traditional dimensions such as; trends and growth rate of MSME units, employment along with investment through the government to this sector. To find out the measure of Growth Rate (GR) for all dimensions; the Compound Annual Growth Rate (CAGR) and percentage methods are used.

Keywords: *Investment, MSME, CAGR,GR, entrepreneurship*

Introduction:

The Micro, Small and Medium Enterprises (MSME) sector has developed into a exciting and active element of the Indian economy. It makes a considerable part to the economic and social progress of the nation through encouraging entrepreneurship. It is providing a vast group of employment opportunities at an investment cost. The Indian economy is paying attention on MSMEs as a means of achieving sustainability throughout utilising locally available resources for manufacturing, labour-intensive processes as well as resettlement. The policy of LPG entered India in the post cold war era. The policies of economic liberalization enacted in 1991 bear the growth. Economic Liberalization policies promote the stable growth rate of Industrialization in India a variety of central Ministries as well as department have triggered the growth by continuing their efforts rate of MSMEs. In the context of Tripura especially at Gandachara Sub-division these kinds of central as well as

state policies had been sequentially launch. The present study will try to focus on sustainable development of Women through the MSMEs.

Development:

Development is a route that ensures good quality of life to each and every one of the people in terms of happiness, harmony and satisfaction of essential needs. It is linked to improvement, progress as well as aspirations of people. This meaning of development would help all the sections of society. It allows people to completion of basic needs like food, education, health and shelter.

Sustainable Development:

Sustainable Development means which meets the needs of the present without compromising the ability of future generations to meet their own needs. This most widely accepted definition of Sustainable Development was given through the Brundtland Commission in its report *Our Common Future* (1987).

Micro, Small and Medium Enterprises (MSMEs)

Micro, Small, Medium Enterprises (MSME's) are entities that are concerned in production, manufacturing as well as processing of goods and commodities. The MSME was first introduced by the government of India through the Micro, Small & Medium Enterprises Development (MSMED) Act, 2006.

Statement of the Problem

Micro, Small and Medium Enterprises (MSMEs) and Sustainable Development of women in Tripura: special reference to Gandachara Sub-division.

Objectives

1. To Know about the Micro, Small and Medium Enterprises (MSMEs).
2. To know about the concept of Sustainable Development.
3. To find out how MSMEs help for the sustainable development of women at Gandachara Sub-division.

Methodology

Both quantitative and qualitative data were gathered for the study, this ensured that both statistical and non-statistical analysis was used in order to support the findings of the results of the study. Primary data were collected from field survey whereas the secondary data were collected from different library and online e-books and journals.

Review of Literature

A few of works has been done on the **“Micro, Small and Medium Enterprises (MSMEs) and Sustainable Development of women in Tripura: special reference to Gandachara Sub-division.”**

Muchie, M., &Bekele, E. Promoting micro, small and medium Enterprises (MSMEs) for sustainable rural Livelihood. (2009).This study basically focus on how MSMEs may be able to provide sustainable livelihood towards Rural people.

Hassan, M. S., &Dey, N. B. (2017). Financial and Management Accounting Practices in Micro, Small and Medium Enterprises (MSMEs): An Analytical Study in Tripura (Doctoral dissertation). This Study explain about the financial and managements and their contribution towards the spread of MSMEs.

Shah, T. M. (2016). Tripura Bamboo Mission: Cohesive power of small and medium enterprises. Proceedings of Innovation, Inspiration and Hope in a VUCA World, 13(1), 35-45. This study focus on the progress of bamboo Mission in Tripura by the help of Small and medium enterprises.

Kumar, J. S., &Shobana, D. MAJOR ROLE OF MICRO, SMALL AND MEDIUM ENTERPRISES (MSMES) SECTOR IN NORTH EAST INDIA. This study told that contributions of Small and Medium enterprises for the development of North-East India.

Bhattacharya, R. Extending management education to rural entrepreneurs of MSMEs units in India: A strategic tool for sustainable development. EXCEL (2012). This study told about the Training programmed for the rural entrepreneur. So they can develop themselves through sustainably.

Burman, K. K., & Das, B. The Present Status of Micro, Small and Medium Enterprises (MSMEs) in Assam–An Economic Analysis. (2011).This book talks about the Status of MSMEs in the perspectives of Economic development.

MSMEs With Sustainable Development

MSMEs assist to increase the economy and GDP. MSMEs are the the majority common type of business in OECD countries.MSMEs are classically found in low-skilled, labour-intensive industries such light built-upas well as the service zone.

MSMEs can revitalizedeprived communities and encourage economic integration. Small businesses serve up communities, populations, and markets. According to study, smaller businesses are well again at reviving the local economy.

Position of women entrepreneur in MSMEs

Women work in industrial activities like manufacturing, assembly, manual labour, and other endeavours are referred to as "women entrepreneurs." Women entrepreneurs are clear as single people or groups of people that launch, plan, and run a business. It is

predictable of women to create or modify economic activities. Women must begin, copy, or adopt an economic activity in order to be measured entrepreneurs.

Entrepreneurship is the Main pillar of a country's economic success. It creates new job opportunities. Entrepreneurship has become a source of motivation for the business sector all around the world. Without the participation of women, who create up roughly half of the population, in entrepreneurial activity; women have very varied economic circumstances. Investigating the main causes of economic inequality and coming up with plans to go forward women's status is thus crucial.

Analysis and Interpretation of Field Survey data

Micro, Small and Medium Enterprises (MSMEs) and Sustainable Development of women in Tripura: special reference to Gandachara Sub-division can be discuss thus-

Table No - 1

1. Do you know about the Micro, Small and Medium Enterprises (MSMEs)?

Measurement	Frequency (Respondent)	Percentage
Partial	35	35%
Moderate	19	19%
Highly	12	12%
None of the above	34	34%
Total	100	100%

Source: Field Survey

Interpretation:

The table 1 shows that more or less 66 percent women know about the Micro, Small and Medium Enterprises (MSMEs).

Table No - 2

2. Do you have any Idea Regarding Sustainable Development?

Measurement	Frequency (Respondent)	Percentage
Partial	30	30%
Moderate	39	39%
Highly	16	16%
None of the above	15	15%
Total	100	100%

Source: Field Survey

Interpretation:

The table-2 shows that out of 100 respondents thirty nine (39) respondents have Moderate idea regarding Sustainable Development while thirty (30) have partial idea and

Sixteen (16) have high idea regarding this and 15 women who does not know about sustainable development So more or less out of 100 women 85 women who know about Sustainable Development.

Table No - 3

3. Do you think that MSMEs help for the sustainable development of women at Gandachara Sub-division?

Do you think that MSMEs help for the sustainable development of women at Gandachara Sub-division?	Yes	No	Total
Respondents	80	20	100

Source: Field Survey

Interpretation:

The table 3 shows out of 100 women 80 women told that MSMEs help for the sustainable development of women at Gandachara Sub-division.

Table No - 4

Social Category of the women entrepreneurs

Category	Total	Percentage to total
Scheduled Caste	08	08
Scheduled Tribe	52	52
OBC	18	18
MINO	05	05
GEN	17	17
Total	100	100

Analysis

Table-4 This table shows that the highest number of social categories of women in this area is ST and the lowest number of Social category is Minority.

Table No - 5

Family Occupations of the respondents

Occupation	Total	%
Agriculture	10	10
Labour	20	20
Business	55	55
Service	15	15
Total	100	100

Analysis

Table-5 shows that business group are high (55 percent) and the lowest number of respondent in the occupation is Agriculture.

Table No - 6
Loan received from Bank by the settled Entrepreneurs in trading activities

Year	Total	%
Up to 50000	51	69.32
Above 50000 to Below 2 lakhs	35	28.22
Above 2 lakhs	14	2.45
Total	100	100

Table-6 shows that the highest number of Entrepreneurs get loan from bank is upto 50000 categories and the lowest number of Entrepreneurs get loan from bank is Above 2 Lakh.

Limitation of the study

The sample size is very limited and the area of sample is limited only 5 villages were chosen for this Research study.

Conclusion

To conclude, it can be said that MSMEs is a good initiative for the sustainable development of rural economy as well as women. Because on the one hand it is less harmful for the nature and the other hand it provides the income opportunity to the rural women. As we know that in the rural areas large number of people belongs to poverty line. Moreover lack of proper infrastructure the rural women are unable to contribute themselves to the economic activities. The present study had done at Gandachara (Dhalai Tripura), this district is most under develop zone in the Tripura as well as rural also. Therefore these MSMEs play a vital role for the upliftment of women at this area.

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The primary data were collected from field survey.

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M-COMMERCE AND MOBILE APPS: OPPORTUNITIES FOR MSME'S

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Abstract:

Mobile apps are revolutionizing the way businesses are conducted, offering up a plethora of new business opportunities, and establishing new marketplaces, from Uber to Airbnb. Technology has made asset sharing a reality, leading to efficient utilization of resources at costs much lower than were thought possible. Markets are becoming more interconnected and communication is vitally ingrained in our business transactions. The current research paper is a review of current concepts in M-commerce and Mobile Applications. In the paper M-commerce is defined as a part of e-commerce. The conclusion suggests that M-commerce depends significantly on e-commerce technologies. Technology adoption is becoming more affordable as well as a necessity to survive in today's ultra-competitive business environment. Only brick and mortar or businesses without presence on the internet would be at a big disadvantage and may even close down sooner than later. In order to fulfill market needs and take advantage of current or projected opportunities, MSME businesses' flexibility makes it simpler to make decisions on a broad scale, such as adopting new technology or altering or even redesigning an existing business process. As a result, m-commerce offers MSMEs the opportunity to significantly increase their profits by putting their products in the hands of millions of potential customers worldwide.

Keywords: M. Commerce, Mobile Apps, MSME's, Developing Countries, Technologies, Digitalization

Introduction:

Certainly! Mobile commerce, or m-commerce, has opened up significant opportunities for Micro, Small, and Medium Enterprises (MSMEs) in the business world. With the proliferation of smartphones and internet connectivity, MSMEs now have the chance to expand their reach and increase their sales through mobile apps. These apps provide a convenient platform for customers to browse products or services, make purchases, and engage with businesses. The introduction of m-commerce and mobile apps for MSMEs signifies a shift towards digitalization, allowing businesses to cater to a larger audience beyond geographical boundaries. It enables MSMEs to create a seamless shopping experience, implement targeted marketing strategies, and provide personalized customer service, all of which are crucial for staying competitive in today's market. By embracing m-commerce, MSMEs can enhance their visibility, improve customer engagement, and ultimately boost their revenue. This transformation offers a level playing field, allowing smaller businesses to compete with larger enterprises in the digital landscape. As technology continues to advance, the opportunities for MSMEs in the realm of m-commerce are boundless, making it a vital avenue for growth and sustainability.

Objectives:

- Mobile apps and m-commerce empower and enable MSMEs, increasing their reach and boosting customer happiness and loyalty
- Mobile apps can streamline a variety of business processes, improving the effectiveness of the business process and enabling MSMEs to establish a distinctive brand identity.
- M-Commerce platforms and mobile apps can be used to secure MSMEs' commercial relationships and keep them competitive in the ever-changing business environment.
- M-Commerce and mobile apps may help businesses develop, increase customer happiness, and maintain a competitive edge in the digital market.

M-Commerce Meaning:

M-trade is the usage of handheld, wi-fi devices consisting of cellular phones, pills and private virtual assistants to carry out on-line industrial transactions. It's a factor of digital trade that works on cellular devices. M-trade allows a commercial enterprise to attain greater clients on-line. It additionally offers clients with a extensive variety of product picks and charge alternatives from specific vendors. It is an development of ecommerce, permitting humans to shop for and promote items or offerings from nearly anywhere, genuinely the usage of a cellular telecellsmartphone or pill device.

Oppurtunities For MSMEs:

Expand Market Reach: Mobile apps enable MSMEs to reach a broader audience beyond their physical location, potentially attracting customers from different regions or countries.

Improve Customer Engagement: Mobile apps allow businesses to engage with customers through personalized notifications, promotions, and loyalty programs, enhancing customer experience and fostering brand loyalty.

Enhance Convenience: M-commerce offers convenient shopping experiences. Customers can browse products/services, place orders, and make payments from the comfort of their mobile devices, leading to increased sales.

Data Collection and Analysis: Mobile apps collect valuable customer data, which MSMEs can analyze to understand consumer behavior, preferences, and market trends. This data-pushedmethodfacilitates in makingknowledgeablecommercial enterprise decisions.

Cost-Effective Marketing: Mobile apps provide a cost-effective platform for marketing and advertising. MSMEs can run targeted marketing campaigns within the app, reducing the expenses associated with traditional marketing methods.

Streamline Operations: Mobile apps can integrate various business functions, such as inventory management, order processing, and customer support. This integration streamlines operations and reduces manual errors.

Build Brand Loyalty: Through mobile apps, MSMEs can offer exclusive deals, discounts, and rewards to app users, encouraging repeat purchases and building a loyal customer base.

Compete with Larger Enterprises: Having a well-designed mobile app levels the playing field for MSMEs, allowing them to compete with larger enterprises in the digital marketplace.

Adaptation to Changing Consumer Behavior: With the increasing reliance on smartphones, MSMEs need to adapt to changing consumer behavior. Mobile apps cater to the preferences of modern consumers who prefer the convenience of mobile shopping.

Facilitate Secure Transactions: Mobile apps can integrate secure payment gateways, ensuring safe and hassle-free transactions for both the business and customers.

Challenges Associated with M-Commerce and Mobile Apps:

Initial Development Cost: Creating a mobile app can be expensive, especially for small businesses with limited budgets. Developing a user-friendly and feature-rich app requires investment in technology and skilled developers.

Maintenance and Updates: Apps need regular maintenance and updates to remain compatible with new devices and operating systems. This ongoing cost can burden small businesses, especially if they have limited technical expertise.

Security Concerns: Mobile apps are susceptible to security threats such as data breaches and hacking. MSMEs might lack the resources to implement robust security measures, putting customer data at risk.

Market Saturation: App stores are saturated with millions of apps. Getting noticed among competitors can be challenging, requiring additional investments in marketing and promotions.

User Experience: If the app is not user-friendly or does not offer a seamless experience, customers might uninstall it. Ensuring an intuitive interface and a positive user experience requires careful design and testing.

Dependency on Third-Party Platforms: MSMEs often rely on third-party platforms (e.g., app stores) to distribute their apps. Changes in policies or algorithms of these platforms can affect app visibility and downloads.

Limited Device Compatibility: Apps might not be compatible with all devices and operating systems, excluding potential customers who use devices incompatible with the app.

Internet Connectivity: M-commerce relies heavily on internet connectivity. In regions with poor network coverage, customers may face difficulties accessing the app, limiting the business's reach.

Competition from Big Players: Large corporations with substantial resources dominate the app market. Small businesses may struggle to compete with these giants, affecting their market share and profitability.

Data Privacy Compliance: MSMEs must adhere to data protection regulations, which can be complex and require additional resources for compliance.

How M-Commerce and mobile apps Can Help MSMEs Solve Many of their Problems?

Wireless mobile devices, including smartphones and PDAs, are used in m-commerce. The ease of use and necessity of smartphones and PDAs has an effect on intentions and behavioral outcome (Hubert, et al. 2017). According to Rahayu et al. (2016), m-commerce can benefit MSMEs in the following crucial areas: expanding their customer base, increasing sales, improving customer and supplier communication, improving brand image, accelerating business processes, and improving employee efficiency. Furthermore, empirical data demonstrates that the higher the level of M-commerce adoption among MSMEs in Indonesia, a developing nation, the higher the profit (Rahayu et al. 2016). Due to the enhanced market reach provided by the internet aspect of business, m-commerce can assist businesses in attracting more clients. Market expansion will result in additional clients, which will boost these MSMEs' sales revenue. Better relationships with customers and suppliers will result from improved communication with both parties, and there will be less risk of ambiguity when delivering the appropriate good or service at the appropriate time. M-Commerce can enhance the company's reputation as a cutting-edge business, and it also increases staff productivity by allowing them to work more effectively thanks to technology. Businesses that operate online avoid the expenses associated with opening brick and mortar establishments, such as the costs of rent, staffing, insurance, decorating, and other necessities. According to eMarketer data, more than 80% of all online customers also use their mobile devices to shop, and by 2019 that percentage is expected to reach 95%.

Mobile devices are becoming a significant platform for M-commerce, as well as for advertising, movies, TV shows, and e-books. As with Alipay, Uber, Airbnb, and many other apps that are used daily by millions of users worldwide, it brings innovation. It promotes growth by making businesses efficient, effective, and competitive.

Conclusion:

As to the studies, SMEs generally and those in developing nations in particular face a number of challenges. Additionally, it emphasizes how M-commerce might aid in overcoming many of the challenges faced by SMEs in developing nations. For instance,

expanding the market's reach, increasing sales, lowering transaction costs and middlemen, accelerating procedures, enhancing communication, and increasing employee productivity. Many SMEs in the real estate and transportation sectors, for instance, can sign up for rides or room rentals on Uber/Didi and Airbnb, respectively, and therefore tap into new revenue streams. As an alternative, SMEs can purchase a mobile app that is specifically tailored to their needs as a business and to better serve their customers. These apps typically cost between US\$2000 and US\$250000, however complicated apps or those involving Mobile apps and m-commerce give MSMEs the chance to innovate, expand their market reach, increase productivity, and have a strong online presence, all of which contribute to the growth and sustainability of their businesses. To overcome these obstacles, considerable preparation, strategic investment, and a commitment to providing outstanding client experiences are necessary. Additional features and services like location-based functionality, payment synchronization, social media, in-app purchases, cross-device synchronization, etc. would be significantly more expensive.

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ROLE OF MSME AND ITS CONTRIBUTION TOWARDS SUSTAINABLE DEVELOPMENT OF INDIAN ECONOMY

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Abstract

This Research paper is attempted to examine the role of MSME and its contribution as well as sustainable development through MSME. The MSME sector plays an indispensable role in financial improvement of the country. India's Micro, Small and Medium Enterprises (MSME) sector has appeared as a vibrant and dynamic sector for the economy. It has been recognized as a catalyst in promoting the growth and development of the Economy. MSME's are playing a pivotal role in creating a huge amount of employment, helping in establishment of industries in economically backward regions and truncating regional inequalities, contributing to GDP and increasing the National Income. It is found from the study and various researches that MSME's are playing a crucial role in changing the Indian Economy in future. The MSME's are providing a platform for the persons who are both skilled or unskilled with wide range of employment opportunities and increasing the standard of the society and as well as in the development of the regions in setting up industries in the rural and backward and also in urban areas. The MSME's are providing uniform development to the society and can be a strong mean to utilize the natural resources in an effective way to contribute to the efficiency and in the development of the Economy of India. So, the sustainable contribution by the MSME's towards the Economy must be constantly increased for the well development of the Nation.

Keywords: MSME, Rural Development, GDP, Employment Generation, National Income,

Introduction

The Micro, Small and Medium Enterprises (MSME's) is regarded as the Economy's growth engine. It is the most important and emerging sector of the economy. MSME's play a pivotal role in the contribution to the National GDP as well as economic development of the country. MSME's not only serve as an important role in creating enormous employment opportunities at a cheaper cost of capital than large enterprises, but also, they aid in the industrialization of rural and backward areas and decreases the regional inequalities and ensuring fair distribution of national revenue & wealth and ensuring the development of the society. MSME's play a crucial role in socio economic transformation of the country. MSME's offers a wide range of products and services with innovative government initiatives to promote the growth of the nation. Indian Government has introduced enormous initiatives and schemes to promote MSME's and upcoming entrepreneurs in the Nation. Make in India concept was also launched with a lot of

flourishes to inculcate new vitality in the manufacturing sector. The purpose of this paper is to examine role, contribution and sustainable development towards the economic development through MSME. Therefore, MSME's can be a boon and hope for the sustainable development of the Indian Economy in near future.

Objectives of the Study

The study has the following objectives.

1. To study the Role of MSME in the Economic Development.
2. To examine the Contribution of the MSME towards Economic Development.
3. To analyze the Sustainable Development of the economy through MSME.

Methodology

This paper is completely based on the secondary data. The secondary data were collected from the Directorate of Economics and Statistics, Ministry of Micro, Small and Medium Enterprises, Journals, Thesis & Websites.

Elucidation of MSME

The Micro, Small, and Medium Enterprise Development (MSMED) act, 2006, was adopted by the Indian government. it defines Micro, Small and Medium Enterprises (MSMEs) as the businesses involved in the manufacturing, processing, or preservation of items.

MSMEs play a considerable role in the GDP growth story on account of their contribution to production and processing. Their growth results in an increase in value addition, final output, and profitability. Furthermore, they complement large industries by acting as ancillary units, thus bringing out integration benefits.

Definition of Micro, Small and Medium Enterprises:

In accordance with the major provision of micro, small and medium enterprises act 2006 has classified MSME's into two categories:

- a) Manufacturing enterprises: Refers to those enterprises engaged in the manufacture or production of goods relating to any industry specified in the first schedule to industries (According to development and regulation act, 1951)
- b) Service enterprises: These enterprises are engaged in providing or rendering of services in terms of investment in equipment's

MSME units producing goods and rendering services will be defined in terms of annual turnover, as mentioned under:

Micro enterprises will be defined as a unit where the annual turnover does not exceed Rs.5 crore

A small enterprise will be defined as a unit where the annual turnover is more than Rs. 5 crores but it does not exceed Rs. 75 crores

A medium enterprise will be defined as a unit where the annual turnover is more than 75 crores but does not exceed Rs. 250 crores

Manufacturing Sector

Enterprises	Investment in Plant & Machinery
Micro Enterprises	Less than 25 Lakh
Small Enterprises	More than 25 Lakh, but does not exceed 5 Crore
Medium Enterprises	More than 5 Crore, but does not exceed 10 Crore

Service Sector

Enterprise	Investment in Equipments
Micro Enterprises	Less than 10 Lakh
Small Enterprises	More than 10 Lakh, but does not exceed 2 Crore
Medium Enterprises	More than 2 Crore, but does not exceed 5 Crore

Some of the Government Schemes Promoting MSME's in the Economy

- Credit Linked Capital Subsidy Scheme for Technology Upgradation
- Credit Guarantee Scheme
- Prime Minister's Rozgar Yojana (PMRY)
- MSME MDA Scheme
- Prime Minister Employment Generation Programme (PMEGP)
- Credit Guarantee Trust Fund for Micro & Small Enterprises (CGTMSE)
- Entrepreneurship and Skill Development Programme (ESDP) Scheme
- Micro and Small Enterprises Cluster Development Programme (MSE - CDP)
- Mudra Yojana

Role of MSME in Economic Development & its Contribution

Recently, MSME's plays a vibrant role in the development of economy by increasing the wealth of the nation and as well as the society by providing more employment opportunities to the society and contributing to the GDP of the nation. MSME's help to reduce the rate of unemployment and stimulates the economic growth.

1) Increasing Employment

MSMEs have played an essential role in providing employment opportunities in rural areas. They have helped in the industrialization of these areas with a low capital cost compared to the large industries. Acting as a complementary unit to large sectors, the

MSME sector has enormously contributed to its socio-economic development. MSMEs account for 90% of businesses, 60 to 70% of employment and 50% of GDP worldwide. As the backbone of societies everywhere they contribute to local and national economies and to sustaining livelihoods, in particular among the working poor, women, youth, and groups in vulnerable situations. The National Sample Survey (NSS), according to the 73rd round, which was done between the years 2015 and 2016, the Indian government plans to increase the number of jobs in the MSME sector by 5 crores by 2025 from the present level of 11.10 crore.

As of December 2022, approximately 1.28 crore MSME registered industries employed 9.31 crore people including 2.18 crore women employees, based on the most recent data from the portal of Udyam. The MSME sector generates 360.41 lakh jobs out of the 11.10 crore jobs. The jobs mainly belong to the manufacturing sector, in the rural and urban areas, with 387.18 lakh jobs in trade and 362.82 lakh jobs in other services across the country. The MSMEs that were founded in the year 2022, employed more than 1 crore people.

The MSME's employment by top states during the year 2022.

States	No. of Individuals Employed
MAHARASTRA	11.23 Lakh
TAMIL NADU	8.54 Lakh
UTTAR PRADESH	8.47 Lakh
TELANGANA	8.29 Lakh
RAJASTAN	8.20 Lakh

2) Regional Development

Micro, Small and Medium Enterprises (MSME) sector has emerged as a highly vibrant and dynamic sector of the Indian economy over the last five decades. MSMEs not only play crucial role in providing large employment opportunities at comparatively lower capital cost than large industries but also help in industrialization of rural & backward areas, thereby, reducing regional imbalances, assuring more equitable distribution of national income and wealth. MSMEs are complementary to large industries as ancillary units and this sector contributes enormously to the socio-economic development of the country. Ministry of Micro, Small & Medium Enterprises (M/o MSME) envision a vibrant MSME sector by promoting growth and development of the MSME Sector, including Khadi, Village and Coir Industries, in cooperation with concerned Ministries/Departments, State Governments and other Stakeholders, through providing support to existing enterprises and encouraging creation of new enterprises.

Over the period, MSMEs are expanding with a consistent development rate and giving both urban and rural people with employment opportunities. According to the 2017-18 MSME report, about 49 percent of MSMEs are located in urban areas, while 51 percent in rural areas make a good contribution towards development in those areas. As a result, the standard of living of the population of rural areas is improving healthily. Also, as most of the MSMEs perform labour intensive works so the investment required is relatively less, so it enables them to offer a greater number of jobs per capital that is invested as compared to medium or large-scale industries.

3) Contribution to the GDP

As per the latest information received from Ministry of Statistics & Programme Implementation, the share of MSME Gross Value Added (GVA) in all India Gross Domestic Product (GDP) during the year 2019-20, 2020-21 and 2021-22 was 30.5%, 27.2% and 29.2% respectively. The share of MSME manufacturing output in all India Manufacturing output during the year 2019-20, 2020-21 and 2021-22 was 36.6%, 36.9% and 36.2% respectively.

As per the information received from Directorate General of Commercial Intelligence and Statistics (DGCIS), the share of export of MSME specified products in all India exports during the year 2020-21, 2021-22 and 2022-23 was 49.4%, 45.0% and 43.6% respectively. MSMEs' contribution will be integral in making India achieve its lofty goals of becoming a developed nation by 2047. With a contribution of 30% to the country's GDP, the MSME sector has immense potential to help the economy grow by leaps and bound. The role of manufacturing MSMEs, in particular, will prove significant in India's economic aspirations as a nation. The MSME sector in India employs over 100 million people and accounts for 45% of manufacturing output and over 40% of the country's exports, according to a PIB release. With 63.4 million units spread across the country, the sector contributes around 6.11% of the manufacturing GDP and 24.63% of the GDP from service activities.

4) Sustainable Growth

MSMEs play a considerable role in the GDP growth story on account of their contribution to production and processing. Their growth results in an increase in value addition, final output, and profitability. Furthermore, they complement large industries by acting as ancillary units, thus bringing out integration benefits.

Their contribution is increased manifold when one accounts for the multiplier effect of the economic activity undertaken by their employees and suppliers. The CSO data states MSMEs' contribution to Gross Value Added (GVA) at 30% for FY 2019-20, with the manufacturing share standing at 36.9%. MSMEs are being supported by the government

through 'Make in India' with the 'Zero Defect & Zero Effect' initiative to promote sustainability and higher quality standards.

5) Increasing the Number of Exports

India's trade and external sector has a significant impact on the GDP growth and expansion in per capita income. India is among the world's largest producers of milk, pulses and jute and the second largest producer of rice, wheat, fruit and cotton, groundnut, sugar, and vegetables. It is also one of the leading producers of spices, fish, poultry, livestock and plantation crops. Most of these are run in small production units. India's industrial exports are predicted to exceed \$1 trillion by 2028. As India continues to be the world's fastest-growing major economy, one of the key drivers of growth for the country is the rise in the volume of India's exports, which have grown by 37% in 2022. According to a report from the Ministry of Commerce & Industry, India's overall exports (Merchandise and Services combined) in April-November 2022 exhibited a positive growth of 17.72% over the same period last year. Traditionally, MSMEs have contributed almost 50% of India's exports; therefore, an increase in exports signifies a growth opportunity for small businesses to scale up and distribute their products globally. By increasing exports, India is poised to provide more jobs and create opportunities for both semi-skilled and unskilled workers.

6) Emphasising Make in India

MSMEs can contribute greatly towards reducing imports and enhancing exports. In 2023 and the coming years, the Government is on a mission to implement Make in India more actively to reduce importing goods and products from foreign countries. The Make in India programme aims at utilizing the existing Indian talent base, creating additional employment opportunities and empowering the secondary and tertiary sectors. The programme also aims at improving India's rank on the Ease of Doing Business index by eliminating unnecessary laws and regulations. It also makes the bureaucratic processes easier, making the Government more transparent, responsive and accountable.

According to a report from the Ministry of Commerce and Industry, domestic demand has remained steady amidst the global downturn. Overall imports in April-November 2022 exhibited a growth of 29.47% over the same period last year. This signifies that India still depends on imports for various needs like raw materials, financing, machinery, etc. To reduce imports further, India needs to ramp up production in the country, which requires the Government to take measures to check the increase in raw material prices and high dependency on imports for some industries like pharma, etc. Make in India' campaign to get Indian companies as well as global firms to invest and partner in the manufacturing sector is a well-drawn-out concept and is the most relevant for India's MSMEs. 'Make in

India' campaign can attract the foreign MNCs to bring in their investment, set up venture/angel funds to take advantage of the inherent depth of the MSME Sector in terms of range of products and services, marketing networks and the ability to grow fast. Another advantage in Indian MSME Sector the foreign partners would experience is that production process in this sector is already underway. The various networks required for undertaking the production process are already established. The foreign MNC is just required to bring in investment and technical know-how to achieve excellence in these areas. In order to enhance the capabilities of MSMEs, Ministry of MSME has been implementing a number of programs and schemes in the areas of finance, infrastructure, technology, marketing and skill development to address the problems confronting the sector.

7) Women Empowerment

Women are the pillars of society and when women are empowered, the whole world is empowered. Ministry of Micro, Small and Medium Enterprises (MSME) is empowering women entrepreneurs through its different schemes helping women spark their talent and build their own identity. 1.38 lakh projects have been set up by the women entrepreneurs under Prime Minister's Employment Generation Programme (PMEGP) Scheme since inception and up to 23.01.2019. The projects set up by women entrepreneurs are about 30% of total projects set up under PMEGP. Under the scheme, women entrepreneurs are covered under Special Category and are entitled to 25% and 35% subsidies for the project set up in urban and rural areas respectively. For women beneficiaries, own contribution is only 5% of the project cost while for general category it is 10% during 2016-17 and 2017-18, under the Khadi Programme of KVIC, women entrepreneurs have set up 30437 projects for which margin money of 85,305 lakh Rupees have been disbursed.

Not only MSME, the Government of India has taken various steps towards women empowerment and safety. Initiatives like BetiBachao, BetiPadhao, Stand Up India, Mission Indradhanush, Mudra Yojana Scheme, TREAD (Trade Related Entrepreneurship Assistance and Development) Scheme, Mahila Udyam Nidhi Scheme, Annapurna Scheme, Stree Shakti Package for Women Entrepreneurs, Bhartiya Mahila Business Bank Loan, Dena Shakti Scheme, Udyogini Scheme, Cent Kalyani Scheme and many more have added to the welfare of the women population in India.

Sustainable Development of Economy through MSME

1) Sustainability in Employment

MSMEs play a vital role in the Indian economy, making significant contributions to social and economic development by creating substantial employment opportunities at relatively lower capital costs and nurturing entrepreneurial ecosystems in the country.

According to the Federation of Indian Chambers of Commerce & Industry (FICCI), as far as the Indian economy is concerned, the MSME sector makes up 45 percent of the total manufacturing output, 40 percent of the total exports, and 95 percent of the total industrial units. The sector also employs approximately 60 million people in rural areas, making it one of the largest sources of employment after agriculture.

2) Sustainability in GDP

MSMEs play such an important role in the Indian economy (MSMEs account for 30 percent of the gross domestic product), the development trajectory of this sector holds the key to achieving the Indian Government's sustainability targets. A majority of MSMEs and local 'green' enterprises have high rates of natural resource ownership because they depend on these resources for their livelihood and sustenance. As a result, they are more environmentally conscious and invested in preserving these resources. Therefore, MSME activities and operations can have a significant positive impact in tackling climate change, preserving terrestrial and water ecosystems, and implementing sustainable production and consumption practices.

3) Sustainability Through Make in India

Indeed, sustainability is a globally accepted development centre stage at both national and international levels. In order to boost MSME's government of India has made several commitments. With the new initiative undertaken by government of India "Make in India" (Zero defect and zero effect). All the sectors of the Indian economy need to make a collective effort for a better economy. In the current scenario, the manufacturing sector has a significant contribution to sustainable economic growth. MSMEs sector has the potential to create jobs opportunities to a huge number of peoples but adopting the sustainable business policies it goes along and contributes to the Indian economy. MSMEs plays an important role directly or indirectly to achieve sustainable goals through ITC support.

Final Synopsis

Number of MSME's in India: The number of MSME's in India is estimated to be at 42.50 million which comprises of registered and unregistered MSME's together accounting to a staggering 95% of total industrial units in the country

MSME and employment opportunity: Itemploys about 106 million out of which 40% is of India's workforce itself next only to the agricultural sector

Products of MSME's: It produces more than 6000 products

GDP Contribution: Currently it contributes around 6.11% of the manufacturing GDP and 24.63% of the service sector GDP

MSME output: 45% of the total Indian manufacturing output

MSME Exports: 40% of the total exports

Bank Lending Rate: MSME's account for almost 16% of bank lending

Fixed Assets: Current fixed assets is at INR1,47,1,912.94 Crore

Conclusion

The role of MSMEs in economic activity, its contribution and its sustainability development towards the Economy is very well explained in the above paper. MSMEs provide employment and ultimately self-dependency. MSMEs can be boon and a hope for Indian economy in near future. The MSMEs are providing uniform development to the society and can be a strong mean to utilize the natural resources of India. The MSMEs are very helpful to remove the regional imbalances if it is established in the underdeveloped areas. The MSMEs are providing more employment to the society and increasing the standard of living of the people and increasing the GDP of the nation and increasing the National Income. If this continues, the Nation will definitely attain its sustainable goals in future.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

VOLUME - 2

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ROLE OF MSME IN ENTREPRENEURSHIP DEVELOPMENT

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Abstract

Micro, Small, and Medium Enterprises (MSMEs) occupy a pivotal position in the landscape of entrepreneurship and economic advancement. Their role extends beyond mere economic significance; they are the lifeblood of innovation and economic dynamism. By providing a welcoming environment for budding entrepreneurs, they nurture the spirit of innovation and enterprise. MSMEs, with their agility and adaptability, drive economic growth, create jobs on a substantial scale, and act as a force for innovation in various industries. They exemplify resilience and community empowerment, often flourishing in local contexts, thus contributing to localized development. Moreover, they are instrumental in global trade, exporting specialized and artisanal products. In essence, the support and nurturing of MSMEs are paramount in the quest for sustainable economic development, emphasizing the imperative of empowering these enterprises to foster entrepreneurship and ensure a dynamic and enduring economic landscape.

Keywords: MSME, Entrepreneurship, Economic Development, Employment Generation.

Introduction

India's Micro, Small, and Medium-Sized Businesses (MSMEs) sector is a fundamental driver of the national economy, offering substantial employment, reducing poverty, and bolstering economic growth. The Indian government's initiatives aim to support its growth and development, making it a vital player in the global market through expanding exports. This sector fosters entrepreneurship, innovation, and long-term economic prosperity, underlining its critical role in India's overall development.^[4] Entrepreneurship, often regarded as the engine of economic development, is a dynamic force that propels innovation, fosters job creation, and sparks economic transformation. MSMEs, with their flexibility and agility, provide a nurturing ground for aspiring entrepreneurs. They offer a low-entry barrier, allowing individuals to transform ideas into businesses, experiment with innovation, and gain invaluable experience in managing a business. In doing so, MSMEs become an incubator for entrepreneurship development, fostering a culture of innovation and enterprise in society. The role of MSMEs transcends mere economic contributions; they

are also fundamental in ensuring equitable and sustainable economic growth. By empowering entrepreneurs, they create jobs, alleviate poverty, and drive economic stability, particularly in regions where large corporations might not have a substantial presence. Furthermore, their localization and community-focused approach promote inclusive development, ensuring that the benefits of economic progress are distributed more evenly, especially in rural and semi-urban areas. In this complex interplay between MSMEs and entrepreneurship, the potential for a dynamic and sustainable economic future unfolds.

Review of Literature

Zanjurne (2018)^[1] discovers that the growing recognition of the Micro, Small, and Medium Enterprises (MSME) sector worldwide for its pivotal role in achieving diverse socio-economic goals, such as fostering economic growth, generating employment, promoting entrepreneurship, and facilitating exports. In the context of India, the MSME sector is considered the backbone of the economy, significantly contributing to its growth and development. This sector is instrumental in driving faster and more inclusive economic growth in the country, aligning with the National Manufacturing Policy's goal of increasing manufacturing's GDP contribution to 25% by 2022. Patel and Shah (2021)^[2] shows that over the past five decades, the Micro, Small, and Medium Enterprises (MSME) sector has evolved into a dynamic and thriving component of the Indian economy. These enterprises are not only pivotal in offering significant employment prospects with relatively lower capital investments compared to larger industries but also contribute to the industrialization of rural and underserved regions, thereby mitigating regional disparities and ensuring a more equitable distribution of national income and wealth. The Start-up India program, spearheaded by the Indian government, represents a flagship initiative aimed at cultivating a robust ecosystem for fostering innovation and startups within the nation. This initiative holds the potential to drive sustainable economic growth and generate substantial employment opportunities. Patel and Tripathi (2022)^[3] reveals that the Micro, Small, and Medium Enterprises (MSMEs) are integral to India's economic growth, contributing significantly to industrial production, employment, GDP, regional development, exports, and economic diversification. The Indian economy while highlighting the challenges they face, including issues related to finance, marketing, technology, human resources, operations, and export potential. It underscores the need for strategic management, financial literacy, and talent retention.

Growth of MSME in India

The growth of Micro, Small, and Medium Enterprises (MSMEs) in India has been a remarkable journey, intricately woven into the country's economic fabric. Over the years,

these enterprises have evolved from modest beginnings into powerful engines of economic progress, making significant contributions to employment, innovation, and overall economic development. In the early days of India's independence, MSMEs emerged as vital instruments for generating employment, especially in rural and semi-urban areas where large-scale industries were scarce. Their ability to adapt quickly to changing market demands and their role in utilizing local resources made them catalysts for regional development. The introduction of policies and schemes by the Indian government further bolstered their growth, providing financial aid, technical support, and market linkages. The liberalization of the Indian economy in the 1990s opened new avenues for MSMEs. With reduced bureaucratic hurdles and enhanced access to global markets, these enterprises began to thrive. The technological revolution, particularly the internet boom, enabled many MSMEs to expand their reach beyond geographical boundaries, fostering innovation and competitiveness. Additionally, initiatives like 'Make in India' and 'Startup India' provided further impetus, encouraging entrepreneurship and innovation within the MSME sector.

In recent years, the digitization of business processes and the widespread use of e-commerce platforms have transformed the landscape for MSMEs. These enterprises have leveraged online platforms to reach a wider customer base, enabling them to showcase their products and services globally. Furthermore, the emphasis on sustainability and eco-friendly practices has led many MSMEs to innovate, creating a niche market for eco-conscious consumers. Despite the challenges, such as limited access to finance and global economic fluctuations, MSMEs in India continue to grow. They have become hubs of innovation, producing a diverse range of products and services, from traditional handicrafts to cutting-edge technology solutions. The government's continuous support through policies, funding, and skill development programs ensures that the growth trajectory of MSMEs remains upward. In essence, the growth of MSMEs in India mirrors the nation's resilience, adaptability, and entrepreneurial spirit. These enterprises, through their ingenuity and determination, not only contribute significantly to the Indian economy but also serve as beacons of inspiration for aspiring entrepreneurs, showcasing the limitless possibilities within the MSME sector.

Government Policies and Initiatives related to MSME Entrepreneurship

Government policies related to entrepreneurship in Micro, Small, and Medium Enterprises (MSMEs) play a vital role in fostering growth, innovation, and sustainability in this sector.

- ❖ **MUDRA Yojana:** The Pradhan Mantri Mudra Yojana is a government initiative that offers financial support to small businesses in the form of loans. This scheme provides loans at different stages of business development, encouraging entrepreneurship among the economically weaker sections of society.

- ❖ **Credit-Linked Capital Subsidy Scheme (CLCSS):** This scheme provides a subsidy for technology up-gradation in MSMEs. By offering financial incentives, it encourages businesses to adopt modern technology and enhance their competitiveness.
- ❖ **Goods and Services Tax (GST) Composition Scheme:** A simpler tax scheme for small businesses with an annual turnover below a specified threshold. This policy reduces the compliance burden on MSMEs.
- ❖ **Skill India Initiative:** This program aims to enhance the employability of the youth and empower them with relevant skills, making them job creators instead of job seekers. It includes schemes such as Pradhan Mantri Kaushal Vikas Yojana (PMKVY).
- ❖ **Digital MSME Scheme:** Part of the broader Digital India initiative, this scheme encourages MSMEs to adopt digital technologies and e-commerce. It provides support for the implementation of Enterprise Resource Planning (ERP) systems, website development, and digital marketing.
- ❖ **Zero Defect, Zero Effect (ZED) Certification Scheme:** This scheme encourages quality manufacturing and the adoption of best practices in MSMEs to enhance product quality. It supports MSMEs in achieving international standards and accessing global markets.
- ❖ **Export Promotion Capital Goods (EPCG) Scheme:** The EPCG scheme allows MSMEs to import capital goods at concessional or zero customs duty rates to improve their export capabilities.
- ❖ **Single Window Clearance:** Several states in India have introduced the concept of a single window clearance system for MSMEs. This system simplifies the regulatory processes, approvals, and clearances required to start and operate a business.
- ❖ **Startup India Initiative:** Launched to promote a culture of entrepreneurship and innovation, this initiative provides benefits such as tax exemptions, funding, and a simplified regulatory framework for startups, many of which fall under the MSME category.
- ❖ **Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE):** This scheme provides credit guarantee cover for loans extended to small and micro-enterprises. It encourages financial institutions to extend credit to these enterprises, reducing the risk for lenders.
- ❖ **Technology Upgradation and Quality Certification (TEQUP):** This scheme supports MSMEs in implementing modern technology and acquiring quality certifications.
- ❖ **National Manufacturing Competitiveness Programme (NMCP):** This program aims to enhance the competitiveness of manufacturing enterprises, including MSMEs, by providing support for the creation of industrial clusters.

The Role of MSMEs in Entrepreneurship Development

Micro, Small, and Medium Enterprises (MSMEs) are the often-overlooked heroes of entrepreneurship development, leaving an indelible mark on multifaceted dimensions of economic progress. In their unassuming scale, these enterprises play a pivotal role in nurturing entrepreneurship through several foundational avenues. First and foremost, MSMEs emerge as formidable employment generators, casting a wide net of job opportunities and infusing society with the spirit of entrepreneurship. These businesses, agile and innovative, are quick to pivot in response to evolving market dynamics, introducing novel products and kindling the fires of entrepreneurial creativity. Their collective economic impact is substantial, constituting a critical cornerstone of a nation's overall economic growth and prosperity.

Beyond economics, MSMEs exhibit a geographical conscience, often choosing to root themselves in rural and semi-urban landscapes. This deliberate decentralization not only alleviates urban congestion but also sparks economic vitality in areas historically underserved by development. MSMEs, perhaps most significantly, orchestrate a symphony within the entrepreneurial ecosystem. They act as catalysts, spawning opportunities for interconnected businesses throughout the supply chain. In doing so, they fortify the broader entrepreneurial landscape, nourishing an environment ripe for innovation, competition, and economic advancement. In essence, the influence of MSMEs resonates deeply, reverberating through the corridors of entrepreneurship and casting a wide net of economic, social, and creative possibilities.

Conclusion

The significance of Micro, Small, and Medium Enterprises (MSMEs) in nurturing entrepreneurship development is paramount. These businesses form the foundation of entrepreneurship, propelling job generation, fostering innovation, spurring economic growth, and facilitating regional development. As engines of transformation and ingenuity, MSMEs play a central role in shaping a nation's entrepreneurial ecosystem. Thus, supporting and cultivating MSMEs is not just crucial for entrepreneurship development but also essential for ensuring enduring economic growth and prosperity. Recognizing the importance of MSMEs can pave the path to a more vibrant, innovative, and entrepreneurial economy.

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EXPORT COMPETITIVENESS OF INDIA: THE ROLE OF MSMEs TO PLAY

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Abstract

The purpose of the current article is to improve Indian MSMEs' export competitiveness. In the article, an effort has been made to examine the export performance elements and the numerous difficulties and limitations related to the sector in order to overcome them for a superior export performance and make MSMEs export competitive, hence reducing the trade deficit of the Indian economy. It has been addressed how the government, business sector, and international arenas may all actively contribute to the expansion of MSME exports. The sector has the potential to enhance India's participation in the global small sector exports, which are now dominated by developing nations like China, Korea, Taiwan, etc. since it is one of the main performers in both Indian exports and the country's total economy. In terms of its contribution to industrial output, exports, employment, and the development of the consumer base, the Micro, Small, and Medium Sized Enterprise (MSME) sector is a significant component of the Indian economy (Nanjudappa, D.M. 2002). Indian MSMEs serve as an example of how government socioeconomic policies should be implemented. These policies should emphasise job creation at all income levels, the distribution of economic power among many people, the prevention of monopolistic production and marketing practises, and the promotion of economic growth and foreign exchange earnings through low import intensive business activities. Given that it accounts for 80% of all industrial firms and 34% of all exports from India, the MSME sector is important to the country's economy. The industry has fared better than other industries employing large firms in the recent slump. It is true to say that the MSME sector is the engine driving the Indian economy, and it will remain that way as long as government policies are favourable to the sector's expansion and improvement. The MSME sector is a significant contributor to India's exports and may help the nation's export growth by raising the bar for MSME goods and attracting more foreign clients.

Keyword: MSMEs, export competitiveness, growth, challenges, sustainability, etc

Introduction

In terms of its contribution to industrial output, exports, employment, and the development of the consumer base, the Micro, Small, and Medium Sized Enterprise (MSME) sector is a significant component of the Indian economy (Nanjudappa, D.M. 2002). Indian MSMEs serve as an example of how government socioeconomic policies should be implemented. These policies should emphasise job creation at all income levels, the distribution of economic power among many people, the prevention of monopolistic production and marketing practises, and the promotion of economic growth and foreign exchange earnings through low import intensive business activities. Due to their high contribution to domestic production, significant export earnings, low investment requirements, operational flexibility, location aware mobility, low intensity imports, capacity to develop appropriate indigenous technology, ability to replace imports, contribution to defence production, technology oriented industries, competitiveness in domestic and export markets, and ability to create new businesses, Indian MSMEs also play a significant role in the development of the country. The financial institutions' expertise and support enable small and medium sized businesses to compete on both the domestic and global markets. Small and medium sized businesses (SMEs) are essential to the expansion of the Indian economy since they generate more than 8000 high quality goods for both domestic and foreign markets, account for 45% of industrial production and 40% of exports, and support 1.3 million employment annually. SME GDP contribution in 2012 was over 22%, and it is anticipated to rise in 2013. In India, there are over 30 million MSME Units, and 12 million new workers are anticipated over the next three years. More opportunities than ever before exist for SMEs to expand and diversify across industries. The industry is seen as one of the biggest drivers of growth and the future strategic push. Numerous untapped business prospects in the sector have been made possible by changes in the legislative environment, investments in the industry, globalisation, and India's success story. There has been a significant shift in the industry, which has progressed from the manufacture of basic consumer items to the manufacturing of complex and precise goods, as a result of numerous important measures by the Indian government for the sector's competitiveness, quality upgrading, financing, and technology. MSME in India are established in nearly all of the major industrial sectors, including food processing, agricultural inputs, chemicals and pharmaceuticals, engineering, including electronics and electrical and electro medical equipment, textiles and garments, leather and leather goods, meat products, bio engineering, sports goods, plastic products, computer software, etc. MSME are regarded as important participants in the supply chain. In India, there are approximately 400 SME clusters and over 2000 artisan clusters, which have fostered the growth of inter firm collaboration to support regional production, innovation, and group learning. These clusters are thought to provide 60% of India's manufacturing exports. The

industry has recognised the need for supportive government policies, enhanced loan flow, and technology, modernization efforts.

MSME and their Role

Growth Prospects: The open door policy of the nation's globalisation has increased competition for MSMEs both domestically and abroad, making it crucial for Indian MSMEs to overcome the difficulties and improve themselves in order to sustain and compete globally through lower costs, improved quality, adoption of various innovative practises, and technology advancement.

Finance: One of the essential components for the growth and development of micro and small businesses is finance. Due to the fact that the majority of the country's exporters lack the skills necessary to properly prepare and submit a loan application, MSMEs in India now only manage 4 million accounts. They seldom ever have collateral that banks will accept as security for a loan.

Government Support: Exporters from nations like China outperform Indian exporters in global trade competitions because to superior state run programmes like subsidies, infrastructure improvements, export sales leads and market aid in foreign markets, duty drawback programmes, etc. The government need to work to make these alluring incentives available to the MSME exporters in India.

Technology: One of the most crucial elements in the survival of MSMEs is technology. Businesses that heavily rely on technology are significantly more equipped to compete both domestically and abroad and to satisfy business demands. It is well acknowledged that information and communication technologies (ICT) have the potential to increase productivity.

Infrastructure: According to the survey report, one of the main causes of Indian MSMEs' low market share abroad is that India's current infrastructure is insufficient when compared to other exporting MSMEs producing countries. Building export clusters close to sea ports is a crucial component that may substantially aid in boosting sustainability and competitiveness; China is a prime example. The cost of the goods can be reduced by reducing the transportation expenditures needed to get the shipment to the ports.

Sustainability: Sustainability is the need of the hour. The government should promote the adoption of climate friendly green technologies by the MSMEs which is highly acclaimed in the advanced markets. Reducing the carbon emissions by the adoption of green technology as a mark of sustainability can serve as a promotional technique as most of the emerging countries like China are centers of carbon emissions. Responsibility towards environment and self reliance on energy must be met by the MSME sector.

Human Resource/ Training and Development: The government needs to provide sufficient attention to a number of highly crucial issues, including the industry's scarcity of

trained workers. For each cluster, specialised training institutions and centres should be established under the direction of the centre. The institutions will regularly create trained labour that has access to the newest technology in the industry. One of the main reasons for the skilled labour shortage in the MSME sector is a lack of suitable compensation and motivating elements for the trained workers.

Problems & Constraints in Indian MSMEs

Micro, Small, and Medium Enterprises (MSMEs) play a crucial role in the Indian economy, contributing significantly to GDP, employment generation, and industrial production. However, they also face several problems and constraints that hinder their growth and development. Here are some of the key issues faced by Indian MSMEs:

1. **Access to Finance:** Lack of adequate access to finance is a major challenge for MSMEs. Many of them struggle to secure loans from formal financial institutions due to limited collateral and credit history. High interest rates charged by traditional lenders further exacerbate this problem.
2. **Collateral Requirements:** MSMEs often lack the required collateral to obtain loans, making it difficult for them to access credit. This limits their ability to invest in technology, expand operations, or meet working capital needs.
3. **Regulatory Compliance:** MSMEs in India are burdened with various regulatory compliances, such as obtaining licenses, adhering to labor laws, and complying with environmental regulations. These can be time consuming and costly.
4. **Infrastructure and Technology Gap:** Many MSMEs struggle with outdated technology and inadequate infrastructure, limiting their competitiveness and productivity.
5. **Market Access and Competition:** MSMEs often face challenges in reaching larger markets and competing with established players. Lack of marketing skills and resources can be a hindrance.
6. **Skilled Labor Shortage:** Finding skilled labor can be difficult for MSMEs, particularly in specialized industries. This impacts their ability to scale and innovate.
7. **Delayed Payments:** Delayed payments from customers, especially from large corporations and government agencies, can strain the cash flow of MSMEs.
8. **Digital Divide:** Many MSMEs, particularly in rural areas, struggle to adopt digital technologies and e commerce, limiting their ability to participate in the digital economy.
9. **Supply Chain Disruptions:** Disruptions in supply chains, such as during the COVID 19 pandemic, can severely affect MSMEs that rely on just in time inventory and have limited resources to adapt.

10. Access to Markets and Export Challenges: Expanding into international markets can be challenging for MSMEs due to export related regulations, logistics, and global competition.

Addressing these problems and constraints is crucial for the sustained growth and development of MSMEs in India. Government initiatives, financial reforms, improved access to technology and skills development, and streamlined regulatory processes can all contribute to overcoming these challenges and promoting the growth of the MSME sector.

Players and Roles

Micro, Small, and Medium Enterprises (MSMEs) in India are vital components of the country's economy, contributing significantly to employment generation, industrial production, and overall economic growth. Various players and entities play specific roles in the MSME sector in India:

- ❖ **Entrepreneurs and Business Owners:** Entrepreneurs and business owners are at the core of the MSME sector. They establish and manage small and medium-sized enterprises across various industries.
- ❖ **Employees and Skilled Workforce:** MSMEs are significant employers in India, providing jobs to millions of people, including skilled and unskilled laborers.
- ❖ **Government Agencies:** The Indian government, at both the central and state levels, plays a crucial role in supporting MSMEs through various policies, initiatives, and schemes. The Ministry of Micro, Small and Medium Enterprises (MSME Ministry) is a key government body overseeing this sector.
- ❖ **Banks and Financial Institutions:** Banks and financial institutions provide crucial financial support to MSMEs through loans, credit lines, and working capital assistance. They play a pivotal role in the growth and sustenance of these enterprises.
- ❖ **Non-Banking Financial Companies (NBFCs):** NBFCs often cater to the credit needs of MSMEs, offering alternative financing solutions, including invoice discounting, supply chain finance, and more.
- ❖ **Venture Capitalists and Angel Investors:** Some MSMEs seek funding from venture capitalists and angel investors who provide equity capital in exchange for ownership stakes in the businesses.
- ❖ **Industry Associations and Chambers of Commerce:** Industry-specific associations and chambers of commerce represent the interests of MSMEs in various sectors. They advocate for policy changes, offer networking opportunities, and provide information and resources to their members.
- ❖ **Technology Incubators and Accelerators:** These organizations support MSMEs in technology-driven sectors by providing mentoring, access to infrastructure, and funding to help them scale and innovate.

- ❖ **Export Promotion Councils:**Export-oriented MSMEs can benefit from export promotion councils that assist in identifying international markets, complying with export regulations, and participating in trade fairs and exhibitions.
- ❖ **Educational and Training Institutions:**Educational institutions, vocational training centers, and skill development programs provide training and education to individuals looking to acquire skills relevant to MSME industries.

Micro, Small, and Medium Enterprises (MSMEs) in India form the backbone of the country's export sector, making a substantial contribution to its economic growth. These enterprises operate across diverse industries, exporting an array of goods and services to international markets. Their cumulative efforts play a pivotal role in driving India's export growth and fostering economic resilience.

One of the notable aspects of MSMEs in India is their versatility. They engage in manufacturing, services, and agri-processing, allowing for a wide range of exportable products and services, including textiles, engineering goods, IT services, and handicrafts. This diversity not only boosts export earnings but also showcases India's multifaceted capabilities on the global stage.

Furthermore, MSMEs in India are significant job creators, especially in labor-intensive sectors like textiles and handicrafts. They provide employment opportunities to millions of individuals, addressing both urban and rural unemployment concerns. This employment generation enhances social inclusion and supports India's demographic dividend.

The government plays a crucial role in supporting and promoting MSME exports. It offers various incentives, financial support, and trade facilitation measures to bolster their competitiveness in international markets. Export promotion councils and industry associations provide valuable guidance, market intelligence, and networking opportunities to assist MSMEs in expanding their global reach. Additionally, the rise of e-commerce has opened new avenues for MSMEs to tap into global markets, further boosting their export potential. In summary, MSMEs in India serve as pivotal players in the country's export sector. Their versatility, job creation potential, government support, and adaptability to evolving market trends make them indispensable contributors to India's economic growth through exports.

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IMPACT OF SUSTAINABLE FINANCE OF MSMES

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Abstract:

Sustainable Finance contributes to superior development and preferred Finance for Economic growth. Sustainable development is defend and restoring the ecosystem. SIDBI, NITI Aayog, and World Bank facilitate Sustainable Finance to encourage businesses to grow from Small Medium Concern to large Industries to make an huge global impact. As per the World Bank Appraise, negatively affect the standard of living of the population and climate change will reduce India's GDP by nearly 3%. For tracking the climate defense performance of the country. The Key sustainable finance providers to companies and MSME's are Banks, Corporations, International Financial Institutions, Institutional Investors, International organizations through Financial Instruments Climate Bonds, Impact Finance, Social bonds, Microcredit, SIDBI Sustainable Finance Scheme for funding, NABARD (National Bank for Agriculture and Rural Development) , and Make in India. MSMEs, and SMEs involved in the Projects Solar Power Plants, solar energy, Green Machinery, Waste Management, Electric Machine (EM), Green Energy, Recycle, Poverty reduction, and Energy Transformation, and India is committed to achieving Carbon Neutral radiation by 2070. During the Climate summit in Green Place, India accepted for Five -Point climate 'chanamrit, or commit' towards Global Warming and Transnational Financing. As per the Environment ministry India needs \$280 billion for Ecological infrastructure and the government of India planned the founding of a Social Stock market, EIB with SBI. RBI has considered Green and Sustainable projects should be put under Priority Sector Lending (PSL) to support SD (Sustainable Development) growth and to meet the QEG (Quality Education Goals) and ESG (Economic, Social, Environment) guidelines for overtime.

Keywords: (Green Bonds, Climate Finance)

Introduction

Sustainable Finance is one fiscal instrument to fight climate change and its impacts by regulating emigrations and promoting developments in renewable energy and Sustainable development towards ESG- Environmental, Social and Governance. Sustainable development is a combined trouble towards erecting an inclusive, sustainable and flexible future for people and the earth has three core rudiments(i) profitable Growth,(ii) Social addition and(iii) Environment protection. Socially responsible Investment has formerly surfaced in the late 1960s and 1970s in the US and Europe1980s(Boxenbaum & Gound, 2006)(1). The conception of the Evergreen Revolution in India was mooted by the Father of

the Green revolution M.S. Swaminathan and United Nations Environment Programme (UNEP) has played a commanding part in shaping and promoting the green frugality for reducing environmental pitfalls. The backing in the area of reduction in carbon emissions, pollution, enhance energy and resource effectiveness in the area of clean technologies, renewable powers, water services, green transportation, waste operation, green structure and sustainable husbandry. Indian frugality is one of the fastest growing and arising request husbandry in the world. As per the Global Climate Risk Index 2021, India stands seventh amongst the most vulnerable countries prone to climate change impact and has incurred losses of USD 69 billion in 2019. Agriculture-related land use reckoned for 17 of global GHG emissions and 16 of India's GHG emissions from all sectors. India action for generating solar energy through International Solar Alliance (ISA) at the Paris climate change peak and with Green Grid Initiative (GGI) led by the UK called One Sun, One World, One Grid (OSOWOG), will draw further investment openings for Funding Agency in solar power product. New delineations of MSMEs and Companies grounded on Development and Investment Micro-Enterprises Companies with an investment of lower than Rs. 1 crore and development lower than Rs. 5 crores small Enterprises Companies with an investment of lower than Rs. 10 crore and development of Rs. 50 crore medium Enterprises Companies with an investment of lower than Rs. 50 crore and development lower than Rs. 250 crore.

Review of Literature:

Nickolay Gantchev, Mariassunta Giannetti, and Rachel Li investigate whether investor behaviour might influence company behaviour. Corporate Divestitures and Environmental and Social Policies." They investigate whether exit governance can improve enterprises' environmental and social (E&S) strategies. The authors discover that bad E&S incidents are followed by divestitures, but the magnitudes are minimal. The authors speculate that the fear of future leaving may be more strong than actual exit in the event of an E&S disaster. According to this hypothesis, after an E&S incident, firms reduce their greenhouse gas emissions and greatly increase their E&S ratings if they have a high share of E&S-conscious investors and the CEO receives equity remuneration plus is worried.

Much of the financial costs associated with climate finance relates to transition risk ensuing from uncertain technological, political, and policy environment. However, financial losses may result from physical damages caused by climate-related occurrences. The extent to which such physical risk is reflected in asset prices is a topic of "Climate Change Risk and the Cost of Mortgage Credit" by Duc Nguyen, Steven Ongena, Shusen Qi, and Vathunyoo Sila. The authors study the question in the context of mortgage markets. This scenario differs from other studies that directly focus on climate-affected asset valuations, such as real estate or insurance firms.

Using data from 1,581,600 first-lien 30-year mortgages originated in the United States by BlackKnight McDash between January 1992 and June 2018, the authors show that financing costs for houses exposed to more sea level rise have higher interest rate spreads, which are 10.2 basis points higher for mortgages in a zip code where all properties are exposed to SLRrelative to a zip with no sea level rise. The fascinating aspect of this discovery is that, while some of the risks may still be far in the future financial, markets have already priced them in via credit contracts.

While much of the research on sustainable investors focuses on institutions, Anders Anderson and David Robinson investigate home investors in their book "Financial Literacy in the Age of Green Investment." They polled a large sample of Swedish households on their environmental preferences, such as the relative importance of environmental vs financial aims, and discovered that green households, surprise, do not own green portfolios. Financial disengagement is one explanation. Green households are often uninterested in investing, with less stocks owned, pension balances checked, and active pension choices made (rather than depending on the default allocation). The second type of constraint is informational, which prevents households from identifying assets that meet their tastes. They may purchase mutual funds with pro-environmental titles even if they are not ESG-compliant, for example.their preferences in actions.

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India's Sustainable Finance Progress:

Role of SIDBI in sustainable development SIDBI has introduced sustainable finance schemes growth and development of MSME. Manufacturing exertion and service exertion of micro small medium enterprises contribute6.11 and24.63 per cent to the GDP of the country and also it contributes33.4 of Indian manufacturing affair that helps for the profitable growth of the country. SIDBI provides finance to MEMEs through two major approaches- It it introduced sustainable finance to MSMEs to attain sustainable green systems. The main intention of furnishing finance for the green revolution is to encourage low carbon, use renewable coffers efficiently and also enhance the profitability of MSMEs.

Role of NABARD in sustainable development:

NABARD also made easy availability of climate finance for sustainable development and it also provides numerous e adaption fund green climate finances and also promoting advanced technology for husbandry increase in green technology for colorful development systems. One of the schemes introduced by NABARD is APL I the product Linked

incitement to promote organic husbandry effective use of renewable coffers proper operation of waste produce employment openings.

RBI and NITI Aayog :

RBI has made emendations on Priority sector lending and sustainable development in 2012 and 2015 casing, social structure and renewable energy by considering terrain pitfalls in assessing agrarian price development. NITI Aayog launched design Shoonya – an action to pace of relinquishment of electric vehicles(EVs) in the civic deliveries member. EV can lead to the reduction of oil painting demand, reduction in CO2 and reduction in GHG emigrations.

Share of installed generation capacity of different types of energy :

There are several types of fields with its share of generation capacity they're nuclear with1.7% with share, diesel with0.1% share, gas with6.4% share, lignite with1.7% share, hydro with 12% share, wind, solar and other shaft with26.4% share. 60% of the share of generation capacity from reactionary energy find 40% off of share of generation capacity fromnon-fossil energy (profitable time-28 November 2021)

Advantage:

- 1) The global cooperation between developing and developed countries and profitable governance to encourage mitigation and adaptation to climate change.
- 2) The multiple association like International Finance Institution, Banker, Government has further impact in achieving sustainable pretensions.
- 3) RBI has initiated the Regulator frame for ESG exposure and incorporated environmental impact into marketable lending.

Disadvantage:

- 1) Companies or financial institutions may exaggerate their commitment to sustainability, misleading investors and the public.
- 2) An excessive emphasis on immediate financial returns can divert attention from long-term environmental and social goals.
- 3) Sustainable finance can be intricate, making it challenging for investors to discern genuine sustainable investments from conventional ones.
- 4) In some regions, there may be inadequate regulations or standards, leading to inconsistency and potential loopholes in sustainable finance practices.

Benefits:

- 1) Sustainable finance directs capital towards environmentally friendly projects and companies, aiding in the preservation of ecosystems and natural resources.

- 2) It encourages businesses to consider their impact on society, fostering corporate social responsibility and ethical practices.
- 3) Investing in sustainability can lead to more stable, long-term returns by mitigating risks associated with climate change and societal challenges.
- 4) Sustainable finance drives innovation by supporting green technologies and solutions, spurring economic growth in these sectors.

Constraints:

- 1) The availability of genuinely sustainable investments can be limited, which may restrict diversification options for investors.
- 2) Companies focused on sustainability may face short-term financial pressures when transitioning to more eco-friendly practices, potentially impacting profitability.
- 3) Misleading claims about sustainability practices can make it difficult for investors to identify authentic sustainable investments.
- 4) Measuring the impact of sustainability can be complex, leading to challenges in evaluating the true environmental and social effects of investments.

Conclusion:

The impact on sustainable finance is a complex and evolving field with both advantages and disadvantages. Sustainable finance offers numerous benefits, including environmental preservation, social responsibility, long-term stability, and innovation. It encourages companies to prioritize ethical practices and aligns with global goals for a more sustainable future such as limited investment opportunities, the risk of greenwashing, complex metrics, and short-term financial pressures. Regulatory uncertainties and the costs of transitioning to sustainability can also pose challenges.

Despite these constraints, the momentum toward sustainable finance continues to grow, driven by increasing awareness of environmental and social issues. As the industry matures, addressing these constraints and fostering transparency and accountability will be essential to harness the full potential of sustainable finance and its positive impact on the planet and society.

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SUSTAINABLE AGRICULTURE AND FOOD PROCESSING

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Introduction

Sustainable agriculture can be defined as producing food and livestock over the long term with minimal negative effects on the environment. It is undertaken by a society with the goal of producing the greatest quantity of food over the longest time in order to feed a growing human population while keeping the environment intact. Sustainable agriculture follows other sustainability practices where the long-term health of ecosystems and society are taken into consideration. The ideal in sustainable agriculture is to conserve water, lessen pesticide and fertilizer use, promote biodiversity in crops and livestock, and prevent soil erosion.

Historically, produce was grown and livestock was raised with very little concern for how farming practices affected the surrounding ecosystems. During the Green Revolution of the 1960s, increased pesticide and fertilizer use allowed farmers to produce larger crop yields on the same amount of land. This in turn leads to soil erosion, water pollution, and loss of crop diversity. As these new agrochemicals entered the environment, negative impacts were also noticed. This leads to environmentalists, consumers, and farmers shifting practices towards more sustainable practices.

Sustainable agriculture is something that is on the rise, with the climatic changes and environmental pollution hitting the roof it's about time farmers engaged in sustainable farming. Sustainable agriculture is nothing but farming that requires no chemicals, conserves energy and resources, goes easy on the environment, and works well with the locally available resources.

For an agriculture to be truly sustainable, farmers should consider some important factors like a. Environment – farmers should engage in farming practices that promotes sensible resource management of local resources, promising no harm to the ecosystem and enhance biodiversity, b. Profitability – it should also be profitable for the farmers, only then it will be sustainable, and c. Providing for people – the quality of food given to people has to be nutrient rich.

1. Mulching

Mulching is the process of covering the ground with some cover to avoid soil eroding and maintain soil temperature and moisture. Growth of weed can be reduced dramatically

by mulching. Sometimes even the most stubborn weed can be eliminated by mulching. This helps in increasing the soil quality. The user can use organic items like wood chips and straw for mulching; they also help in retaining the nutrients of the soil and facilitate microorganism growth that conduces the crop growth.

2. Crop Rotation

Crop rotation is nothing but growing different crops on the same field in different seasons. This is truly effective in retaining the fertility of the soil. Farmers can highly benefit from the crop rotation as this also reduces the need of using pesticides. Crop rotation helps in degeneration of destructive pests as growing different crops can help destruct the development cycle of pests and therefore reduce the usage of pesticides.

3. Diversified Farming

Diversified farming fosters farmers to help maintain the efficiency by encouraging growing varied species in one land by considering the area as one. This will promote the health of all organisms in the soil and achieve more soil fertility. By diversified farming we mean growing animals in a land that helps enhance the growth of plants too. This will also reduce bringing artificial soil fertilisers.

4. Agro Forestry

Agroforestry is nothing but growing trees on grazing lands and in between trees. This will help retain soil moisture and soil fertility. Also, soil temperature is maintained and reduces soil erosion during rains and wind. In the end, the soil quality is maintained and nutrients are retained. Fruits and vegetables from agroforestry are much more nutrient rich. This is said to increase profits for the farmers and also environmentally sustainable.

5. No-Till Farming

No-till farming is a method of farming without disturbing the soil tillage. This increases water infiltration, retain the nutrients of the soil and maintain the organic nature of the soil. Many agricultural lands have seen a reduction in soil erosion and increase the life of microorganisms on the soil that facilitates agriculture. No-till farming has to increase resilience of the soil.

6. Contour Farming

Contour farming majorly helps in soil erosion and increases water absorption and crop production. In contour farming the ruts are made perpendicular. This increases retention of soil nutrients and support environmental sustainability.

7. Organic Animal Raising

Making animal graze in open lands can be highly beneficial for the soil as well the animals. Confining animals to a particular area can be a lot less healthy for the animals. This will eventually result in the increase of quality of products we get from them. Soil also gets healthier from the manure from animals.

Sustainable Agriculture Practices

Through decades of science and practice, the following farming practices have proven effective in achieving sustainability, especially when used in combination:

Rotating Crops and Embracing Diversity

Planting a variety of crops can have many benefits, including healthier soil and improved pest control. Crop diversity practices include intercropping (growing a mix of crops in the same area) and complex multiyear crop rotations.

Planting Cover Crops and Perennials

Cover crops such as clover, rye, or hairy vetch are planted during off-season times when soils might otherwise be left bare, while perennial crops keep soil covered and maintain living roots in the ground year-round. These crops protect and build soil health by preventing erosion, replenishing soil nutrients, and keeping weeds in check, reducing the need for fertilizers and herbicides.

Reducing or Eliminating Tillage

Traditional plowing (tillage) prepares fields for planting and prevents weed problems but can cause soil loss. No-till or reduced-till methods, which involve inserting seeds directly into undisturbed soil, can reduce erosion and improve soil health.

Applying Integrated Pest Management (IPM)

A range of methods, including mechanical and biological controls, can be applied systematically to keep pest populations under control while minimizing use of chemical pesticides.

Integrating Livestock and Crops

Industrial agriculture tends to keep plant and animal production separate, with animals living far from the areas where their feed is produced, and crops growing far away from abundant manure fertilizers. A growing body of evidence shows that a smart integration of crop and animal production can make farms more efficient and profitable.

Adopting Agroforestry Practices

By mixing trees or shrubs into their operations, farmers can provide shade and shelter that protect plants, animals, and water resources, while also potentially offering additional income from fruit or nut crops.

Managing Whole Systems and Landscapes

Sustainable farms treat uncultivated or less intensively cultivated areas as integral to the farm. For example, natural vegetation alongside streams, or strips of prairie plants within or around crop fields, can help control erosion, reduce nutrient runoff, and support bees and other pollinators and biodiversity in general.

Sustainable Food Production

Sustainable food production is “a method of production using processes and systems that are non-polluting, conserve non-renewable energy and natural resources, are economically efficient, are safe for workers, communities and consumers, and do not compromise the needs of future generations”.

As the world becomes more conscious of the perils of climate change, eco-friendly practices have emerged as important qualifiers in the minds of both consumers and retailers in terms of who they do business with. The food industry as a whole is looking for ways to operate in a more sustainable fashion and food processors have an opportunity to make a difference while striving for a healthier planet.

Here are a few ways that food processing can become more sustainable.

1. Efficient Water Use and Conservation Practices

Food processors account for 23 percent of the industry’s total energy use and a lot of that is due to the water-intensive nature of the processes. Water is used both as an ingredient and a tool in the process and is often used inefficiently. Implementing water conservation measures like smart meters and sustainable water management systems can help identify and act on these opportunities. These efforts can even extend all the way back to the food production segment. Roughly 39 percent of fresh water used annually in the United States is for crop irrigation. Much of it is necessary to the cultivation of these crops but switching to drip irrigation systems and utilizing wastewater re-use mechanisms are ways to conserve water in the process and operate more efficiently.

2. Reusable and Eco-friendly Packaging

Packaging waste reduction is a crucial element to the waste reduction efforts of grocery stores and other food retailers, but it can also extend to the processors that get these products onto the shelves of those retailers in the first place. Only 14 percent of the 78 million tons of food packaging waste are recycled annually. Eliminating plastic is the name of the game when it comes to recycling food packaging. We cannot recycle plastic, meaning its only purpose after the packaging is ripped off is taking up space in a landfill.

Wood and paper packaging are better ways to go, and when needed, aluminum is the best and most environmentally responsible metal packaging to use. There are also packaging options available that are made from biodegradable materials. Changing the way food is packaged and what it is packaged makes a sizable impact on the overall waste output of food processing and will make the entire operation more sustainable.

3. Reducing Food Related Waste

Examining the way processing facility operates often leads to ways to improve it from a sustainability standpoint. Calculate how much food-related waste facility generates and determine how much of that can be reduced. Have regular maintenance checks on the equipment to ensure the process is maximizing the amount of usable food products produced.

Where are all of the fats, oils and greases going? By partnering with a reputable collection service, that used cooking oil and grease material can be repurposed into ingredients used the production of renewable diesel, a cleaner-burning alternative to petroleum fuel that reduces carbon emissions by up to 85 percent per gallon. The same goes for inedible meat byproduct. It also can be recycled and repurposed into materials used in producing renewable diesel and various household products. It's not uncommon in larger industrial processing facilities to be losing grease down the drain without knowing it. A reputable provider can help to identify where we are potentially losing grease waste in areas may not even be aware of.

Recycling the byproducts of operations is beneficial in a variety of ways. What we consider waste has value and can turn into an additional revenue stream in the form of rebates. It's also contributing toward producing fuel that could potentially power the trucks that deliver food to the retailers that buy from farmer. By

recycling, we can reduce carbon emissions both in the facility's operations and with the trucks that carry the product to its ultimate destination.

4. Avoid Additives and other Harmful Chemicals

The use of pesticides, fertilizers and antibiotics is commonplace in producing the food that the facility processes. When possible, try to buy from organic producers that shy away from using these chemicals that cause damage to the environment. Organically grown produce and grass-fed meats are a great place to start. Plant-based meat may also be an option worth exploring as the alternatives to meat-based products become more abundant and diverse. The plant can be more sustainable by looking at the product we produce and how it can be made in a healthier and more sustainable manner.

These are just a few of the ways we processing facility can look to identify ways in which it can be more sustainable. Implementing these simple tips to help do the facility work toward a healthier planet and a more sustainable future.

Conclusion

Sustainable agriculture is the way to maintain a parity between the increasing pressure of food demand and food production in the future. As population growth, change in income demographics, and food preference changes, there are changes in the demand of food of the future population. To be sustainable, the food system needs to: (1) maintain healthy rural ecosystems and fertile agricultural soils, and (2) limit its dependence on economic fluctuations and external politics.

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MSME – GROWTH THROUGH M-COMMERCE

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Abstract

MSME's acts as the base for Development of a Country and in generating employment opportunities. MSMEs constitutes to 90 % of enterprises in most of the economies and account for massive generation of employment opportunities in most of the economies and MSMEs has enormous opportunities with the Mobile Commerce. The design of the business is being transformed in this modern era , there has been still some challenges in transforming the MSMEs to the digital era with M Commerce. In this abstract we explore the realm of Mobile commerce (M commerce) and the exciting prospects it offers to Micro, Small and Medium Enterprises (MSMEs). We shed light on how mobile technology has the power to revolutionize MSMEs by allowing them to expand their market reach streamline their operations and flourish in the era.

Keywords: MSMEs , Mobile Commerce , Opportunities, Challenges ,literature, models

Introduction

MSME(Micro, Small, Medium Enterprises) are the driving force for the growth of countries economy where MSMEs contribute significant role in Indian economy ,the contribution towards the GDP is 29.2⁽⁶⁾ percentage by 2021 Mobile commerce also known M-commerce, is the new transformative force that has entered the business landscape. Today smartphones have become ubiquitous and it has changed the way we conduct business. As key contributors to global economies, standing in the threshold of the field of new opportunities presented by M-commerce are the Micro, Small and Medium Enterprises (MSMEs). This paper shows the interesting intersection of M-commerce and MSMEs, it also explores the benefits, challenges, and strategies that these MSMEs can follow to thrive in this digital medium.

In recent times with the increasing use of smart phones and with the increase in the internet accessibility to everyone, M-commerce has become the forefront of economic

activities. MSMEs are known for the innovation and M-commerce provides the perfect opportunity for MSMEs to compete on a broader scale. As the boundaries between traditional and online business blur, it only becomes natural for MSMEs to get adapted to the mobile-centric ecosystem, it is important for the MSMEs to understand M-commerce to not only survive but also to flourish in this highly competitive business environment.

This paper aims to show MSMEs the opportunities that are provided by M-commerce and further exploration of M-commerce. As most MSMEs are unaware on how to navigate M-commerce, by discussing various case studies, key advantages, and addressing the obstacles that may arise, we aim to provide actionable knowledge on how to navigate M-commerce.

Definitions

MSME : Micro ,small, and medium enterprises are the business which is been within a specific turnover or investment in fixed assets of the business, Where these were used by governments & organisations to categorise based on the level, size , operations of business.

In a broader sense the micro level business has limited number of workers or employees, a maximum of 10 employees identified as a micro scale , meanwhile a enterprise with 10-49 considered as small enterprise and a enterprise with 50-249 identified as middle enterprise

M-commerce : Mobile commerce often referred to as m commerce is the process of buying and selling goods and services using devices, like smartphones and tablets. This innovative approach takes advantage of the convenience offered by technology enabling users to shop browse products and complete transactions wherever and whenever they want. M commerce includes a range of activities such as purchasing through apps accessing mobile optimized websites utilizing wallets and making payments using mobile systems. Its impact on the industry has been transformative providing shopping experiences that can be enjoyed on the go. Moreover businesses benefit from m commerce through opportunities for marketing strategies location based promotions tailored to customers needs and increased customer engagement. As smartphones become increasingly prevalent in our society m commerce continues to expand its influence, on the future of commerce.

Objectives

1. **To examine the importance of M-commerce :** This paper aims to provide an understanding of how M commerce's relevant and impactful, in todays business landscape. Specifically in focusing on to transform the operation of MSMEs
2. **To highlight the opportunities :** By examining real world case studies this study aims to shed light on the opportunities that M commerce presents to MSMEs. These

opportunities include expanding market reach cost efficiency and improved customer engagement.

3. **To identify the challenges :** This research aims in identifying and analysing the challenges that MSMEs may face when adopting to M commerce. These challenges can range from technological adoption to securities concerns.

Importance of M Commerce and MSME

Need of MSMEs

Micro, Small and Medium Enterprises (MSMEs) play a role, in any economy as they make contributions to job creation, economic growth and innovation. Their significance lies in factors that establish them as a component of both developing and developed economies.

In foremost MSMEs serve as a source of employment opportunities. They generate jobs on a scale. Accommodate diverse workforces encompassing skilled and unskilled labour. This not reduces unemployment rates but also fosters growth particularly in regions with limited industrialization.

MSMEs in rural & urban

Sector	Micro	Small	Medium	Total
Rural	324.09	0.78	0.01	324.88
Urban	306.43	2.53	0.04	309.00
All	630.52	3.31	0.05	633.88

Source: Ministry of MSMEs annual report 2018-19

MSMEs contribute to growth and stability due to their agility and adaptability. They can swiftly respond to market demands. Seize opportunities, thereby infusing dynamism into the economy. This dynamic nature fosters competition enhances productivity levels and fuels innovation. Moreover MSMEs encourage entrepreneurship by fostering local entrepreneurship ecosystems. They inspire individuals to embark on business ownership journeys while cultivating a culture of innovation and risk taking. This entrepreneurial spirit leads to the development of products, services and technologies that ultimately benefit society at large. Additionally MSMEs play a role in development by decentralizing economic activities. Often located in urban or rural areas they help bridge the gap, between urban and rural sectors/As they continue to develop they allocate resources, towards improving infrastructure enhancing the quality of life and boosting the economy.

Why MSMEs Need M-Commerce?

Mobile commerce or m commerce holds importance for Micro, Small and Medium Enterprises (MSMEs) in today's era. It provides a platform, for MSMEs to expand their reach and increase sales. With the rising number of smartphone users, m commerce offers a channel for MSMEs to connect with customers and tap into a wider market. Moreover it breaks down barriers to entry in the marketplace enabling MSMEs to compete on a footing with larger businesses. The flexibility and accessibility of m commerce empower MSMEs to boost visibility streamline transactions. Establish an online presence – all crucial factors for business growth and sustainability, in an increasingly competitive world.

Opportunities and Challenges of MSME in M Commerce

Opportunities

M-commerce provides the opportunity for the MSMEs to reach a wider market. As the market widens and the audience increases there is an increase in the revenue. As the M-commerce doesn't require a physical location for customer interaction there is an improved communication with the customers and suppliers as the communication can be carried out remotely. Through online website the company image develops. Due to online accessibilities the whole process picks up some pace and the overall productivity increases. There are already signs that show that when an MSME adopts E-commerce the level of profit is higher. The online nature of the business results in saving a lot of money that is spent on the brick and mortar stores. The data obtained from various sources show that almost 80% of online shoppers use mobile shopping and it is only expected to grow from this number. M-Commerce can help SMEs in the following important aspects: increasing market reach, increased revenues, improved communication with customers and suppliers, better company image, speedy process, better staff productivity.

Mobiles are the major platform for E-commerce. Therefore M-commerce was born. M-commerce uses wireless mobile devices such as smartphones and Personal Digital assistants, as smartphones and PDAs are easy to use and have become a necessity. As the online platform continues to grow everyday this gives more competition to the MSMEs and therefore gives more room for the MSMEs to grow, which provides growth.

Challenges in transformation

The conversion of Micro, Small and Medium Enterprises (MSMEs), to Mobile Commerce (M Commerce) is a venture that offers potential for growth and competitiveness. However this journey is not without its challenges.

One major obstacle is the lack of skills among MSMEs. While M Commerce relies on technology numerous small businesses struggle with navigating the landscape. This knowledge gap can hinder their ability to effectively embrace M Commerce solutions and

fully capitalize on the opportunities presented by technology. Another significant challenge arises from resources. MSMEs often operate on budgets with financial means. The development and maintenance of apps or responsive websites can be costly while hiring skilled personnel can strain their financial capacities. This financial constraint restricts their ability to invest in the infrastructure for a transition to M Commerce. Moreover issues related to infrastructure and connectivity can impede the adoption of M Commerce in regions, with internet access or unreliable connectivity.

In order to have smooth transactions and ensure that websites are mobile friendly it is important to have a digital infrastructure. However access, to infrastructure is not equal across all areas, in rural or underdeveloped regions. The biggest trouble for MSMEs is the difficulty in borrowing for business. There is not adequate support from the government, there is inadequate credit and infrastructure facilities in the MSMEs. The biggest problem is the lack of funding from the banks to MSMEs due to this there is a problem in buying the raw materials that is required and the on time delivery of the product. It is observed that banks don't expect MSMEs to be capable of repayment as the amount and they avoid extending loan amounts and the amount also remains small. Even worse, they pose strict regulations on start-ups. Those businesses also cannot maintain their credit score and it affects their prospects to avail loans. In addition, it becomes harder in traditional lending for businesses to meet strict demands and lengthy procedures for approval of MSME loans. It further affects their spirits. Strict collateral procedure further increases difficulty in seeking MSME loans. Small businesses usually don't have any property to fulfil the requirements. Due to the lack of availability of resource the transformation to Mobile commerce still becomes a question mark. Most MSMEs don't have the awareness or knowledge about technology, due to this the MSMEs are not able to develop the business in a technological mode.

Eventhough the entrepreneurs are constantly exploring new strategies most entrepreneurs don't have financial expertise so, the MSMEs entrepreneurs should be provided more resources to understand the financial situation and how to invest the finance in the required sectors and to be able to effectively use the finance.

Suggestions for Development of MSME through M-Commerce

1. Awareness about Mobile Commerce :

In India about 90 %⁽⁴⁾ of the enterprises are MSMEs where only 43% ⁽⁶⁾of the MSMEs are using it , Raising awareness to Micro ,Small , Medium Enterprises about M-commerce plays a vital role in development. Governments, Organisations and Industry associations has to aware about the digital era with campaigns, seminars, advertisement to make M commerce a powerful tool for MSMEs development

2. Government policies in connecting MSMEs :

Government has to provide financial incentives, simplifying the regulation process, technology supports, development of digital infrastructure in rural areas to the MSMEs which should directly connect MSMEs with common general public. And has to provide regulation that can defend against competition from large scale enterprises

3. Creating user- friendly applications :

Enhancing user friendly experience in Mobile commerce is the important part in connecting the MSMEs to the general public. It should also need to have instructions in using the application. Should provide the satisfaction of both buyer and seller.

4. Improvement in logistics and delivery support :

To enhance the performance Micro, Small, Medium Enterprises in realm of Mobile Commerce , it is important to enhance the area of Logistics and Delivery support . As the mobile commerce is completely depends on digital, one should not come to the particular location to examine the product , thus creating a standard , safe , cost efficient and supportive delivery logistics is a broader area to be focused for enhancing the development opportunities for MSMEs

5. Marketing the Enterprises :

Selling a product in Mobile Commerce is the biggest barrier for most of the MSMEs. The base for selling a product is marketing, and the product perhaps be unique, qualitative, cost efficient than the competitors. For analysing and marketing , creating a software is a huge need for marketizing the products of MSMEs.

Conclusion

This study shows that M-commerce is the growing trend in this digital era and it only seems natural for the MSMEs to merge together with M-commerce. There seems to be a tread that when MSME is able to integrate itself into M-commerce their profits also tend to rise due to wider audience and market. M-commerce is still in its growing stage so there are still some obstacles in the way to be overcome but once the MSMEs are able to figure out the best way that works for them, they will be able to overcome the challenges that might occur in the way of integration of MSMEs with M-commerce. And it shows promise for a smooth integration and a better future.

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THE ROLE OF MICRO, SMALL, AND MEDIUM ENTERPRISES (MSMES) IN SUSTAINABLE DEVELOPMENT IN RURAL ECONOMIES

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Abstract

The present research work looks into the critical role that Micro, Small, and Medium Enterprises (MSMEs) play in encouraging sustainable development in rural economies. In rural areas around the world, MSMEs have emerged as critical engines of economic growth, poverty alleviation, and environmental sustainability. The purpose of this paper is to evaluate the available literature, assess case studies, and provide insights into the diverse contributions of MSMEs to rural sustainable development. It addresses the economic, social, and environmental aspects of their influence, emphasizing the significance of legislative support and innovative approaches to realizing their full potential. MSMEs provide around 30% of India's GDP, 45% of manufacturing output, and 40% of exports. It is not wrong to call them the 'Backbone of the Indian Economy.' MSMEs play an essential role in the economy.

Keywords: MSMEs, Entrepreneurship, Economic Development, Economy, Indian economy

Introduction

The Micro, Small, and Medium Enterprises (MSME) sector has emerged as an essential component for the Indian economy over the previous few decades. It makes a significant contribution to the country's socioeconomic growth by encouraging entrepreneurship and offering vast employment prospects at substantially lower capital costs, second only to agriculture.

The MSMEs sector is an important part of India's legacy economic model and a vital supply network for goods and services. This industry is recognized as a job creator, and it is crucial to providing widespread employment and industrialization in rural and underserved areas. MSMEs are crucial to emerging countries like India's economic development. SMEs account for the great majority of businesses worldwide, and they play an important role in job creation and global economic growth. SMEs make for the vast majority of enterprises globally, and they play a significant role in employment creation and global economic development. They account for around 90% of firms and more than

50% of global employment. In emerging economies, formal SMEs generate up to 30% of national income (GDP). When informal MSMEs are included, these figures skyrocket.

An Overview of MSME

The Government of India established Micro, Small, and Medium Enterprises (MSMEs) in accordance with the Micro, Small, and Medium Enterprises Development (MSMED) Act of 2006. These businesses are typically involved in the production, manufacture, processing, or preservation of goods and commodities. There are two types of Indian MSMEs. These are manufacturing and service businesses. Manufacturing enterprises are those that participate in the manufacture of things, whereas service enterprises are those that provide / provide services. These constitute the majority of Indian MSMEs.

Indian MSMEs also defined on the bases of employee before 2006 because India does not have fix standard and definition for MSMEs before 2006. In 2006 government of India introduce an act "Micro, Small and Medium enterprises Development (MSMED) Act, 2006. This act defines MSME in India on the basic of employee as follows.

SMEs classification on the basis of number of Employees:

Classification of SMEs	Number Of Employees
Micro	2-9 Employees
Small	10-49 Employees
Medium	50-249 Employees

The Union Cabinet amended the SME definition on June 1, 2020. The investment and turnover statistics were increased, resulting in a greater number of medium-sized businesses. New MSME definition based on investment and turnover, effective July 1, 2020. The distinction between manufacturing and service organizations has been eliminated by lowering the investment amount and annual turnover for businesses in both sectors. Revised Classification applicable w.e.f. 1st July 2020

Classification of Micro, Small and Medium Enterprise (MSME) Sector			
Composite Criteria Investment in Plant & Machinery/equipment and Annual Turnover			
Classification	Micro	Small	Medium
Manufacturing and Service Sector Enterprises	Investment in Plant and Machinery or Equipment up to Rs.1 crore and Annual Turnover does not exceed Rs. 5 crore	Investment in Plant and Machinery or Equipment upto Rs.10 crore and Annual Turnover does not exceed Rs. 50 crore	Investment in Plant and Machinery or Equipment upto Rs.50 crore and Annual Turnover does not exceed Rs. 250 crore

An Overview of Indian Economy

India is a growing country with a mixed economy that includes both the public and private sectors. Because of its robust democracy and strong ties, India has emerged as the world's fastest-growing major economy and is expected to be one of the top three economic powers in the next 10-15 years. India's economy is described as an emerging market economy with a middle-income. It has the world's sixth-largest nominal GDP and the third-largest purchasing power parity (PPP) economy. According to the International Monetary Fund (IMF), India ranks 145th in nominal GDP and 122nd in PPP GDP. Since the turn of the century, annual average GDP growth has been 6% to 7%, and from 2013 to 2018, India was the world's fastest-growing major economy, surpassing China. For the majority of the two millennia, India had the world's largest economy from the first to the nineteenth century.

Indian Economy and MSME

Micro, Small, and Medium Enterprises (MSMEs) play a vital part in a country's economic development. Their function in terms of production, job creation, export contribution, and supporting equitable income distribution is crucial. MSMEs play a vital role in the Indian economy since they create jobs with minimal government intervention. SME development benefits both urban and rural areas. SMEs benefit the Indian economy in the following ways: they create jobs, reduce poverty, close the urban-rural income gap, encourage regional development, increase exports, and so on. SMEs in India face a number of issues, including suboptimal operational size, technical obsolescence, and supply chain inefficiencies, growing domestic and global competition, fund shortages, changes in manufacturing practices, and a chaotic and uncertain market climate. If MSMEs are to prosper in this environment, compete with national and global enterprises, and contribute meaningfully to GDP, they must be innovative in their operations. SMEs are inventive, innovative, and global in nature.

Review of Literature

De, Sankar (2009) in his article has viewed that SME's in India face many challenges, but perhaps none are as difficult as the challenge of financing, both short term and long term.

K,Vasanth,Majumdar M., K. Krishna (2012) in their paper have stated that since several successful models of the sustainable SME are gradually evolving; networks of SMEs would become essential for addressing the systemic problems under lying the industrial ecology, enterprise resilience, and global supply chain sustainability.

Subrahmanya (2004) highlighted the impact of globalization and domestic reforms on small scale industries sector by emphasizing that small industry had suffered in terms of

growth of units, employment, output and exports. He also suggested that the focus must be turned to technology development and strengthening of financial infrastructure in order to make Indian small industry internationally competitive and contribute to national income and employment.

Srinivas (2013) analysed about the performance of MSMEs, their contribution in India's economic growth, identified the number of enterprises, employment in MSMEs and concluded that MSMEs play a significant role in inclusive growth of Indian economy.

Yogesh C. Joshi and Kaushal Kishore (2018) found in their research that considerable proportion of MSMEs are practicing energy conservation but a lot of efforts are required to increase the number of units practicing the Data Collection model of energy conservation.

Nihar Ranjan Jena and Lina R Thatte (2018) analyzed that the difference in performance of the MSME sector in different states existed due to the differences in presence or absence of adequate enabling factors like labour force, economic infrastructure, regulatory national level. Present research is mainly based on the framework, size of GSDP and density of MSME clusters etc. and found that Maharashtra was the leader in terms of performance of the MSME sector which was closely followed by Gujarat, Tamilnadu, Andhra Pradesh, Uttar Pradesh, West Bengal and Kerala.

Papiya Manna and Dr. Tapas Mistri (2017) analyzed in their research that MSMEs are increasing year by year and its share in national or state GDP has also Data Analysis: shown increasing trend with some fluctuations.

Objectives of the Study

1. To understand the present scenario of MSME sector of India.
2. To study the role of MSME sector in economic development of India.

Data Collection

This study based on secondary data. Several reports from authentic sources have been studied by researcher to know the present scenario of Small, and Medium Enterprises (MSME) sector. Other secondary data have been collected by researcher from various published research papers which related to MSME field. This research is based on annual report of MSME 2022-23 which is published by Government of India. Facts and figures given in this study have been considered for analysis purpose.

Present scenario of MSME sector of India

MSMEs in India play an important role by creating large employment opportunities at a lower capital cost than large industries, as well as industrializing rural and backward areas, reducing regional imbalances, and ensuring a more equitable distribution of national income and wealth. According to the 73rd round of the National Sample Survey (NSS)

conducted by the National Sample Survey Office, Ministry of Statistics and Programme Implementation in 2015-16, there were 633.88 lakh unincorporated non-agriculture MSMEs in the country engaged in various economic activities (196.64 lakh in Manufacturing, 230.35 lakh in Trade, 206.84 lakh in Other Services, and 0.03 lakh in Non-captive Electricity Generation and Transmission).

Estimated Number of MSMEs (Activity Wise)

Activity Category	Estimated Number of Enterprises (in lakh)			Share (%)
	Rural	Urban	Total	
(1)	(2)	(3)	(4)	(5)
Manufacturing	114.14	82.50	196.65	31
Electricity*	0.03	0.01	0.03	0
Trade	108.71	121.64	230.35	36
Other Services	102.00	104.85	206.85	33
All	324.88	309.00	633.88	100

Source- MSME Annual Report 2021-22

Micro sector with 630.52 lakh estimated enterprises accounts for more than 99% of total estimated number of MSMEs. Small sector with 3.31 lakh and Medium sector with 0.05 lakh estimated MSMEs accounted for 0.52% and 0.01% of total estimated MSMEs, respectively. Out of 633.88 estimated number of MSMEs, 324.88 lakh MSMEs (51.25%) are in rural area and 309 lakh MSMEs (48.75%) are in the urban areas. Statement No. 2.2 and figure 2.2 shows the distribution of enterprises in rural and urban Areas.

Distribution of Enterprises Category Wise (Numbers in lakh)

Sector	Micro	Small	Medium	Total	Share (%)
R u r a l	324.09	0.78	0.01	324.88	51
Urban	306.43	2.53	0.04	309.00	49
All	630.52	3.31	0.05	633.88	100

Source- MSME Annual Report 2021-22

Micro sector with 630.52 lakh estimated enterprises accounts for more than 99% of total estimated number of MSMEs. Small sector with 3.31 lakh and Medium sector with 0.05 lakh estimated MSMEs accounted for 0.52% and 0.01% of total estimated MSMEs, respectively. Out of 633.88 estimated number of MSMEs, 324.88 lakh MSMEs (51.25%) are in rural area and 309 lakh MSMEs (48.75%) are in the urban areas.

To study the role of MSME sector in economic development of India

Since its formation, the MSME segment has proven to be a highly dynamic Indian economy sector. MSMEs produce and manufacture a variety of products for both domestic as well as international markets. They have helped promote the growth and development of khadi, village, and coir industries. They have collaborated and worked with the concerned ministries, state governments, and stakeholders towards the upbringing of rural areas. MSMEs have played an essential role in providing employment opportunities in rural areas. They have helped in the industrialization of these areas with a low capital cost compared to the large industries. Acting as a complementary unit to large sectors, the MSME sector has enormously contributed to its socioeconomic development. MSMEs also contribute and play an essential role in the country's development in different areas like the requirement of low investment, flexibility in operations, mobility through the locations, low rate of imports, and a high contribution to domestic production. With the capability and capacity to develop appropriate local technology, provide fierce competition in domestic and international markets, technology-savvy industries, a contribution towards creating defense materials, and generating new entrepreneurs by providing knowledge, training, and skill up-gradation through specialized training centers. The below-mentioned data, represented in a tabular format, is by the Central Statistics Office (CSO) and Ministry of Statistics & Program Implementation.

The below-mentioned data, represented in a tabular format, is by the Central Statistics Office (CSO) and Ministry of Statistics & Program Implementation.

Share of Gross Value Added (GVA) of MSME in all India GDP

Year	Total MSME GVA	Growth %	Total GVA	Share of MSME in GVA %	All india GDP	Share of MSME in All India GDP %
2014-15	3658196	-	11504279	31.80	12467959	29.34
2015-16	4059660	10.97	12574499	32.28	13771874	29.48
2016-17	4502129	10.90	13965200	32.24	15391669	29.25
2017-18	5086493	12.98	15513122	32.79	17098304	29.75
2018-19	5741765	12.88	17139962	33.50	18971237	30.27

Source- MSME Annual Report 2020-21

MSMEs employ around 40% of India's workforce, which is an estimated 80 million people, who are given an opportunity for livelihood and employment via low-skilled jobs. Around 1.3 million SMEs contribute 45% to India's manufacturing output and 40% of

India's total export. In a way, they form the backbone of the Indian economy. There are around 6000 products manufactured by 31.7% SMEs while the remaining 68.2% are engaged in delivering various services. This sector, if extended the right support, has the potential to spread industrial growth throughout the country. Small and Medium Enterprise currently contributes to about 30% of India's GDP now (source: financial express). MSMEs occupy an important place in Indian economy because they provide employment without much government interference. SMEs encourage both urban and rural growth. Broadly, the SMEs help the Indian economy in the following ways: Generate employment, reduce poverty rate, reduce urban-rural income gap, encourage regional development, boost exports, increase production, etc.

Conclusion

To summarize, Micro, Small, and Medium Enterprises (MSMEs) play a significant part in a country's economic development. Their function in terms of production, job creation, export contribution, and supporting equitable income distribution is crucial. MSMEs now account for roughly 30% of India's GDP. However, this industry must be properly nurtured and supported. To reap the greatest benefits from this industry, the government must work together.

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FINANCIAL HEALTH OF FIRMS AVAILING MSME FINANCE A STUDY

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Abstract

India's Micro, Small, and Medium Enterprises were known as Small Scale Industries (SSIs). After much reconsideration of the procedural discussions, the Central Government of India decided to broaden the definition and concept of SSI units. In 2006, the Micro, Small, and Medium Enterprises Development (MSMED) Act were rolled out. After the passing of the Act, the sector has been identified as MSMEs in place of SSIs. This article describes the development of SSI units into MSMEs and then the result of MSMEs. In the global economic scenario, the MSMEs are seen as engines to growth for developing countries. Due to its contribution to employment generation, this sector occupies a significant position in the economy of every country irrespective of its nature of development. As the unemployment rate is high in India due to its vast population base, MSMEs have become a significant contributor to the development and inclusive growth.

Introduction

The SSI sector, now known as Micro, Small, and medium enterprises, contributed enormously to the development of the economy. It was a long-standing demand of the entrepreneurs and small business owners to have a comprehensive legislative framework, gave birth to Micro, Small and Medium Enterprises Development (MSMED), Act 2006. The Act was initiated to solve all policy-related issues of SSI Units and the investment ceilings for the sector. The Act supports various agendas like setting up of National Board for MSMEs to resolve policy-related issues, solving memoranda filing related topics, classification of Micro, Medium, and Small Enterprises according to nature and investments made, credit facilities, promotion criteria, ensuring development and competitiveness of the sector, controlling delays payment schemes, along with providing guidelines to issue State guidelines to pass Act regarding MSMEs in respective States in India. All the non – agricultural sectors have been integrated, and all heterogeneous sectors are brought in under a single umbrella, including the Services Sector and bringing in the medium enterprises under its purview.

Review of Literature

L.C. Jain 1990, The author pointed out that institutional assistance is needed to set up new industrial units, and proper infrastructure facilities should also be provided to help the units grow up. The industrial and fiscal policies should be formed by taking into account the need of SMEs.

P. C. D. Nambiar 1977, The role of Commercial Banks restricts the provision of finance and has to evaluate the feasibility of the project and help the entrepreneurs select the right kind of project according to their needs. Government agencies and Commercial Banks should also coordinate among themselves for better results and priority sector development.

Objectives

- ❖ To identify and analyse the Industrial Policy and trends of MSME loans & advances by different financial institutions.
- ❖ To analyse the Growth Perspective of firms availing MSME Finance.

Findings of the Study

- i. West Bengal have not formulated the Industrial Policy eyeing the growth of business before 2013. As it is an agrarian economy, earlier emphasis was given to the development of agriculture rather than industries.
- ii. (ii) The Govt. started the sustainable development process, providing support for inclusive growth, development of infrastructure like roads, lands for setting up for industries much later. To date no separate package is available for establishing new industries, acquiring a large quantity of land is still difficult because of middlemen, political environment.
- iii. Earlier the Government was eyeing for middle and large-scale industries, intending to provide large-scale employment. Skilled labor is not a problem here due to the high literacy rate in the state. After the new industrial policy, due consideration is also given to micro and small enterprises, as they require a lesser amount of space, and labor-intensive in nature. The establishment of industrial parks, markets for the artisans, arranging different fairs for the artisans, business summits for MSMEs, and other initiatives, let the industries get a positive impact and support to grow.

Suggestions

(i) Creating a Business Friendly Environment –

- ❖ A specific portal needs to be developed where all information and support can be found for the MSMEs. All schemes, all policies will be uploaded there. The site needs to be updated at regular intervals.

- ❖ Annual surveys to keep track of the growth of the firms or sickness. Based on the data collected, proper action need to be taken.
- ❖ Rural industrialization needs to be promoted

(ii) Initiatives for Entrepreneurship Development

- ❖ Capital subsidy schemes for purchase of machinery
- ❖ Development of incubation centers
- ❖ Financial assistance to test products, ideas, in the market
- ❖ Grooming the female entrepreneurs

(iii) Access to Finance –

- ❖ Lower interest rates for micro and small enterprises, comparatively higher rate of interest for medium enterprises to boost up the seed finance
- ❖ More and more sensitization initiatives to be taken by banks.

Conclusion

In conclusion, we can say that MSMEs always need support from the Govt. as they start with turbulent scenarios. The journey from SSI to MSME was a long path traveled, the initiative was taken on the assumption that, if all the units can be brought into one single control, then policy decisions can help them grow inclusively. But only the MSMED Act of 2006 can not do this single-handedly. If the state industrial policy is not aligned to the same objective, then it will be tuff to bring in the change. Therefore a policy framework has been proposed wherein the issues identified despite having a good potential to grow and stable financial health of those firms who have availed any kind of MSME Finance under four categories – the creation of a business-friendly environment, financial aspects, inclusive growth, and assistances to innovation and technology

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DIGITAL INDIA IN MSME SECTORS

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Abstract

The Micro, Small, and Medium Enterprises (MSME) sector in India holds immense promise for economic growth, employment generation, and inclusive development. In recent years, the Digital India initiative has gained momentum, aiming to transform the nation into a digitally empowered society and knowledge economy. This descriptive study seeks to provide a comprehensive overview of the current state of digitalization within the MSME sector, shedding light on the adoption trends, challenges, and opportunities.

This research employs a mixed-methods approach, combining quantitative and qualitative data collection techniques. Data is gathered through surveys, interviews, and an analysis of relevant government reports and industry literature. The primary objectives of this study are to:

- 1. Assess the extent of digital technology adoption among MSMEs in India, including the use of e-commerce platforms, digital payment systems, cloud computing, and online marketing.*
- 2. Identify the key drivers and motivations for MSMEs to embrace digital technologies, such as improving operational efficiency, expanding market reach, and enhancing customer engagement.*
- 3. Examine the barriers and challenges faced by MSMEs in their digital transformation journey, including issues related to digital literacy, access to finance, and cyber security concerns.*
- 4. Analyze the role of government policies, incentives, and support mechanisms in facilitating digitalization within the MSME sector.*
- 5. Explore the potential impacts of digitalization on MSME competitiveness, innovation capabilities, and overall business sustainability.*

The findings of this descriptive study will provide valuable insights into the current landscape of digitalization within the MSME sector in India. It will serve as a foundational resource for policymakers, industry stakeholders, and MSMEs themselves, offering a clear understanding of the opportunities and challenges associated with Digital India. By highlighting the status quo, this research aims to contribute to informed decision-making and the formulation of strategies that can accelerate digital transformation and inclusive growth in the MSME sector.

Introduction:

The MSME (Micro, Small, and Medium Enterprises) sector in India plays a pivotal role in the country's economy. It is a diverse sector encompassing a wide range of industries and businesses. Here's an overview of the MSME sector in India. MSMEs are a significant contributor to India's GDP, accounting for around 30% of the country's GDP. The MSME sector also contribute significantly to employment generation.

MSMEs are classified based on their investment in plant and machinery or equipment and annual turnover. As of 2021, the classification is as follows:

- ❖ Micro Enterprises: Investment of less than INR 1 crore and revenues of less than INR 5 crores
- ❖ Small Businesses: Investments of less than 10 crores and yearly revenue of less than 50 crores
- ❖ Medium Enterprises: Investment of under 50 crore rupees and a yearly revenue of under 250 crore rupees

MSMEs are known for their labor-intensive nature and contribute significantly to job creation, particularly in rural and semi-urban areas. The MSME sector covers a wide range of industries, including manufacturing, services, agriculture, and trade, making it highly diverse. Many MSMEs are engaged in export-oriented activities, contributing to India's exports and foreign exchange earnings. MSMEs face various challenges, including access to finance, technology adoption, marketing, and regulatory compliance. These challenges can hinder their growth and competitiveness. The Indian government has implemented various schemes and initiatives to support MSMEs, including credit facilitation, technology upgradation, and skill development programs. Digital India and Make in India are among the initiatives aimed at bolstering the sector. Digitalization has been a key driver of growth for MSMEs in recent years. The adoption of digital tools, e-commerce, and online marketplaces has expanded their market reach and improved efficiency. MSMEs have demonstrated resilience in the face of economic challenges, including the COVID-19 pandemic. Their adaptability and ability to pivot quickly have been notable. The MSME sector is poised for further growth with ongoing government support and increasing digitalization. It is expected to play a crucial role in India's economic development and job creation.

Overall, the MSME sector in India is a dynamic and vital component of the economy, with the potential for continued growth and innovation. Government policies and private sector initiatives are essential in addressing the challenges and unlocking the full potential of this sector.

Overview of digital India for MSME:

Digital India, launched by the Government of India in 2015, has ushered in a transformative era for the Micro, Small, and Medium Enterprises (MSME) sector. This ambitious initiative aims to harness the power of digital technologies to empower MSMEs, enhance their competitiveness, and drive economic growth. With a comprehensive vision encompassing various facets of digitization, Digital India has laid the foundation for a vibrant digital ecosystem that benefits MSMEs in numerous ways.

Through the extensive rollout of high-speed internet connectivity, the provision of digital infrastructure, and the promotion of digital literacy, Digital India has opened up new opportunities for MSMEs to thrive in the digital age. This initiative has not only facilitated market expansion but also improved financial inclusion, making it easier for MSMEs to access capital and manage finances through digital payment systems.

Moreover, Digital India has streamlined administrative processes and reduced bureaucratic hurdles, simplifying compliance and regulatory procedures for MSMEs. The adoption of digital tools and platforms has boosted operational efficiency, enabling MSMEs to optimize their processes and adapt to rapidly changing market dynamics.

In essence, Digital India has become a catalyst for the growth of the MSME sector, offering advantages such as increased market reach, cost savings, improved access to government schemes, data-driven insights, and resilience in the face of evolving challenges. As the digital landscape continues to evolve, MSMEs in India are poised to leverage these opportunities to achieve greater success and contribute significantly to the nation's economic development. This transformation is a testament to the power of digital innovation in fostering inclusive growth and empowerment in the MSME sector.

Impact of digital India in MSME sector:

Digital India has had a significant impact on the MSME (Micro, Small, and Medium Enterprises) sector in India. Here are some key ways in which Digital India has benefited MSMEs:

1. **Access to Markets:** Digital platforms and e-commerce have provided MSMEs with a broader market reach, allowing them to sell their products and services to a global audience.
2. **Financial Inclusion:** Digital payment systems like UPI and mobile wallets have improved financial inclusion for MSMEs, making it easier for them to receive payments and access credit.
3. **Government Services:** MSMEs can leverage digital platforms to access various government services and schemes, simplifying compliance, registrations, and approvals.
4. **Ease of Doing Business:** Digital initiatives have reduced bureaucratic hurdles, making it easier for MSMEs to start and operate businesses.
5. **Skill Development:** Digital India has promoted digital literacy and skill development, empowering MSMEs to adapt to new technologies and trends.
6. **Cost Efficiency:** Cloud computing and digital tools have reduced infrastructure costs for MSMEs, allowing them to operate more efficiently.
7. **Data Analytics:** MSMEs can harness data analytics to gain insights into customer behavior, market trends, and optimize their operations.

Advantages of digital India towards MSME sector:

Digital India has brought several advantages to the MSME (Micro, Small, and Medium Enterprises) sector in India:

1. **Increased Market Reach:** Through e-commerce platforms and online marketing, MSMEs can reach a larger customer base locally, nationally, and even internationally, expanding their market presence.
2. **Cost Savings:** Digital tools and platforms reduce the need for physical infrastructure, leading to cost savings in terms of rent, utilities, and operational expenses.
3. **Efficient Operations:** Automation and digital solutions streamline business processes, enhancing operational efficiency and productivity within MSMEs.
4. **Financial Inclusion:** Digital payment systems and mobile banking services have improved financial inclusion for MSMEs, making it easier to manage finances and access credit.
5. **Access to Government Schemes:** MSMEs can leverage digital platforms to access various government schemes, incentives, and subsidies designed to support their growth.
6. **Data Analytics:** Data-driven insights enable MSMEs to make informed decisions, optimize their product offerings, and better understand customer preferences.
7. **Ease of Compliance:** Digital platforms simplify regulatory compliance, tax filing, and other administrative tasks, reducing the administrative burden on MSMEs.
8. **Skill Development:** Digital India initiatives offer training and skill development programs, empowering MSMEs to adopt new technologies and stay competitive.
9. **Global Competition:** MSMEs can compete globally by utilizing digital platforms to offer niche products and services with unique value propositions.
10. **Resilience:** Digital tools help MSMEs adapt to changing market conditions, as they can pivot quickly and efficiently in response to emerging trends and challenges.

Problems faced by MSME sector in digital India:

While Digital India has brought numerous advantages to the MSME (Micro, Small, and Medium Enterprises) sector, there are also some potential disadvantages and challenges:

1. **Digital Divide:** Not all MSMEs have equal access to digital infrastructure and resources. This digital divide can leave some businesses at a disadvantage in terms of competing online or accessing digital services.
2. **Initial Investment:** Adopting digital technologies often requires significant upfront investments in hardware, software, and training, which can be a barrier for cash-strapped MSMEs.

3. **Cybersecurity Risks:** Increased digital presence exposes MSMEs to cybersecurity threats and data breaches, which can be financially and reputationally damaging.
4. **Skills Gap:** MSMEs may lack the necessary digital skills and expertise to fully leverage digital tools and platforms effectively.
5. **Market Saturation:** As more MSMEs go digital, competition in online marketplaces can become saturated, making it harder for individual businesses to stand out.
6. **Dependence on Online Platforms:** Relying heavily on online platforms and e-commerce marketplaces can leave MSMEs vulnerable to changes in platform policies, fees, or algorithms.
7. **Privacy Concerns:** Handling customer data digitally can raise privacy concerns and regulatory compliance issues, which MSMEs must navigate carefully.
8. **Infrastructure Challenges:** In some areas, poor internet connectivity and power supply issues can hinder the smooth adoption of digital technologies.
9. **Dependency on Tech Providers:** MSMEs may become overly reliant on technology providers and platforms, making them susceptible to disruptions caused by service outages or changes in provider policies.
10. **Digital Skills Shortage:** The shortage of skilled professionals in the digital domain can make it difficult for MSMEs to find and retain talent.

Suggestions to overcome the Problems faced by MSME sector in digital India:

To overcome the challenges faced by Micro, Small, and Medium Enterprises (MSMEs) in the context of Digital India, several measures can be taken. These measures aim to facilitate digital adoption, enhance competitiveness, and ensure sustainable growth within the MSME sector:

1. **Digital Literacy and Skill Development:** Invest in digital literacy programs and skill development initiatives tailored to the needs of MSMEs. These programs can help entrepreneurs and employees acquire the necessary digital skills to effectively use digital tools and technologies.
2. **Access to Affordable Technology:** Make affordable digital technologies, software, and hardware accessible to MSMEs. Government subsidies or incentives can help reduce the financial burden associated with technology adoption.
3. **Support for E-commerce Adoption:** Offer training and support to MSMEs looking to establish an online presence and engage in e-commerce activities. This includes guidance on setting up e-commerce websites, using online marketplaces, and leveraging digital marketing strategies.
4. **Digital Payment Infrastructure:** Improve digital payment infrastructure and promote cashless transactions. This includes encouraging the use of digital wallets, mobile payment apps, and point-of-sale (POS) systems.

5. **Cybersecurity Awareness and Assistance:** Raise awareness about cybersecurity threats and provide guidance on best practices for securing digital assets. Establish a mechanism for reporting and addressing cyberattacks or data breaches.
6. **Financial Inclusion:** Promote financial inclusion by facilitating easier access to credit and loans for MSMEs, especially those with limited financial histories. Encourage fintech innovations that cater specifically to MSMEs.
7. **Government Initiatives:** Continue to implement policies and initiatives like the Digital India campaign that focus on digital infrastructure development, innovation, and entrepreneurship within the MSME sector.
8. **Cluster-Based Approach:** Foster collaboration among MSMEs by promoting cluster-based development. This encourages knowledge sharing, economies of scale, and collective bargaining power.
9. **Market Access:** Facilitate access to national and international markets through digital platforms. Government-supported e-commerce platforms can help MSMEs expand their customer base beyond local boundaries.
10. **Data Analytics and Insights:** Promote the use of data analytics tools to help MSMEs make informed decisions, optimize operations, and identify market trends.
11. **Compliance Simplification:** Simplify and streamline regulatory and compliance procedures for MSMEs operating in the digital space. This can reduce administrative burdens and associated costs.
12. **Government Procurement:** Reserve a portion of government procurement contracts for MSMEs, incentivizing them to adopt digital technologies and become competitive in government tenders.
13. **Industry-Academia Collaboration:** Encourage collaboration between MSMEs and academic institutions to foster innovation, research, and development of digital solutions relevant to the sector.
14. **Mentorship and Networking:** Create mentorship programs and networking opportunities for MSMEs to learn from successful digital adopters and collaborate with peers.
15. **Monitoring and Evaluation:** Establish mechanisms to monitor the impact of these measures on MSMEs' digitalization and overall growth, adjusting policies and support accordingly.

By implementing these measures, policymakers, industry associations, and stakeholders can help MSMEs overcome digital challenges, unlock their potential, and contribute significantly to India's economic development in the digital age.

Conclusion:

The transformative journey of the Micro, Small, and Medium Enterprises (MSME) sector in India, fueled by the Digital India initiative, underscores the indomitable spirit of adaptability and innovation that characterizes this vital economic segment. As our exploration of the amalgamation of digital technologies and MSMEs draws to a close, it is evident that this union has heralded a new era of possibilities, challenges, and prospects. The advantages of Digital India for the MSME sector are multifaceted and profound. It has shattered geographic barriers, enabling MSMEs to access global markets and compete on an international stage. The cost efficiencies achieved through the adoption of digital tools have amplified competitiveness. Moreover, it has facilitated financial inclusion, reduced administrative complexities, and harnessed the power of data to drive strategic decision-making. The Digital India initiative has, in essence, been the wind beneath the wings of MSMEs, propelling them to new heights. However, the path to digitalization was not without its share of hurdles. MSMEs, particularly smaller ones, grappled with challenges such as access to capital for technology investments, the need for digital skill development, and the cybersecurity risks associated with digital operations. Navigating these obstacles required concerted efforts, collaboration, and targeted support from both public and private sectors.

In conclusion, the Digital India initiative has proven to be a potent catalyst in reshaping the MSME sector. It has unlocked doors to uncharted territories and positioned Indian MSMEs as global contenders. Yet, our journey has underscored that this transformation is not a destination but an ongoing process. Sustained commitment from all stakeholders – government, industry, and society – will be paramount in harnessing the full potential of Digital India for the MSME sector.

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SIGNIFICANCE OF MSME IN ACHIEVING THE SUSTAINABLE DEVELOPMENT GOALS

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Abstract

The Industrial sector has received much attention, especially regarding the role of large businesses in economic recovery. However, the micro, small, and medium enterprise (MSME) sector is more crucial, as MSMEs are the largest employers in India outside of agriculture. The Union Budget 2022-23 has introduced several enabling provisions for the growth of MSMEs. However, MSMEs face several challenges. Addressing these challenges can ensure faster overall economic growth and make the growth process more sustainable and inclusive (The Union Budget 2022-23). In various regions of India, there are more than 63 million MSME units in operation with around 11 crore employees. They are seen as a crucial sector for reaching the Sustainable Development Goals due to their adaptable and dynamic nature and assist other goals to be achieved, either directly or indirectly. Hence, in this paper made an attempt to study the sustainable development goals and the significance of MSME in achieving the sustainable development goals.

Keywords: MSME, sustainable development, economic growth

Introduction

Numerous initiatives, such "Make in India" and "Zero Defect & Zero Effect," show how committed the administration is to achieving a balance between economic growth and sustainable development. The resources to upgrade operations and procedures to better achieve sustainability goals are often available to large businesses. MSMEs, however, face resource and financial constraints that make upgrading ineffective. In spite of all these obstacles, micro, small and medium-sized enterprises are important for the Indian economy since they contribute to its economic ecosystem by providing a wide range of employment possibilities at relatively low capital costs. As far as the Indian economy is concerned, the Federation of Indian Chambers of Commerce & Industry FICCI estimates that the Micro, Small and Medium Enterprises sector accounts for 95% of all industrial units, 40% of exports and 45% of production. With about 60 million people working in rural areas, the industry is one of the main sources of employment after agriculture. The

development of this sector holds the key to reaching the sustainability targets set by the Indian Government because MSMEs are so significant to the Indian economy (MSMEs account for 30% of the GDP). Natural resource ownership is highly prevalent among MSMEs and regional "green" businesses because these businesses rely on these resources for their survival. As a result, they care more about protecting the environment and these resources. As a result, MSME operations and activities can significantly improve efforts to combat climate change, protect land and aquatic ecosystems, and implement sustainable production and consumption methods. (MSME Annual Report 2020-21)

Review of Literature

Richa et al (2020) explored the growth in the number of MSME units, GDP contribution, employment, and exports of the Indian MSME sector; an analysis of the relationship between growth in the MSME sector and the achievement of the 2030 Sustainable Development Goals (SDGs); an examination of the role the MSME sector has played in generating green jobs in India; and an examination of the issues facing the MSME sector. Concluded that private players should be given a variety of incentives, such as tax reductions, business-friendly conditions, expanded infrastructure, favorable environments, etc. It's also important to address the issue of late payments, which makes these businesses' liquidity issues worse.

Sathish and Rajamohan (2020) identified the strategies and initiative assistance offered by MSMEs to promote entrepreneurship and discussed the opportunities created by the government to promote entrepreneurship in India. The Ministry of MSME makes a considerable and important contribution to giving MSMEs substantial financial support. In order to create job possibilities and promote entrepreneurial growth of the country by promoting entrepreneurship opportunities, it expanded its domain across all sectors of the Indian industry. As a result, the study highlighted the important role that MSMEs have played in enabling sustainable growth in India.

Verma (2019) divided the function of MSMEs in achieving various objectives into various activity aspects and also included some suggested actions that can help MSMEs become more sustainable, which will ultimately aid in the achievement of the SDGs. discovered that MSMEs have enormous potential for achieving all sustainable development. MSMEs significantly influence the advancement of the sustainable development goals, either directly or indirectly. Additionally, discovered that due to a variety of issues, micro businesses themselves struggle to function to their full potential. MSMEs must be promoted and supported effectively if they are to participate and contribute as much as possible to the accomplishment of sustainable development goals.

Nitya (2015) indicated that MSME business owners in Punjab believe that the sector's abilities and sustainability are threatened by a high tax system, difficulties in bank

financing, regulatory machinery, and inadequate infrastructure. In order to reduce the burden of administrative rules and enhance the business environment, the State Government has a significant role to play. It is advised that supportive business environments must be offered to foster and promote entrepreneurship so that this sector can grow independently competent to dominate the market and give economic sustainability. It was concluded that the company's strategy must be developed in a way that takes advantage of external opportunities and internal strengths while avoiding external threats and internal weaknesses.

Objectives

1. To understand the concept of sustainable development goals.
2. To study the significance of the MSME in achieving sustainable development goals.

Methodology

The study is based on secondary data and is descriptive in nature. Researchers have collected the data from reliable and published secondary sources. These sources include Journals, Magazines, Reports, Websites and others. Majority of the information is taken from the United Nations website (<https://sustainabledevelopment.un.org>) and Ministry of MSME website (<http://msme.gov.in>) of Government of India. The statistical data from various reports have been mentioned in order to emphasise the importance of the sustainable development and determine the highlights of sustainable development through MSME. However, this research can be used as a basis for further studies on various aspects of the sustainable development and the results are highlighted based on the researcher's suggestions and recommendations.

The sustainable development

The word „Sustainable Development“ was first coined by Barbara Ward in the ‘Cocoyoc Declaration’ in 1974 and has been well discussed in various international summits, conferences and reports like IUCN Report (1980,1990) and World Commission on Environment and Development (WECD). The WECD report named „Our common future“ became a landmark report and reckoned sustainability as the only way to wipe out the danger on the survival of mankind. The idea was later, well discussed in Earth Summit 1992 and The Norway Round Table in 1995. The Earth Summit, 1992 proposed two major documents concerning sustainable development, namely, Agenda 21 and the Rio Declaration on Environment and Development. Norway Round Table also laid down principles to achieve sustainable development. (Freimann, Ham, & Mijoc, 2014) (Verify Sustainability, n.d.) Major summits and agreement have raised concerns over Sustainable Development but failed to provide a comprehensive approach at the global level. The

member states of united nations had adopted the millennium development goals in 2000 which had a major aim to reduce poverty across the globe. This millennium Development Goals (MDGs) has been now replaced by SDGs. The 2030 Agenda for Sustainable Development Goals contains 17 SDGs and 169 targets to be achieved before 2030. These goals and targets are aimed at bringing peace and prosperity around the globe. All developed and developing nations have to achieve those goals and targets through global partnership. The major focus is to end poverty by 2030, improve health and education, reducing inequalities, and achieving economic growth while tackling the problem of climate change and preserving the oceans and forest. (Division for Sustainable Development Goals (DSDG), n.d.)

The sustainable development goals are as follows:



Source: <https://www.gavi.org/sites/default/files/about/global-health/sdgs-rec.png>

In 2015, 195 nations joined the UN to declare that they have the power to transform the world. By bringing together their respective governments, corporations, media, higher education institutions, and local NGOs, each country's citizens' lives will have transformed by the year 2030.

1. Eliminate Poverty
2. Erase Hunger
3. Establish Good Health and Well-Being
4. Provide Quality Education
5. Enforce Gender Equality
6. Improve Clean Water and Sanitation
7. Grow Affordable and Clean Energy
8. Create Decent Work and Economic Growth

9. Increase Industry, Innovation, and Infrastructure
10. Reduce Inequality
11. Mobilize Sustainable Cities and Communities
12. Influence Responsible Consumption and Production
13. Organize Climate Action
14. Develop Life Below Water
15. Advance Life On Land
16. Guarantee Peace, Justice, and Strong Institutions
17. Build Partnerships for the Goals

Significance of MSME in Achieving Sustainable Development Goals

Sustainable development can be achieved if we follow the following points:

- ❖ It can be achieved by restricting human activities.
- ❖ Technological development should be input-effective and not input-utilizing.
- ❖ The rate of consumption should not surpass the rate of salvation.
- ❖ For renewable resources, the rate of consumption should not surpass the rate of production of renewable substitutes.
- ❖ All types of pollution should be minimized.
- ❖ It can be achieved by sensible use of natural resources.

The SDGs are international objectives that were developed upon the previous Millennium Development Goals. They are comprehensive, inclusive, and integrated and place a focus on key aspects of poverty, inequality, and economic development sustainable consumption, innovation, and productivity, global warming, justice, and peace and collaborations.

According to estimates, financing these goals globally will cost between US\$5 and US\$7 trillion year, with US\$3.9 trillion needed in developing nations. However, the estimated US\$1.4 trillion in investments currently made in developing nations leaves an annual shortage of US\$2.5 trillion (UNCTAD, 2014). Strong coordination between various governments, development organizations, the corporate sector, and financial institutions is required for global action of this size in order to be effectively financed and implemented around the world.

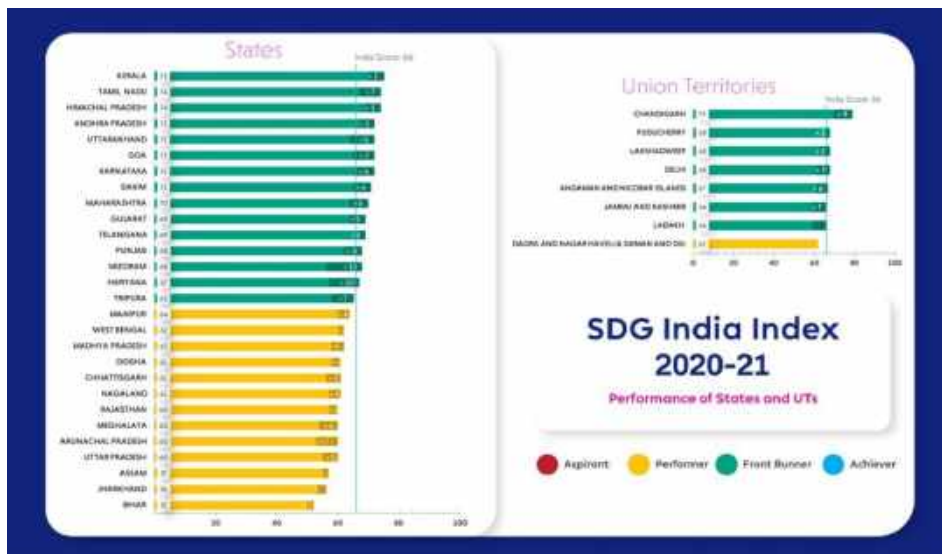
The SDGs' Progress in India

Every country must carefully execute numerous schemes and programs in accordance with local difficulties, capacities, and resource availability in order to achieve sustainable development. India uses a wide range of programs to implement a holistic strategy for achieving the SDGs.

The policies which are initiated by the government are as follows:

1. Swachh Bharat Mission (SBM)
2. Beti Bachao Beti Padhao (BBBP)
3. Pradhan Mantri Awas Yojana (PMAY)
4. Pradhan Mantri Jan-Dhan Yojana (PMJDY)
5. Deen Dayal Upadhyay Gram Jyoti Yojana (DDUGJY)
6. Pradhan Mantri Ujjwala Yojana (PMUY)

The Performance of States and UTs of Sustainable Development Goal Index 2020-21



Source: NITI Aayog's SDG India Index Baseline Report, 2020-21

Kerala and Chandigarh were the top performers of States and UTs respectively SDG India Index 2020-21 followed by Tamil Nadu and Himachal Pradesh, Puducherry, and Lakshadweep.

Conclusion

MSMEs considerably contribute to the Indian economy by providing a long-study solution to persistent societal issues—eradicating poverty, providing goods and services, and promoting economic resilience. The MSME sector in India will emphasis on technological innovation and expanding into new markets if it is to realize its full potential. Finally, the Government of India may promote innovation by improving finance alternatives and assisting MSMEs in developing industries like eco-tourism, organic farming, hydroponics, and decentralized renewable energy through helpful regulatory frameworks. To create job possibilities and promote entrepreneurial growth in the country by promoting entrepreneurship opportunities, it expanded its domain across all sectors of the Indian industry. As a result, the study highlighted the significance of MSMEs have played in enabling sustainable growth in India.

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SUSTAINABLE DEVELOPMENT OF RURAL WOMEN'S ENTREPRENEURSHIP: A PATHWAY TO SELF-RELIANT INDIA

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Abstract

Rural women's entrepreneurship has been a domain enchanting academicians and the government. Being a significant demographic portion, rural women's empowerment through entrepreneurship is an important contributor to economic growth. Women constitute about 50% of the total population, but only about 14% of women entrepreneurs are playing an active role to boost economic and social stability. By guaranteeing social equality and enabling rural women entrepreneurs to live within the parameters, the Indian government had a significant influence on this population.

Keywords: India, Rural women, Empowerment, Entrepreneurship.

“Women are the largest unstopped reservoir of talent in the World”

- Hilary Clinton

Introduction:

Gandhiji made it quite apparent that the Indian economy is built on villages. One of the most crucial elements in accelerating economic and social growth is entrepreneurship. The primary players in fostering change and progress on the social and economic fronts are entrepreneurs. Entrepreneurs are those who have the initiative to start something new, plan production, take on challenges, and handle the risks associated with operating a business. Only entrepreneurship can contribute to creating jobs within the social system. Rural women benefit greatly from this since it enables them to increase family income while still caring for their own homes and cattle and provides them with a variety of opportunities to start their own businesses. As a result, she may effectively agree to both production- and process-oriented businesses.

A key role for women entrepreneurs in an emerging economy is really possible. Nearly 150 million people would be employed by women-owned MSMEs in India by 2030, according to estimates. This illustrates the women entrepreneurs are a driving force behind

change in society as a whole and are essential to fostering opportunity and enhancing the societies they work in. In rural India, women may become entrepreneurs by bridging the gender gap and assembling allies who can support one another. To promote the growth and development of the country, it is necessary to equip women with a complete environment that includes equal economic possibilities. Through digital technology and exclusivity promoting rural women's entrepreneurship is possible.

Statement of Problem:

The expansion and sustainability of Micro, Small, and Medium-Sized Enterprises (MSMEs) have become important drivers of economic growth on a global scale. In this setting, rural women business owners are essential to promoting inclusive economic growth and empowerment. With a focus on the possibilities and obstacles they face along the way to entrepreneurship, the current study seeks to understand how MSMEs affect rural women entrepreneurs. While MSMEs provide potential for rural female entrepreneurs, they also confront a number of obstacles that limit their expansion and viability. The main goal of this study is to examine the major difficulties that rural women face when running MSMEs.

Need of the Study:

MSMEs are essential to economic growth, making a substantial contribution to the creation of jobs, innovation, and GDP growth globally. Understanding how MSMEs affect rural women business owners is essential for creating effective policies that will support and enhance this sector of the economy as a whole. It is essential to alleviate gender imbalances, encourage economic empowerment, and increase the role of MSMEs in promoting sustainable economic development that the research "Impact of MSMEs on Rural Women Entrepreneurs: Opportunities and Challenges" be completed. The research can help create a more inclusive and encouraging environment for rural women's entrepreneurship by highlighting the possibilities and difficulties experienced by rural female entrepreneurs in the MSME sector.

Objectives of the Study:

1. To grasp the idea and development of rural women's entrepreneurship in India.
2. To learn about the options available to rural women entrepreneurs.
3. To learn about the many government programmes for rural women business owners.
4. Offer suggestions for resolving challenges in a way that creates potential possibilities to self reliant.

Research Methodology:

Research papers, journals, and articles from many fields are seen and examined in Google Search. Government websites for observing the current statistics of aspects of women's entrepreneurship in India, as well as articles about women entrepreneurs, are all included in the research. The information is gathered by tabulating and analyzing the data from numerous government websites. Conclusions have been drawn using secondary information from several government websites. Various government programmes for women's entrepreneurship are being implemented in India to boost the growth of MSMEs. Women's empowerment is examined and featured in this study, assisting in the advancement of women entrepreneurs.

Women Entrepreneurs: A Historical Perspective:

Ancient Indian women's empowerment faced conflicting viewpoints, with women having equal rights and training in self-directed combat. The Indian Constitution ratified in 1950, clarifying women's status, and "Nari Shakti" being named Hindi word of the year in 2018.

➤ Thinking Ahead- connecting Skill to Industry

The Ministry of MSME held its inaugural Conclave on Empowering Women Entrepreneurs of Marginalized Sections, addressing female entrepreneurship and highlighting hidden disparities. The event attracted influential individuals to discuss important issues.

➤ MSME- Transforming Homemaker to Entrepreneur

The Ministry of Micro, Small and Medium Enterprises (MSME) is empowering women entrepreneurs through various schemes, boosting their talent and identity. Since inception, 1.38 lakh projects have been set up by women entrepreneurs under the Prime Minister's Employment Generation Programme (PMEGP). Women entrepreneurs are covered under Special Category and receive 25% and 35% subsidies for urban and rural projects. The Khadi Programme of KVIC has also supported women entrepreneurs, with 30437 projects established between 2016-17 and 2017-18.

Women Workforce Participation (2019-2021)

Year	Area	Percentage
2019	Urban	34.31%
	Rural	41.8%
2020	Urban	36%
	Rural	41%

2021	Urban	36.4%
	Rural	42%

Source: Bain & Co. Report (March 23, 2022)

With above table we can identify that working force of women in rural area is more than the women working force in urban area. Rural Women Entrepreneurship is an important part of human resources and economic development. Rural India is envisioned as a resource in the New India that offers opportunities to accelerate economic growth and achieve Sustainable Development Goals.

Rural Women in Msmes:

Rural women's participation in Micro, Small, and Medium Enterprises (MSMEs) has been increasing over the years. MSMEs play a crucial role in the global economy as they contribute significantly to employment generation, innovation, and economic growth. Women's participation in this sector has several benefits for both women themselves and the economy as a whole.

Indian rural women are increasingly playing an important role in the nation's economic progress as a result of their engagement in MSMEs. However, in India, the percentage of female entrepreneurs is currently approximately 14%. Increased female entrepreneurship has the ability to benefit the nation monetarily as well as directly benefit its residents in a variety of ways, some of which are as follows:

- ❖ **Economic impact:** The country's economy has grown considerably in recent years as a result of the establishment of new businesses. This has enabled female entrepreneurs to engage equally in the country's thriving economic environment.
- ❖ **Employment creation:** The availability of MSME financing has made it easier than ever to start a firm. Successful firms can hire employees, which leads to the development of jobs for both other people and female business owners.
- ❖ **Emerging new domains:** Creating new fields given the diversity of options and possibilities available today, women have the same employment resources as men. With the advent of the internet, it is now easier than ever to start a business online and apply for an MSME loan. As the number of female entrepreneurs in the country grows, the government is creating opportunities and MSME programmes to help them succeed.

Broad Activity Wise Total Number of Establishments under Women Entrepreneurship by Type of Establishment:

Broad Activity	Without Hired Workers	With at least One Hired Worker	Total	Percentage share in total establishments	Remarks
Agricultural Activities	2531540	230227	2761767	34.3	❖ Activities relating to agriculture other than crop-production & plantation, ❖ Livestock,- Forestry and Logging,- Fishing and aqua culture.

Source: www.mospi.gov.in

From the above table it is found that the total number of agricultural establishments were 2.76 million constituting 34.3% of the total establishments owned by women.

Governmental Actions:

Recently, there have been programmes aimed at the welfare and emancipation of rural women. India is well known for its gender disparity. The government is making every effort to improve the status of women. There are numerous such well-intentioned programmes that have been established, but the effectiveness and style of implementation will determine the final outcomes. Such are following:

- ❖ **Beti Bachao, Beti Padhao programme:** The Programme aims to empower the women in the field of women's education.
- ❖ **The Sukanya Samriddhi Account,** designed to assist families in setting aside money for their daughters, is part of the This programme, which debuted in January 2015, is an expansion of the first described scheme. In addition to making efforts to preserve more and more girls, the government is also committed to providing them with a brighter future and economic security. India is a country where society is more progressive, despite the fact that women are revered in all religions.
- ❖ **One-stop centers:** Are designed to provide quick access for women who are victims of domestic violence or abuse and require help. Women are suffering from exploitation, torture, and abuse all around us, and these issues must be addressed.

Any type of abuse might be used, including economic, psychological, sexual, mental, or physical assault. Giving citizens a just and secure environment in which to thrive is the main duty of every government. The One Stop Centre Scheme was launched in April 2015 with the intention of advancing women.

- ❖ **Pradhan Mantri Ujjwala Yojana:** Women who are below the poverty line are eligible for free LPG connections via the This initiative, which the Indian government launched in March 2016, promises to feed every home and provide free LPG connections to women who are living in poverty. Due to the social campaign and plea to the wealthy class to stop receiving LPG subsidies in favour of the lower classes, it attracted a lot of attention.
- ❖ **Mahila Haat:** Aimed to aid female self-help organizations and businesswomen. A shout-out to the entire group of female business owners and future leaders, The empowerment of women entrepreneurs, NGOs, self-help organizations, and small producers is a key component of this approach. This multilingual portal, which was launched in March 2016, offers women in our nation a digital marketing platform to promote the goods they produce and the services they provide to draw in clients. This portal will serve as a catalyst for their business and can be accessed anywhere, at any time, with just a cell phone number.
- ❖ **DDUG Deen Dayal Upadhyaya Grameen The Kaushalya Yojana:** This scheme aims of 180 million individuals between the ages of 18 and 34, or more than 69 percent of the nation's youth, reside in rural regions. About 55 million of these are low-income children from families with little or no work that is at the bottom of the food chain. DDUG Deen Dayal Upadhyaya Grameen The Kaushalya Yojana is a programme that targets rural children from low-income families between the ages of 15 and 35. This programme provides technical support, invests in the initiatives of its training partners, and provides high-quality skill training to disadvantaged rural youth.
- ❖ **Pradhan Mantri Matru Vandana Yojana (PMMVY):** Is a Centrally Sponsored DBT scheme with the cash incentive of ₹ 5000/- (in three instalments) being provided directly in the bank/post office account of Pregnant Women and Lactating mothers.
- ❖ **Deen Dayal Anthyodaya Yojana(DDAY):** The programme run by the Indian government to aid the underprivileged by offering skill development. It takes Aajeevik's place. The Indian government has set aside 500 crore (US\$63 million) for the programme. Starting in 2016, the programme's goal is to annually train 0.5 million people in metropolitan areas. By 2017, it is intended to train one million individuals in rural regions. Additionally, there are services like SHG marketing, training facilities, vendor marketplaces, and long-term shelters for the homeless in

metropolitan areas. The programme's goal is to improve Indians' skill levels in both urban and rural areas to the required level of international standards.

To encourage rural women's engagement in economic activities and raise the standard of living, several development projects are being implemented throughout the rural ecosystem. Thus, empowering rural women is essential to boosting the economy, ensuring food security, reducing poverty, and minimising the effects of climate change in order to achieve the UN Millennium Goals by 2030.

The Major Obstacles:

According to the MasterCard Index of Women Entrepreneurs, just 7 out of every 100 business owners in India are women. Only 20% of firms in the nation are owned by women, according to the Google-Bain analysis, while the World Economic Forum's 2021 report reveals a staggering gender imbalance of 72% in India's labour market. Even if they are driven to succeed and follow their business dreams, women, especially those living in rural regions, often face obstacles along the way. While receiving financial aid has been difficult for some, patriarchal concerns are a problem for others. One of the biggest obstacles facing female entrepreneurs is the temptation to conform to established gender stereotypes. They are frequently urged to abandon business in favour of a simple job that allows them to devote more time to their family and kids.

Another difficulty comprehends government initiatives. While the Indian government has taken steps to help women receive finance to launch their businesses, not all resources and services are equally available to businesses run by women. The number and quality of female entrepreneurs in India are poor as a result. Relevant programmes that encourage women to start businesses give them the chance to expand their businesses or offer financial and technical support to other women entrepreneurs.

It has also been quite difficult for rural women entrepreneurs to obtain digital technology and become digitally literate. In high-income nations, the gender gap in digital adoption is about 6%; in low-income nations, it can reach 82.5%. Only 33% of Indian women (compared to 57% of males) have ever used the internet, according to the National Family Health Survey 2021, and 54% of rural women in India do not have a phone, according to the OECD research. These elements imply that women entrepreneurs in India confront a significant hurdle in terms of technology empowerment. Women company owners encounter greater obstacles, from using banking services to implementing digital transformation tools to improve and optimize their operational effectiveness.

❖ Investing in India's Future Development:

The future of entrepreneurship closely reflects the destiny of the country. We can forecast with confidence that the future of rural women's entrepreneurship in India is

promising given the significance of growing the rural economy, the predicted doubling of farmers' income, and the availability of urban services in rural areas. Specific ecosystem modifications will decide the direction of rural management in the future. According to a recent analysis by the McKinsey Global Institute, only by giving women equal access to the workforce can India's GDP rise by up to 18% by 2025. Technology for good has undoubtedly gained ground recently, and it is thought that connected women with access to technology are essential for a nation's economic development. Half of the world's population is made up of women, who have the capacity to advance, generate opportunities, and establish societies that are resilient economically.

❖ **Government Programmes are Essential for Ambitious Rural Female Businesses.**

While more funding and capacity-building are needed to encourage female entrepreneurs, the first step is to make sure that they can access and take advantage of the extensive support that the federal and state governments already offer. India has launched a variety of government programmes to encourage women-led businesses, particularly those from rural areas, after recognizing women as pillars of change. These programmes are ideally situated to support market-making initiatives that motivate additional financial institutions to package higher-size credit and credit-plus services for female entrepreneurs. Government programmes should likewise be accessible in multiple languages to help women entrepreneurs and to overcome language obstacles to essential information like this.

❖ **Enabling Women Entrepreneurship Owners' Financial Inclusion**

Women's financial inclusion can give them useful resources and information, enhancing their participation in livelihood activities that generate revenue and promoting economic empowerment and social mobility. In order to achieve the Sustainable Development Goal (SDG) on gender equality, which is at the core of the 2030 Agenda for Sustainable Development, financial inclusion can be a significant driver of women's economic empowerment. Financial inclusion, however, cannot be achieved solely by owning a bank account. A more inclusive digital finance system will be very beneficial for MSMEs.

In order to save money, women MSME owners should switch from cash-based to online transactions. Additionally, businesses should be on boarded into e-commerce platforms through training and capacity building. These are only a few examples of key components. Therefore, by improving access to information about programmes and policies, as well as by setting up infrastructure and training centers in communities, women can become familiar with digital tools like wallets, portals, and e-commerce websites.

❖ **Through the Establishment of Resource Centers for Digital Literacy, Rural Women are Encouraged to Become Entrepreneurs.**

To promote the socioeconomic empowerment of women and foster entrepreneurship, a programme to construct technologically equipped resource centers with a focus on aspirational areas will be perfect. Digital tools can be made available to the entire community through resource centers that are outfitted with physical resources, digital assets like PCs, and online resources like subscriptions to educational websites and channels. In addition to obtaining extensive training in digital skills, soft skills, entrepreneurship, and livelihood skills, communities will also be connected to suitable government programmes and e-governance services.

❖ **Public-Private Partnership Approaches are Essential for the Growth of Rural Women's Businesses.**

Finally, the possibility of public-private partnerships can have a significant effect, support the MSME sector, and solve issues of sustainability, efficiency, and inclusion. All interested parties must work together to realize this promise since new technologies offer a significant opportunity to revolutionize agricultural systems. Public-private partnerships (PPPs) will be extremely important in this situation. Since the budget's announcement of using PPPs to provide high-tech services in agriculture, there have been essential to start this initiative in mission mode. Through dialogues and evidence-based learning from pilot projects, national and state governments may create the PPP framework and improve communication with the private stakeholder ecosystem. These partnerships aim to improve the ecosystem for female entrepreneurs and make technology more accessible to people in the last mile.

Conclusion:

Rural Women Entrepreneurship has been recognized as one of the important source of socio-economic growth and development. Rural women entrepreneurship is significant to empower rural women and also improving the overall standard of living. Women entrepreneurs have a tremendous opportunity to contribute significantly to a rising economy like India that is utilising a technology-driven environment and the effects of globalisation. In India, there are projected to be 30 million women-owned MSMEs by 2030, creating close to 150 million jobs. Rural women's business is a crucial tool for rural development in the current digital age. Therefore, it is crucial to invest in rural women in order to reduce the digital divide, provide them with social safety and agricultural information, and assist with their unpaid care and household duties. These rural women have tremendous potential, and if we can tap into it, they will be fantastic at leading social companies that promote sustainable development.

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DIGITAL INDIA AND INDUSTRY 4.0

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Abstract:

Industry 4.0 is the most recent disruptive automation concept, led by Cyber-Physical Systems (CPS). It includes cutting-edge ICT tools and technologies such as autonomous robotics, business analytics, Industrial Internet of Things (IIoT), simulation, cloud computing, cyber security, additive manufacturing, horizontal & vertical system integration, Virtual Reality (VR), and Augmented Reality (AR). Complementary to Industry 4.0 is the integration of disruptive and game-changing technologies in the form of the SMAC - Social, Mobile, Analytics, and Cloud stack, which promises to be the next wave in enterprise computing. Industry 4.0 has realized the manufacturer's dream of a "smart factory." Its transformational power comes from marrying advanced production and operations techniques with digital technologies to create connected enterprises that employ data to generate intelligent activities in the physical world. Cyber-physical systems monitor physical processes, construct a virtual duplicate of the physical world, and make decentralised decisions within these modularly built smart factories. Surprisingly, these systems are powered not by petrol, oil, or electricity, but by 'data' and the ability to leverage and mine that data through machine learning and artificial intelligence. Manufacturing and production become adaptive, agile, autonomous, automated, collaborative, coordinated, connected, decentralized, fast, flexible, and intelligent resulting in greater operational efficiencies and lesser costs for enterprises. Over Things (IoT), i.e., physical asset connectivity, CPS communicates and cooperates with each other and with humans in real-time, both internal and cross-organizational services are offered and utilised by value chain players. CPS is made up of collaborative computational elements that govern physical objects, and their processes are continuously monitored, coordinated, regulated, and integrated. A fully connected and retooled supply chain, for example, may rearrange itself in response to any new data point. If a weather delay ties up a shipment, a connected system can proactively adjust and modify manufacturing priorities bringing about perfect alignment between supply chain planning and execution. The origins These manufacturing technologies, together known as Industry 4.0, are the result of renowned German engineering. The German government, as well as leading industrial powerhouses such as Robert Bosch and Siemens, announced the main concepts and recommendations to be embraced by industry globally at the Hannover exhibition. German manufacturing powerhouse. Siemens led by implementing an Industry 4.0 solution in medical engineering. Siemens can now generate an implant in 3 to 4 hours thanks to new software and guiding technologies. Predix, the Industrial Internet Operating System (OS), is enabling digital enterprise organisations that drive the global economy.

Keywords: Inclusive growth, digitalization, challenges faced on digital india and industry

Introduction:

The term 'Industry 4.0' was firstly coined in 2011 at the Hanover Trade Fair in Germany to showcase the competitive strategy model of the European Union governments and industries in relation to other international markets. Since this point in time Industry, 4.0 is a point of discussion among industrialists, researchers, technical experts, and many others. Now, in the era of industrial digitalization, companies are proactively investing in tools and technologies that allow their manufacturing and production processes, machineries, human resources, and even the product itself, to be integrated into a single integrated network for data analytics, evaluation of company growth, and efficient performance. Essentially, the industrial revolution means far more than technological improvements in reality. The word "revolution" refers to an abrupt and drastic changes in operations and management. 14.0 is also going to transform into whole industrial scenario. In order to remain effective and relevant in a global environment, manufacturers, and producers need to constantly update and upgrade their production system technology and accommodate the changing taste of consumers. We can also find that Network readiness index, India lags much behind Developed nations and few developing nations as well. This is the area where government needs to work upon. Tech-oriented strategy, good Industrial policy, and infrastructure development are highly expected from the government end. The purpose of this study is to explore the meaning and components of 14.0 in industrial production. This paper also presents a detailed literature review to explain the components of the fourth industrial revolution. Initiatives and the role of the Indian government have also been discussed in the paper.

SME Sector in India:

Micro, Small, and Medium Enterprises (MSME) sector has emerged as a vibrant sector of the Indian economy over the last five decades. MSMEs contribute more than 29% to the GDP and are responsible for 50% of the country's total exports. It is accountable for one-third of India's manufacturing output MSMEs serve as ancillary units to large enterprises, and this sector contributes significantly to the country's socioeconomic development. The MSME segment includes various verticals and sectors, including services, and the recent governmental classification scheme for MSME has also widened the net as also provided larger benefits accrued to the MSME. As per the MSME ministry's annual report of 2021-2022, there were 65 lakhs+ MSMEs registered in the Udyam portal at the beginning of 2021, but the actual number is in the order of 10 times that number in sectors including manufacturing, services, and trades. 99% are micro, with 0.52% small and 0.1% medium. The number of jobs in the MSME sector is estimated to be 15+ crores.

Over a period of time, through MSME-friendly policies and initiatives, it is envisaged that MSME will contribute 50% of the GDP and 75% of exports of the country.

Role of industry 4.0;

Transformation of traditional manufacturing and production practices due to emerging Industry 4.0 technologies allows substantial improvements in business operations, processes, productivity, quality, and customer support that is otherwise difficult to achieve. It establishes a level playing field for all sizes and varieties of industries. Recent achievements in a few sectors suggest that the advantages of such change would outweigh those India has experienced via decades of committed and persistent revolution in the fields of communication and highway infrastructure. The significance and accomplishments of national initiatives like the Centre for Development of Telematics (C-DOT), the Golden Quadrilateral, and the introduction of Digital Payments transactions at key moments in time to time are now evident. One such ambitious programme is "Make In India," which asks for a "nationally significant transformation" to make India future-ready.

A "manufacturing & production cloud," the industrial sector's "cloud" counterpart of IT, is required for the Make-In-India project to be a smashing success. Although there are no volume, target, or budget commitments for IT, the resources are available as needed at a reasonable cost. This promotes innovation in the field of software development and related applications To support the Indian industrial system and advance manufacturing and production, a similar ecosystem is needed. Small enterprises and startups can create and adopt innovation thanks to it. Large-scale implementation of the Industry 4.0 framework can lead to the "manufacturing & production cloud," which is driven by seamless communication and collaboration across the systems and stakeholders enterprises and Micro, Small, and Medium Enterprises(MSMEs).

Recommendations for MSME Clusters towards Adoption of Industry 4.0

This article provides recommendations to MSMEs for adopting Industry 4.0 technologies . Given the substantial digital divide between large industry and MSME, this is extremely pertinent. Most of the MSMEs fall into the group of low digitalization and low data-driven companies. This is a trend not only in India but even in developed economies. The adoption of Industry 4.0 technologies provides immense benefits to industries and MSMEs and gives them opportunities to transform their supply chains into value chains. No doubt, at the initial stages, some of these technologies may be out of reach for individual MSMEs due to the cost and the fact that these MSMEs may also face liquidity issues. MSMEs may have to look for alternatives for short-term financing that can provide assistance for fixing credit issues and enhancing financial performance. The scarcity of loan-granting institutions other than nationalized banks poses another challenge. However, a cluster-based approach towards procurement and adoption of Industry 4.0 technologies can prove to be beneficial to them if these procurements are done as an MSME cluster. Total Cost of Ownership (TCO) will reduce for these MSMEs. An added advantage is that

most of the MSME clusters are well-organized. To cite an example, CODISSIA, Coimbatore District Small Industries Association, boasts more than 2000 members in 43 sectors. A world-class trade fair complex as an industrial and exhibition venue and incubation center for defense are some of the achievements of this cluster. Likewise, there are many similar success stories pan-India. Another cluster representing the pump, foundry, and motor sectors in the Coimbatore region is the Southern India Engineering Manufacturers' Association (SIEMA) has 300 members. In terms of software packages in AI and/or IoT as part of Industry 4.0, these packages can be sold as a cloud-based solution to the MSME. This would reduce the TCO as the MSME need not procure expensive servers, hardware, and/or infrastructure to host the software package. Exploring open-source packages and menu-based approaches is also an option. In other words, procure the required modules from the software package as per need and top up as required. However, these targeted digital improvements need to be focused and dovetailed into the strategic roadmap of the MSME. MSMEs can incrementally procure Industry 4.0 technologies. They can start small by starting with apps, sensors & IoT and then move up the value chain to high-end robotics, AI, and the like. This results in the optimization of resources. Pilot projects can be pursued as proof-of-concept and implemented in localized value chains.

Considering the rapid growth of digital technologies, regular upskilling, and training programs for employees in MSMEs are absolutely necessary. They would make a fantastic team due to their topic understanding, analytical know-how, and link experience.

In order for employees at all levels to support the adoption of Industry 4.0, awareness must spread across the organisation from top to bottom. Top management would be encouraged to make the necessary investments in the purchase of other digital technologies as a result of this awareness. Additionally, it is necessary to create and distribute to all stakeholders data management and related policies.

MSMEs could use readily available Industry 4.0 capabilities in the e-commerce and logistics sectors to first target external value chains. MSMEs engaged in batch and continuous manufacturing, as opposed to those engaged in process and discrete manufacturing, will benefit from Industry 4.0 solutions first.

This is as opposed to process manufacturing, which is dependent on a process formula, because they rely on a predefined Bill of Material (BOM) and well defined labour processes in the form of assembly lines. Undoubtedly, Industry 4.0-enabled MSMEs have a huge opportunity for growth and success. The time is here for MSMEs to adopt Industry 4.0 in order to significantly boost their productivity. This will significantly improve customer satisfaction by digitally optimising business procedures and support systems, implementing automation, and utilising big data. Using these suggestions as a guide, the next step would be to create a framework for the variables that influence Industry 4.0 adoption in MSMEs and empirically measure their impact on organisational performance.

Digital Transformation

The time is here for MSMEs to adopt Industry 4.0 in order to significantly boost their productivity. This will significantly improve customer satisfaction by digitally optimising business procedures and support systems, implementing automation, and utilising big data. Using these suggestions as a guide, the next step would be to create a framework for the variables that influence Industry 4.0 adoption in MSMEs and empirically measure their impact on organisational performance. Challenges faced includes working capital, trained manpower resources, and lack of awareness or having a comprehensive ICT strategy.

Challenges faced

MSMEs face challenges when it comes to adopting new technologies such as Industry 4.0. They lack awareness regarding Industry 4.0 and its benefits. They consider such technologies disruptive and have the potential to demolish their existing system. Industry 4.0 believes in improving the existing system. Scientific literature provides evidence of sensors and WiFi networks being integrated with old machines like lathes and mills to improve their performance. MSMEs will need to make major financial investments to adopt Industry 4.0. Investing in the right set of technologies will need experts and consultants as well. For any new technology an organisation needs a supportive workforce and a positive organisational culture to be embraced.

Review of literature:

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Kagermann H, Wahlster W, Helbig J. Umsetzungsempfehlungen für das Zukunftsprojekt Industrie. Ensure Germany's future as a destination for production and provide implementation advice for future project industry 4.0,

Nagasawa T, Pillay C, Beier G, Fritzsche K, Pougel F, Takama T, et al. Accelerating clean energy through industry 4.0: manufacturing the next revolution; 2017. Annual Meeting of the Deans of Technical Universities in Romania, U.P.B.,

Tom Savu, "From the Industrial Organisation to the Digital Organisation - Opportunities for Development and Adaptation of Faculties," 2016.

Objectives :

To understand the importance of employment generation and development of industrial economy in the context of industry 4.0.

To review the challenges faced by MSME (Micro, Small & Medium Enterprise) in adopting industry 4.0 technologies.

Scope:

Digital India and Industry 4.0 is vast and transformative. Digital India aims to digitally empower citizens, provide digital infrastructure, and promote digital literacy and governance. Industry 4.0, on the other hand, focuses on the integration of digital technologies into manufacturing and industrial processes, enabling automation, data exchange, and smart systems. Both initiatives have the potential to revolutionize various sectors, enhance efficiency, drive innovation, and create new opportunities for economic growth.

Needs:

Digital India and Industry 4.0 are essential for various reasons. Digital India aims to bridge the digital divide, empower citizens, and enhance access to government services through digital means. It promotes digital literacy and enables the development of digital infrastructure, which is crucial in today's digital age. Industry 4.0, on the other hand, revolutionizes industries by integrating digital technologies, automation, and data exchange, leading to increased productivity, efficiency, and innovation. These initiatives are vital for economic growth, job creation, and overall societal development.

Conclusion:

In conclusion, Digital India and Industry 4.0 are crucial for our nation's progress and development. Digital India empowers citizens through digital technologies, while Industry 4.0 revolutionizes industries through automation and data exchange. These initiatives drive economic growth, enhance efficiency, and create new opportunities. By embracing digital transformation and advanced technologies, we can unlock our nation's full potential and stay competitive globally. Let's continue to embrace the digital revolution and shape a brighter future for all.

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2. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3846755.

EXPLORING THE DYNAMICS OF BRAND LOYALTY: INSIGHTS, INFLUENCES, AND IMPLICATIONS

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Abstract

Brand loyalty is a crucial element in contemporary marketing strategies, with significant implications for businesses in an ever-evolving marketplace. This abstract provides a glimpse into an in-depth exploration of the multifaceted dynamics of brand loyalty, shedding light on the insights gained, the influential factors at play, and the profound implications for both brands and consumers. This research delves into the underlying psychological and behavioral mechanisms that drive brand loyalty, considering the role of factors such as customer satisfaction, trust, emotional connection, and brand identity. It also examines the impact of modern marketing channels, including social media and e-commerce, on shaping brand loyalty dynamics. Furthermore, the study investigates how brand loyalty extends beyond mere consumer preferences, affecting brand advocacy, word-of-mouth marketing, and customer lifetime value. The research highlights the significance of understanding these dynamics in building enduring customer-brand relationships. Ultimately, the implications of this exploration extend to brand managers, marketers, and businesses aiming to cultivate enduring customer relationships in an increasingly competitive and dynamic market landscape. Understanding the intricacies of brand loyalty is essential for creating strategies that not only retain loyal customers but also attract new ones, ensuring long-term success in the marketplace.

Keyword: Brand Loyalty, Consumer Satisfaction, Marketing Strategies, Contemporary Market Place, Brand Advocacy.

Introduction:

In marketing brand loyalty describes a consumer's positive feeling towards a brand, and their dedication to purchasing the brand's products or services repeatedly, regardless of deficiencies, a competitor's actions or changes in the environment. It can also be demonstrated with other behaviors such as positive word of mouth advocacy. Corporate brand loyalty is buy Top of Form where an individual buys products from the same manufacturer repeatedly and without wavering rather than from other suppliers. Loyalty implies dedication and should not be confused with habit with its less than emotional engagement and commitment. Businesses whose financial and ethical values rest in large part on their brand loyalty are said to use the loyalty business models. Brand loyalty is the

tendency of consumers to continuously purchase one brand's products over another. Brand loyalty is a conscious decision of a consumer to continue buying the same brand.

For this, repeat purchase must be accompanied by an underlying positive attitude towards the brand'. Brand loyalty occurs when a customer chooses to repeatedly purchase a product produced by the same company instead of a substitute product produced by a competitor. Brand loyalty is often based upon perception. A consumer will consistently purchase the same product because she perceives it as being the superior product among the choices available. You should note that brand loyalty usually relates to a product, not a company. Brand loyalty is important for several reasons. First, it reduces the cost of production because the sales volume is higher. Second, companies with brand-loyal customers don't have to spend as much money on marketing the product, which will permit the company to either retain more earnings or to invest resources elsewhere. Third, companies may use premium pricing that will increase profit margins. Finally, loyal customers tend to recommend products that they like. Businesses have to exert significant effort to facilitate brand loyalty. You need to convince potential customers that your product has a significant advantage over other product. Businesses also will attempt to leverage brand loyalty developed for a product to other products offered by the company. The hope is to create brand loyalty for as many products as possible.

There are several benefits of brand loyalty, which works in the favor of both the companies and customers. Some of them are:

- ❖ Brand loyalty gives an edge over competitors by a higher brand recall
- ❖ Creates positive brand value and word of mouth helps in positive marketing
- ❖ Customers are willing to pay a premium also for their brand
- ❖ Saves costs on customer retention and helps new customer onboard.
- ❖ More products under the same brand get popular with loyal customers.

Thus, brand loyalty is an important and integral part of brand management and marketing for any business.

Review of Literature:

Loyalty is generally recognized as a brand asset (Aaker & McLoughlin, 2010) that firms invest in to protect and develop. Hence, marketers need to understand factors that are related to higher or lower levels of brand loyalty (Trinh & Dawes, 2020). Achieving customer loyalty is a central goal for most firms (Ngobo, 2017) due to its contribution to their profitability (Reinartz et al., 2005) and long-term survival (Agustin & Singh, 2005). A brand is a trust mark for all intangible credibility and is a symbol of guarantee for a particular brand product or activity (Bart et al., 2005). Brand loyalty, defined as an amicable attitude and commitment toward a particular brand, builds around consumer satisfaction

and leads to continued maintenance and purchasing of that brand (Ballantyne et al., 2006). Chen et al. (2016) analysed which factors affect consumers' repurchasing intentions and identified brand related qualities (experience with the brand, service quality, trust, satisfaction, and commitment) as influencers. Price, function, appearance, social influence, and brand perception were set as external variables that affect brand-related qualities and the analysis revealed that some consumers made their purchasing decisions because they were convinced by other people (Kim et al., 2020). When consumers were satisfied with the quality of the service of a certain brand, they encouraged people around them to make similar purchasing decisions through word of mouth (Azad & Safaei, 2012). Batra et al. (2012) found strong relationships between brand love and brand loyalty, and Bergkvist & Bech-Larsen (2010) demonstrated robust support for this relationship across a number of contexts, including painkillers, food, personal care items, and electronics. Yoshida et al. (2018) found that brand-related social media engagement and team identification, a type of consumer-brand identification, simultaneously affected behavioral brand loyalty.

Brand Loyalty:

Brand loyalty refers to a consumer's commitment and attachment to a particular brand or product. It's the result of a positive and consistent customer experience with that brand over time. Brand loyalty goes beyond mere repeat purchases; it reflects a deep emotional connection and preference for a specific brand over competitors. Brand loyalty often involves a strong emotional connection between the consumer and the brand. This connection can be built through experiences, trust, and shared values. Brands that consistently deliver quality products or services and meet or exceed customer expectations tend to foster loyalty. Customers come to rely on the brand for a certain level of quality and reliability. Trust is a fundamental aspect of brand loyalty. Customers need to trust that the brand will consistently deliver on its promises, whether it's about product quality, customer service, or other aspects of the brand's offering.

Importance of Brand Loyalty:

Brand loyalty is a consumer behaviour which a customer develops over a period of time by repeated use of a particular brand, product or service. Customers who find their needs fulfilled and find the product having good quality, and high value proposition tend to become loyal towards a particular brand. This positive behaviour towards a product or service is useful for companies as they become positive brand advocates and help spread a positive word of mouth about the brand. Consumers who develop a strong brand loyalty tend to become regular customers and also help their friends & family identify the benefits of the products & services that they have been benefitted by. Such is the importance for companies that they have brand loyalty management to ensure that customers get the

correct value proposition offered. Good product quality, brand awareness and positive brand image contributes to building brand loyalty.

Statement of the Problem:

Many companies are aiming for higher satisfaction because customers who are just satisfied, still find it easy to switch when better offer comes along. Those who are highly satisfied are much less ready to switch. High satisfaction creates an emotional bind with the brand not just a rational preference. The result is highly customer loyalty. Hence an attempt has been made to identify the customer attitude and satisfaction on Amul Milk Products.

Objectives of the Study:

- ❖ To study consumer brand loyalty concept from existing literature.
- ❖ To investigate the overall contribution of brand loyalty for buying behaviour.
- ❖ To know the customer buying behavior and to identify the level of customer satisfaction.

Scope of the Study:

This study is done to provide an approach for analyzing market structure in the terms of brand loyalty and brand awareness for the purchase of a product. This study mainly focuses on consumer minds for buying a product on the bases of product category and associated with key consumer benefits. More over the study analyzed the key factors affecting the minds of consumer towards the purchase of a product to create a good position in industry.

Research Methodology:

Research methodology is the specific procedures or techniques used to identify, select, process analyses information about the topic. In a research paper, the methodology section allows the reader to critically evaluate a study's overall validity and reliability. The validity of any research depends on the systematic method of collection of data and analysis of the same in an appropriate manner. The study is descriptive research design refers to the framework of market research methods and techniques that are chosen by a researcher. The design that is chosen by the researchers allows them to utilize the methods that are suitable for the study and set up their studies successfully in the future as well. The primary data has been collected through structured and pre tested questionnaire. Selection of sample units for primary data has been collected from 100 respondents. The primary data has been collected from the customers who consume Amul products. Sampling technique used in this study is "Convenient Sampling". In this regard the below table show the factors that

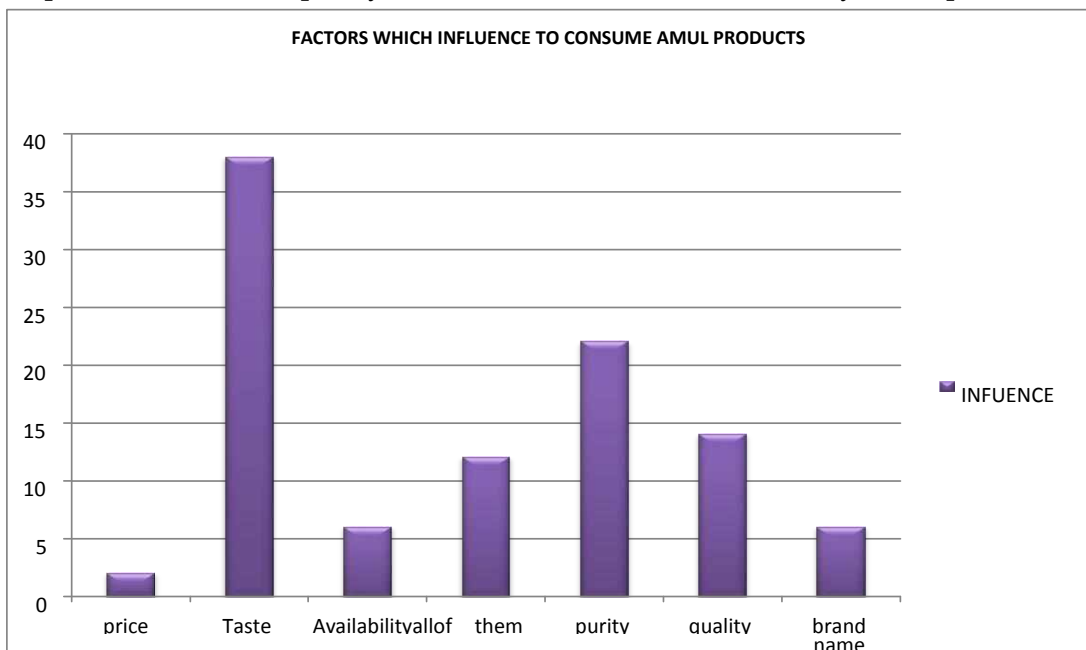
affect the brand loyalty of Amul brand such the price of product, taste, availability of the products across Salem city, the brand name, ingredients purity and quality of also influenced the consumers to buy the product on regular bases, this shows brand loyalty of Amul Products

Factors which Influence to Consume Amul Products

Factors	No. of Respondents	Percentage
Price	2	2
Taste	38	38
Availability	6	6
Brand Name	6	6
Purity	22	28
Quality	14	14

Source: Primary Data

The above table reveals that 2% of the respondents said that price is a factor that influences them to buy Amul products, whereas 38% of the respondents said that taste is a factor that influences them to buy Amul products, 6% of the respondent said that availability is a factor that influences them to buy Amul products, 6% of the respondents said that brand name is a factor that influences them to buy Amul products , 22% of the respondents said that purity is a factor that influences them to buy Amul products, 14% of the respondents said that quality is factor that influences them to buy Amul products.



So, the majority 38% of the respondents said that taste is the important factor for consumption of Amul products. Moreover the other important aspect of study was that milk and milk product purchase decisions are more decided by women rather than male, because she acts as a invigilator, execute her decision and influence the same to the purchase while ascertaining the quality, freshness and price. Hence, Amul co-operative society has to concentrate more on the women and men suggestions for designing the marketing strategy, because women's role in the house is dominant, even in the various decisions. Income of the people decides the purchasing power. The high income prefers to purchase product with the quality, freshness, thickness, etc. and vice versa. So Amul has to concentrate also on low income segment to capture market and position themselves in the minds of the customer with required quality and quality milk and milk products. Quality and Brand Image plays a dominant role. Milk and milk products move in the market due to its quality and brand. Therefore it should maintain the same Since Amul is having loyal customer it should concentrate more on this factor through various potential programs such as campaign, premium packs, offers etc., this helps to increase the loyalty towards the Amul products. Amul has a strong brand value in the market and it increases rapidly through its advertisement. Amul focus on advertising, quality, and customer service which makes it a chief brand in dairy industry. The loyal customers are attached with the value service of Amul products.

Conclusion:

In a global marketplace defined by choices and shifting consumer preferences, understanding the dynamics of brand loyalty is essential for businesses seeking to thrive. This presentation offers comprehensive insights, practical strategies, and thought-provoking perspectives on brand loyalty, emphasizing its significance as a cornerstone of contemporary marketing. By exploring the intricate interplay of factors and trends, businesses can better navigate the dynamic landscape of brand loyalty, positioning them for sustained success. In the present paper, we presented several approaches, were the society of Amul products can use to improve the enjoyment of people experience from their products or to facilitate the formation of personal memories connected to the products. These approaches exemplify strategies that can be instrumental in increasing the degree of attachment that people experience towards the products they use and own. Because strengthening the consumer-product bond may contribute to increasing product lifetime, we hope these design strategies will eventually contribute to the development of more sustainable consumption patterns.

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MSMEs & SUSTAINABLE DEVELOPMENT GOALS - PATH TO PROSPERITY

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Abstract

Micro, Small & Medium Enterprise (MSME) sector accounts for 50% of India's exports and employs more than 120 million people. This sector influences the country's development and contributes to achieve the Sustainable Development Goals (SDGs) in three-fold: eradicating poverty, providing goods and services, and facilitating economic resilience. Such a huge sector with broader scope and potential is facing with serious challenges. This paper attempts to explain the various challenges faced by MSME like finance, infrastructure, and lack of formalisation. The paper also presents the recommendations to overcome the serious challenges faced by MSME sector. The recommendations being improved access to credit and liquidity, encouraging women entrepreneurs, and Fintech solution.

Keywords: *MSME, SDG, Challenges, and Recommendations*

Introduction

Micro, Small & Medium Enterprise (MSME) sector includes more than 63 million enterprises in India, and contributes to close to 30% of the nation's GDP. The sector accounts for 50% of India's exports, and employs more than 120 million people. With such a broad scope and potential, the industry unquestionably has a huge impact on the social fabric of the nation. Sustainable Development Goals (SDGs), or Global goals are the collection of 17 objectives designed for improvement. MSMEs contribute to the attainment of SDGs in three fold contexts, viz. eradicating poverty, providing goods and services, and facilitating economic resilience. Over the past few decades, the social fabric of India has undergone a series of transformations. In the 1990s, the Indian economy was liberalized, and the market opened up, increasing employment opportunities and living standards. A growing financial access led to an increase in social mobility. Certain sections of society, however, have lagged behind for a variety of reasons, from social barriers to a lack of education and funding. MSMEs make up one of these sections, which form the economy's foundation.

Contribution of MSMEs in Sustainable Development Goals

A unifying framework for peace and prosperity for people and the planet, both now and in the future, is provided by the 2030 Agenda for Sustainable Development, which was accepted by all United Nations Member States in 2015. The 17 Sustainable Development

Goals (SDGs), which are an urgent call to action for all nations—developed and developing—in a global partnership, are at the center of it. They understand that combating poverty and other forms of deprivation requires policies that enhance health and education, lessen inequality, and promote economic growth, combat climate change, and fight to protect our oceans and forests.

MSMEs contribute to the attainment of SDGs in three fold contexts, viz. eradicating poverty, providing goods and services, and facilitating economic resilience. Let us discuss this briefly.

Eradicating poverty:

A sizable underprivileged population can benefit economically and socioeconomically from MSMEs. In rural India, inclusive growth is important for reducing poverty and promoting rural development. Economic growth that reduces poverty and opens up employment opportunities is referred to as inclusive growth. MSME ranks second in India behind agriculture as an employer.

Providing goods and services:

MSMEs are the main provider of products and services to villages, which make up a bigger portion of society. The bigger unreached population of the community in rural, which is not even covered by huge corporations, is connected through MSME. Thus, by making goods and services available to the underprivileged group, inclusive growth is ensured.

Facilitating economic resilience:

MSMEs stimulate economic growth and generate significant job possibilities in both urban and rural areas. This supports socioeconomic empowerment and regional harmony. MSMEs help India's economy remain resilient by spreading out risks and decreasing reliance on a small number of major businesses or industries. Their existence across a range of industries and regions contributes to stability, particularly in trying economic times. MSMEs facilitate a more inclusive and sustainable economic growth model and contribute to balanced regional development.

Challenges Faced by MSMEs

Despite being one of the foundations of the Indian economy, MSMEs are still overwhelmingly found in the unorganized sector. Without formalization, it is not only challenging to measure the employment and income metrics for these enterprises, but they also fail to qualify for government welfare programs and subsidies. Some of the serious challenges faced by MSMEs are discussed here under:

Finance:

The Rs 20 lakh crores credit shortfall is the biggest problem facing MSMEs. In order to meet their credit demands, many micro-entrepreneurs are consequently compelled to turn to unofficial sources including family, friends, and local moneylenders, which results in higher interest rates and increased responsibility. 27% of business owners said they had trouble making loan payments on schedule. Enhancing MSMEs' access to funding is essential to their continued viability and growth. The sector also faces a huge credit deficit, which the World Bank estimates to be worth over \$400 billion. Small firms are significantly hindered by this gap, and having access to formal financing can greatly boost their capacity to grow, provide more income and jobs, and support local economies.

Infrastructure:

Because of the lack of infrastructure, MSMEs have higher operating expenses and are less competitive. Another issue mentioned by MSMEs is the lack of skilled labor and raw resources. According to 57% of business owners polled by the Bhartiya Yuva Shakti Trust, supply chain problems and rising raw material costs because of higher transportation expenses caused business disruptions.

Lack of formalisation:

MSMEs are widely dispersed throughout India, but the market is still mostly unorganized due to a lack of timely and affordable funding, a tiny talent pool, and weak supplier/dealer negotiating leverage. According to a survey, the majority of MSMEs operate in the unorganized sector and are not registered. The Udham portal for MSME registration only lists 79,84,801 enterprises (or roughly 12.4% of all businesses), despite the Ministry of MSMEs' projection that there were 633.9 lakh MSMEs in India as of March 30, 2022. In fact, only 1.1 crore MSMEs in India are officially registered with the Goods and Services Tax, and many of them lack the necessary financial and business documents. The majority of these unorganized businesses are owner-managed, fall into the micro category, and employ less than five people. For MSMEs, the lack of formalization causes obstacles to technological advancement, economic growth, and the acquisition of labour and raw supplies.

Recommendations to MSMEs

Initiatives should be triggered by the Government of India, to gear up the MSME sector. The following steps need to be taken:

Improved access to credit and liquidity:

Since MSMEs are the development engine for the Indian economy, the government would need to relax capital requirements in order to boost business. It entails enhancing liquidity, advancing financial inclusion, and providing accessible credit at reasonable rates to encourage growth.

Women at the wheel:

Women MSME business owners play a significant role in fostering long-term socioeconomic growth and raising the standard of life for families and communities. Making a genuine change in the lives of millions of Indians depends on providing them with access to formal capital and simplifying the process for them to receive it. Only 20.4% of Indian MSMEs are owned by women. To support female entrepreneurs, it is essential to extend the Sudra Scheme, Stand Up India, and other credit guarantee programs.

Fintech solution:

The 'missing middle' issue in MSME finance can be mostly linked to two things: the risk aversion of traditional lenders like banks, accessibility problems with regard to documentation, linguistic barriers, and a lack of adequate support networks for last-mile borrowers. NBFCs, especially those that have embraced the fintech paradigm, are the modern answer to these problems.

They frequently specialize in serving certain customer groups that standard lenders avoid. Many of them now evaluate the creditworthiness of MSME borrowers using a more technologically advanced method, taking into account elements like company potential and order pipeline.

The efforts of NBFCs to access underserved markets and provide sustainable effect for MSMEs are also aided by the tech change that has been taking place across the country over the past few years. Giving small company owners the tools they need to grow, develop, and maintain their enterprises significantly impacts their and their families' social mobility. Additionally, it causes improvements for the entire community. Giving small company owners the tools they need to grow, develop, and maintain their enterprises significantly impacts their and their families' social mobility. Additionally, it causes improvements for the entire community.

Conclusion

Unlocking MSME growth is essential if India is to accomplish its goal of having a \$5 trillion economy. It will need regulations and organizational frameworks that make doing business easier. MSMEs are waiting for initiatives to be unveiled that would promote their growth, therefore all eyes are on the Finance Minister and the Union Budget 2023.

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THE IMPACT MSMEs HAVE ON THE INDIAN ECONOMY

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Abstract

The Micro, Small, and Medium Enterprises (MSME) sector of the Indian economy has grown to be a thriving and active one. MSMEs are essential in creating numerous job possibilities at prices that are cheaper than those charged by major enterprises. MSMEs serve as auxiliary units to major businesses and make a significant contribution to the socioeconomic growth of the nation. MSMEs have made a great contribution to the Indian economy in terms of creating jobs, reducing regional inequities, promoting equitable economic growth, and increasing the nation's export potential. Since the global economy is expanding more slowly, more attention must be placed on boosting the MSME sector in order to increase job prospects, particularly for young people. This industry has shown extraordinary success in terms of growth in number, amount of investment, size of output, and total contribution to national GDP despite significant infrastructure shortcomings and obstacles such flow of institutional credit and inadequate market links.

Keywords: *Micro, small & medium enterprises (MSME), Export, Socio-Economic Development, Employment.*

Introduction

Micro, small, and medium-sized businesses play a crucial role in the economy. For many emerging nations, including India, the Micro, Small and Medium-Sized Enterprises (MSMEs) have frequently been referred to as the "engine of growth." In light of a favorable political and economic environment, India is predicted to become one of the top economies in the world during the following ten years. To achieve the national imperatives of financial inclusion and the creation of large levels of employment in urban and rural parts of the nation, the growth of this segment is very essential. With both local and international corporations investing in the "Make in India" program, MSME may be the backbone for the current and future high growth enterprises and have a huge influence on the region. A big potential is "Make in India with zero defect and zero effect." MSMEs flourish throughout the agricultural, manufacturing, and service sectors since each of these industries will continue to be crucial to both the expansion of the general GDP and the creation of new jobs. This socioeconomic revolution will be accelerated by the MSME sector.

Objectives of the Study

- ❖ To identify the manufacturing and service sectors investment levels in plant and machinery equipments.
- ❖ To analyse the different government schemes for MSMEs development.

Definitions of Micro, Small & Medium Enterprises

The Micro, Small and Medium Enterprises (MSME) are divided into two Classes in compliance with the regulations of the Micro, Small & Medium Enterprises Development (MSMED) Act, 2006.

Manufacturing Enterprises:

Businesses that produce or manufacture items for any of the industries listed in the first schedule of the Industries (Development and Regulation) Act of 1951. Investment in plant and machinery is used to define manufacturing enterprises.

Service Enterprises:

The businesses that are involved in rendering services and are described in terms of equipment investment. The maximum amount that can be invested in plant, machinery, and equipment by manufacturing and service businesses is as follows:

Manufacturing Sector

Enterprises	Investment in Plant & Machinery
Micro Enterprises	Does not exceed twenty five lakh rupees.
Small Enterprises	More than twenty five lakh rupees but does not exceed five crore rupees.
Medium Enterprises	More than five crore rupees but does not exceed ten crore rupees.

Service Sector

Enterprises	Investment in Equipments
Micro Enterprises	Does not exceed ten lakh rupees.
Small Enterprises	More than ten lakh rupees but does not exceed two crore rupees
Medium Enterprises	More than two crore rupees but does not exceed five crore rupees.

Significance of MSMEs:

The importance of the MSMEs sector is evident from the fact that it is India's second-largest employer, behind agriculture. Currently, India has up to 56 million such businesses operating across a variety of industries, employing close to 124 million people. Nearly 14% of these are women-owned businesses, and nearly 60% of them are situated in rural regions. In all, the MSME sector contributes 8% of India's GDP and 45% of its exports of goods. The MSME sector is said to as the country's development engine as a result of this.

MSMEs Contribution in Rural Development

The growth of small and medium manufacturing businesses is largely responsible for the development of the rural sector. Rural residents face a number of difficulties, including unemployment, low income, a low standard of life, inadequate educational opportunities, and a lack of markets for their products. The potential of the society to generate revenue declines because it has a variety of resources as raw materials but lacks the capital to transform them into completed items. Young people with education and talent moved to another district since there were no work opportunities there, despite the fact that they had plenty of raw materials, water resources, talent, and knowledge. However, MSME face several difficulties that make them ineffective and inefficient. Some MSMEs also bemoan the lengthy banking processes and challenges in obtaining bank loans. Others also voiced their displeasure.

The majority of MSMEs also lack formal training in their fields of endeavor. High information asymmetry caused by MSMEs' lack of accounting records and inadequate financial statements, which makes it difficult for creditors and investors to access the credit worthiness of potential MSME proposals, is foremost among these issues, along with vulnerability to market fluctuations and high fold-up rates. Additionally, it is the cause of the ill units and MSME manufacturing sustainability problems. Additionally, as a result, there can be a significant funding blockage in the different fixed (capital) assets. These issues still exist in the MSME manufacturing sector, particularly rural MSMEs. In the context of “Make in India” initiative by central government, it is worthwhile to see the role.”

Government Schemes for MSMEs Development:

Prime Minister's Employment Generation Programme (PMEGP):

In 2008-09, the Prime Minister's Rozgar Yojana (PMRY) and Rural Employment Generation Programme (REGP) were combined to create the credit-linked subsidy program known as the Prime Minister's Employment Generation Programme (PMEGP). The program's goal is to provide self-employment options for traditional craftspeople and jobless young people in both rural and urban regions by assisting them in starting small

businesses in the non-farm sector. According to the assessment study report, the program has been successful in creating long-term employment. It has a wide audience and has nearly all social groups in its crosshairs. Margin Money (MM) Subsidy of Rs. 12074.04 crore has been used to establish a total of 5.45 lakh units since its establishment up to 2018-19, creating job possibilities for 45.22 lakh people.

Scheme for Promoting Innovation, Rural Industry & Entrepreneurship (ASPIRE) :

In March 2015, the Ministry of Micro, Small, and Medium Enterprises unveiled the ASPIRE program. It was planned to establish 20 technology business incubators (TBIs) and 100 livelihood business incubators (LBIs). 39 LBIs had started incubation as of March 31st, and 74 LBIs had been authorized as of that date. Over 28000 incubators have finished their incubation, and roughly 25% of them have launched their own businesses or found lucrative jobs. There have been 11 TBIs that have been authorized, and 55 excellent ideas have sprung from them. The Small sectors Development Bank of India (SIDBI) has received an increase in the "Fund of Funds" from Rs. 60 crore to Rs. 310 crore for investment in start-ups in agro-based sectors.

Scheme of Fund for Regeneration of Traditional Industries (SFURTI):

The program attempts to cluster traditional businesses and craftspeople in order to increase their competitiveness and long-term viability. With design changes, better packaging, and infrastructure, it also aids in improving the marketability of the goods produced by micro and small firm clusters. The program was updated in 2014 with a budget of Rs. 149.44 crore for the development of 71 clusters (including coir) that would initially serve 44,500 craftsmen. With a financing commitment of Rs. 140 crore, 72 Detailed Project Reports of clusters have been authorized between 2015 and 2018. These clusters would employ over 60,000 craftsmen and labourers. Out of 72 clusters, 53 have been finished as of 15.10.2019. It has been approved to continue the program with a capital of Rs. 350 crore and establish 100 more clusters in the coir, village industries, and khadi sectors. 110 projects with SFURTI funding of about Rs. 244.18 crore were authorized throughout the 2018-19 and 2019-20 fiscal years (until September 30, 2019), helping 59000 (approximately) craftsmen and laborers.

Market Promotion and Development Assistance (MPDA):

Market Promotion and Development Assistance Scheme (MPDA) has replaced KVIC's Market Development Assistance (MDA) program. In order to create the MPDA plan, several schemes, sub-schemes, and components of other Heads introduced in the 11th Plan—namely, market development assistance, publicity, marketing, and market promotion—were combined. In order to increase the marketing network for items made by

Khadi & Village Industries (VI), a new infrastructure component called the construction of Khadi Plazas/Marketing Complexes has been included. Under the Modified Market Development Assistance (MMDA) program, producing institutions receive financial support equal to 20% of the Prime Cost of Khadi and Polyvastra production, selling institutions receive financial support equal to 10% of the Prime Cost, artisans receive 40% of the funding, and the remaining 30% goes to the best-performing Khadi Institutions chosen using an open scorecard.

Interest Subsidy Eligibility Certificate (ISEC) Scheme:

An essential method of supporting the programs of khadi institutes is the Interest Subsidy Eligibility Certificate (ISEC) Scheme. Under the ISEC Scheme, banks provide loans at a reduced rate of interest in accordance with the needs of the Khadi institutions. Institutions are only required to pay interest of 4%; any interest that banks charge in excess of 4% would be reimbursed to banks by the Indian government through the Khadi and Village Industries Commission.

Solar Charkha Mission:

In Bihar's Nawada District, the hamlet of Khanwa executed a Solar Charkha pilot project in 2016. The Government of India has given consent to establish 50 such Clusters between 2018–19 and 2019–20 based on the success of the pilot project. According to the plan, "Solar Charkha Clusters" will be established, each of which will consist of a central hamlet and several nearby villages within an 8–10 km radius. Additionally, 200 to 2042 beneficiaries, including spinners, weavers, stitchers, and other skilled artisans, will benefit from such a cluster.

Honey Mission:

The "Honey Mission" was started in May 2017 in response to the Hon'ble PM's appeal for "Sweet Kranti" and has the goals of improving farmer and beekeeper income, quantity and quality of honey and hive products, crop productivity through bee pollination, and adopting best beekeeping and trade practices. From the fiscal year 2017–18 through the end of the current fiscal year (October 31, 2019), 11,020 recipients received 1,09,231 Bee boxes, which provided them with direct work.

Skill Upgradation & Mahila Coir Yojana:

Regular training programs, Entrepreneurship Development Programs (EDPs), Workshops, Exposure Tours, Seminars, etc. are organized under the Skill Upgrading program. Under the Mahila Coir Yojana training program, women craftsmen receive training along with a stipend of Rs. 3000 per month. Under the Prime Minister

Employment Generation Programme (PMEGP), skilled women are entitled to apply for financial support for the establishment of coir units with a project cost of up to Rs. 25 lakhs.

Credit Guarantee Scheme for Micro and Small Enterprises (CGTMSE):

For the purpose of executing the Credit Guarantee Fund (Scheme) for Small Industries (CGS), a Trust with the name Credit Guarantee Fund Trust for Small Industries (CGTSI) was established in July 2000. Following the passage of the MSMED Act in 2006, the Trust was renamed Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) and the Scheme was renamed "Credit Guarantee Fund Scheme for Micro and Small Enterprises (CGS)". To make available, CGS was established collateral and third party guarantee free credit to the Micro and Small Enterprises (MSEs). The guarantee cover available under the scheme is up to 85 percent of the sanctioned amount, for a maximum credit facility of Rs. 200 lakhs.

Micro and Small Enterprises-Cluster Development Programme (MSE-CDP):

As a fundamental strategy for boosting the productivity and competitiveness of Micro and Small Enterprises (MSEs), the government has selected the cluster development method. The plan's objectives are:

1. To solve common problems including the advancement of technology, skills, and quality, market access, access to funding, etc. in order to promote the sustainability and expansion of MSEs.
2. To increase MSEs' ability to work together in a supportive manner by creating self-help groups, consortia, upgrading associations, etc.
3. To build/improve infrastructure facilities in MSE clusters and new/existing industrial zones.
4. To establish Common Facility Centers (for testing, a training facility, a raw material depot, an effluent treatment facility, and other procedures that support manufacturing).
5. Encouraging clusters to adopt sustainable and green production methods and goods through promoting green manufacturing and sustainable manufacturing technologies.

Public Procurement Policy for MSEs:

Every Central Ministry/Department/PSU must establish an annual objective of at least 25% of the total yearly procurement from the items or services produced or supplied by MSEs, according to the Public Procurement Policy for Micro and Small Enterprises (MSEs). The aim must set aside 3% of the total annual Micro and Small Enterprise procurement for purchases from Micro and Small Enterprises run by women. A sub-target of 4% of yearly

purchases is set aside for purchases from MSEs run by SC/ ST business owners. A total of 164 CPSEs reported Rs. 40,343.08 crore in procurement during the FY 2018–19, accounting for 26.31% of all procurement and benefiting 1,27,705 MSEs. It comprises purchases totaling Rs. 823.86 crore that will help 4,579 people.

Digital Payments in MSMEs:

The government has been working to encourage a less cash-dependent economy and to easily make digital payments available to all Indian residents. The Government of India has given the promotion of digital payments top importance in an effort to formally include all facets of our nation in the use of these services. The goal is to make seamless digital payment available to all Indian people in a way that is practical, simple, inexpensive, rapid, and secure. The Ministry of MSME has undertaken various activities as a partner in the drive to digitally empower the whole MSME ecosystem.

MSMEs Backbone to Indian Economy:

The MSME industry is crucial to the Indian economy. In diverse industries, there are more than 6 crore businesses with over 10 crore workers. Overall, the MSME sector accounts for 40% of exports and 45% of India's industrial production. Despite the fact that 90% of MSMEs are unregistered, the sector contributed about 28% of India's GDP annually, which resulted in an increase of 8% in our nation's GDP. MSMEs are widely renowned for providing excellent opportunities for both wage job and self-employment, as was previously mentioned. MSMEs in India have grown in significance solely due to their contribution to the country's economic system. The Government of India has been working hard to protect and develop this phenomena through its think tank, NITI AAYOG; this is evident from the facts and numbers of the expanding manufacturing sector. To make MSME units competitive on the global stage, several councils and committees have been established. The government has proposed a National Manufacturing Policy to increase manufacturing's contribution to GDP to 25% by 2022. The government's "Make in India initiative," which was unveiled in September 2014, intends to turn India into a powerhouse for global manufacturing. 'Udyog Aadhaar Memorandum' (UAM), a simple one-page enrollment form, has been made available by the Ministry of MSME to make it easier for MSMEs to register.

Conclusion

MSMEs, or micro, small, and medium businesses, have become the development engine of the Indian economy. Due to their significant contribution to GDP, industrial output, and exports, they have become a thriving and active part of the economy. The creation of jobs, which is this sector's second-largest contribution after agriculture in India,

is its main accomplishment. By providing collateral-free loans, providing financial aid to struggling businesses, setting up internet marketing campaigns, simplifying regulations and laws, and other measures, a favorable atmosphere will be developed for the growth of small and cottage enterprises. To succeed not only in the home market but also in the global market, the MSME sector requires sufficient financial and technical assistance in the present globalized economic environment. Small and cottage industries now face problems from the current market-based economy, but it has also offered up new opportunities. It is necessary to recognize these opportunities and view the growth of the MSME sector as a movement. To sustainably contribute to the national economy, employment, and exports, a small and medium-sized sector that is technologically advanced and globally competitive should be encouraged to emerge. In order to help the MSME sector support the Indian economy, it is crucial to take care of it.

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ROLE OF MSME SECTOR IN INDIAN ECONOMY

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Abstract

The Micro, Small, and Medium Enterprises (MSME) sector has emerged as a critical driving force behind India's economic growth and development. This abstract provides an overview of the role of the MSME sector in the Indian economy, highlighting its significance and impact on various aspects of the nation's economic landscape.

India, being one of the fastest-growing economies globally, has witnessed a substantial contribution from the MSME sector. This sector comprises a diverse range of enterprises engaged in manufacturing, services, and trade. The MSME sector plays a pivotal role in generating employment opportunities, fostering innovation, and enhancing inclusive growth. Its contribution to the GDP, exports, and investment is substantial.

Introduction

Micro, Small and Medium Enterprises (MSMEs) are amongst the powerful sources of employment generation, economic development and doing innovation. With a vast network of about sixty-three million three hundred eighty thousand enterprises, about forty-five per cent contribution in manufacturing output, more than forty per cent of exports, over twenty-eight per cent of the Gross Domestic Product and creating employment for about one hundred eleven million people, the MSME sector is the growth engine of the national economy. Employment in MSME sector stands next to agricultural sector in terms of volume. Different kinds of products and services are produced by MSMEs with adoption of latest technology so the market size of business units also varies from handmade products to hi- tech products. The National Manufacturing Policy Enterprises (MSME) forecasted to raise the share of manufacturing sector in GDP from sixteen per cent at present to twenty-five per cent by the end of 2022 to provide momentum to manufacturing sector. The Ministry of MSME runs various schemes aimed at financial assistance, Technology assistance and upgradation, skill development and training, infrastructure development, enhancing competitiveness and Market assistance of MSMEs.

Review of Literature

Yogesh C. Joshi and Kaushal Kishore (2018) found in their research that considerable proportion of MSMEs are practicing energy conservation but a lot of efforts are required to increase the number of units practicing the model of energy conservation.

Papiya Manna and Dr. Tapas Mistri (September 2017) analyzed in their research that MSMEs are increasing year by year and its share in national or state GDP has also shown increasing trend with some fluctuations.

Objectives

1. To understand the role of MSME sector in economic growth of India.
2. To study the importance in development of MSME sector.
3. To analyze the contribution of MSME sector in Indian economy.

Research Methodology

Research Design

Research Design of present study is descriptive in nature.

Data Collection

Current study is based on secondary data. Several reports from authentic sources have been studied to know the current scenario of MSME sector. Present research is mainly based on the statistics available on annual report (2018-19) of MSME published by Government of India, report published by Indian Brand Equity Foundation (IBEF) in December 2019 and report of expert committee on MSME published by Reserve Bank of India (RBI) in July 2019. Facts and figures in these reports have been considered for analysis purpose.

Data Analysis

Overview of Performance of the Indian MSME Sector

The MSME sector is considered as an important driver of economic growth. As MSME sector has significant employment potential at very low capital cost, this gives competitive edge to small scale units of the country. The Small and Medium Enterprises (SMEs) play key roles in job creation and economic growth especially in developing countries as it account for about ninety percent of businesses and more than fifty per cent of employment worldwide.

Growth rate of MSME Sector in comparison with the Overall Industrial Sector

It must also be studied that whether the MSMEs are growing in line with the overall industrial growth or not. The MSMEs have recorded a higher growth rate than the overall growth of industrial sector in many years which shows the importance of MSME sector in economic development of the nation.

Contribution of MSMEs in Country's Economy at Current Price

From 2011-12 to 2016-17, the contribution of the MSMEs in Gross Domestic Product (GDP) of the country remained almost similar. 30% is a significant number in terms of sharing GDP. There are no major fluctuations observed in recent years.

Overview of MSME Sector

Micro, Small and Medium Enterprises have played highly significant role in overall development of the state. They have proved to be a major contributor to the economy of the state in terms of entrepreneurship development and employment generation. MSME is playing an essential role in providing opportunities and employment in the areas of Engineering, Textile, Chemical products, Plastic, Food Processing, Ceramic, Pharmaceutical, etc.

Recent Initiatives Taken By the Government of to Promote MSME Sector

Government is very actively promoting small & medium size businesses through various schemes of granting financial and technical support, establishing incubation centres, supporting budding entrepreneurs, providing guidance to young students who are initiating start-ups, introducing courses in entrepreneurship, encouraging internships and summer internship projects in MSMEs, organizing awareness programmes of Government schemes to assist MSME sector. The government in February 2020 signed a MoU with State Bank of India (SBI) to facilitate fast approval of loans to entrepreneurs in the MSME sector. This is in line with the objective of central government to move up in the ranking of Ease of Doing Business.

Conclusion

It is very clear from the analysis that Micro, Small and Medium Enterprise (MSME) sector has emerged as a very important segment which is contributing significantly to employment generation, innovation, exports, and inclusive growth of the economy. The reason is that the MSME sector has the ability to make cost effective products and government is also providing full support to boost up this sector. Currently MSME's share in national GDP is about 29% and is projected to touch 50% by 2024. With its inherent strengths, powerful infrastructure and strong positioning at national and international level.

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GREEN MANUFACTURING AND FINANCING FOR SUSTAINABLE MSMEs

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Abstract:

Green manufacturing, characterized by environmentally friendly practices and resource efficiency, has gained prominence as a vital component of sustainability in Micro, Small, and Medium Enterprises (MSMEs). This abstract provides an overview of a comprehensive research study that explores the relationship between green manufacturing and the financing mechanisms available to promote sustainability in MSMEs. The research aims to examine how the adoption of green manufacturing practices can lead to enhanced sustainability outcomes in MSMEs, encompassing environmental, economic, and social dimensions. It employs a multi-faceted research approach, including case studies, surveys, and financial analyses, to provide a holistic understanding of the subject matter.

Keywords: *sustainability, environmentally friendly, green manufacturing and Financing.*

Introduction:

Micro, Small, and Medium Enterprises (MSMEs) form the backbone of economies worldwide, contributing significantly to employment generation, economic growth, and innovation. As global concerns about environmental sustainability intensify, there is a growing imperative for MSMEs to embrace sustainable practices, including green manufacturing, and to secure the necessary financing to support these initiatives. This introduction provides an overview of the critical interplay between green manufacturing and financing for sustainable MSMEs, highlighting the significance of this topic in the contemporary business landscape.

Green manufacturing represents a paradigm shift in manufacturing practices. It entails the adoption of environmentally friendly processes, technologies, and materials, aimed at minimizing resource consumption, waste generation, and carbon emissions throughout the production lifecycle. Green manufacturing aligns with broader sustainability goals, promoting a harmonious coexistence between economic development and ecological preservation.

MSMEs, characterized by their limited resources and scale, often face distinct challenges when attempting to embrace green manufacturing practices. These challenges may include constrained budgets, limited access to advanced technologies, and a lack of awareness regarding the potential benefits of sustainable operations. Despite these challenges, MSMEs play a pivotal role in achieving sustainability objectives due to their sheer number and diversity across sectors.

Objective of the Study:

1. Assessing the level of awareness and adoption of green manufacturing practices among MSMEs across different sectors.
2. Examining the environmental benefits and resource savings associated with green manufacturing.
3. Investigating the economic impact of green practices on MSMEs, including cost reduction and revenue generation.
4. Analyzing the role of government policies and incentives in promoting green manufacturing initiatives.

Level of Awareness and adoption of Green Manufacturing:

The level of awareness and adoption of green manufacturing practices among Micro, Small, and Medium Enterprises (MSMEs) varies significantly across different sectors. Several factors contribute to this variation, including the nature of the industry, regulatory environment, resource availability, and market demand for sustainable products. Here, we will examine how awareness and adoption differ across various sectors:

1. Manufacturing and Industrial Sectors:

In traditional manufacturing sectors like textiles, metalworking, and chemicals, awareness of green manufacturing practices has been relatively low historically.

However, as environmental regulations have become more stringent and consumer demand for sustainable products has increased, there has been a growing interest in adopting green practices.

Some industries, such as automotive manufacturing, have been at the forefront of adopting green manufacturing due to the energy-intensive nature of their operations and the need to reduce emissions.

2. Agri-Food and Agriculture:

Agriculture and agri-food MSMEs have shown increasing awareness of sustainable farming practices, including organic farming and reduced chemical use.

Consumers' preference for organic and sustainably sourced food products has driven this adoption.

The adoption of precision agriculture technologies to reduce water and pesticide use is also gaining traction.

3. Renewable Energy and Clean Tech:

MSMEs operating in renewable energy and clean technology sectors have a high level of awareness and strong adoption of green manufacturing practices.

These sectors are inherently focused on sustainability and environmental impact reduction, which drives innovation and green practices.

4. Retail and Consumer Goods:

MSMEs in the retail and consumer goods sectors are increasingly adopting green practices to meet consumer demand for eco-friendly products and packaging.

Sustainable sourcing, reduced energy consumption in logistics, and recyclable packaging are becoming common practices.

5. Service Sectors:

MSMEs in service sectors (e.g., hospitality, IT services) are also recognizing the importance of green practices, such as energy-efficient building design and sustainable IT infrastructure.

Certification programs like LEED (Leadership in Energy and Environmental Design) are encouraging sustainable practices in building construction and operations.

6. Construction and Building:

The construction industry is gradually adopting green building practices, including energy-efficient design, use of sustainable materials, and waste reduction.

Building certifications like BREEAM (Building Research Establishment Environmental Assessment Method) and LEED have contributed to awareness and adoption.

7. Waste Management and Recycling:

MSMEs in waste management and recycling sectors naturally prioritize green practices, as their core business is centered around sustainability and waste reduction.

8. Challenges and Barriers:

MSMEs in sectors with low adoption often cite barriers such as lack of capital for technology investments, limited awareness of green options, and the perception that going green is expensive.

Government incentives and industry associations can play a crucial role in overcoming these barriers.

The environmental benefits and resource savings associated with green manufacturing

Green manufacturing practices offer a wide range of environmental benefits and resource savings that are not only crucial for reducing the ecological footprint but also for improving the long-term sustainability and competitiveness of businesses. Here are some of the key environmental benefits and resource savings associated with green manufacturing:

- 1. Reduced Energy Consumption:** Green manufacturing often involves the adoption of energy-efficient technologies and processes. This results in lower energy consumption, which not only reduces operating costs but also decreases greenhouse gas emissions, helping combat climate change.
- 2. Resource Efficiency:** Green manufacturing places a strong emphasis on optimizing resource use. This includes minimizing raw material waste, reusing materials when possible, and recycling materials at the end of their life cycles. This reduces the strain on natural resources and lowers waste disposal costs.
- 3. Water Conservation:** Many green manufacturing processes implement water-saving techniques and technologies. Reducing water consumption not only conserves this precious resource but also lessens the environmental impact of wastewater discharge.
- 4. Reduced Emissions:** Green manufacturing aims to minimize emissions of pollutants and greenhouse gases. This leads to cleaner air and a reduced negative impact on public health and the environment.
- 5. Waste Reduction:** Green manufacturing practices focus on minimizing waste generation. This includes both hazardous and non-hazardous waste. Less waste means lower disposal costs and less strain on landfill capacities.
- 6. Improved Air Quality:** By reducing emissions of pollutants such as volatile organic compounds (VOCs) and particulate matter, green manufacturing contributes to improved air quality in surrounding communities.
- 7. Biodiversity Preservation:** Sustainable manufacturing often involves environmentally friendly land use practices and reduced habitat disruption, contributing to the preservation of local ecosystems and biodiversity.
- 8. Longer Product Lifespans:** Green manufacturing places an emphasis on product durability and quality. Products that last longer and require fewer replacements result in less resource consumption over time.
- 9. Supply Chain Sustainability:** Green manufacturing extends its influence to the supply chain, encouraging suppliers to adopt environmentally friendly practices. This ripple effect amplifies the environmental benefits across the entire production process.

- 10. Brand Reputation and Market Access:** Embracing green manufacturing can enhance a company's brand reputation and open doors to environmentally conscious markets. Consumers are increasingly choosing products and services from businesses with strong sustainability credentials.
- 11. Regulatory Compliance:** Adhering to green manufacturing practices helps companies stay in compliance with environmental regulations, avoiding costly fines and legal issues.
- 12. Innovation and Cost Savings:** Sustainability often drives innovation, leading to the development of more efficient processes and products. These innovations can result in cost savings in the long run.
- 13. Resilience to Climate Change:** Sustainable manufacturing practices can make businesses more resilient to climate-related risks by reducing exposure to resource scarcity and extreme weather events.

The economic impact of green practices on MSMEs, including cost reduction and revenue generation.

The economic impact of green practices on Micro, Small, and Medium Enterprises (MSMEs) is multifaceted, encompassing both cost reduction and revenue generation. While the initial adoption of green practices may require investment, the long-term economic benefits often outweigh the upfront costs. Here's a breakdown of the economic impact of green practices on MSMEs:

Cost Reduction:

- 1. Energy Savings:** Implementing energy-efficient technologies and processes can significantly reduce energy consumption and related costs. MSMEs can benefit from lower electricity bills and reduced operating expenses.
- 2. Resource Efficiency:** Green practices focus on optimizing resource use, including raw materials, water, and chemicals. By minimizing waste and making efficient use of resources, MSMEs can lower their procurement costs.
- 3. Waste Reduction:** Implementing waste reduction and recycling measures can lead to reduced waste disposal and landfill costs. This not only saves money but also aligns with environmental regulations.
- 4. Lower Compliance Costs:** Many regions offer incentives and tax benefits for businesses that adopt green practices. MSMEs can take advantage of these incentives to reduce compliance-related expenses.
- 5. Maintenance and Lifecycle Cost Savings:** Green technologies often have longer lifespans and require less maintenance than conventional alternatives. This can lead to reduced repair and replacement costs over time.

Revenue Generation:

1. **Market Differentiation:** MSMEs that adopt green practices can differentiate themselves in the market. Consumers are increasingly seeking environmentally responsible products and services, potentially leading to higher sales and market share.
2. **Access to Sustainable Markets:** Green certification and eco-labeling can open doors to markets that prioritize sustainability. MSMEs can tap into these markets to expand their customer base and generate additional revenue streams.
3. **Enhanced Brand Reputation:** A commitment to sustainability can enhance a company's brand reputation. Positive public perception can attract new customers and strengthen loyalty among existing ones.
4. **Product Innovation:** Green practices often drive product innovation. MSMEs that develop eco-friendly products or services may find new market niches and revenue opportunities.
5. **Partnerships and Collaborations:** Companies that embrace sustainability may be more attractive partners for collaborations with larger organizations, leading to business growth and revenue generation.
6. **Government Contracts and Grants:** Governments and public institutions often prefer to work with environmentally responsible suppliers. MSMEs that adopt green practices may be eligible for government contracts and grants, leading to increased revenue.
7. **Cost Savings Passed to Customers:** If MSMEs can reduce their production costs through green practices, they may choose to pass these savings on to customers through competitive pricing, potentially increasing sales.
8. **Long-Term Resilience:** By reducing resource dependence and exposure to price fluctuations, MSMEs can enhance their resilience to economic uncertainties, contributing to long-term revenue stability.

Analyzing the role of government policies and incentives in promoting green manufacturing initiatives

Government policies and incentives play a crucial role in promoting green manufacturing initiatives among Micro, Small, and Medium Enterprises (MSMEs). These policies are designed to encourage businesses to adopt environmentally friendly practices, reduce their environmental impact, and contribute to sustainable development. Here's an analysis of the key roles of government policies and incentives in this context:

1. Financial Support and Incentives:

Governments often offer financial incentives, such as grants, subsidies, and tax credits, to encourage MSMEs to invest in green technologies and practices.

These incentives can significantly offset the initial costs of adopting green manufacturing, making it more financially viable for MSMEs.

2. Research and Development (R&D) Funding:

Governments may provide funding for research and development projects related to green manufacturing technologies and processes.

This R&D support helps MSMEs innovate and develop cost-effective and sustainable solutions.

3. Regulatory Frameworks:

Governments establish environmental regulations and standards that businesses must adhere to.

These regulations create a level playing field and set clear expectations for green manufacturing practices.

4. Environmental Certification and Labeling:

Governments often support and promote environmental certification and labeling schemes, such as ENERGY STAR, Eco-labels, and LEED certification.

These certifications help MSMEs communicate their commitment to sustainability to consumers and gain a competitive edge in the market.

5. Technical Assistance and Training:

Governments may provide technical assistance and training programs to help MSMEs understand and implement green manufacturing practices.

This support enhances the knowledge and capacity of MSMEs to adopt sustainable initiatives.

6. Market Access and Public Procurement:

Some governments give preference to environmentally responsible suppliers in public procurement contracts.

MSMEs that engage in green manufacturing may have an advantage in securing government contracts, expanding their market reach, and generating revenue.

7. Information Dissemination:

Governments often serve as sources of information on best practices, available technologies, and resources related to green manufacturing.

Access to such information can guide MSMEs in making informed decisions about adopting sustainable practices.

8. Emissions Reduction Targets:

Governments may set emissions reduction targets and encourage MSMEs to align their operations with these goals.

Achieving these targets can lead to positive public relations and compliance with international agreements.

9. Collaborative Initiatives:

Governments may facilitate collaboration between MSMEs, industry associations, research institutions, and non-governmental organizations (NGOs) to promote green manufacturing.

These partnerships can lead to knowledge sharing, innovation, and the development of sustainable supply chains.

10. Environmental Impact Assessments:

Governments often require businesses to conduct environmental impact assessments for certain projects.

These assessments help MSMEs identify potential environmental risks and find ways to mitigate them, ensuring responsible and sustainable growth.

11. Long-Term Planning and Stability:

Government policies provide MSMEs with a stable regulatory environment that encourages long-term planning and investment in green manufacturing.

Findings of the Study:

Green manufacturing can offer MSMEs significant advantages, including cost savings through resource efficiency, improved market competitiveness, and reduced environmental impact. However, access to suitable financing mechanisms is crucial for MSMEs to initiate and sustain green initiatives. The study aims to provide practical insights and recommendations for both MSMEs and financial institutions to facilitate the adoption of green manufacturing practices and ensure the long-term sustainability of these enterprises. This research contributes to the ongoing discourse on sustainability and the vital role that MSMEs play in achieving environmental and economic objectives.

Conclusion:

Green manufacturing and financing holds immense promise for the sustainable growth of Micro, Small, and Medium Enterprises (MSMEs). This research has shed light on the critical importance of embracing environmentally responsible practices while securing the necessary financial support to do so. As the global community grapples with the challenges

of environmental degradation and climate change, MSMEs play a pivotal role in shaping a more sustainable and resilient future.

In light of these findings, it is clear that the convergence of green manufacturing and financing offers MSMEs a path to both economic prosperity and environmental responsibility. To capitalize on this potential, collaboration between governments, financial institutions, industry associations, and MSMEs themselves is paramount. By working together, we can overcome the barriers, seize the opportunities, and drive a collective transformation toward a more sustainable and resilient future for MSMEs, the broader economy, and the planet as a whole.

As we move forward, the pursuit of green manufacturing and sustainable financing will continue to evolve, guided by the principles of environmental stewardship, economic growth, and social equity. MSMEs are poised to play a central role in this journey, contributing not only to their own success but also to the greater good of society and the preservation of our natural resources for generations to come.

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INDUSTRY 4.0 IN INDIA: EMBRACING THE DIGITAL REVOLUTION IN MANUFACTURING

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Abstract

India's manufacturing sector has been a key driver of its economic growth, contributing significantly to employment and GDP. However, to remain globally competitive, Indian manufacturers need to adopt advanced technologies and processes. Industry 4.0 provides the perfect framework for this transformation. By leveraging digital technologies, Indian manufacturers can enhance their productivity, improve product quality, reduce costs, and respond more effectively to changing market demands. The world is currently witnessing a significant transformation in the manufacturing sector. With the advent of Industry 4.0, the world is currently witnessing significant changes in the manufacturing sector. The fourth industrial revolution is characterized by the integration of digital technologies such as the Internet of Things (IoT), artificial intelligence (AI), big data analysis and robotics into production processes. India, with its growing economy and vast manufacturing sector, has also embraced this digital revolution, paving the way for a new era of manufacturing excellence.

Introduction

Industry 4.0 takes digitalization to a whole new level with connections between physical and digital spaces through the Internet of Things (IoT), big data and analytics, cloud, autonomous robots, artificial intelligence, machine learning and augmented reality, as well as access to real-world resources. temporal data. Industry 4.0 is revolutionizing the way companies manufacture, improve and distribute their products. Manufacturers are integrating new technologies, including the Internet of Things (IoT), cloud computing and analytics, artificial intelligence and machine learning, into their production facilities and throughout their operations. These smart factories are equipped with advanced sensors, integrated software and robots that collect and analyze data and enable better decision making. Even more value comes when data from manufacturing operations is combined with operational data from ERP, supply chain, customer service and other business systems to create a whole new level of visibility and insight into previously hidden information. These digital technologies are leading to greater automation, predictive maintenance, self-optimizing process improvements and, most importantly, new levels of efficiency and responsiveness to customers that were not previously possible. The goal of Industry 4.0 is to enable companies to make faster and smarter decisions while minimizing costs and human intervention.

Digital India

Digital India is a flagship program of the Government of India aimed at transforming India into a digitalized society and knowledge economy. It has the following goals:

- ❖ Digital infrastructure as an essential tool for every citizen: This includes the availability of high-speed internet to all citizens, building a digital identity for life, providing a mobile phone and a bank account to all citizens, easy access to public services, etc. in a secure cyberspace .
- ❖ On-demand management and services: includes the seamless integration of government services between ministries or jurisdictions, the provision of real-time services on online and mobile announced as part of the Digital India Initial platforms, electronic and cashless financial transactions, and the use of geographic information systems (GIS) for support systems decisions and development.
- ❖ Digital Citizenship: includes digital literacy, widely available resources in local languages, collaborative platforms for participation in governance and virtual rather than physical presentation of documents.

Some key Digital India initiatives relevant to Industry 4.0 includes:

- ❖ Center of Excellence for Internet of Things (COE-IT): The Center for Internet of Things was announced as part of the Digital India Initiative, which aims to rapidly launch the IoT ecosystem by leveraging the strengths of Indian IT and helping the country take a leading role in the convergence of space hardware and software. The main goal of the center is to develop innovative applications and domain functions. Additionally, the center will help create employable talent, a startup community and an entrepreneurial ecosystem for 45 IoT. It was created in collaboration with NASSCOM and the strategic partners are Bosch, Intel, GE, Cisco, TCS and Microsoft.
- ❖ Electronics Development Fund (EDF): Part of the government's Digital India program to develop the Electronic Systems Design and Manufacturing (ESDM) sector to achieve 'zero net imports' and make India an ESDM hub too to meet Indian domestic demand than exports. To this end, the Electronic Development Fund (EDF) was created as a "fund of funds" to participate in professionally managed "children's funds" which in turn provide venture capital to companies developing new technologies in the fields of electronics and nanoelectronics. and information technology (IT) National Supercomputing Mission(NSM): The National Supercomputing Mission aims to strengthen national academic and research and development institutions across the country by creating a vast supercomputing network with more than 70 high-performance computing facilities. These supercomputers will also be connected to the National Supercomputing Network through the National Knowledge Network (NKN).

Elements of Industry 4.0

- ❖ **Huge amount of data:** The system collects too much data, making it difficult to identify relevant information and trends that can lead to intelligent analysis. Nowadays, enormous data analysis techniques are emerging. They help determine the performance of an individual component and its operating limits to prevent future production problems and take preventive measures.
- ❖ **Cloud Computing:** There has been a big change in the use of cloud solutions in the industry. The cloud will be used for applications such as remote services and performance benchmarking, and its role in other business areas will continue to grow. For example, commercially available smart watches have turned our wrists into smartphone cases that allow us to send text messages, make phone calls, and more. Devices like Fitbit and Jawbone have helped revolutionize the fitness world. With the right connections and data, IoT can solve congestion and reduce noise and pollution.
- ❖ **Simulation:** You can use system simulations to evaluate various scenarios. Once scenarios are assessed, cost-effective solutions can be developed, tested and implemented much more quickly, resulting in lower costs and faster time to market.
- ❖ **Autonomous robots:** They are used to automate production processes in various industries and are based on the concept of the Internet of Things (IoT). This allows computer devices and machines to communicate with each other.
- ❖ **Autonomous mobile robots (AMR)** can move materials around the factory by avoiding obstacles, coordinating with fleet colleagues, and identifying pickup and delivery locations in real time. By connecting to a central server or database, the activities of robots can be coordinated and automated better than ever. They can perform tasks intelligently and with minimal human intervention. i.e. ASRS stacker cranes, roller shutter trolleys, etc.
- ❖ **Augmented Reality (AR)** Increasingly popular, augmented reality efficiently provides real-time information to help users better integrate and interact with electronic systems. Examples include providing part repair information that can be viewed on various devices or training personnel using 3D simulations and visualizations of the plant or equipment.
- ❖ **Cybersecurity:** Information security will become critical as we move away from closed systems and toward greater connectivity via the Internet of Things and the cloud. Security and reliability enable the successful implementation of a truly modern and digital production workflow that takes full advantage of a connected environment.
- ❖ **System integration:** In most cases, systems are highly automated in their operation and have difficulty communicating with other systems. Standards and open architecture facilitate the transfer of information to both the company and the customer/end user.

This may include establishing common languages for data exchange, such as JDF for task information.

- ❖ **Additive Manufacturing:** This is becoming increasingly important for low-volume applications or for producing unique parts or customized products. This information is used directly by customers or suppliers to improve projects and thus increase efficiency, flexibility and profitability.
- ❖ **Edge computing:** The demands of real-time manufacturing operations mean that some data analysis must be performed at the “edge” where the data is created. This minimizes the delay between data generation and the required response. For example, detecting a safety or quality issue may require near real-time equipment intervention. The time required to transfer data to the corporate cloud and then to the factory can be prohibitive and depends on the reliability of the network. Using edge computing also means data stays close to the source, reducing security risks.
- ❖ **Digital Twin:** Digital transformation through Industry 4.0 has enabled manufacturers to create digital twins, which are virtual replicas of processes, production lines, factories and supply chains. A digital twin is created by collecting data from internet-connected sensors, devices, controllers, and other IoT objects. Manufacturers can use digital twins to increase productivity, improve workflows and design new products. By simulating a production process, for example, manufacturers can test changes to the process to find ways to minimize downtime or improve capacity.

Trends in Industry 4.0

Below are the three most important Industry 4.0 trends that are changing the way of life of industrial companies and their employees today:

- ❖ **Digitalization:** Production processes in all sectors, from high technology to the plant industry, are now being transformed by digital technologies .
- ❖ **Industrialization:** Companies are already integrating these technologies for improvement and development purposes.
- ❖ **Optimization:** Advanced manufacturers are discovering that improving the production process of even the simplest products opens up new development opportunities.

Conclusion

Industry 4.0 will revolutionize manufacturing around the world, just like the first three industrial revolutions. Thanks to global supply chains and highly interactive markets, this revolution will be completely different than previous ones: it will happen much faster and bring previously unexpected results. It will highlight the fact that small changes in one area of the manufacturing ecosystem will result in significant changes across the entire ecosystem due to the connectivity throughout the supply chain and the speed of

information dissemination. Also Industry 4.0 enables the flow of information not only from the manufacturer to the product, but also between manufacturers, products and especially customers. The ability to embrace Industry 4.0 and take advantage of opportunities that arise quickly (and in many cases unexpectedly) will be key to success in the new global marketplace. Taking this innovation from concept to mass product will be critical to success. Equally important will be ensuring a talent pipeline within 's manufacturing workforce, enabling to rapidly innovate Industry 4.0.

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ROLE OF MSME's IN ECONOMIC SELF RELIANCE

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Introduction

Micro, Small, Medium Enterprises (MSME's) are entities that are involved in production, manufacturing and processing of goods and commodities.

The concept of MSME was first introduced by the government of India through the Micro, Small & Medium Enterprises Development (MSMED) Act, 2006.

Importance and Features of MSME's

The MSME sector is considered the backbone of the Indian economy that has contributed substantially to the economic development of the nation. It generates employment opportunities and works in the development of backward and rural areas. India has approximately 6.3 crore MSMEs.

In addition, due to the following features, they are considered a viable source of income for those looking to venture into the manufacturing industry

Export Promotion and potential for Indian products

- ❖ Funding – Finance & Subsidies
- ❖ Government's Promotion and Support
- ❖ Growth in demand in the domestic market
- ❖ Less Capital required
- ❖ Manpower Training
- ❖ Project Profiles
- ❖ Raw Material and Machinery Procurement

MSMEs contribute to approximately 8% of India's GDP, employ over 60 million people, have an enormous share of 40% in the exports market and 45% in the manufacturing sector. Hence, they are of paramount importance for overall economic development of India.

Government Scheme Available for MSME

- ❖ Atma Nirbhar Bharat Abhiyan
- ❖ Aadhaar Udyog Free Scheme
- ❖ MSME Samadhaan
- ❖ Udyog Aadhar
- ❖ Pradhan Mantri Mudra Yojana Scheme
- ❖ Zed Scheme
- ❖ Make in India
- ❖ Stand up India

MSMEs have a crucial role to play in achieving the objectives of the Atma Nirbhar Bharat Abhiyan. They are key drivers of employment, innovation, and exports, and their growth is essential for India's economic development. The following are some of the ways in which MSMEs can contribute to the self-reliance of India:

Promoting Indigenous Manufacturing

One of the main objectives of the Atma Nirbhar Bharat Abhiyan is to promote indigenous manufacturing and reduce dependence on imports. MSMEs can play a critical role in achieving this objective by producing goods that are made in India. With the right support and incentives, MSMEs can manufacture high-quality products that can compete with imported goods and create a self-reliant economy.

Creating Employment Opportunities

MSMEs are significant employers in India and contribute significantly to job creation. With the right support and incentives, MSMEs can create more employment opportunities, especially in rural areas, where job opportunities are scarce. This will not only help in reducing unemployment but also contribute to the overall economic growth of the country.

Encouraging Innovation and Entrepreneurship

MSMEs are known for their innovative and entrepreneurial spirit. With the right support and incentives, they can develop new technologies, products, and services that can drive economic growth and make India self-reliant. The government has launched several initiatives, such as the Startup India and Make in India programs, to encourage innovation and entrepreneurship among MSMEs.

Promoting Exports

MSMEs are significant contributors to India's exports, and their growth is essential for boosting the country's exports. With the right support and incentives, MSMEs can produce

goods that are globally competitive and increase India's share in the global market. This will not only promote self-reliance but also generate foreign exchange for the country.

The Aadhaar Udyog Free Scheme can empower MSMEs in several ways:

Simplified Registration Process

The Aadhaar Udyog Free Scheme simplifies the registration process for MSMEs, making it hassle-free and paperless. This eliminates the need for any documentation or paperwork, reducing the time and effort required for registration. This simplification can encourage more MSMEs to register themselves and benefit from the various government schemes and incentives.

Increased Access to Finance

MSMEs often face challenges in accessing finance due to lack of collateral, inadequate credit history, and other factors. With the Aadhaar Udyog Free Scheme, MSMEs can easily register themselves and obtain a Udyog Aadhaar Memorandum (UAM) number, which is necessary to avail of various government schemes and incentives. This can improve their creditworthiness and increase their access to finance.

Ease of Doing Business

The Aadhaar Udyog Free Scheme can also improve the ease of doing business for MSMEs. The simplified registration process can reduce the time and effort required for compliance and documentation, freeing up resources for business operations. This can improve the overall efficiency of MSMEs and make them more competitive.

Greater Transparency and Accountability

The Aadhaar Udyog Free Scheme can also increase transparency and accountability in the MSME sector. With the digitisation of the registration process, there is greater visibility and traceability of MSMEs. This can reduce the incidence of fraud and promote fair competition.

Samadhaan

MSME Samadhaan is made up of two words that are "MSME" which means micro, small, and medium enterprises. The second word is "Samadhaan" which means solution in Hindi. After combining the meaning of both the words "MSME Samadhaan" is a platform that will solve the issue of related to delayed payment of MSME. Hence we can say that Samadhaan is an online platform for the recovery of delayed payment of MSME.

Samadhaan portal helps MSMEs to get back their delayed payment in a timely manner. The main focus has been given to timely discovery because MSMEs are small businesses

and their businesses are running on the basis of the money that comes through their daily earning. If that money does not come their business will be shut down. Last five decades, data shows that MSMEs have played a very important role in the growth of the Indian economy. This means if their work is hampered it will directly impact the Indian economy. Hence the government every now and then comes up with many schemes that can help MSME and MSME Samadhaan is one of them.

Udyog Aadhar

Udyog Aadhar is a Unique Identification Number issued to Micro, Small and Medium Enterprises (MSMEs). It is issued by the Ministry of Micro, Small and Medium Enterprises. But now the Udyog Aadhar is revised into Udyam. New MSMEs need to register now under the Udyam Registration Portal and obtain Udyam Certificate.

All the existing enterprises registered under Udyog Aadhar should register again on the Udyam Registration portal. The enterprises registered under Udyog Aadhar before 30th June 2020 will continue to be valid till 31st March 2021. Thus, MSMEs who have a Udyog Aadhar Certificate need to re-register themselves under the Udyam Registration portal before 31st March 2021.

Pradhan Mantri Mudra Yojana Scheme

Pradhan Mantri Mudra Yojana (PMMY) is a flagship scheme by the Government of India, launched in April 2015, to provide financial support to small and micro-enterprises. It falls under the broader Mudra initiative. The primary objective of PMMY is to offer loans to individuals, particularly those from underprivileged and economically weaker sections of society, who want to start or expand their small businesses.

PMMY categorizes loans into three stages:

Shishu Loan

Shishu loan is a primary scheme of mudra bank and in that scheme, you can get upto 50,000 rupees 2 start your business. Now apply mudra Shishu loan online, today. We are sharing details of documents which require to get MUDRA Shishu loan under PMMY MUDRA Bank Scheme. Please read the entire list carefully because of all the documents required for Mudra Bank Loan.

Kishore Loan

You can avail a Mudra Kishore loan as a part of the Pradhan Mantri Mudra Yojana (PMMY) scheme. This particular initiative was launched by the Government of India to give Micro, Small and Medium Enterprise owners like you the capital infusion you need. As a Mudra Kishore loan, you can avail anywhere between ₹50,000 to ₹5 Lakhs

depending on your scale of operations, eligibility, and monetary requirement. The money acquired as a Mudra Kishore loan can help you meet working capital requirements, buy new machinery or even consolidate high interest debt. On an average, about 40 percent of the amount sanctioned as Mudra loans is given to entrepreneurs like you in the form of Kishore loans.

Mudra Tarun Loan

If you are an MSME owner who is looking to start a business or expand it, a Mudra Tarun loan can come to your rescue. Given as a part of the Pradhan Mantri Mudra Yojana, the Mudra Tarun loan can help you secure funding of anywhere between ₹5 to ₹10 lakhs. You can use this money to set up a new business, expand your operations or even meet heavy working capital requirements. This article will take a deep dive into the Mudra Tarun loan variant and tell the reader everything they need to know about it.

Zed Scheme

The Government has launched a new scheme namely “Financial Support to MSMEs in ZED Certification Scheme”.

The objective of the scheme for promotion of Zero Defect and Zero Effect (ZED) manufacturing amongst micro, small and medium enterprises (MSMEs) and ZED Assessment for their certification so as to:

- ❖ Develop an Ecosystem for Zero Defect Manufacturing in MSMEs.
- ❖ Promote adaptation of Quality tools/systems and Energy Efficient manufacturing.
- ❖ Enable MSMEs for manufacturing of quality products.
- ❖ Encourage MSMEs to constantly upgrade their quality standards in products and processes.
- ❖ Drive manufacturing with adoption of Zero Defect production processes and without impacting the environment.
- ❖ Support ‘Make in India’ campaign.
- ❖ Develop professionals in the area of ZED manufacturing and certification.

Make in India

Make in India is a Government of India scheme launched by Prime Minister Narendra Modi in 2014 intended to boost the domestic manufacturing sector and also augment investment into the country. This article comprehensively covers details on objectives, schemes & initiatives under it, 25 focus sectors, advantages, challenges, & progress related to the Make in India Scheme.

Stand up India

The Stand up India scheme aims at promoting entrepreneurship among women and scheduled castes and tribes. The scheme is anchored by Department of Financial Services (DFS), Ministry of Finance, Government of India.

Stand-Up India Scheme facilitates bank loans between Rs 10 lakh and Rs 1 Crore to at least one Scheduled Caste (SC) or Scheduled Tribe (ST) borrower and at least one woman borrower per bank branch for setting up a greenfield enterprise. This enterprise may be in manufacturing, services or the trading sector. In case of non-individual enterprises at least 51% of the shareholding and controlling stake should be held by either an SC/ST or woman entrepreneur.

Conclusion

In a nutshell, MSMEs have emerged as an engine of growth in Indian economy by way of their significant contribution to GDP and industrial production. The MSMEs needs to improve its productivity and quality, reduce costs and innovate. Government policy should help MSMEs to increase their efficiency and competitiveness within a market driven economy. In order to prevent the major sickness in MSMEs, new approaches like the cluster approach or harnessing the power of industry association should be encouraged. To keep this growth engine on the right path and direction, it is necessary to put emphasis on the formulation of friendly policies, conducive operating environment, improvement of proper infrastructure, securing peace and security, arranging proper finance, efficient manager and arranging appropriate modern technology for MSMEs.

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FINANCIAL INCLUSION AND PERFORMANCE OF MSMEs

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Abstract

MSMEs form one of the pillars of the Indian economy; a vast majority of them are still in the informal sector. It contributes significantly to GDP and export earnings. MSMEs face unique challenges, often related to access to finance, technology, and market networks. Financial inclusion is viewed as the ability of some individual to access and use basic financial services like savings, loans and insurance designed in a manner that is reasonably convenient, reliable and flexible. Financial inclusion is about providing access to an adequate range of safe, convenient and affordable financial services to needy and other weak groups, including low income, rural and undocumented persons, who have been underserved or excluded from the formal financial sector. The development of entrepreneurship has become an important aspect of our plan priorities. Government has taken several measures to encourage entrepreneurs to set up small scale and micro enterprises through the schemes of MSME sectors. To sustain the growth of MSMEs, governments worldwide implement various policies and support mechanisms to nurture, to support the budding entrepreneurs and companies and to advocate them in each decision they make. This paper attempts to find out the performance of MSMEs and financial inclusion of MSMEs.

Keywords: *Micro, Small and Medium Enterprises, Financial Inclusion, Entrepreneurs*

Introduction

The Micro Small and Medium Enterprises (MSMEs) sector is a major contributor to the socio-economic development of the country. In India, the sector has gained significant importance due to its contribution to Gross Domestic Product (GDP) of the country and exports. The sector has also contributed immensely with respect to entrepreneurship development especially in semi-urban and rural areas of India. The Government of India has envisioned doubling the Indian economy to US\$ 5 trillion in five years. In order to achieve this goal, career opportunities for the young population have been generated and MSMEs have the potential to serve as a key employment generator. Therefore, the government has taken up promotion of MSMEs in order to create new jobs in the sector. Further, the government aims to enhance MSME's share in exports and its contribution to GDP. In order to achieve these targets, the government should invest in providing more back-end services to improve performance of the MSME sector as it supplies goods and services to big industrial enterprises. Lack of technology-based production activities and low investment in R&D activities are bottlenecks hindering the sector to become competent. Globally available technology could be subsidies by the government so that the

product quality of MSME players can be improved using the existing resources. This also requires the help of academic institutions in the form of providing research and development (R&D) services for product innovation.

The Concept of Financial Inclusion

Financial inclusion is viewed as the ability of some individual to access and use basic financial services like savings, loans and insurance designed in a manner that is reasonably convenient, reliable and flexible. Financial inclusion can reduce social disparities and poverty and increase economic growth and national financial efficiency. Access to financial services is provided to all segments of the society. Currently, MSMEs are still experiencing difficulties in terms of capital. Access to financial services in banking is also still difficult due to the lack of financial information on the MSMEs when compared to large, more transparent companies; thus, banks have more difficulty in assessing the creditworthiness of MSMEs. As financial access grew, so did social mobility. However, certain sections have lagged behind due to myriad reasons ranging from social barriers to a lack of access to education and financing. One of these sections is made up of a multitude of micro, small and medium enterprises (MSMEs), which form the foundation of the economy.

Performance of MSMEs in Tamil Nadu

Tamil Nadu continues to be a vibrant industrial State, with a large base of big factories and small units. The State has an estimated seven lakh registered micro, small and medium enterprises (MSME), or about 15.1 per cent of all such units in the country, with Rs 32,000 crore of an estimated investment in them.

Tamil Nadu is a leader in Auto parts and components, Readymade Garments and Leather and leather goods. In order to give special drive the following 13 Industries have been identified as thrust sector

1. Electrical and electronic industry
2. Leather and leather goods
3. Auto parts and components
4. Drugs and pharmaceuticals.
5. Solar energy equipment.
6. Gold and Diamond Jewellery for exports.
7. Pollution Control equipments.
8. Sports Goods and Accessories.
9. Cost effective building material.
10. Readymade Garments.
11. Food processing
12. Plastic and
13. Rubber

Conclusion:

MSME sector has induced the economic activity in India and all over the world apart from providing self-assurance, sustainable economic development, removing poverty by providing employment opportunity to youths. Indian Government and Tamil Nadu Government have taken various efforts to improve the employment opportunity, exports and Country's GDP. Financial inclusion requires particular attention to specific portions of the population historically excluded from the formal financial sector either because of their income levels and volatility, gender, location, type of activity or level of financial literacy.

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DIGITAL REVOLUTION: MSMEs EMBRACING M-COMMERCE AND MOBILE APPS

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Abstract

The advent of mobile technology has revolutionized the way businesses operate and engage with their customers. Mobile Commerce, or M-Commerce, has emerged as a significant driver of economic growth globally. Micro, Small, and Medium Enterprises (MSMEs) stand to benefit immensely from this digital transformation. In this article, we will explore the opportunities that M-Commerce and mobile apps present to MSMEs and how they can leverage this technology for sustainable growth. From Uber to Airbnb mobile apps are changing the ways business is done and opening numerous new avenues for business and creating new markets. Technology has made asset sharing a reality, leading to efficient utilization of resources at costs much lower than were thought possible. Markets are becoming more interconnected and communication is vitally ingrained in our business transactions. Technology adoption is becoming more affordable as well as a necessity to survive in today's ultra-competitive business environment. Only brick and mortar or businesses without presence on the internet would be at a big disadvantage and may even close down sooner than later. Flexibility characteristic of MSMEs business makes it easier to make a decision on a large scale, such as new technology adoption, modifying or even revamping an existing business process to meet market demands and avail existing or potential opportunities. M-Commerce, therefore, holds great benefits for MSMEs to grow their revenues greatly by being available at the fingertips of millions of potential buyers around the world.

Keywords: M-Commerce, Mobile apps, MSMEs

Introduction

Technology is changing changes our lives at a pace faster than ever. Businesses and societies are being shaped by the new technological advancements. Mobile apps are growing at an enormous rate, it seems there is the app for everything, from food, groceries, and clothing, booking a taxi ride to renting or sharing a home. MSMEs need to adopt and keep pace with this ever-changing technology to grab these opportunities available in abundance. M-Commerce or mobile commerce is an online channel for sale and purchase of products, services and information through smartphones, tablet PCs, iPads and laptops using wireless technology Extensive use of ICTs is shaping our societies and businesses world today. The use of internet in general and smartphones, in particular, has grown at an

unprecedented rate worldwide. Smartphone users have grown tremendously and is projected at 2.32 billion by the end of year 2017 (www.statista.com/statistics). Smartphones bring a wealth of opportunities to businesses especially in terms of knowledge management, profiling customers, recording and tracking purchase history and buying patterns. Usability of mobile apps makes shopping more convenient and time-saving as people almost at any time have access to their phones. In today's busy world people are connected through various ICT devices, such as laptops, Tablet PCs, PDAs, iPads but predominantly smartphones which are more portable and necessary for staying in touch with work, family, and friends. Life without smartphones in this age of high technology and digitized economy is unimaginable. According to the World Bank from 1960 – 2015 the cellular phone subscription grew from 0 to 98.6%, further, low and middle-income world population had 94% cellular subscription (data.worldbank.org). According to the same data source, the internet usage worldwide accounted for 43.99% and for low and middle-income population 36.80% by the year 2015. The smartphone usage statistics worldwide and even in developing countries show exponential growth, 30.90% of the world population will be using smartphones by the year 2017 (www.statista.com/statistics). These statistics are too big to ignore for any business operating in this strongly interconnected world of digital economy. Particularly MSMEs being flexible business enterprises can hugely benefit from M-Commerce. These are typically the enterprises with limited resources in terms of finance and HR, in addition, with significant barriers to financial access larger SMEs comparatively have better access to Finance but they are a very few in number compared to micro and medium size SMEs. Limited resources mean that MSMEs cannot spend much on marketing, advertising, exploring new markets. M-Commerce has the potential to help MSMEs reach vast markets around the globe at a much lower cost, faster speed and instant communication would mean less ambiguity for both the buyer and sellers.

M-Commerce and E-Commerce

M-Commerce refers to the buying and selling of goods and services through mobile devices such as smartphones and tablets. This digital evolution has gained prominence due to the widespread availability of smartphones and the growing internet penetration worldwide. As a result, consumers are increasingly using their mobile devices to shop, pay bills, book services, and more. M-Commerce is expanding at much faster rate than the conventional E-Commerce which used PCs and laptops as the main tool. More people in developing countries have smartphones today than the PCs because they are more affordable, portable, convenient and necessary to stay in touch virtually 24/7. Unlike PCs, smartphones are always in the hands or pockets of the owners. More smartphones are 3G and 4G enabled making web browsing, communicating, socializing and shopping on the go

anytime convenient. Mobile banking and payment systems have boosted M-commerce way ahead. There are numerous mobile payment apps available in the world market today: Alipay, Paypal, Google Wallet, Apple Pay, WeChat, Venmo and Facebook Messenger to name a few. It is not uncommon in developed economies to see shoppers going to stores and malls without carrying money or the credit/ debit cards, the mobile phone does it all. In developing countries, it is comparatively less common but the trend is changing rapidly. The main barriers to mobile banking and payments in developing countries are the payment security concerns, poor I.T infrastructure, and low quality of telecom services and lack of trust. Smartphone users are more likely to buy online than those on the PCs because of the easy access which also encourages impulsive buying behavior as most people use their smartphone in their free time or while taking short breaks between works. There is an enormous number of mobile apps available including many shopping, traveling, hotel/ hostel/ house booking apps. It seems that there is app for almost everything one can think of. Airbnb for renting room, Uber for taxi ride then there is further division UberX for taxi, UberBlack, for higher priced cars for executives, UberPool for shared taxi that saves cost, Washio for laundry service, Heal for doctor check-up at your home and BloomThat for flower delivery are few of the mobile apps among many others that have changed the traditional businesses in hotel, transportation, maintenance and cleaning, real estate and grocery shopping industry.

Mobile app surfing is another phenomenon very common in smartphone users because the phone is always in reach and one's fingertips, users surf on the installed apps including shopping apps and end up buying on impulse (Kim et al. 2016). This normally does not happen so frequently with brick and mortar stores, as people don't go to shopping malls except when they plan to buy something. Further, on brick and mortar stores the variety of goods is not enough and it is not convenient to search in different departments of the store for long time which turns one off due to fatigue. For businesses, on the other hand, it offers an opportunity to target customers almost any time of the day with their products and services or send them their deals and promotions.

State of MSMEs with Respect to M-Commerce

MSMEs are indispensable for the growth of an economy, they create jobs, they are innovative, flexible, and bring prosperity to the nation. It is vital for the sustainability and growth of any country's economy to have a robust private sector and SMEs are the overwhelming majority of firms in the private sector. When it comes to technology adoption SMEs in developing countries lag behind for which the government support is found to be the most important factor in encouraging MSMEs to adopt E-Commerce. SMEs represent a huge number of firms, that is more than 95% in many countries and provides jobs in the private sector to over half of the population according to the World Bank. By the

same source, SMEs have a significant role in generating economic opportunities, ICT and Mobile technology adoption are expanding in developing countries at a great pace and can tap into clean-technology one of the high demand sectors which estimated at USD 1.6 trillion in the next ten years (www.worldbank.org). However, the market is still in its nascent stage in terms of M-Commerce share.. This trend is changing rapidly with explosive growth in technology, increasing trust in online shopping worldwide but still in many developing countries the online payment system is not developed enough, they do not have Alipay or PayPal equivalent payment platform.

Opportunities for MSMEs

Audience Expanded Market Reach: Mobile apps provide MSMEs with a platform to reach a wider beyond their physical location. With an app, a small business can tap into global markets, opening up new revenue streams.

- ❖ **Cost-Effective Marketing:** Mobile apps offer cost-effective marketing channels. Push notifications, personalized offers, and in-app advertising enable MSMEs to engage their customers directly and promote their products or services efficiently.
- ❖ **Enhanced Customer Engagement:** Mobile apps facilitate better customer engagement through features like real-time chat, customer feedback, and loyalty programs. Engaged customers are more likely to become loyal, repeat customers.
- ❖ **Streamlined Operations:** MSMEs can improve their internal processes by using mobile apps for inventory management, order processing, and customer relationship management. This leads to increased efficiency and reduced operational costs.
- ❖ **Access to Analytics:** Mobile apps provide valuable data and insights into customer behavior and preferences. MSMEs can use this data to make informed decisions, refine their marketing strategies, and tailor their offerings to meet customer demands.
- ❖ **Payment Convenience:** Integrating mobile payment solutions in apps allows MSMEs to offer convenient and secure payment options to their customers. This can lead to higher conversion rates and reduced cart abandonment.
- ❖ **Brand Building:** A well-designed mobile app can enhance the brand image of an MSME. It offers a professional and user-friendly interface, creating a positive impression on customers.
- ❖ **Expanded Market Reach:** Mobile apps provide MSMEs with a platform to reach a wider audience beyond their physical location. With an app, a small business can tap into global markets, opening up new revenue streams.

Challenges and Considerations

While the opportunities are vast, MSMEs should be mindful of certain challenges when venturing into M-Commerce and mobile app development:

- ❖ **Cost:** Developing and maintaining a mobile app can be expensive. MSMEs should carefully budget for this and explore cost-effective development options, such as outsourcing.
- ❖ **Competition:** The mobile app market is highly competitive. MSMEs must focus on offering unique value propositions and exceptional user experiences to stand out.
- ❖ **Security:** Handling customer data and payments requires stringent security measures to protect against cyber threats and data breaches. Compliance with data protection regulations is crucial.
- ❖ **User Experience:** A poorly designed app can deter users. MSMEs should prioritize user experience by ensuring their app is easy to navigate and responsive.

Problems Faced by MSMEs

MSMEs face various obstacles, difficulties in borrowing for business being the biggest hurdle. Inadequate government support and poor infrastructure such as roads, railways, bridges, and airports, transportation make it less reliable in terms of timely delivery of goods and expensive at the same time. Research has highlighted numerous other obstacles in the way of SMEs in emerging economies that include a shortage of skilled human resource, resistance to change, lack of I.T resources, security concerns and lack of support. Limited resources and lack of access to finance mean the cost of financing would be high which will increase operation cost of the business. There will be less budget for marketing, reaching out to new markets becomes difficult and costlier. Most SMEs in developing countries mainly target domestic markets. SMEs are reluctant to entering international markets owing to lack of market information, complex customs procedures, language barrier and cultural differences. Export is the most common and simple and quick way of entering foreign markets as it takes up fewer organizational resources and is less risky for the business compared to investing directly in a foreign market, joint venture, licensing and contract manufacturing . SMEs are the main source of selling domestic products and services in international markets . In spite of huge benefits that exports offer, very few SMEs actually take it. In this regard, the role of government to support SMEs in export is of great importance. Government must build necessary infrastructure for the businesses to operate smoothly and formulate policies to support export so that SMEs can stay competitive in the international markets. Research also reveals that there is a link between exporting SMEs and the E-Commerce adoption.

Transforming Troubles into Triumphs: M-Commerce Solutions for MSMEs

M-Commerce uses wireless mobile devices such as smartphones and PDAs. Smartphones and PDAs are being easy to use and a necessity has an impact on the intentions and behavioral outcome. M-Commerce can help SMEs in the following important aspects: Increasing market reach, increased revenues, improved communication with customers and suppliers, better company image, speedy process, better staff productivity. Further, empirical findings show that SMEs in Indonesia, a developing country, higher the E-commerce adoption level higher the profit. M-Commerce can help company target more customers as a result of extended market reach due to online nature of business. Extended markets mean more customers which will increase sales revenue of these SMEs. Improved communication with customers and suppliers will enhance the quality of service, better relations with customers and suppliers and less chance of ambiguity in delivering the right product or service at the right time. M-Commerce can improve the image of the company as a modern enterprise and finally, it improves the productivity of the employees as the technology enables them to perform their tasks efficiently. Online business saves the costs incurred on brick and mortar stores such as rent, salaries, insurance, decorations and other things needed for setting up a physical store. Data from eMarketer shows that more than 80% of all online shoppers use mobile shopping as well and this number is estimated to grow to 95% in the year 2019.

Mobiles have become a major E-Commerce platform, and platform for advertising, movies, TV shows and e-books. It brings innovation as in the case of Alipay, Uber, Airbnb and numerous other apps that are used every single day by millions of users around the globe. It makes enterprise efficient, effective, and competitive thus drives growth.

Conclusion

M-Commerce and mobile apps are no longer the exclusive domain of large corporations. MSMEs can harness the power of mobile technology to expand their reach, engage customers, and drive growth. However, success in this digital era requires a strategic approach, investment, and a commitment to delivering value to customers. By embracing M-Commerce and mobile apps, MSMEs can position themselves for sustainable success in the evolving business landscape. It reveals that there are several obstacles to SMEs in general and those in developing countries in particular. It also highlights how M-commerce can help in overcoming many of these obstacles facing SMEs in developing countries. For instance, extending market reach, increased revenues, reducing transaction cost and intermediaries, speeding up processes, improving communication, more productivity of staff. Many SMEs working in transport and real estate industry, for example, can register at Uber/Didi, Airbnb; for a ride or renting a room, respectively, thus tapping into a new revenue source. Alternatively, SMEs can also get a customized mobile

app to perfectly suit their business requirements and to better serve customer and that would range on average between USD2000 to USD250000 but complex apps or those involving more features and functions such as location-based features, payment synchronization, social media, in-app purchases, synchronization across device etc. would cost much higher. SMEs, especially the micro SMEs can rather choose to register on already well-known global E-commerce giants such as Alibaba, Amazon, Flipkart, eBay and Shopify among many others for reaching out to customers around the globe using their established networks. Through these giant E-commerce platforms and their Global Shipping Program (GSP), SMEs can deliver goods at a rate much lower than the normal shipping rates. Saving cost on shipping means increased profitability and increased market reach. Finally, it is also validated through the empirical research findings in Indonesian SMEs that SMEs with a higher level of E-Commerce showed higher profits as stated above in the literature. Post E-Commerce adoption results showed a significant increase in profitability.

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A STUDY ON MOBILE COMMERCE IN INDIA

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Abstract

The exchange of products and services via wireless handheld devices, such as cellular phones and personal digital assistants (PDAs), is known as mobile commerce (M-Commerce). M-Commerce, often referred to as next-generation E-Commerce, allows consumers to access the Internet without having to locate a location to plug in. People may now transfer money, purchase online, and bid on items without physically visiting a store thanks to M-Commerce and E-Commerce. While M-Commerce is conducted on mobile phones utilizing the internet, E-Commerce is done on laptops and desktop computers. M-Commerce is online shopping with a mobile device. Online transactions were first made available at any time and anywhere thanks to E-Commerce and mobile commerce, respectively. In India, there are now more mobile users and mobile internet subscribers thanks to the ubiquity, reachability, mobility, and flexibility qualities of M-Commerce. The Indian mobile commerce market has great potential, and its rate of growth portends a promising future. The market represents around 3% of the \$560 billion in sales made by US online retailers. The non-store merchants are expanding at a rate of 13.2% in the US. Only the major cities in India currently dominate online sales. India had 220 million smartphone users as of 2015, a 23% increase. By 2020, India is expected to surpass the US as the second-largest market for smartphones, behind China. This essay focuses on M-Commerce, including its benefits and drawbacks as well as its potential for expansion in India.

Keywords: M-Commerce, E-Commerce, India, Smartphone.

Introduction

M-Commerce is carried out through mobile apps. For tasks like buying tickets, transferring money, emailing, and paying utility bills, people are switching from web services to mobile ones. So, M-Commerce is taking the place of E-Commerce. While M-Commerce has many benefits, it also has drawbacks such as small screens, weak CPUs, memory restrictions, bad resolutions, inefficient data entry, a lack of WAP-enabled devices, high data speeds, and a lack of bandwidth. With approximately 83% of people in India owning a smartphone and using it to shop online on their mobile devices, the market for mobile commerce in India is expected to grow. Customers between the ages of 25 and 34 are especially using their mobile devices to shop online, with 90% of them doing so. These are some of the results that emerged from the M-Commerce Trends in India 2016. Although many customers have shopped online using their mobile devices, there is still a lot of space for expansion in terms of how frequently people purchase online. Only 53% of respondents

polled stated they had recently done any online shopping. Additionally, only 28% of respondents claimed they used their phones to shop at least once a week.

The differences between E-Commerce and M-Commerce

The world of today is very different from the world of our ancestors. Everything is quick now that the Internet has been developed and takes place online. The days of choosing a product by walking between three to four stores over a distance of a few kilometers are long gone. Nowadays, we make all decisions online before visiting a physical store, and the majority of the things are only a few clicks away. M-Commerce, mobile shopping apps, etc. are relatively new concepts compared to terminology like "E-Commerce" or "web store," which have been around for a while.

Although both concepts have different connotations, they both work to improve the lives of consumers. Please review the following table to better grasp the distinctions between M-Commerce and E-Commerce.

Table 1: Differences between E-Commerce and M-Commerce

Basis	E-Commerce	M-Commerce
Definition	Electronic Commerce (also called E-Commerce) refers to the activities of buying and selling products and services with the use of electronic systems such as the Internet.	Mobile Commerce (also called M-Commerce) refers to the process of buying and selling products and services with the use of internet/cellular data via wireless handheld devices.
History	1970's	1990's
Devices used	Computers, laptops...	Wireless handheld devices such as cell phones, iPads, tablets...
The use of the Internet	Mandatory	Not mandatory (allow the use of offline mode, might not work properly though)
Connectivity	Smaller	Larger owing to the bigger number of mobile users
Mobility	Limited	Less limited because of lighter weight and smaller size leading to easier to-carry
Reach	Only at the places where electricity and the Internet are available	Broader due to its portability

Payment Gateway	Credit cards	Caller's rate, mobile banking, or user's credit card
Usage	Less simple because of a more complicated user interface and more functions	Simple because all functions have been simplified
Platform used	Web stores	Web stores (mobile version/web app), hybrid app, native app
Cost	Less costly for the creation of a web store and the use of the internet	More costly the creation of a mobile app and use of cellular data

Review of Literature

With roughly 83% of Indians owning smartphones and using them to shop online, Indian consumers are embracing mobile commerce. Customers between the ages of 25 and 34 are especially using their mobile devices to shop online, with 90% of them doing so. These are some of the findings from the Regalix Inc. report titled "State of M-Commerce 2016." Although many customers have shopped online using their mobile devices, there is still a lot of space for expansion in terms of how frequently people purchase online. Only 53% of respondents polled stated they had recently done any online shopping. Furthermore, only 25% of those surveyed indicated they used their phones to shop at least once a week. Men are more likely than women to purchase online (63%) at least once per month, suggesting a gender gap in this area. Three platforms account for the majority of online retail: Flipkart (44%), Amazon (32%), and Snapdeal (19%). It's interesting to note that age groups differ in their preferences for these platforms, with 49% of respondents in the 18–24 age group choosing Flipkart as their preferred retailer, compared to only 35% in the 25–34 age group. In the 25–34 age range, support for Snapdeal was higher (25%) than in the 18–24 age range (just 13%). Cash-on-delivery (CoD) (34%) and free delivery (34%), are the two main variables affecting a customer's decision to shop online. 62% of clients chose COD as their preferred payment method above net banking, credit/debit cards, and mobile wallets. An overwhelming 94% of consumers said they preferred mobile applications to mobile websites as their preferred method of shopping on their phones. While 81% of respondents claimed that mobile advertisements had no impact on them, the study also indicated that women (25%) were more likely than men (17%) to claim that advertisements had an impact on their shopping habits. With 31% of those who haven't done any online shopping yet stating they planned to do so in the future, this trend is only expected to continue. What has kept 75% of such shoppers away is concern over product quality.

Objectives of the Study

- ❖ To study the concept and growth of M-Commerce in India
- ❖ To study the advantages and disadvantages of M-Commerce in India
- ❖ To study the prospects of M-Commerce in India.

Methodology of the Study

Secondary sources, currently available literature, reports, and data have all been employed to achieve the aforementioned goals. The information was gathered from numerous journals, studies, periodicals, and websites.

Tools for Mobile Commerce

The following are some of the mobile technologies that assist in contacting customers in the current market. There are many mobile solutions accessible for businesses to engage customers in business.

- ❖ SMS: SMS (Short Message Service)
- ❖ MMS: MMS (Multi-media Message Service)
- ❖ Mobile Web Applications
- ❖ Bluetooth
- ❖ Location-based marketing
- ❖ Voice

Advantages of M-Commerce

Growth of M-Commerce in India

For consumers of smartphones, numerous mobile applications are being developed. programmes used for mobile banking include State Bank Freedom from State Bank of India, iMobile from ICICI, and Axis Mobile for Android from AXIS Bank. These programmes are used for online financial transfers and utility bill payments. IRCTC Connect is used to reserve train tickets, Mpesa by Vodafone is used to send money and pay bills, and Book My Show is used to reserve movie tickets. People switching from E-Commerce to M-Commerce is a common feature of M-Commerce. The introduction of affordable smartphones and inexpensive mobile tariffs contributed to the rapid expansion of mobile internet users and, consequently, of M-Commerce in India. 60% of internet users in India use their mobile phones to access the internet. By 2019, the number is anticipated to reach 436 million, according to an IAMAI-KPMG analysis. According to research by Google India and IPSOS, 94% of Indian smartphone users have used their devices to access the internet from their phones. Mobile internet is the next BIG revolution in India. In the country, 56% of smartphone users access the internet more than once every day (the figure is 53% in the US). 40% of users surf the web daily or more. Only 6% of people (11%) in the

US never use their phone to access the Internet. Compared to 54% in the US, 76% of smartphone users in India use their handsets to browse social networking sites. 77% of smartphone owners listen to music, 33% play games, and 32% read newspapers or magazines on their devices.

10 reasons why Mobile Commerce in India may get bigger than Online Commerce

- ❖ Affordability of mobile devices
- ❖ Doing things on the go
- ❖ Mobile Internet connectivity
- ❖ Mobile Payments
- ❖ Security
- ❖ Bridging the gap between E-Commerce and conventional stores
- ❖ Low tariffs - High revenue
- ❖ The greater target audience for advertisements
- ❖ Government policies
- ❖ Personalization

M-Commerce Market India: Share and Sales Remain Positive

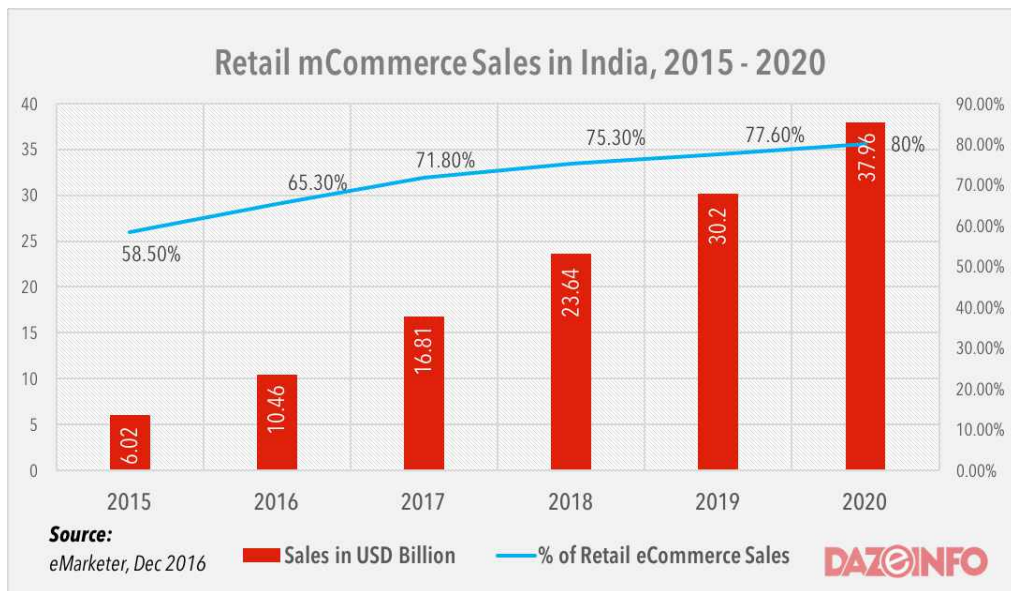


Figure 1: Retail M-Commerce Sales in India, 2015 - 2020.

By 2020, India's retail M-Commerce industry will hold 80% of the country's retail eCommerce. The M-Commerce industry in India has gained momentum thanks to the rapid usage of smartphones, mobile internet, and apps. By 2020, the Indian mCommerce business is anticipated to account for \$37.96 billion in sales or 80% of the country's E-

Commerce market. Increased use of smartphones and the internet has led to a surge in M-Commerce in India. Currently, 331 million people in a nation of 1.3 billion people use cell phones. In India, there were 371 million mobile internet users as of June 2016, and that number is predicted to rise to 500 million by 2017. These numbers show that India's E-Commerce sector which relies on mobile devices has only just begun to explore its full potential.

Disadvantages of Mobile Commerce

- ❖ Mobile devices don't have large screens like desktops or laptops, so consumers may get tired of navigating endlessly to select a single item from thousands. Rates of shopping are impacted.
- ❖ Every new technology starts with certain issues. Since M-Commerce is a new application, people occasionally resist changes that are undergoing rapid change. Due to their habit of purchasing goods via E-Commerce.
- ❖ Every company has unique risks. Mobile commerce is a market that is expanding and where a lot of investment is risky. because technology is constantly evolving.
- ❖ Furthermore, the wireless network has less security, increasing the likelihood of data hijacking. Mobile commerce requires 3G's fast connectivity. Otherwise, the user's experience with the entire product-buying procedure will become stressful.

Conclusion

People are using mobile applications to pay their utility bills, transfer funds, reserve train tickets, buy cinema tickets, and other things because of the features of M-Commerce. People have been drawn to conduct transactions on mobile devices by the development and low cost of smartphones, the reduced mobile internet fee, and the busy lives of people. Smartphones were created to get around M-Commerce's drawbacks. The number of daily transactions conducted via mobile devices has skyrocketed in the nation over the past few years as a result of expanding smartphone access and rising mobile Internet usage. According to a survey published last year by the market research firm Zinnov, India's mobile commerce sector would grow from \$2 billion in 2014 to \$19 billion in 2019. Without a doubt, there is room for improvement in the specialized areas of mobile commerce, such as safe transactions, an improved shopping experience, and improved visuals. Mobile commerce ushers in a new era of shopping aside from this.

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A STUDY ON MOBILE COMMERCE IN INDIA

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Abstract

Mobile Commerce is the subset of e-commerce, which includes all e-commerce transactions, carried out using a mobile (hand held) device. This paper attempts at figuring out the relevance and potential role that m-commerce can play in the development of business environment, the use of wireless handheld devices such as cellular phones and laptops to conduct commercial transactions online. Mobile commerce transactions continue to grow, and the term includes the purchase and sale of a wide range of goods and services, online banking, bill payment, information delivery and so on.

Keywords: *M-commerce, environment, commercial, transactions, information.*

Introduction

E-commerce, or electronic commerce, refers to the buying and selling of goods and services online using the internet. This can include transactions between businesses, between businesses and consumers, and between consumers themselves. E-commerce has grown rapidly over the last few decades and has become an important part of the global economy.

M-commerce, or mobile commerce, is a subset of e-commerce that refers specifically to transactions conducted using mobile devices, such as smartphones and tablets. M-commerce includes not only online purchases made through mobile devices, but also mobile payments, mobile banking, and other transactions facilitated by mobile technology. Both e-commerce and m-commerce have become increasingly important in recent years as more and more people have gained access to the internet and mobile devices. They offer numerous benefits, including convenience, flexibility, and access to a wider range of products and services.

Characteristics and Limitations

Mobile commerce has characteristics that make it significantly different to E-commerce using desktops and laptops:

- ❖ Mobile devices tend to have limited space: a typical Smartphone or tablet would have less than 10% storage space compared to desktops and laptops.
 - ❖ Mobile devices also have significantly smaller display screens to allow easier mobility.
- This means the design of websites, apps, and applications for M-commerce needs to

take into consideration what are the essential requirements needed to fit into these limited displays.

- ❖ Mobile devices need to operate on battery for longer hours. This feature is essential if the device to be considered to be true mobile. Long and continuous use of the processing power of the mobile devices would drain the battery.
- ❖ Limited processing power and processing memory Random Access Memory (RAMs). Typical mobile devices are not equipped to perform extensive processing as traditional desktops and laptops. The processor is designed to self-cool without the need for a fan to keep the mobile devices both slim and reduce the use of the battery. Thus many traditional applications could not run efficiently on mobile devices.
- ❖ Internet traffic on mobile devices needs to consider that many mobile devices would be using mobile network. Both the devices and the network cannot handle extensive traffic although the new generations of tablets and smart phones have been designed to handle faster and better Internet traffic at speeds now reaching 5G or 100GB per second.
- ❖ The operating systems on mobile devices have been designed not to be large and reduce its extensive use of the processor and RAMs. This has come at a cost in reducing the tools and options that would have been otherwise available in typical desktop or laptop.
- ❖ Mobile devices come with extensive features not found traditionally in desktop or laptop devices. Features include: high-resolution cameras, Global Positioning Systems (GPS), Near Field Communication (NFC), SMS messages, calling, and access to extensive libraries for application downloads known as Apps.

Applications of M-Commerce

Other than the straightforward m-commerce transactions of buying and selling of goods and services, they have so many applications. Let us take a look at a few examples,

- ❖ **Mobile Banking:** Using a mobile website or application to perform all your banking functions. It is one step ahead of online banking and has become commonplace these days. For example, in Nigeria, the majority of banking transactions happen on mobile phones.
- ❖ **Mobile Ticketing and Booking:** Making bookings and receiving your tickets on the mobile. The digital ticket or boarding pass is sent directly to your phone after you make the payment from it. Even in India now IRTC and other services provide m-ticketing services.
- ❖ **E-bills:** This includes mobile vouchers, mobile coupons to be redeemed and even loyalty points or cards system.

- ❖ **Auctions:** Online auctions having now been developed to be made available via mobile phones as well.

Benefits of Mobile Commerce

M-commerce gives great benefits to both business owners and customers. Below are some benefits of m-commerce, which are;

- ❖ **Fasters Purchases**

The m-commerce gives positive customers experience, easy and repeat purchases. It also increases business owners' sales. In addition, it loads data faster and enables customers to browse and purchase products faster and easier.

- ❖ **Better Customer Experience**

According to Marketing Land, 83% of customers use smart phones inside real stores to shop. These days, people are well familiar with how smart phones and tablets work. To give your customers better experience, your online shopping app should be fast, convenient, and exclusive.

- ❖ **Direct Connection to Customers**

This benefit allows business owners to easily communicate to their customers. It notifies shoppers or customers about a new product updates, discounts, promotions, and it easily engages the customers. Customers get such messages when they open a mobile app, and may get notified even without activating an app. Studies shows that 50% of users like notifications, and 80% of users say offers and rewards make them more loyal to a brand or business.

- ❖ **Tailored Contents**

Based on customers' behavior and interaction with your mobile app, you can deliver personalized content to them. Giving customers their preferences through the use of customized content can also lead to higher customer loyalty. The effect of tailored content to your business leads to better engagement, expanded reach, and customer loyalty.

- ❖ **Deeper Analytics**

Analytics allows you to get basic information of your customers, like sex, location, age, shopping history, and other information when set up. The mobile app or website linked to Google Analytics allows you to build and set user analytics of various levels. With this analytics, you will get a better understanding of your customers or targeted audience, and in turn create more sales for your brand or business.

- ❖ **Cost Reduction and Productivity**

Most apps allow you reach your customers faster and also cut down cost when running a marketing campaign. The development of app, IT maintenance, and support are cheaper compared to a web store or any other selling points.

❖ **Store Navigation/Geo location**

M-commerce provides users with easy access to navigate through the nearest stores in their GPS. It gives users easy access to find the nearest preferred store and make a purchase. M-commerce provides fun experience for users, and creates more banding options.

❖ **Traditional Retail Sales Benefits**

The m-commerce provides you with assistance in your traditional retail sales. The customers look and explore your products online and visit your retail shop or store to make purchase. It also helps your online shop to filter the hassle of your customers having to go through all your collection manually at your shop or store. M-commerce also helps eliminate the hassle retail store owners and staffs go through to manually update their data.

❖ **New Customer Base**

M-commerce also provides you with new customers. When m-commerce is optimized very well, it does not just hold your current customer base but also brings and attracts new buyers who come to have a look at your online shop, and if they find it interesting and reliable, they make purchases. One of the means that customers use in looking for information is mobile search. M-commerce increases your likelihood to be discovered by customers.

❖ **Higher Return of Investment (ROI)**

It is important to know that 60% of people are likely to make purchases from a mobile friendly e-commerce site than from one that is not mobile friendly. With this, your product speaks for itself. It is more likely for a customer who is happy about purchasing your product, and have a good experience with your brand, to come back to make another purchase. They can also introduce or refer others to your brand or business.

- ❖ The differences between E-commerce and M-commerce
- ❖ Our world today is so much different from our previous generations. With the invention of
- ❖ Internet, everything is fast and happens online. Long gone are those days when people shop
- ❖ around 3-4 stores with the total distance of a few kilometers deciding which product to buy.
- ❖ These days, all considerations are done online before we made it to the physical store and most
- ❖ of the products are just a few clicks away from us. The terms E-commerce or web store have
- ❖ been on the market for a while, but M-commerce and mobile shopping app etc. are quite

- ❖ newcomers.
- ❖ Both of these terms have different meanings though both aim at making consumer lives
- ❖ easier. To better understand the differences between E-commerce and M-commerce, please
- ❖ have a look at the following table
- ❖ E-commerce
- ❖ M-commerce
- ❖ Definition
- ❖ Electronic Commerce (or also called E-commerce) refers to the activities of
- ❖ buying and selling products and services
- ❖ with the use of electronic systems such as
- ❖ the internet.
- ❖ Mobile Commerce (or also called M-commerce) refers to the process of buying
- ❖ and selling products and services with the
- ❖ use of internet/cellular data via wireless
- ❖ handheld devices.
- ❖ History
- ❖ 1970's
- ❖ 1990's
- ❖ Devices used
- ❖ Computers, laptops...
- ❖ Wireless handheld devices such as cell
- ❖ phones, iPads, tablets...
- ❖ The use of
- ❖ Internet
- ❖ Mandatory
- ❖ Not mandatory(allow the use of offline
- ❖ mode, might not work properly though)
- ❖ Connectivity
- ❖ Smaller
- ❖ Larger owing to the bigger number of
- ❖ mobile users
- ❖ Mobility
- ❖ Limited
- ❖ Less limited because of lighter weight and

- ❖ smaller size leading to easier to carry
- ❖ Reach
- ❖ Only at the places where the electricity
- ❖ and the internet are available
- ❖ Broader due to its portability
- ❖ Payment
- ❖ gateway
- ❖ Credit cards
- ❖ Caller's rate, mobile banking or user's
- ❖ credit card
- ❖ Usage
- ❖ Less simple because of more complicated
- ❖ user interface and more functions
- ❖ Simple because all functions have been
- ❖ simplified
- ❖ Platform used
- ❖ Web stores
- ❖ Web stores (mobile version/web app),
- ❖ hybrid app, native app
- ❖ Cost
- ❖ Less costly for the creation a web store
- ❖ and the use of internet
- ❖ More costly for the creation of a mobile
- ❖ app and the use of cellular data

Conclusion

There are news articles and pictures displaying people, who are ordering things over the Internet while waiting for a bus, downloading merchant coupons on their PDAs as they enter a store or bidding for the last table at a hot restaurant by digital phone in a spur-of-the-moment auction. Actually this process represents a tip of a very big iceberg. The advent of m-commerce, as widely referred to among the users, has far-reaching implications. But there are many limitations in the technologies that Once its relevant technologies get matured, widely available and competent, the host of portable devices will be ready to handle the bigger transactional activities not envisioned so far successfully apart from these minor activities.

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FACTORS AFFECTING THE GROWTH AND PERFORMANCE OF MSME's IN INDIA

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Abstract

Micro, Small and Medium Enterprises (MSMEs) contribute to India's economic development by creating large-scale employment and producing consumer-oriented products, thereby reducing inequality and poverty. The emergence of SMEs and their ability to produce more goods and services at low labor and capital costs makes it advantageous to contribute to India's overall export production and employment generation. It will significantly increase about 45 percent of manufacturing, more than 40 percent of exports, 28 percent of GDP and create about one hundred million jobs. The purpose of this paper is to assess the performance of MSMEs and throw light on the factors affecting the growth of MSMEs in India. The academic period is 1990-91 and 2017-18. The data is taken from annual reports published by small and medium enterprises and research reports published by the Government of India. Multiple regression analysis technique is used to calculate the relationship between MSME growth and its influencing factors. The paper reveals that there is a great need for MSME workforce management and reduction of sick units as both play an effective role in overall MSME performance.

Introduction

Micro, Small and Medium Enterprises (MSME) play an important role in business development and create the second largest employment opportunity in India. The MSME sector has developed into a very vibrant market that plays a key role in the economic balance of the country (Kumar et al.). Globally, small and medium-sized enterprises are widely recognized for their significant contribution to economic growth, the creation of decent jobs, the provision of public goods and services, and the alleviation of poverty and inequality. The first generation of sectoral reforms took place in 1991, and the second generation reforms establish MSME as a separate focus area with an independent legal framework under the Micro, Small and Medium Enterprises Development Act (2006). For example, in India, the Industrial Development and Regulation (IDR) Act of 1951; small scale industries were planned on the basis of "number of workers". But it was noted that

obtaining reliable data on the number of employees was difficult. According to Section 7(1) of the MSME Development Act (2006), regarding manufacturing enterprises and investments, any category or class of enterprises can be classified as micro, SME or medium enterprises based on investment in plant and machinery. regarding service companies to equipment and thus the Act paved the way for merger of all Agriculture and Rural Industries (ARI) consisting of Khadi and Village, Coir Industries which together became MSME. The main motive behind these initiatives was to make India a global engineering and manufacturing center in the sub-regions.

These initiatives include Make-In-India and Digital India program. The Make-In-India program was launched in September 2014 along with other nation-building projects. The Digital India initiative, on the other hand, provides ample opportunities for SME promotion and SME participation in the ICT sector. Also, in the series of MSME reforms, Udyam Registration was launched where registration can be done only with the help of Aadhaar number. In order to solve problems related to financing, raw materials and work of EMEs, a portal of national strength will be formed, and in addition, a credit guarantee system will be launched for micro and small businesses mainly for new projects. To improve the sustainability of traditional industries, the SFURTI program to improve their competitiveness and the ASPIRE program to promote innovation, rural industries and entrepreneurship in India will be launched.

Plans to expand marketing and acquisitions were launched to provide useful information for the growth of the company. The central government has also defined measures in the form of the Atmanirbhar Bharat program to ensure business continuity during the COVID-19 pandemic. The "Make in India" initiative and the "Atmanirbhar Bharat Abhiyaan" (Campaign for an Independent India) played a central role in promoting entrepreneurship and local production in the country, with special emphasis on SMEs, which are also called the backbone of India. economy . Apart from this, MSMEs have been reclassified by the Government of India after fourteen years of the MSME Act, 2006. This classification defines MSMEs on the basis of investment and turnover. There is no longer a distinction between manufacturing and service companies. Companies are now called micro units if they have investments up to Rs. 1 crore and turnover below Rs. 5 crores. An MSME is defined as a small enterprise if its net investment in plant, machinery and equipment is between Rs. 1 crore to Rs. 10 million and an annual turnover of Rs. 5 crore to Rs. 50 crores. Under the new definition, companies with investments up to Rs. 50 million and a turnover of less than rupees. 250 billion are now called medium-sized companies. In the era of reforms, India has many medium-sized enterprises.

Various plans and initiatives of the Government of India consider small businesses as the primary sector for local value addition and thus employment generation. With the recently announced unsecured loans for small and medium enterprises, banks and

financial agencies have also declared that lending to such enterprises and restructuring their operations is risk-free. This will encourage SMEs to export more and more without fear of losing the benefits of being an MSME entity. This leads to a multiple increase in exports from the country, rapid growth of the entire economy, and achieves social and economic progress. The emergence of MSME and its ability to produce more goods and services at low labor and capital costs makes it advantageous to contribute to India's overall industrial output and employment generation. Employment in the MSME sector is next to the agricultural sector in terms of volume. According to the latest available data, there are 7.9 million registered small and medium enterprises in India. The MSME industry accounts for 33 percent of the country's GDP and generates more than 120 million jobs across various industries and regions of the country, contributing to wealth creation at the grassroots level. This will help promote often neglected entrepreneurs such as women, marginal entrepreneurs and directly benefit the poor and disadvantaged by directly reducing the poverty gap and increasing incomes.

In FY 2022 alone, 8.59 million women-led MSMEs were registered on the Udhyam portal, accounting for 17 percent of all MSME registrations. The share of up to 63.4 million units is 6.11 percent of the GDP of industry and 24.63 percent of the GDP of services. MSME produces various products and services using the latest technology, currently the size of the business unit market also varies from hand-made products to high-tech products. The Union budget for 2022-2023 focuses on ease of doing business for small and medium-sized enterprises. Government and non-government agencies are creating complex measures to create a credit facility, improve recruitment, create job opportunities and expand IT skills in this sector. This article has attempted to compare the growth of the MSME sector before and after the MSME Development Act, 2006. Formerly known as Small Scale Industries (SSI), micro-small business in India has shown great growth since independence. Bargal et al (2009) investigated the causal relationship between three variables, GDP, SSI production and SSI exports and compared SSI performance parameters before and after liberalization. The study revealed that the CAGR (compound average growth rate) of various parameters of SSI decreased before the reform, but an upward trend was observed in the post-reform period.

Sandberg et al., (2002) SMEs contribute to national income, create jobs, promote international trade through export promotion and encourage entrepreneurship. Small business performance is defined as their ability to create jobs and wealth through business establishment, survival and sustainability. Moorthy and others (2012) define a strong relationship between effective business, appropriate management of human resources, the use of market information and the application of information technology are important from the point of view of business results. Yadav et al (2013) concluded using regression analysis that output appears to be highly positively dependent on the absolute values of

labor and capital. The company's ability to increase production depends on the growth of capital and labor. Continued growth in productivity increases industrial production and growth, which helps to increase economic growth, competitiveness of exports in domestic and international markets, and the standard of living of society. Florea et al (2015) determined the role of human capital in achieving production using a simulation model (regression function). The author also points out the need to increase training hours to achieve the goal of skilled employment and increase production capacity and income.

Kumar and Rao (2016) reclassified the factors affecting production into material, money, machinery, labor, management, information and time. In their research, Manna and Mistri (2017) analyzed that SMEs grow year by year, and their share in the national or country gross domestic product also showed a growth trend with certain variations. In their study on the MSME sector, Joshi and Kishore (2018) found that a significant number of MSMEs are engaged in energy conservation, but increasing the number of units practicing the energy conservation model requires a lot of effort. Dubey (2020) analyzed the current situation of MSMEs during the coronavirus pandemic and the financial assistance package called "Atmanirbhar Bharat (Independent India) to revive the business of MSMEs. Kadam and Pandey (2020) studied the current state of MSME. Based on the above, the analyst tried to investigate the problems and possible developments of the MSME sector in the post-Covid 19 pandemic period. Tripathy and Bisoyi (2021) examined the role of SMEs in the growth of the Indian economy, estimated the intensity of the losses caused by the Covid-19 pandemic in various sectors and proposed solutions to the existing challenges.

The purpose of this study is to find out the effect of various factors on the total output of MSME and to find out various policy measures to promote the growth of MSME in India in the future. Considering the purpose of the study, this article is divided into three parts. The first part of the paper describes the performance of MSMEs in terms of number of units, employment, access to credit, export output, number of affected units and MSME output before and after the implementation of the 2006 MSME Act. The paper focuses on the overall impact of various variables on the total output of MSMEs in India and finally the third section concludes the discussion and presents certain policy implications for the future growth of MSMEs in India.

Methodology

The study is an empirical study based on secondary data. Secondary data is taken from annual publications of RBI, annual reports of MSMEs published by Government of India and research reports published by Government of India. The study period is the years 1990-91 2017-18. For analysis, this article looks at different variables. The data variables consist of production, employment, exports, the number of sick units, the amount of capital of the schedule bank, the amount invested in fixed assets of the MSME. Production It is the

process of combining different inputs, both tangible and intangible, to create outputs. Ideally, this product is a good or service that has value and contributes to the utility of individuals. employment Refers to a form of economic activity where another person has assigned a person to perform a specific task or job. to take Exports are goods and services produced in one country and sold to buyers in another country. Simply put, an export is a good or service that is produced domestically but sold abroad. Sick units According to the guidelines, micro, small and medium enterprises (as per MSME Act, 2006) can be considered sick if any account of the corporate borrower is in NPA status for at least three months.

Capital is durable goods, which in turn are used as production inputs in the further production of goods and services. Bank schedule Banks listed in Schedule II of the Reserve Bank of India Act, 1934 are called Scheduled Banks. Fixed assets Assets that are purchased for long-term use and that are unlikely to be converted into cash are classified as fixed assets. For example, land, buildings. Simply put, a fixed asset is a long-term tangible asset that a business uses to generate revenue. An additional correlation coefficient is calculated to determine the relationship between the variables. The result of the multiplication can be useful to improve the performance in the modification and formulation of a specific policy. Multiple regression technique is used to calculate the functional relationship between MSME productivity and the independent variables in the model such as employment, exports, sick units, capital and fixed assets. All variables are converted to percentages based on the annual growth rate.

Methodology for Compound Annual Growth Rate

Regression Model

$$P = f [\alpha + (\beta_1 S_i + \beta_2 E_i + \beta_3 X_i + \beta_4 C_i + \beta_5 I_i)]$$

where, P stands for production, α is constant and β_1 to β_5 are the coefficient parameters of the Number of Sick units (S), Employment (E), Export (X), Credit facility (C) Investment in Fixed Assets (I).

Results and Discussions

The role of small-scale industry as an employer and export promoter is well known. The policy plans also emphasized the importance of the SSI sector in the economy. The period of the present study is divided into pre-MSME Act (1990-1991-2005-2006) and post-MSME Act (2006-2007-2017-). 2018). The performance of the MSME sector is described in this study in terms of annual output growth, employment, exports, permanent units, sick units and credit facilities. Tables 1 and 2 show the growth of MSME before and after MSME Act 2006. A perusal of Table 1 shows that MSMEs' production, exports, number of permanent establishments and access to credit increased significantly during the pre-

MSME Act period. There is continuous growth in production during the period and the maximum production growth of 23.64 percent can be found in 1994-95. The total annual growth of production is 13.72 percent. The number of SSI units increased from 6.79 million to 12.34 million between 1991 and 2005-06, contributing to an increase in employment from 15.83 million to 29.49 million. The estimated export values show that the volume of exports is increasing during the study period. It increased from 96.64 billion in 1990-91 to 1502.42 billion in 2005-06. At this stage, the number of affected units has decreased and the data also shows that the credit facility of MSME units has increased.

Table 1: Growth Performance of MSMEs in Pre-MSME Act (1991-2006)

Year	Production in Billion	% Change	No. of Employees Millions	% Change	Exports (Billion)	% Change	No. of Units (Million)	% Change	No. of Sick Units	% Change	Credit Available	% Change
1990-91	788.02		15.83		96.64		6.79		163361		17938	
1991-92	806.15	2.30	16.6	4.86	138.83	43.66	7.06	3.98	233441	42.90	18939	5.58
1992-93	844.13	4.71	17.48	5.30	177.84	28.10	7.35	4.11	361667	54.93	20975	10.75
1993-94	987.96	17.04	18.26	4.46	253.07	42.30	7.65	4.08	256452	-29.09	23978	14.32
1994-95	1221.54	23.64	19.14	4.82	290.68	14.86	7.96	4.05	268815	4.82	29175	21.67
1995-96	1477.12	20.92	19.79	3.40	364.7	25.86	8.28	4.02	262376	-2.40	34246	17.38
1996-97	1678.05	13.60	20.59	4.04	392.48	7.62	8.62	4.11	235032	-10.42	38196	11.53
1997-98	1872.17	11.57	21.32	3.55	444.42	13.23	8.97	4.06	221536	-5.74	45771	19.83
1998-99	2104.54	12.41	22.06	3.47	489.79	10.21	9.34	4.12	306221	38.23	51679	12.91
1999-00	2337.60	11.07	22.91	3.85	542	10.66	9.72	4.07	304235	-0.65	57035	10.36
2000-01	2612.97	11.78	24.09	5.15	697.97	28.78	10.11	4.01	249630	-17.95	60141	5.45
2001-02	2822.7	8.03	24.93	3.49	712.44	2.07	10.52	4.06	177336	-28.96	67107	11.58
2002-03	3148.5	11.54	26.02	4.37	860.13	20.73	10.95	4.09	167980	-5.28	64707	-3.58
2003-04	3645.47	15.78	27.14	4.30	976.44	13.52	11.4	4.11	138811	-17.36	71209	10.05
2004-05	4297.96	17.90	28.26	4.13	1244.17	27.42	11.86	4.04	138041	-0.55	83498	17.26
2005-06	4978.42	15.83	29.49	4.35	1502.42	20.76	12.34	4.05	126824	-8.13	101285	21.30
CAGR		13.72%		3.91%		20.07%		4.06%		-1.7%		12.23%

Source: Central Statistical Organization, Ministry of Statistics. Government of India

Table 2: Growth Performance of MSMEs in Post-MSME Act (2006-2017)

Year	Production in Billion	% Change	No. of Employees Millions	% Change	Exports (Billion)	% Change	No. of Units (Million)	% Change	No. of Sick Units	% Change	Credit Available	% Change
2006-07	13513.83		80.52		1825.38		36.18		126824		127323	
2007-08	14351.79	6.20	84.2	4.57	2020.17	10.67	37.74	4.31	85187	-32.83	213539	67.71
2008-09	15242.35	6.21	88.08	4.61	2143.87	6.12	39.37	4.32	103996	22.08	256128	19.94
2009-10	16193.56	6.24	92.18	4.65	3911.59	82.45	41.08	4.34	77723	-25.26	362291	41.45
2010-11	17215.53	6.31	96.52	4.71	5077.39	29.80	42.87	4.36	90141	15.98	478527	32.08
2011-12	18343.32	6.55	101.17	4.82	6301.05	24.10	44.76	4.41	85591	-5.05	527684	10.27
2012-13	18965.87	3.39	106.14	4.91	6981.66	10.80	46.75	4.45	220492	157.61	687208	30.23
2013-14	19765.67	4.22	111.43	4.98	8068.78	15.57	48.86	4.51	465492	111.12	851092	23.85
2014-15	19987.73	1.12	117.43	5.12	8492.48	5.25	51.06	4.50	961174	106.49	961174	12.93
2015-16	20764.89	3.89	118.23	0.94	8553.52	0.72	52.09	2.02	534844	-44.36	996425	3.67
2016-17	21876.09	5.35	118.98	0.63	8675.89	1.43	53.76	3.21	480280	-10.20	1069822	9.37
CAGR		4.93%		3.98%		16.87%		4.04%		14.24%		23.72%

Source: Annual Report of Ministry of MSME 2018-19

Table 2 discusses the activities of MSME in the post-MSME Act. After the implementation of the MSME Act in 2006, the sector's output increased from 13513.83 billion in 2006-2007 to 21876.09 billion in 2016-2017. Total annual output growth at this stage is 4.93 percent. During this period, employment increases marginally. Employment increased from 80.52 million to 118.98 million. The table shows that exports have grown considerably. Exports increased from 1825.38 billion in 2006-2007 to 8675.89 billion in 2016-2017. The growth of the MSME sector shows that the number of affected units has increased in the years since the publication of the book. The number of patients increased from 126,824 units to 480,280 units. The results show that the availability of credit improved significantly during this period. The tabular results also reveal that the combined annual growth of all variables during 1991-2006 (Pre-MSME Act) and 2006-2017 (Post-MSME Act). Table 1 shows that the total annual growth of production is 13.72 percent and the growth of export is 20.07 percent. During the pre-MSME Act, the total increase in credit availability was found to be 12.23 percent. In the second research period, the annual growth of production is only 4.93 percent and the growth of export is 16.87 percent. After the MSME Act, the annual growth of the affected units has increased significantly. The annual growth of sick units during this period is 14.24 percent. Figure 1 compares the combined annual growth of different variables in two periods. The figure shows that in the post-MSME Act, MSME production has declined. The growth rate of manufacturing has come down from 13.72 percent pre-MSME Act to 4.93 percent post-MSME Act. On the other hand, there is no significant difference in the annual growth of employment and exports in both periods

Table 3: Estimation of Functional Relationship

Coefficients^a						
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	R²
	B	Std. Error	Beta			
(Constant)	9.229	7.846		1.176	.252	.755
% Number Employee	.874	.110	.825	7.948	.000	
% Value of Exports	-.138	.225	-.065	-.612	.547	
% Credit Available from Schedule Bank	.006	.269	.002	.021	.984	
% Fixed Investment	.374	.280	.142	1.338	.194	
% Number of Sick Units	-.151	.071	-.226	-2.127	.044	

A significant change can be seen in the availability of credits and sick sections. Credit availability has doubled under the post-MSME Act and the number of affected units has increased dramatically compared to the pre-MSME Act. In addition, correlation and regression are performed together to measure the degree of association between variables. The results show that there is a positive and strong relationship between employment and production. It paves the way for government, decision makers, entrepreneurs, financial institutions and private sector organizations to formulate policies that help increase employment through people and skill development programmes.

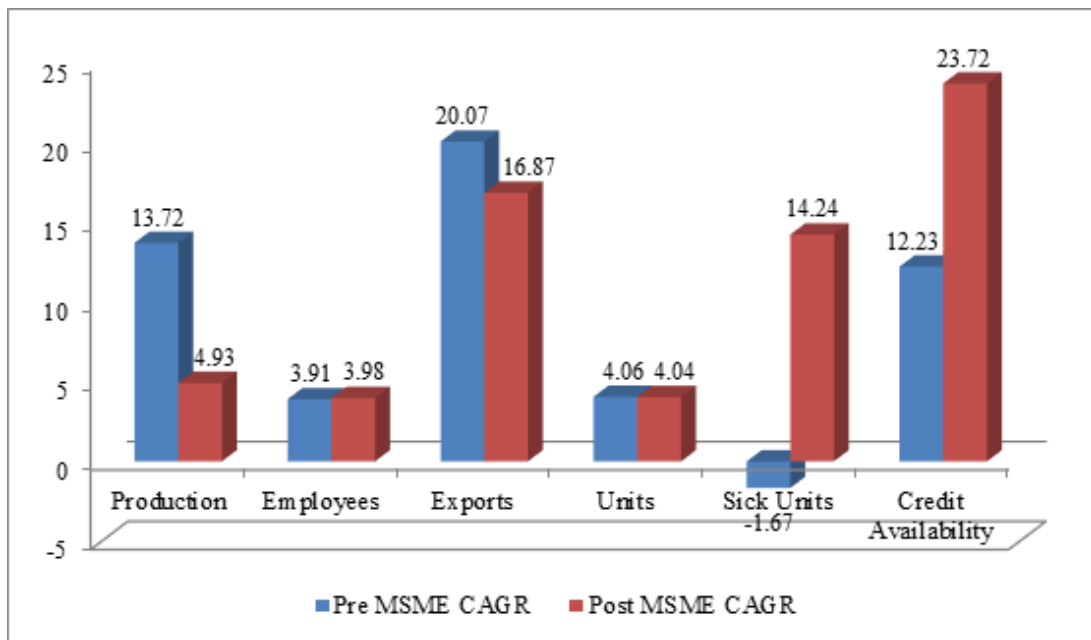


Figure 1. Compound Annual Growth Rate of Various Factors Affecting Growth of MSMEs (percentages).

Source: Computed from secondary data.

Calculations by the Author

The relationship between dependent and independent variable is considered as $P = f [\alpha (\beta_1Si \beta_2Ei \beta_3Xi \beta_4Ci \beta_5Ii)]$ Output of MSME Units = 9,229 -.151 (Number of Sick Units) .874 (Number of Employees) - 138 (Number of Exports) .103 Amount of Credit Available .374 (Amount of Investment in Fixed Assets) The adjusted R-squared value was 0.755. The regression results show that the number of sick units and employment are statistically significant for the model. The volume of exports, fixed investments and available credit is not significant. Only one negative coefficient is sick units, which indicates that production levels decrease as sick units increase.

The significance of the ANOVA analysis confirms that the model fits the observed dependent and independent variables. Therefore, it can be concluded that production increases when employment increases and decreases when the number of sick MSME units increases. For example, if employment increases by one, the percentage change in output growth is 0.847, all other variables remaining constant.

Conclusion

Small and medium-sized enterprises are the backbone of the country, and to survive in the age of technological development, they must incorporate new innovations in production methods. The results show that an increase in number of sick units leads to a

decrease in production and when employment increases, production also increases, so it is necessary to manage MSME workforce and reduce number of sick units because both work effectively. role in the overall functioning of the MSME. The R-squared intercept indicates that the number of sick units and employment are statistically significant for the model. It is necessary to introduce an educational system aimed at entrepreneurs and organize workshops to support the affected units. Qualified and educated entrepreneurs must be fully aware of government benefits and privileges in order to make sound financial decisions. In addition, learning new technologies and tools causes significant changes in the quality of products at the cheapest prices. SMEs can be encouraged to improve their competitiveness by supporting power generation equipment and other infrastructure. Government can provide marketing assistance and space to sell MSME products and services. Priority should be given to investment in research and development and extension services that can help Indian SMEs compete in the global market.

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Web links

1. Applications filed by MSMEs, Government of India, Ali MSME
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DIGITAL INDIA AND INDUSTRY 4.0

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Abstract

This abstract provides a succinct glimpse into the synergy of "Digital India" and "Industry 4.0," illustrating their convergence in driving technological advancement and socio-economic progress in India. It highlights their transformative impact on sectors ranging from governance and education to manufacturing and healthcare, setting the stage for a digital and industrially evolved nation.

Keywords: *Digital India, Industry 4.0, technology, digital transformation, infrastructure, e-governance.*

Introduction

Digital India and Industry 4.0 represent two powerful and interconnected trends that are shaping the future of India's economy and society. These initiatives are transforming the way businesses operate, how government services are delivered, and how citizens interact with technology. In this article, we will explore the convergence of Digital India and Industry 4.0 and their impact on the nation's growth and development.

In an era marked by unprecedented technological advancements, two transformative initiatives have taken center stage in India's journey towards progress and modernization: Digital India and Industry 4.0. These initiatives are redefining the nation's landscape, propelling it into the digital age while revolutionizing its industries. Digital India, a government-led program, seeks to empower citizens through digital technologies, while Industry 4.0 represents the fourth industrial revolution, where automation, data, and connectivity converge to redefine manufacturing and commerce. In this article, we will explore the symbiotic relationship between Digital India and Industry 4.0 and their profound impact on India's socio-economic development.

Digital India: A Vision for Inclusive Growth

Digital India, launched in 2015 by the Government of India, is a comprehensive program aimed at harnessing the power of digital technologies to create a digitally empowered society and a knowledge-based economy. The program has several key pillars, including infrastructure development, digital literacy, e-governance, and digital services.

Infrastructure Development: The backbone of Digital India is the creation of robust digital infrastructure, including high-speed internet connectivity in rural and urban areas. Initiatives like BharatNet are working towards bridging the digital divide by connecting even the remotest parts of the country.

Digital Literacy: To ensure that every citizen can benefit from digital services, Digital India focuses on promoting digital literacy and skills training. This empowers people to use technology effectively for personal and professional development.

E-Governance: Digital India aims to make government services more accessible and efficient through e-governance. Services such as Aadhaar, e-KYC, and digital payments have simplified interactions between citizens and government agencies.

Industry 4.0: The Fourth Industrial Revolution

Industry 4.0, on the other hand, represents the fourth industrial revolution characterized by the integration of digital technologies, automation, data analytics, and the Internet of Things (IoT) into manufacturing and industrial processes. It's transforming traditional industries and creating new opportunities for innovation and growth.

Smart Manufacturing: Industry 4.0 is driving the development of smart factories where machines communicate and collaborate with each other, leading to increased efficiency, reduced waste, and better quality control.

Data-Driven Decision Making: Businesses are leveraging big data and analytics to make informed decisions, optimize supply chains, and predict maintenance needs, resulting in cost savings and improved productivity.

Customization and Personalization: Industry 4.0 enables mass customization, allowing companies to tailor products and services to individual customer needs, enhancing customer satisfaction.

The Convergence: Digital India Meets Industry 4.0

The synergy between Digital India and Industry 4.0 is evident in various sectors:

Manufacturing: India is witnessing a rapid transformation of its manufacturing sector with the adoption of Industry 4.0 technologies. Factories are becoming smarter, more efficient, and interconnected.

Agriculture: Digital India initiatives, combined with Industry 4.0, are revolutionizing agriculture. Smart farming techniques, data-driven crop management, and precision agriculture are boosting yields and farmers' incomes.

Healthcare: Telemedicine and remote monitoring have become more prevalent, enhancing healthcare accessibility, especially in rural areas, thanks to the digital infrastructure developed under Digital India.

Education: Digital learning platforms are proliferating, and the pandemic accelerated the adoption of online education, making quality education more accessible across the nation.

Smart Cities: The concept of smart cities is gaining traction, with urban planning integrating technology for efficient resource management, traffic control, and citizen services.

Digital India Trends:

E-Governance and Digital Services Expansion: Digital India continues to expand its e-governance initiatives, making government services more accessible and efficient through online platforms and mobile apps. Initiatives like the Unified Payments Interface (UPI) and e-KYC have gained widespread adoption.

Rural Internet Connectivity: Efforts to improve rural connectivity through programs like BharatNet are ongoing, ensuring that even remote areas have access to high-speed internet, thus bridging the digital divide.

Digital Literacy and Skill Development: Promoting digital literacy remains a priority, with initiatives aimed at providing digital skills training to individuals across various age groups and backgrounds.

Cybersecurity Enhancement: With the increasing digitization of services, there is a growing emphasis on enhancing cybersecurity measures to protect government and citizen data from cyber threats.

Industry 4.0 Trends:

Smart Manufacturing: The adoption of Industry 4.0 principles in manufacturing continues to grow, with more companies integrating IoT devices, data analytics, and automation to create smart factories that enhance efficiency and reduce operational costs.

AI and Machine Learning Integration: Artificial intelligence (AI) and machine learning are becoming integral to Industry 4.0, enabling predictive maintenance, quality control, and data-driven decision-making.

Supply Chain Digitization: The pandemic highlighted the importance of resilient and adaptable supply chains. Industry 4.0 trends include the digitization of supply chains for real-time monitoring, better risk management, and greater transparency.

5G Connectivity: The rollout of 5G networks is set to accelerate the adoption of Industry 4.0 technologies by providing faster and more reliable connectivity for IoT devices and real-time data transfer.

Sustainability and Circular Economy: Industry 4.0 is increasingly focused on sustainability, with technologies like IoT and data analytics being used to reduce waste, optimize resource use, and promote a circular economy.

Collaborative Robotics (Cobots): Collaborative robots are being used alongside human workers to enhance productivity and safety in manufacturing processes.

Digital Twins: Digital twins, which are virtual replicas of physical assets or processes, are gaining prominence for simulation, testing, and predictive maintenance purposes.

These trends demonstrate the ongoing evolution of both Digital India and Industry 4.0, as they continue to reshape various sectors, fostering innovation, efficiency, and sustainable growth. To stay up to date with the latest developments, it's essential to refer to recent reports, government announcements, and industry publications.

Conclusion

The convergence of Digital India and Industry 4.0 is driving India towards a more connected, efficient, and technologically advanced future. It's not only boosting economic growth but also improving the quality of life for citizens across the country. As India continues on this transformative journey, it is crucial to ensure that the benefits are equitably distributed, leaving no one behind in this era of technological revolution.

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ROLE OF MSME SECTOR IN INDIA ECONOMY

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Abstract

The micro small and medium enterprises (MSMEs) have been accepted as the engine of economic growth and for promoting equitable development. The labour intensity of the MSME sector is much higher than that of the large enterprises. The micro small and medium enterprises (MSMEs) have been accepted as the engine of economic growth and for promoting equitable development. The labour intensity of the MSME sector is much higher than that of the large enterprises. The MSMEs constitute over 90% of total enterprises in most of the economies and are credited with generating the highest rates of employment growth and account for a major share of industrial production and exports. The MSMEs play a vital role in the overall growth of industrial economy of the country. With its agility and dynamism, the sector has shown admirable innovativeness and adaptability to survive the recent economic downturn and recession and have lots of opportunities to grow in the future. This paper enlightens the growth of MSMEs and outlining the opportunities available for the MSMEs in the Indian economy.

Keywords: MSME, vital, economy, employment, challenges.

Introduction

In the past few years, MSMEs have generated a huge number of employments, at a relatively lower cost of capital as compared to the large-scale business or ventures or establishments. As there is the increase in employment opportunities in the MSME sector, they help increase the country's socio-economic development. The MSME sector not only providing employment but also helped rural development which was the biggest challenge in front of the Government as in initial phase of industrialization which has attracted rural population towards urban region. It has provided balanced regional development of the country and proved as a key success factor for rural development. The Ministry of Micro, Small and Medium Enterprises (MSME) intends to make the MSME sector, including Khadi, Village and Coir Industries even more vibrant by providing support to existing enterprises and encouraging creation of new enterprises, by way of various programmes and schemes in cooperation with concerned Ministries, Departments and State Governments.

The long-term goal of the ministry is to enhance manufacturing base in the country by improving performance of MSMEs through skill and entrepreneurship development. In India, the enterprises have been classified broadly into two categories: (i) Manufacturing; and (ii) Those engaged in providing/rendering services. Both the categories have been further classified into micro, small and medium enterprises based on their investment in plant and machinery (for manufacturing enterprises) or on equipment (in case of enterprises providing or rendering services).

The key objectives of this study are:

1. To understand the role of MSMEs in the Indian economy and their performance.
2. To Study the importance and benefits of MSMEs in India.
3. To understand the problems of MSMEs in India.

Benefits of the MSME Sector to the Indian Economy

MSME Sector's Contribution to Indian Economy:

As per the Ministry of Statistics & Programme Implementation, the contribution of the MSME sector to the Gross Value Added (GVA) in the country's GDP in FY 20 was 30%. The share has been around 30% over the past few years. The sector's contribution to manufacturing in all India manufacturing gross value output in FY 20 stood at 36.9%, the same as that in FY 19.

MSME Contribution to Export in India:

The MSME sector is among the country's major exporters. Specified MSME-related product exports accounted for 49.5% of India's total exports in FY 21, compared to 49.8% in FY 20. Textiles, garments, different types of shoes, rice and castor oil are among the major products exported by the Indian MSME sector.

Employment Generation:

The MSME sector is one of the country's major employers. The sector has been instrumental in generating employment opportunities in rural and remote areas of the country. As per the data from the Udyam Portal of the Ministry of MSMEs, 93,94,957 people were employed by MSMEs registered on the portal in FY 22.

Connecting Remote Areas to Rest of the Country:

By preparing key raw materials and finished goods with global demand, MSMEs in remote and backward areas help connect these areas with the rest of the country and the world. Several MSMEs operate in rural areas while providing ancillary goods to large multinational companies across the globe.

Improving Standard of Living:

By creating employment opportunities and connecting backward areas, the MSME industry in India plays a key role in lifting people out of poverty and improving their standard of living. Thus, the sector helps reduce regional imbalances across the country and increase equality among citizens.

Challenges faced by MSMEs in India

Delayed payment:

Four years after MSME SAMADHAAN portal was set up to help enable faster payments and improved cash flows to India's MSMEs, the number of applications filed for relief on the portal are piling up closer to one lakh.

Credit gap:

MSMEs still find access to formal credit a challenge. Roughly 40 per cent of MSME lending is done through the informal sector (in 2018), where interest rates are at least twice as high as in the formal market. The reason for the enormous credit gap is two-fold: Lack of assets among MSMEs such as land and building etc. to secure asset-based financing or secured loans.

Credit risk assessment challenges faced by financial institutions in owing to lack of financial data and credit history among small businesses.

Infrastructural bottlenecks:

Land: Due to high cost of land, the circle rate of Industrial area is usually high making it unaffordable for the MSME entrepreneur.

Power & water: Delay in getting access to power and water connection. Lack of adequate power supply in few parts of the country.

Logistics: Lack of a cost effective and efficient logistics/supply chain infrastructure as well as lack of dedicated infrastructure i.e. ready to move-in, built-in factories with plug and play facilities.

Poor infra for capacity building: Lack of access to R&D Centres, Product and Prototype Development Centre's, Testing Laboratories, etc.

Poor marketing strategy: MSMEs because of their size are unable to achieve economies of scale or hire a marketing specialist who can guide them to have robust marketing strategy. Also, they do not have adequate foot print on digital marketing platform.

Access to Technology: Though India has a vast pool of technical talent with well-developed intellectual capability, the country still scores low in terms of developing, commercializing and adopting new and innovative technologies.

Women specific issues: The number of women-led MSMEs in India has jumped from 2.15 lakh to 1.23 core in just a decade. However, they face a finance gap of \$158 billion and largely rely on informal sources. About 90 per cent of SMEs owned by women in the country still rely on informal ways of securing capital or loans. Besides, social attitude, and socioeconomic constraints also hold women back from becoming entrepreneurs.

Importance of MSME in India

It creates large-scale employment: Enterprises that are inclusive in this sector require low capital to start up new business. Moreover, it creates a vast opportunity for the unemployed people to avail. India produces about 1.2 million graduates per year out of which the total number of engineers are around 0.8 million. There is no economy so far that could provide that large number of freshers in one year only. MSME is the boon for the fresh talent in India.

1. **Economic stability in terms of Growth and leverage Exports:** It is the most significant driver in India contributing to the tune of 8% to GDP. Considering the contribution of MSME to manufacturing, exports, and employment, other sectors are also benefitting from it. Nowadays, MNCs are buying semi-finished, and auxiliary products from small enterprises, for example, buying of clutches and brakes by automobile companies. It is helpful in creating a linkage between MSME and big companies even after the implementation of the GST 40% MSME sector also applied GST Registration that plays an important role to increase the government revenue by 11%.
2. **Encourages Inclusive Growth:** The inclusive growth is at the top of the agenda of Ministry for Medium, and small and Medium-sized enterprises for several years. On the other hand, poverty and deprivation are a deterrent to the development of India. Besides, it includes marginalized sections of a society which is a key challenge lying before the Ministry of MSME.
3. **Cheap Labor and minimum overhead:** While in the large-scale organizations, one of the main challenges is to retain the human resource through an effective human resource management professional manager. But, when it comes to MSME, the requirement of labor is less and it does not need a highly skilled laborer. Therefore, the indirect expense incurred by the owner is also low.
4. **Simple Management Structure for Enterprises:** MSME can start with limited resources within the control of the owner. From this decision making gets easy and efficient. On the contrary, a large corporation requires a specialist for every departmental functioning as it has a complex organizational structure. Whereas a small enterprise does not need to hire an external specialist for its management. The owner can manage himself. Hence, it could run single-handedly.

5. **The main role in the mission of “Make in India”:** The signature initiative by the Prime Minister of India “Make in India” has been made easy with MSME. It is taken as a backbone in making this dream a possibility. In addition, the government has directed the financial institution to lend more credit to enterprises in the MSME sector.

Conclusion

MSME is the backbone of the Indian economy. This sector has proven the instrumental in the growth of the nation, leverage exports, creating huge employment opportunities for the unskilled, fresh graduates, and the underemployed. It also extended the opportunities to banks for giving more credit to enterprises to MSME Sector. The government should take the special care by addressing the importance of MSME in terms of providing more and more MSME Registration advantages by implementing better regulations and enable financial institutions to lend more credit at less interest rate for sustainability of this sector. MSMEs address major challenges of the overall Indian economy also, that are unemployment and poverty. By reducing regional imbalances, giving employment to local people living in rural areas, they have done their part to knock-down disparities. Acting as a motivational factor for the existing MSMEs and as an aspiration factor for the potential MSMEs, increase in the income of people and the trend of promoting the interests of consumers, there will be various opportunities for MSMEs to play with in the domestic as well as export-market.

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FINANCIAL INCLUSION OF MSMEs AND ITS IMPACT ON SOCIETY

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Abstract

The MSMEs primarily rely on bank finance for their operations and as such ensuring timely and adequate flow of credit to the sector has been an overriding public policy objective. Micro, Small and Medium Enterprises (MSMEs) are strategic assets for economic development and employment generation, but remain too small and informal to make an impact. Women entrepreneurs in India play a significant role in advancing the economic growth of the country. With the growing recognition of women entrepreneurs' contribution to economic growth, there is need to understand the state of their operations in India. Supporting them with access to formal capital and easing the process for them to obtain is, therefore, crucial to making a real difference in the lives of millions of Indians. Financial inclusion allows people to be part of the organised financial sector and provides better access to credit and other financial services.

Introduction

There is a big gap between developing and developed countries when it comes to financial inclusion. Emerging markets need to get the same access to global financial markets as the rest of the world. Financial inclusion can reduce social disparities and poverty and increase economic growth and national financial efficiency. Access to financial services is provided to all segments of the society.

Currently, MSMEs are still experiencing difficulties in terms of capital. Access to financial services in banking is also still difficult due to the lack of financial information on the MSMEs when compared to large, more transparent companies; thus, banks have more difficulty in assessing the creditworthiness of MSMEs.

Important of financial inclusion

The MSMEs primarily rely on bank finance for their operations and as such ensuring timely and adequate flow of credit to the sector has been an overriding public policy objective. Over the years there has been a significant increase in credit extended to this sector by the banks. Financial inclusion encourages people to access financial products, and people can more freely use their money to make transactions.

Financial inclusion can reduce social disparities and poverty and increase economic growth and national financial efficiency. Access to financial services is provided to all segments of the society. Currently, MSMEs are still experiencing difficulties in terms of capital. Access to financial services in banking is also still difficult due to the lack of

financial information on the MSMEs when compared to large, more transparent companies; thus, banks have more difficulty in assessing the creditworthiness of MSMEs.

MSME Lending

Micro, Small and Medium Enterprises (MSMEs) are strategic assets for economic development and employment generation, but remain too small and informal to make an impact. Over 95% of Indian enterprises are classified as micro, leading to the curious 'missing middle' syndrome. One of the key factors inhibiting the scaling up of MSMEs is a lack of affordable finance. MSMEs face a credit gap of ₹69.3 trillion out of which only ₹36.7 trillion is addressable by formal financing.

After the liberalization of the economy in the 1990s, the market opened up and employment opportunities grew, as did the spending power and standard of living of the average Indian.



As financial access grew, so did social mobility. However, certain sections have lagged behind due to myriad reasons ranging from social barriers to a lack of access to education and financing. One of these sections is made up of a multitude of micro, small and medium enterprises (MSMEs), which form the foundation of the economy.

However, the recently released Annual Report of RBI for 2022-23 indicates a different trend. The report shows while the credit release to MSMEs has increased by a healthy 14% during the year, (at end December, 2022) the actual number of operating MSME accounts has decreased by about 17% during the same period.

Credit gap hurdle

Although MSMEs form one of the pillars of the Indian economy, a vast majority of them are still in the informal sector. Without formalisation, not only is it difficult to track the metrics of income and employment for these businesses, they also slip through the cracks of government welfare schemes and subsidies.

The sector also suffers from a vast credit gap, estimated by the World Bank at over \$400 billion. This gap severely impedes small businesses, and access to formal credit can greatly increase the ability of these businesses to live up to their potential for growth, increased income and employment generation and support local economies. These small businesses are not only instrumental in supporting the entrepreneurs themselves, but also help them to become job creators as well as boost local economies. These businesses, therefore, have a huge impact on the socio-economic position of the country's population and its progress.

Contribution to GDP

There is a big gap between developing and developed countries when it comes to financial inclusion. Emerging markets need to get the same access to global financial markets as the rest of the world. At present, the sector comprises over 63 million MSMEs and accounts for close to 30 per cent of the country's GDP, 50 per cent of India's exports, and employs over 120 million people. With this vast reach and potential, the sector undoubtedly has a very significant impact on the country's social fabric. Let's explore how Indian MSMEs shape the nation's progress, and the hurdles that hinder them

Financial Inclusion for Women entrepreneurs

Women entrepreneurs in India play a significant role in advancing the economic growth of the country. With the growing recognition of women entrepreneurs' contribution to economic growth, there is need to understand the state of their operations in India. A country-level diagnostic of the demand and supply of finance for women-owned Micro, Small and Medium Enterprises (MSMEs) is essential to drawing up country specific strategies to improve their access to finance.

Women entrepreneurs are disproportionately disadvantaged by social stigma and gender-based discrimination when it comes to accessing capital and getting their businesses off the ground. However, when they do succeed, they have the potential to effect generational change. They can inspire young women to become financially independent and open doors for other women to enter the workforce.

They are also largely responsible for improving the baseline of the standard of living for their own families. According to various studies, when women earn, they spend a large chunk of their income improving their family's lifestyle. A 2022 survey by LXME, a financial platform for women, showed that the top 3 categories where Indian women spend

most are groceries, children's education fees and personal shopping. Together, these factors facilitate social mobility and economic affluence, resulting in a better educated, more health-conscious, and socially aware population on the whole.

Access to capital for MSME entrepreneurs has the potential to alter India's social fabric. This change can be brought about by providing accessible digital solutions, as well as the opportunity for them to receive personalised customer service, which fintech NBFCs are perfectly positioned to facilitate. Women MSME entrepreneurs are important in driving sustainable socio-economic development and improving the standard of living of families and communities. Supporting them with access to formal capital and easing the process for them to obtain is, therefore, crucial to making a real difference in the lives of millions of Indians.

Conclusion

The Indian government has also taken steps to promote financial inclusion for MSMEs by launching various schemes, such as the Pradhan Mantri Mudra Yojana (PMMY), to provide loans to small businesses and Credit guarantee schemes. Recently, Finance Minister announced a revamped credit guarantee scheme for MSMEs. Financial inclusion allows people to be part of the organised financial sector and provides better access to credit and other financial services. This is essential for the masses to escape poverty and create a pathway to prosperity.

CORPORATE SOCIAL RESPONSIBILITY IN MICRO SMALL AND MEDIUM INDUSTRIES

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Abstract

Small and Medium Enterprises (SMEs) are widely regarded as the backbone of the Indian economy, representing a dynamic and vibrant sector that serves as the driving force behind the nation's growth. This sector assumes a crucial role in addressing persistent issues such as poverty, inequality, underemployment, and unemployment. In today's world, industries are not only evaluated based on their products and profits but also on the ethical manner in which these profits are generated. Corporate Social Responsibility (CSR) is gaining momentum on a global scale as companies increasingly recognize their responsibilities to stakeholders. Within the context of India, Micro, Small, and Medium Enterprises (MSMEs) are actively working to enhance their social and environmental responsibilities by giving due consideration to CSR issues. This paper aims to elucidate the concept of CSR as applied to MSMEs, delving into its implementation, assessing the limitations of investments, elucidating its significance in the MSME sector, and exploring its multifaceted dimensions. Additionally, it sheds light on the challenges faced by MSMEs concerning CSR and offers valuable suggestions to overcome these challenges.

Keywords: *Social and environmental responsibility, Inequality reduction, Social and environmental responsibility, CSR dimensions.*

Introduction

Corporate Social Responsibility (CSR) has become a prominent buzzword in recent years, with an increasing number of companies adopting it as a central focus. Over the past two decades, a growing number of corporations have shown a strong commitment to CSR. In the foreseeable future, CSR will continue to gain significance for various reasons, including the competitive advantages it offers to companies. CSR is now an integral part of global business practices.

The World Business Council defines CSR as follows: "Corporate Social Responsibility is the ongoing commitment by businesses to behave ethically and contribute to economic development while enhancing the quality of life for their employees and their families, as well as for the local community and society at large."

There is a growing recognition of the importance of incorporating "green" elements into SME (Small and Medium Enterprises) development worldwide. This recognition stems from the proliferation of SMEs and the ease with which environmentally friendly

technologies can be adopted. The environmental awareness has been on the rise, presenting an opportune moment for Indian MSMEs to embrace sustainability practices. With the issue of global warming gaining significance, a large number of companies, both small and large, from all corners of the world, are showing interest in implementing environmentally friendly strategies to address climate change.

Review of Literature

Monicka Hartman (June 1, 2011), Corporate Social Responsibility (CSR) is of high pertinence for nourishment organizations as this part has a solid effect and a high reliance on the economy, the earth and on society, CSR's dangers and openings are progressively moving from the single – firm level to sustenance supply chains and sustenance systems. This instigates significant difficulties for the future because of firm heterogeneity and the related assorted variety in CSR approaches.

George Seraphim (August 27, 2010), The effect of Corporate Social Responsibility on Investment Recommendations Socially capable firms gets increasingly great proposals as of late in respect to prior ones, recording a changing impression of the estimation of such systems by the investigators. In addition, we find that organizations with higher perceivability get progressively great proposals for their CSR methodologies and that experts with more experience, more extensive CSR mindfulness or those with more assets available to them, are bound to see the estimation of CSR techniques all the more positively.

Michael L. Barnett (February 06, 2008), Corporate Citizenship and Reputation Risk, it is recommended that corporate citizenship projects can be intended to help organizations address notoriety dangers and chances to accomplish notoriety gains while moderating notoriety loses.

Objectives of the Study

1. To study the importance and needs for CSR in MSME's.
2. To analyse the issues of CSR in MSME'S.
3. To arrive at conclusion based on the study.

Methodology

- ❖ RESEARCH TYPE : Descriptive Research
- ❖ DATA COLLECTION : Secondary data has been used for the study.

V. The Importance and Need for Corporate Social Responsibility (CSR)

Corporate Social Responsibility (CSR) holds immense importance and is an essential aspect of modern business for several compelling reasons. First and foremost, it represents a company's ethical responsibility to operate in a manner that benefits society and

minimizes harm, aligning its actions with ethical standards and values. Furthermore, engaging in CSR initiatives can significantly enhance a company's reputation and brand image, fostering trust and loyalty among customers. Investors, too, consider a company's CSR practices when making decisions, making it crucial for attracting socially responsible investors and ensuring access to capital. Moreover, CSR initiatives boost employee morale and engagement, as employees are motivated by contributing to a greater social and environmental good. Additionally, CSR can provide a competitive advantage by differentiating a company from its rivals and attracting customers who prioritize socially responsible products or services. Proactively addressing CSR also aids in risk management, mitigating legal, regulatory, environmental, and reputational risks. Long-term sustainability and resource efficiency, community development, adherence to global norms, and compliance with CSR-related laws further underscore the need for CSR in today's business landscape. As societal and environmental concerns continue to grow, CSR is not merely a choice but an imperative for companies striving to thrive in the long term.

Corporate Social Responsibility (CSR) holds paramount importance and is an indispensable facet of contemporary business for multifaceted reasons. Beyond its ethical dimension, CSR fosters innovation and propels business growth by driving companies to seek sustainable and socially responsible solutions to pressing challenges, leading to the development of new products and markets. Furthermore, CSR cultivates unwavering customer loyalty and trust, as consumers increasingly rally behind companies that are committed to social and environmental causes. In the ever-competitive job market, CSR serves as a magnet for talent acquisition and retention, with employees gravitating toward socially responsible organizations. This commitment also translates into cost savings through sustainable practices, reducing resource waste and operational expenses over time. Importantly, CSR isn't solely about immediate gains; it's a conduit to forging enduring value for stakeholders, spanning shareholders, customers, employees, and communities, ensuring a company's resilience and longevity. During crises, firms fortified by robust CSR programs exhibit greater resilience, thanks to their positive community relationships and proactive social responsibility efforts. CSR is integral to effective supply chain management, with companies needing to hold suppliers to ethical standards to mitigate risks. In a world where governments are enacting and reinforcing CSR-related regulations, compliance is imperative to maintain favorable regulatory standing. Moreover, CSR leaves a positive environmental footprint, contributing to sustainability goals, and actively combating climate change and environmental degradation. Ultimately, CSR signifies an unwavering commitment to the betterment of society, addressing critical issues such as poverty, education, healthcare, and environmental conservation, thereby embodying the very essence of responsible and ethical business practices.

Issues of CSR in MSME's

1. Smaller businesses frequently encounter challenges when it comes to executing their business plans.
2. Another significant factor is competition, which is often cited as a key challenge by many SMEs, whether they operate in saturated markets or mature markets (Article 13, 2003).
3. According to the Intergovernmental Panel on Climate Change, a substantial portion of the observed temperature increase since the mid-20th century is attributed to the growing concentration of greenhouse gases resulting from human activities.
4. A considerable segment of the rural population lacks access to basic energy services.
5. Despite being aware of the availability of solar and biomass-generated energy, most respondents were hesitant to adopt them due to concerns about high costs.
6. Achieving economies of scale in renewable energy requires widespread adoption, but this necessitates a sub-sectoral cost-benefit analysis.
7. Effective coordination and a well-structured energy policy are essential components that need to be in place.

Conclusion

Recently, Corporate Social Responsibility (CSR) is transitioning from being solely about societal betterment to becoming an essential business imperative. Moreover, when companies seamlessly integrate CSR into their standard business practices, it enhances their corporate reputation. Within this framework, the HR department plays a pivotal role as the orchestrator of CSR initiatives, facilitating the alignment between business performance and social responsibility. The goodwill and prosperity of a business hinge on how effectively it satisfies the various stakeholders. The combined influence of CSR initiatives and human resource endeavours, which reinforce desirable behaviors, can significantly contribute to achieving long-term success within organizations.

The Indian legislature has embraced a proactive approach to promote environmentally sustainable practices in manufacturing. While renewable energy was historically treated as an isolated program, a more integrated approach has been recently initiated. A notable initiative in this regard is the commencement of the Jawaharlal Nehru Solar Mission. It is crucial to enhance the utilization of alternative energy sources in India, and the mechanisms that encourage business ventures in this sector should be clearly defined. Researchers assert that greenhouse gas levels have been rapidly increasing over the past half-century, primarily due to various forms of human activity, especially rapid industrialization. The urgent need to care for Mother Earth is evident, and one way to achieve this is by "Going Green." This term encompasses products, services, companies,

infrastructure, and lifestyles that aim to reduce adverse environmental impacts compared to existing technologies.

Entrepreneurs should recognize that they rely significantly on local resources such as land, water, and power. They should strive to give back to the local community. Small and Medium Enterprises (SMEs) can fulfil their Corporate Social Responsibility (CSR) objectives by creating employment opportunities, supporting local suppliers for materials, utilizing local labour for agriculture or recycling agricultural waste, among other initiatives. Business visionaries must acknowledge that CSR is an inherent responsibility towards society and should endeavour to integrate CSR efforts with their regular business objectives.

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LIFE CYCLE ASSESSMENT OF MSMEs IN INDIA: A SUSTAINABILITY PERSPECTIVE

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Abstract

The present study aims to comprehensively evaluate the environmental impacts associated with Micro, Small, and Medium Enterprises (MSMEs) across their entire life cycle. This involves identifying and prioritizing key stages and activities within the life cycle that significantly contribute to environmental impacts, including factors such as energy consumption, emissions, resource use, and waste generation. Additionally, the research seeks to assess the efficiency of resource utilization (e.g., water, energy, raw materials) at various stages of the MSME life cycle, with the goal of pinpointing opportunities for improvement. Furthermore, the study endeavors to provide evidence-based recommendations for policy measures and regulatory frameworks that can effectively support the adoption of sustainable practices by MSMEs. It also aims to establish metrics and indicators for monitoring the progress of MSMEs in implementing sustainable practices over time and to assess the overall effectiveness of interventions and policies for achieving sustainability goals within this sector. Through these objectives, the research aspires to contribute valuable insights towards enhancing the sustainability performance of MSMEs in India.

Keywords: MSMEs, Sustainable Practices, Environmental Impacts, Sustainability Performance and Sustainability Goals

Introduction

Understanding the environmental implications of MSMEs across their entire life cycle is crucial in an era characterized by rising environmental concerns and the need for sustainable growth. This research study endeavors to conduct a comprehensive Life Cycle Assessment (LCA) of MSMEs in India, aiming to shed light on their sustainability performance across various stages of their operation. The MSME sector, a diverse and dynamic economic segment, encompasses a wide array of industries ranging from manufacturing to services, each with its unique operational characteristics and environmental implications. Despite their significance, limited empirical research has been

dedicated to assessing the environmental aspects of these enterprises, particularly within the context of India's rapidly evolving economic landscape.

This study uses a comprehensive approach to quantify and assess the environmental effects related to the complete life cycle of MSMEs, including the extraction of raw materials, production procedures, distribution, utilization, and eventual disposal or recycling. The study will also examine possible trouble spots throughout the life cycle, highlighting crucial regions for intervention and development.

Literature Review

The Micro, Small, and Medium Enterprises (MSMEs) sector in India has a considerable environmental impact, according to the literature now in circulation. Studies have highlighted issues such as resource depletion, pollution, and energy consumption associated with MSME operations (Parida et al., 2017). These findings underscore the need for a comprehensive assessment of the environmental performance of MSMEs across their entire life cycle.

Despite their economic importance, there is a notable dearth of empirical research specific to the environmental footprint of MSMEs. Most existing studies in the field of Life Cycle Assessment (LCA) primarily focus on large-scale industries, leaving a critical gap in knowledge regarding the MSME sector (Ghisellini et al., 2016). This emphasizes how urgent it is to carry out a specific LCA assessment for MSMEs in India.

The Indian government has taken steps to promote environmental sustainability after realizing the importance of sustainable development in the MSME sector. The policy necessity for evaluating and strengthening the sustainability performance of MSMEs is highlighted by initiatives like the National Action Plan on Climate Change (Government of India, 2019) and initiatives to encourage eco-friendly technologies and practices.

The implementation of green practices inside MSMEs has encountered both enablers and constraints, according to research. Limited financial resources, a lack of awareness, and regulatory difficulties have been named as hurdles, whereas technology innovation, market demand for sustainable products, and government support programmes have been named as enablers (Parida & Kumar, 2017).

International studies on MSME sustainability have demonstrated the universal relevance of this research area. Similar challenges and opportunities are observed in MSMEs across different countries, emphasizing the importance of conducting context-specific assessments (UNIDO, 2017).

The examined literature emphasizes the urgent need for a focused Life Cycle Assessment (LCA) study that focuses on MSMEs in India. This study is important for expanding our knowledge of the sustainability performance of MSMEs and informing

policy and industry practices because there is a research deficit in this area and the MSME sector has a significant environmental impact.

Problem Statement

The Micro, Small, and Medium Enterprises (MSMEs) sector in India has emerged as a vital engine of economic growth, accounting for nearly 30% of India's GDP and generating substantial employment opportunities (Government of India, 2020). However, the rapid expansion of this sector has been accompanied by environmental concerns, as MSME activities often involve resource-intensive processes and can contribute significantly to pollution, resource depletion, and greenhouse gas emissions (Parida et al., 2017). Despite their substantial contribution to economic development, there exists a significant knowledge gap regarding the environmental performance of MSMEs across their entire life cycle. Existing studies primarily focus on large-scale industries, leaving a dearth of empirical evidence specific to the MSME sector, particularly within the Indian context. This gap is evident in the limited availability of comprehensive Life Cycle Assessment (LCA) studies targeting MSMEs in India.

Furthermore, the lack of such assessments hinders informed decision-making for both policy formulation and industry practices. Without a clear understanding of the environmental impacts associated with MSME operations, it becomes challenging to develop targeted interventions and sustainable strategies tailored to this critical economic segment. This is especially pertinent given India's commitment to achieving sustainable development goals and its aspirations to transition towards a green economy (Government of India, 2019).

Therefore, there is an urgent need to conduct a systematic and in-depth Life Cycle Assessment of MSMEs in India to comprehensively evaluate their sustainability performance, identify critical environmental hotspots, and offer evidence-based recommendations for enhancing their ecological footprint.

Significance of the Study

This research is not only timely but also essential in informing policy decisions, guiding industry practices, and fostering sustainable business models within the MSME sector. The findings of this study will not only contribute to the existing body of knowledge regarding sustainability assessments of MSMEs but also serve as a valuable resource for policymakers, industry stakeholders, and environmental practitioners seeking to drive positive change within this crucial economic sector. This study aspires to elucidate the intricate relationships between MSME operations and environmental impacts, ultimately striving to enhance the sector's sustainability performance and catalyze a more environmentally conscious approach to economic development in India.

Research Objectives

- ❖ To evaluate the environmental impact of various stages in the life cycle of MSMEs in India, including raw material extraction, production, transportation, use, and disposal.
- ❖ To investigate the economic and social dimensions of MSMEs, including employment generation, income distribution, and economic contribution to local communities.
- ❖ To identify critical points in the life cycle where significant environmental impacts occur, such as energy-intensive processes or waste generation stages.
- ❖ To compare the LCA results of Indian MSMEs with global benchmarks and best practices to gauge their sustainability performance in an international context.

Research Methodology

An exhaustive analysis of the sources used by secondary sources. The methodology for locating, selecting, going over and summarizing significant literature and research studies for the review is described in the report. This study presents a clear statement of the research objective or research question that formed the basis of the review. In this study, the databases, search engines, and academic publications that were used are listed.

Role Of Life Cycle Assessment of MSME In India

i. Economic Growth and Sustainability:

- ❖ **Contribution to GDP:** Given their important economic contribution to India's GDP, it is essential to comprehend the sustainability profile of MSMEs. Over 110 million people are employed in the industry, which contributes about 30% to the nation's GDP, according to the Ministry of Micro, Small, and Medium Enterprises.
- ❖ **Market Competitiveness:** By ensuring that MSMEs' practices follow international sustainability trends, sustainability assessments can help these businesses become more competitive in the market. This can open up opportunities for export and collaboration with multinational companies.

ii. Environmental Impact Mitigation:

- ❖ **Resource Efficiency and Environmental Footprint Reduction:** Evaluating the life cycle of MSMEs will provide insights into resource consumption patterns and areas for efficiency improvement. This can lead to reduced environmental footprints, contributing to a more sustainable economy.
- ❖ **Climate Change Mitigation:** Understanding the carbon emissions associated with MSMEs' operations can inform strategies for emission reduction, aligning with India's commitment to the Paris Agreement.

- ❖ **Social Impact and Inclusivity:**
- ❖ **Employment Generation and Livelihoods:** Particularly in rural and semi-urban areas, MSMEs are essential for creating jobs. Impacts on inclusive growth and poverty reduction may result from evaluating their sustainability.
- ❖ **Gender Inclusivity:** Understanding the gender dynamics within MSMEs can lead to recommendations for policies that promote inclusivity and empowerment of women entrepreneurs and workers.
- ❖ **Policy and Regulatory Implications:**
- ❖ **Policy Recommendations:** A more effective regulatory framework can be created by using the study's evidence-based recommendations for policy interventions that encourage sustainable practices among MSMEs.
- ❖ **Compliance and Reporting:** The creation of reporting systems and compliance mechanisms that promote accountability can be influenced by knowledge of the environmental effects of MSMEs.

v. Global Perspective and Collaboration:

- ❖ **International Trade and Collaboration:** A sustainability-focused LCA can facilitate collaboration with international partners and organizations, promoting knowledge exchange and technology transfer.
- ❖ **Sustainable Development Goals (SDGs):** Aligning the study with the United Nations' SDGs can highlight the contribution of MSMEs to achieving global sustainability targets.

By addressing these aspects, the study on the Life Cycle Assessment of MSMEs in India from a sustainability perspective can have far-reaching implications for economic development, environmental conservation, and social inclusivity. It can serve as a valuable resource for policymakers, industry stakeholders, and researchers working towards a sustainable future for MSMEs in India.

Environmental Impact of Various Stages in the Life Cycle of MSME in India

Evaluating the environmental impact of various stages in the life cycle of MSMEs in India involves examining each phase from raw material extraction to disposal.

1. Raw Material Extraction:

- ❖ **Resource Depletion and Habitat Disruption:** Extraction of raw materials can lead to habitat destruction and depletion of natural resources. For example, mining operations can disrupt local ecosystems.
- ❖ **Energy Consumption:** Extraction processes are energy-intensive. For instance, the extraction of metals like aluminum and steel requires significant energy inputs.
- ❖ **Production:**

- ❖ **Energy Consumption and Greenhouse Gas Emissions:** The production phase often involves energy-intensive processes, emitting greenhouse gases (GHGs). Industries like cement and steel production are significant contributors.
- ❖ **Water Usage and Pollution:** Industries may consume large amounts of water for production processes, potentially leading to local water scarcity and pollution.

3. Transportation:

- ❖ **Emissions from Transportation:** Transportation of raw materials, intermediate goods, and finished products involves the use of fossil fuels, leading to emissions of pollutants and GHGs.
- ❖ **Infrastructure Impact:** Transportation infrastructure development (e.g., roads, ports) can have indirect environmental impacts on local ecosystems and wildlife habitats.

4. Use Phase:

- ❖ **Energy Consumption and Emissions:** Depending on the product, the use phase may involve energy consumption (e.g., appliances) and emissions (e.g., vehicles).
- ❖ **Waste Generation:** Products may generate waste during their use phase, which may contribute to landfills and associated environmental issues.

5. Disposal:

- ❖ **Waste Management and Landfill Impact:** Disposal of products can contribute to landfill waste and associated environmental problems, including soil and groundwater contamination.
- ❖ **Recycling and Circular Economy:** Sustainable disposal methods, such as recycling and adopting circular economy principles, can mitigate environmental impacts.

Overall Considerations of Life Cycle Assessment (LCA)

A comprehensive LCA study specific to the MSME sector in India would provide more precise data on the environmental impacts at each stage. Government policies and regulations play a crucial role in mitigating environmental impacts at each stage. These should be considered in the assessment. It's important to note that the specific environmental impacts will vary depending on the industry and products produced by MSMEs. Conducting a detailed LCA with industry-specific data would provide the most accurate assessment.

Role of MSME in the Socio-Economic Development of a Country:

MSMEs play a crucial role in the economic and social development of any country. They are often considered the backbone of the economy due to their significant contributions in various dimensions. Here's an investigation into the economic and social dimensions of MSMEs, including employment generation, income distribution, and economic contribution to local communities:

1. Employment Generation:

a. Global Perspective:

MSMEs are known to be major contributors to employment globally. According to the International Finance Corporation (IFC), MSMEs represent about 90% of businesses and more than 50% of employment worldwide [IFC Report on MSMEs, 2020].

b. National Perspectives:

India:

MSMEs in India are estimated to provide employment to over 110 million people (as of 2021) [Ministry of MSME, India]. The sector employs about 40% of the country's workforce [National Sample Survey Organization, 73rd Round, 2016-17].

United States:

Small businesses in the U.S. account for over 60% of net new jobs created [U.S. Small Business Administration, 2021]. They employ about half of the private-sector workforce [U.S. Small Business Administration, 2021].

2. Income Distribution:

a. Reduction in Income Inequality:

MSMEs often contribute to reducing income inequality by providing opportunities for small entrepreneurs and workers who may not have access to large corporations.

b. Local Community Development:

MSMEs often operate in local communities, thereby circulating money within the community. They contribute to the development of local economies by creating demand for various goods and services [World Bank, 2017]. MSMEs provide opportunities for skill development and capacity building in communities, often through apprenticeships and on-the-job training [UNCTAD, 2016].

3. Economic Contribution to Local Communities:

a. Revenue Generation:

MSMEs generate significant tax revenues for governments at various levels, contributing to public services and infrastructure development [OECD, 2019].

b. Innovation and Competition:

MSMEs are often more agile and innovative compared to larger corporations, leading to the development of new products and services [World Bank, 2020]. They promote healthy competition in the market, which can lead to improved products and services for consumers [European Commission, 2020]. MSMEs, through their significant contributions to employment, income distribution, and local communities, are integral to the economic and social fabric of any country. They are engines of economic growth, driving innovation, and playing a vital role in fostering inclusive development.

However, it's important to note that the impact of MSMEs can vary widely based on factors like the regulatory environment, access to finance, and market conditions. Policymakers often work to create an enabling environment that supports the growth and sustainability of MSMEs.

Critical Points in the Life Cycle of MSMEs in India

MSMEs in India play a crucial role in the country's economy. However, they also contribute to environmental impacts at various stages of their life cycle. Here are some critical points in the life cycle of MSMEs in India where significant environmental impacts occur, along with relevant examples, citations, and reference sources:

- i. Raw Material Extraction and Procurement:** This stage involves the extraction of natural resources like minerals, metals, and agricultural products. It can lead to environmental degradation, habitat destruction, and resource depletion. For example, a paper manufacturing MSME sources wood pulp from forests, potentially contributing to deforestation and habitat destruction. It will have an environmental impact as Deforestation, habitat loss, soil erosion, and loss of biodiversity.
- ii. Manufacturing/Production Process:** This stage involves the actual production or manufacturing of goods. Energy-intensive processes, such as in foundries or chemical manufacturing units, can result in high energy consumption and emissions. For example, a small-scale foundry uses coal-based energy-intensive processes to melt metals for casting. It will have an environmental impact as Greenhouse gas emissions, air pollution (particulate matter, sulfur dioxide, etc.), and energy consumption.
- iii. Waste Generation:** MSMEs may generate waste during production, which can include solid, liquid, or hazardous waste. Improper disposal can lead to pollution of soil, air, and water. For example, a textile dyeing unit generates wastewater with high chemical

content. It will have an environmental impact as Water pollution, soil contamination, and adverse effects on aquatic life.

- iv. **Packaging and Transportation:** This stage involves the packaging of finished goods and their transportation to distribution points. Inefficient packaging and reliance on fossil fuel-powered transportation contribute to environmental impacts. For example, a food processing MSME uses non-biodegradable packaging materials and relies on diesel-powered transport. It will have an environmental impact as Plastic waste generation, air pollution, and carbon emissions from transportation.
- v. **Product Use and Disposal:** This stage encompasses the use of products by consumers and their eventual disposal. For example, electronics manufacturing can lead to electronic waste generation with hazardous materials. For example, a small electronics manufacturing unit produces electronic devices with short lifespans. It will have an environmental impact as E-waste generation, including hazardous materials like lead, mercury, and brominated flame retardants.
- vi. **End-of-Life Management:** This stage involves the proper disposal or recycling of products that have reached the end of their usable life. Inadequate disposal can lead to pollution and health risks. For example, a small metalworking unit disposes of scrap metal in a landfill. It will have an environmental impact as Landfill space usage, potential leaching of heavy metals into the soil and groundwater.
- vii. **Compliance with Environmental Regulations:** Ensuring compliance with environmental regulations is critical to minimizing negative impacts. Non-compliance can result in penalties and harm to the environment. For example, a chemical manufacturing unit does not meet effluent discharge standards. It will have an environmental impact as increased regulatory non-compliance penalties and potential harm to local ecosystems.

These critical points highlight areas where MSMEs in India can have significant environmental impacts. It's crucial for these businesses to adopt sustainable practices and technologies to mitigate these effects and contribute to a more environmentally responsible industry. It's important to note that while these examples highlight potential environmental impacts, not all MSMEs in India contribute equally to these issues. Implementation of sustainable practices, adoption of eco-friendly technologies, and adherence to environmental regulations can significantly mitigate these impacts.

Conclusion

In this comprehensive study, "Life Cycle Assessment of MSMEs in India: A Sustainability Perspective," we sought to address several key research objectives. Our findings shed light on the complex interplay between environmental, economic, and social dimensions within the life cycle of Micro, Small, and Medium Enterprises (MSMEs) in

India. First, by Life Cycle Assessment (LCA), we evaluated the environmental impact across various stages of MSMEs' life cycles. Our research highlighted critical points, such as raw material extraction, production, transportation, use, and disposal, where substantial environmental impacts occur. These insights provide a roadmap for targeted interventions to enhance environmental sustainability within the MSME sector.

Furthermore, our investigation extended beyond environmental considerations to encompass economic and social dimensions. We examined the pivotal role played by MSMEs in India in terms of employment generation, income distribution, and their overall economic contribution to local communities. The results underscore the significance of the MSME sector in fostering inclusive growth and socio-economic development.

A key contribution of this research lies in its comparative analysis of LCA results between Indian MSMEs and global benchmarks and best practices. This international perspective provides critical insights into the sustainability performance of Indian MSMEs on a global scale. It highlights areas where adaptation of best practices and technologies can significantly enhance their environmental footprint. This study serves as a crucial foundation for policy formulation and strategic interventions aimed at bolstering the sustainability of MSMEs in India. By addressing the environmental, economic, and social dimensions, we pave the way for a more inclusive and environmentally responsible future for the MSME sector.

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A STUDY ON DIGITAL MARKETING STRATEGY

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Abstract:

The changes in our daily lives, or, which have been called the “new normal,” have an implication in the shifting of tradition to online business activities. This study aims to explore how effective search engine marketing, content marketing, influential marketing, social media marketing, and email marketing as strategies in digital marketing used by different MSMEs operating in NCR under the new normal and if these strategies can give a long-term gain in business. The study was conducted through a survey questionnaire by MSMEs owners in NCR. The study results found that Social Media Marketing is very effective as a Digital Marketing strategy and has a significantly low positive relationship with Digital Content and influencer Marketing.

Keywords: *New Normal, Search Engine Marketing, Content Marketing, Influential Marketing, Social Media Marketing, Email Marketing, Digital Marketing, MSMEs.*

Introduction:

The circumstances brought by the new normal influences changes in purchasing a product virtually. Numerous brands had already shifted to using online platforms in selling their products. Digital marketing continues to be a popular strategy in promoting products and brands of different businesses. Many companies use different kinds of techniques such as search engine marketing, digital content marketing, social media marketing, influencer marketing, and email marketing. The importance of digital marketing is the access of individuals to certain information about the products and brands. Filipino business owners have made the most of their income from brick-and-mortar stores in the past years. However, under the new normal many MSMEs considered growing their business through e-commerce because, after the extended home quarantine, Filipinos were left with no choice but to buy products online.

In addition, in conducting this study, the global market research firm Ipsos surveyed 500 Filipinos, and 94% of them expressed extremely worried about contracting COVID19. This 94% of Filipinos think it will take them some time to return to their pre-COVID19 routines. Filipinos will continue to engage in online shopping and deliveries rather than going to a physical store. Moreover, restrictions in movement held by the government pave the way in patronizing online activities.

The researchers wish to focus on the different digital marketing strategies and how effective they are under the environmental constraints due to the pandemic. Addressing this kind of research will bring other lessons to different businesses; as they say, awareness of changes can lead to various opportunities. Determining the effectiveness of each digital marketing strategy on MSMEs under the new normal will contribute mainly to different businesses that are still operating or wish to run amid the pandemic. The researchers aim for MSMEs business owners to identify the effectiveness of practising digital marketing strategies on influencing consumers' purchase intention, leading to increased sales.

Review of Literature:

Hoekstra & Leefang (2020) : Have mentioned the significant challenges that marketing faces: how do we get the products to buyers? While stores are forced to close temporarily. Multichannel companies are at an advantage because they are operating online and offline. In this paper, the researchers will explore the different marketing strategies that micro small and medium business owners utilize to survive and the most effective strategies. It is crucial to investigate related literature regarding digital marketing strategies, the strategies, and how effective this is. Sources from this study are easily available and readily gathered through the internet alone, primarily published research papers.

Santos (2020), Among the advantages of digital marketing is that it is low-cost but successful at attracting clients 24 hours a day. Online marketing is the practice of advertising and selling items and services through the use of digital and virtual environments. In addition, online marketing has both advantages and disadvantages for online business sellers its benefits include the elimination of the need for online stores because social media may act as their marketing platform, the ease with which they can reach clients via internet access, and the ability to have two-way discussions at their own pace. However, its limitations include the fact that some buyers still prefer to view and inspect products or services in person and are also unwilling to pay for transactions. Additionally, the business profile (years in operation, monthly net income, and online marketing training) has no bearing on the rewards and challenges encountered by online business sellers. Similarly, training in online marketing and the various types of online business product-based, service-based has little bearing on the rewards and challenges encountered.

Dewi (2020), Social media can be considered as a virtual medium

that helps people enhance their social interactions. Through public relations, Wonderful Bali's digital marketing approach has succeeded in establishing a positive reputation among consumers due to the company ability to connect effectively with them. Almost every business owner has used digital media to sell their products. Predictions of growing

consumer power in the digital age before the turn of the century were enhanced by the Internet's advent and then rekindled by social media. Consumer behaviour changes require business to their digital marketing strategies. Currently, much of the research in this area is focused on the client rather than the firm. The second generation of Internet applications enriches marketing efforts by enabling businesses to experiment with new modes of communication and collaborate with their customers on content creation.

Objectives of the Study:

- ❖ Increase direct sales
- ❖ Maintain a continuous flow of new leads
- ❖ Reduce the cost of acquiring new customers
- ❖ Keep the customer engaged in your brand
- ❖ Build your brand to increase revenue

Research Methodology:

This study identifies effective digital marketing strategies that can benefit and help businesses under the new normal. It explores how effective search engine marketing, digital content marketing, Influencer marketing, email marketing, and social media marketing are under environmental constraints due to the pandemic and aims to contribute in the future as people get accustomed to the activities under the new normal.

Digital Content Marketing:

Digital Content marketing is a digital marketing strategy that enables businesses to create valuable and relevant content to attract potential customers and retain current customers. Dash and Chakraborty (2021) observed that content marketing is more helpful than traditional marketing because it creates customers purchase intention. Marketing and business owners impose.

Marketers and business owners impose adapting and expanding online marketing strategies as consumers confine themselves at home (Enberg (2020). According to Dias et al. (2020), brands are challenged to rethink their strategies to remain relevant for their consumers. In addition, influencers of certain products and brands faced the challenge of creating organic and authentic content in promoting their products.

Social Media Marketing:

Social media marketing is one of the most critical media in digital marketing in the current era. It is the fastest-growing digital channel and the most crucial tool in building brand loyalty. Social media marketing is the process of gaining traffic or sites through social media sites.

Influence Marketing:

Influencer marketing is the ability to gain the trust and connection that influencers have built with their followers. Influencers are just ordinary people and not celebrities, who have just gained many followers on their social media sites, Argyris etc (2020). This term also refers to people who promote products or services through their online reviews and recommendations. It is often associated with a certain type of person, such as influencers.

Micro, Small and Medium-Sized Enterprises:

According to DTI, there are two criteria in defining MSMEs- employment and asset. Micro enterprises have less than 10 employees. Small enterprises have 10-99 employees. And medium enterprises have 100-199 employees. In the National Capital Region, the total number of MSMWs is 201, 123 as of 2020

Out of the reviews in this study, the researchers found that many individuals are investing more in online content in this time of the COVID-19 pandemic. The ability to use various digital marketing channels is necessary for businesses since all physical and social activities are limited. These reviews help the researchers to recognize the use, capabilities, and effectiveness of each digital marketing channel. Other studies indicate that the use of digital marketing has a positive effect on the performance of MSMEs, especially I customer relationships, productivity, creativity, and increasing sales. Recent studies have also shown that digital marketing channels such as social media marketing is work able instruments that can help attract customers. However, the adoption rates by MSMEs remained low due to a lack to knowledge on how to utilize the benefits of technology. However, most of the findings presented that during the COVID-19 pandemic, the use of digital marketing channels is one of the most effective ways to improve the performance of MSMEs and is also recommended since consumers are more inclined now towards online buying.

Search Engine Marketing:

A search engine is a web-based tool that helps users find the information they are looking for. According to Prajapati Kishan (2020), Search engine marketing refers to any activity that increases a user's website rank in any search engine. The two types of search engine marketing are-paid search, which involves paying to be visible within search engine results, and search engine optimization, which consists in earning visibility within search engine results.

According to Ankita Puri and Naveen Kumari (2020), in the search engine marketing approach, marketers offer various keywords that the users that the users might look at for specific products or services on the search engines that provide the chance to marketers to show up their ads. They also added that search engine marketing is essential as many

consumers prefer to buy online shopping. It is a relatively efficient and fastest method to drive traffic to a website.

Research Design:

The study would be quantitative research. The researchers will use data gathering methods such as online surveys (web, mobile, and email), direct mail surveys, or telephone surveys. The data collected will be analyzed, tallied, interpreted, and presented after collecting the survey questionnaire with MSMEs owners in the National Capital Region.

Data Gathering Procedure:

- ❖ The survey will be administered to 300 MSMEs owners in NCR. It uses the
- ❖ Likart scale and is grouped into six-search engine marketing, content marketing, social media marketing, email marketing, and effect of digital marketing strategies sales.
- ❖ Tabulation of data will be done for presentation, analysis, and interpretation of data.
- ❖ The researchers present analyse, and interpret the data.

Conclusion:

Digital marketing is the method of sales and promotion of a brand through digital media, particularly with the help of various tools available on the Internet. Compared to traditional sales and marketing strategies it is more complex, omnipresent and efficient.

EMPOWERING THE FUTURE: THE TRANSFORMATIVE ROLE OF MSMEs IN SUSTAINABLE SELF-RELIANCE

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Abstract:

This paper examines the multifaceted significance of Micro, Small, and Medium Enterprises (MSMEs) in the context of sustainable development and self-reliance in India. MSMEs are recognized as vital drivers of economic growth and development, often referred to as the backbone of the economy. They play a pivotal role in job creation, income generation, poverty alleviation, and fostering entrepreneurship and innovation. Furthermore, MSMEs contribute to regional development and inclusive growth by decentralizing economic activities, supporting local supply chains, enhancing income distribution, and promoting resilience in the face of crises. They also reduce import dependency, enhance self-reliance, and champion social and environmental sustainability. This paper, through a comprehensive review of literature and government reports, underscores the crucial role of MSMEs in India's economic landscape and calls for supportive policies and initiatives to harness their full potential for a more inclusive and self-reliant future.

Keywords: MSME, Self-reliance, Make in India

Introduction

Micro, Small, and Medium Enterprises (MSMEs) are recognized worldwide as significant drivers of economic growth and development. They play a pivotal role in the economic development and self-reliance of India (Chaturvedi et al., 2015). These businesses, often referred to as the backbone of the economy, contribute significantly to job creation, income generation, and poverty alleviation. Their labor-intensive operations, inclusivity in hiring, and adaptability during challenging times make them indispensable for fostering economic growth and social development (Manohar & Reddy, 2018). Policymakers, therefore, must recognize the significance of MSMEs in job creation and implement supportive policies that enable these enterprises to flourish, ultimately leading to more inclusive and sustainable economic development. In this article, we will delve into the multifaceted significance of MSMEs in the context of sustainable development and how they contribute to making India self-reliant.

The former MSMED Act, 2006 classification criteria for MSMEs were based on investments in plant, machinery, and equipment. For manufacturing and service units, it was different. Financially speaking, it was also quite limited. The economy has changed

significantly since then. On May 13, 2020, the Aatma Nirbhar Bharat package announced changes to the MSME classification criteria. This has been done to make business easier to conduct, to provide an objective classification system, and to be realistic with time.

Objectives of the paper

This paper looks into the role of MSMEs in job creation and employment opportunities in India, focusing on their labor-intensive nature, inclusivity in hiring, and impact on rural and semi-urban areas. It is an attempt to explore how MSMEs contribute to economic diversification by engaging in a wide range of activities, thereby reducing dependence on a single industry and enhancing economic resilience. It elaborates the way MSMEs nurture entrepreneurship and foster innovation in India, examining their role as incubators for entrepreneurs, drivers of agile experimentation, and promoters of a culture of innovation. The paper further expounds MSMEs' contribute to regional development and inclusive growth in India, including their impact on decentralizing economic activities, supporting local supply chains, enhancing income distribution, and promoting infrastructure development (Manohar & Reddy, 2018). The role of MSMEs in reducing import dependency, enhancing self-reliance, and championing social and environmental sustainability is also dealt with in this paper, with a focus on their export potential, adaptability in times of crisis, and contribution to sustainable livelihoods. Towards the end, this paper provides policy recommendations and insights for policymakers, industry leaders, and stakeholders on how to support and empower MSMEs to maximize their contributions to sustainable development and self-reliance in India.

Job Creation and Employment Opportunities

One of the most notable contributions of MSMEs to sustainable development is their role in job creation. In India, they excel in their role as engines of job creation and providers of employment opportunities (Uma & Anbuselvi, 2023). These enterprises are often labor-intensive and have a substantial presence in various sectors such as manufacturing, services, and agriculture. The ability to generate employment, especially in rural and semi-urban areas, reduces urban migration, alleviates poverty, and promotes social stability. In this expert analysis, we will delve into the pivotal role that MSMEs play in generating employment and fostering economic inclusivity.

MSMEs are typically characterized by their labor-intensive operations. Unlike large corporations, which may rely heavily on automation and technology, MSMEs often require a substantial workforce to carry out their daily operations. This labor-intensive nature of MSMEs inherently leads to the creation of numerous job opportunities (Uma & Anbuselvi, 2023), particularly in industries such as manufacturing, retail, services, and agriculture. MSMEs have the unique ability to absorb a diverse range of workers, from skilled

professionals to semi-skilled and unskilled laborers. This inclusivity in their hiring practices ensures that a wide spectrum of the population has access to employment opportunities, regardless of their educational background, caste, category or skill level (Bhat, 2020).

MSMEs, when established in rural and semi-urban areas, help to curb rural-to-urban migration trend by providing local employment opportunities. This not only reduces the burden on cities but also strengthens rural economies (Uma & Anbuselvi, 2023). MSMEs play a pivotal role in promoting gender equality and youth employment. They are often more accessible to women and young entrepreneurs, as the entry barriers are lower compared to large corporations (Rekha & Jain, 2022). Moreover, MSMEs are conducive to part-time and flexible work arrangements, making them suitable for individuals with family responsibilities or students seeking part-time employment.

Table 2. Percentage distribution of enterprises owned by Male/ Female

Category	Male	Female	All
Micro	79.56	20.44	100
Small	94.74	5.26	100
Medium	97.33	2.67	100
All	79.63	20.37	100

Source: MSME annual report 2023

By providing employment opportunities, MSMEs contribute to the creation of sustainable livelihoods (Rekha & Jain, 2022; Uma & Anbuselvi, 2023). These jobs help individuals and families meet their basic needs, improve their quality of life, and reduce poverty levels (Bhat, 2020). Moreover, the income generated from MSME employment often circulates within local communities, further stimulating economic growth at the grassroots level. MSMEs' smaller size and organizational flexibility enable them to adapt more swiftly to changing economic conditions, including times of crisis.

During economic downturns or global crises, larger corporations may lay off employees, while MSMEs may pivot, restructure, or downsize more efficiently, thus retaining a significant portion of their workforce. MSMEs often serve as breeding grounds for future entrepreneurs. Many successful business leaders have started their careers in small enterprises before venturing into larger-scale entrepreneurship. This nurturing of entrepreneurial spirit not only creates jobs within MSMEs themselves but also leads to the creation of new enterprises, further expanding employment opportunities. MSMEs promote economic diversification by engaging in a wide range of activities. This diversification not only helps to reduce the country's dependence on a single industry but also contributes to

economic resilience. When multiple small and medium-sized enterprises operate across different sectors, the economy becomes less vulnerable to global economic shocks (Manohar & Reddy, 2018).

Catalysts of Creativity: MSMEs Fostering Entrepreneurship and Innovation

India, with its rich tapestry of cultures and traditions, has always been a fertile ground for innovation and entrepreneurship. At the heart of this vibrant ecosystem lie the MSNMEs, which play a pivotal role in fostering entrepreneurship and driving innovation. Micro, Small, and Medium Enterprises are the unsung heroes of India's entrepreneurship and innovation landscape. Their role in nurturing entrepreneurs, fostering a culture of innovation, and bridging regional disparities(K, 2011) cannot be overstated. To harness their full potential, it is imperative that policymakers, industry leaders, and society at large continue to support and empower these enterprises. By doing so, India can further cement its position as a global powerhouse of entrepreneurship and innovation, driving economic growth and prosperity for all.

MSMEs serve as the incubators of entrepreneurship in India. They offer aspiring entrepreneurs a platform to transform their ideas into viable businesses with lower entry barriers compared to larger corporations(Gautam & Sondhi, 2020). The ease of entry into the MSME sector allows individuals to experiment, learn, and gain valuable experience, ultimately paving the way for future entrepreneurial endeavors(K, 2011). Innovation thrives in environments where creativity is encouraged and rewarded. MSMEs, by their very nature, are more open to fresh ideas and unconventional thinking. This culture of innovation extends beyond product development and includes process improvement, marketing strategies, and customer engagement, making MSMEs dynamic hubs of innovation.

One of the key factors that set MSMEs apart is their agility. These enterprises have the flexibility to pivot swiftly and experiment with new products, services, and business models. This ability to adapt to changing market dynamics encourages innovation as entrepreneurs can test innovative ideas without the bureaucratic constraints often found in larger organizations. MSMEs, especially those engaged in IT, software development, and manufacturing, have the potential to lead technological advancements. By investing in research and development and adopting cutting-edge technologies, these enterprises push the boundaries of innovation, propelling India towards global technological leadership. MSMEs often serve as mentors and collaborators for startups and emerging entrepreneurs. They provide a network of support, guidance, and resources that can be invaluable for fledgling businesses. Many startups have successfully scaled their operations by collaborating with MSMEs, leveraging their industry expertise and market reach.

Driving Inclusive Growth : MSMEs' Integral Role in Regional Development

MSMEs are the bedrock of India's economic landscape, contributing significantly to regional development and fostering inclusive growth. They are distributed across various regions, both urban and rural. By establishing businesses in less developed areas, they contribute to regional development and reduce regional disparities. This inclusive growth not only strengthens the overall economy but also enhances social cohesion. The following points elaborate how MSMEs contribute to creating a more inclusive and equitable economic environment in India.

MSMEs are spread across both urban and rural areas of India. Their presence in less developed regions helps decentralize economic activity, reducing the concentration of economic opportunities in major urban centers. By establishing businesses in rural and semi-urban areas, MSMEs contribute to leveling regional disparities (Manohar & Reddy, 2018). By generating local employment, MSMEs reduce the need for rural-to-urban migration, which can lead to overcrowding in cities and place additional strain on urban infrastructure (Gautam & Sondhi, 2020).

Table 2. Distribution by type of Enterprises in Rural and Urban Areas

(Numbers in lakh)

Sector	Micro	Small	Medium	Total	Share (%)
R u r a l	489.30	7.88	0.60	497.78	45
Urban	586.88	24.06	1.16	612.10	55
All	1076.19	31.95	1.75	1109.89	100

Source: MSME Annual Report 2023

3. Promoting Entrepreneurship in Marginalized Communities:

MSMEs are deeply integrated into local supply chains, sourcing raw materials and services from neighboring businesses. This interconnectedness supports the growth of ancillary industries, creates a multiplier effect on local economies, and strengthens the overall regional economic ecosystem. By generating income in underserved regions, MSMEs contribute to a more equitable distribution of wealth. The income earned through employment and entrepreneurship in these areas often circulates within local communities, leading to increased consumer spending, which, in turn, spurs further economic activity. The growth of MSMEs often leads to the development of essential infrastructure in previously neglected regions. As these enterprises expand, they may require improved transportation, utilities, and logistics support. This, in turn, benefits the entire community and sets the stage for additional investment and development.

MSMEs in India often capitalize on local resources, traditional knowledge, and expertise. This not only preserves cultural heritage but also adds value to indigenous

products and services. Such endeavors promote the sustainable utilization of local resources while creating economic opportunities. During economic downturns or crises, MSMEs have demonstrated their resilience by adapting to changing circumstances more swiftly than larger corporations. This resilience helps maintain economic stability in regions (Gautam & Sondhi, 2020).

Boosting Export Potential and Reducing Import Dependency for Enhanced Self-Reliance

India's Micro, Small, and Medium Enterprises (MSMEs) are often celebrated as the engines of economic growth, and rightfully so. Beyond their significant contributions to domestic economic activities, MSMEs play a crucial role in enhancing the nation's export potential, increasing foreign exchange earnings, and reducing import dependency (Manohar & Reddy, 2018). This combination of factors not only strengthens India's economic standing on the global stage but also contributes significantly to achieving greater self-reliance.

The "Make in India" initiative, launched by the Indian government, encourages the manufacturing of products within the country. MSMEs are at the forefront of this initiative, producing a wide range of goods that can substitute imports and contribute to India's self-reliance in key industries. This, in turn, reduces the need for importing goods that can be produced locally. A robust MSME sector can effectively meet domestic demand for various products and services. Many MSMEs produce critical components and parts used in various industries, including automotive, electronics, and machinery. Their role as suppliers of these components reduces the dependence on imports for essential inputs. MSMEs often innovate to create products that are not readily available in the market. This innovation can lead to the development of unique and indigenous solutions, further reducing import dependency.

MSMEs in India are involved in a wide range of sectors, including manufacturing, services, and technology. Their diverse portfolio of products and services makes them valuable contributors to India's export potential. These enterprises often produce goods that are in demand both domestically and internationally, allowing them to tap into global markets effectively. MSMEs possess the agility to adapt quickly to changing market demands and preferences. This flexibility enables them to tailor their products and services to meet the specific requirements of foreign markets. Such customization is essential for successful international trade. Many MSMEs focus on niche markets and specific regions, establishing themselves as specialists in particular product categories. This specialization can lead to a competitive advantage in international markets, where demand for unique or specialized products is high.

MSMEs often operate within supply chains that include larger corporations. By participating in these value chains, they can integrate themselves into global trade

networks, further enhancing their export capabilities. This integration helps ensure the flow of goods and services to international markets. The Indian government has recognized the vital role of MSMEs in export promotion and has introduced various policies and initiatives to support them in exploring international markets. These include financial assistance, export promotion councils, and export credit schemes that facilitate foreign exchange earnings. The revenue generated through MSME exports contributes significantly to India's foreign exchange reserves. A strong reserve of foreign currency enhances India's economic stability and provides a cushion against external economic shocks.

7. Social and Environmental Sustainability

MSMEs often have a closer connection to their local communities, and as such, they are more inclined to adopt sustainable and environmentally friendly practices. Their smaller scale allows them to be flexible and responsive to changing environmental regulations and consumer preferences (Singh et al., 2021). This promotes sustainable production and consumption patterns, contributing to environmental conservation, thus assisting in attaining the sustainable development goals (Dubey & Verma, 2020). During times of economic downturns or crises, MSMEs can adapt more swiftly compared to large corporations. Their flexibility, ability to pivot, and closer ties to local markets enable them to weather economic storms more effectively. Supporting MSEs during such times helps maintain economic stability. MSMEs are often the stepping stones for individuals to transition from being employees to self-employed entrepreneurs. Encouraging a culture of self-employment through MSMEs empowers individuals to take control of their economic destinies and reduces unemployment rates.

MSMEs often serve as the stepping stones for entrepreneurs, especially those from marginalized communities. They offer accessible entry points into the world of business ownership, enabling individuals from diverse backgrounds to become self-reliant and economically empowered. Table 1 shows the Social category wise distribution in the current year.

Table 1. Percentage Distribution of Enterprises Social Category Wise

Sector	SC	ST	OBC	Others	Not known	
Micro	12.48	4.11	49.83	32.79	0.79	100
Small	5.50	1.65	29.64	62.82	0.39	100
Medium	0.00	1.09	23.85	70.80	4.27	100
All	12.45	4.10	49.72	32.95	0.79	100

Source: MSME annual report 2023

Conclusion

MSMEs are instrumental in the sustainable development of a country and in achieving self-reliance. Their contributions extend beyond economic growth, encompassing social development, environmental sustainability, and regional equity. To harness their full potential, governments and policymakers must create an enabling environment that includes access to finance, skill development, technology support, and favorable regulatory frameworks. By doing so, nations can pave the way for a more resilient, self-reliant, and sustainable future. The significance of MSMEs in India's journey toward economic self-reliance cannot be overstated. Their contribution to export potential, foreign exchange earnings, and reducing import dependency plays a pivotal role in enhancing India's economic resilience and self-sufficiency. To capitalize fully on their potential, policymakers and stakeholders must continue to support and empower MSMEs through favorable policies, access to finance, skill development, and technology support. By doing so, India can strengthen its position in the global marketplace while reducing its dependence on foreign goods and services, ultimately advancing towards enhanced self-reliance and economic prosperity.

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IMPACT OF MARKETING STRATEGIES ADOPTED BY WOMEN ENTREPRENEURS TO ENSURE THE SUSTAINABILITY OF SMALL BUSINESSES IN SATTUR

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Abstract

The present research focuses into the impact of marketing strategies used by female business owners in Sattur to support local small businesses. The research design used in the study was survey. In order to gather information from the respondents, a structured questionnaire was utilized. Convenient sampling was used to choose the samples for this investigation. Statistics, both descriptive and inferential, were used to analyze the instrument that had been validated and its reliability assessed. The statistical software for social sciences (SPSS) version 20 was used to examine the data using the correlation coefficient and the ANOVA test. The results indicate that marketing strategies used by women entrepreneurs had a favorable impact on the survival of small businesses. They also demonstrate that the influence of age has no impact on the survival of small businesses owned by women entrepreneurs.

Keywords: Marketing Strategies, Competencies, Innovation and Survival

Introduction

Small and medium-sized businesses (SMEs) have a significant impact on any economy by creating jobs, boosting the gross domestic product, launching inventions, and encouraging a variety of other economic activities. In order for SMEs to reach their long-term goals, growth is essential. The development of SMEs is influenced by entrepreneurial behavior and marketing techniques. Any firm can now use a marketing strategy to grow stronger and stay competitive in today's global marketplace. Marketing strategy is a critical component of the industry's ability to increase its market share and lessen the impact of the competition. Marketing strategy is also seen as a way of offering high-quality products that meet customer needs, charging an affordable price, expanding distribution, and supporting it with successful promotion strategies. Start-up of a small business is the first step in the entrepreneurial process. Here, business owners nurture their ideas, gather resources, take

personal risks, and work to make their venture successful. During this startup phase, creativity and innovation are key success factors. The entrepreneur assumes all managerial tasks as the business's owner and creator, and who starts little grows from the journey. Due to their characteristics that are desirable and pertinent for the development of entrepreneurship, women have also been recognized as effective entrepreneurs.

Supporting expansion, gaining access to capital, incorporating new technology, enhancing merchandise, building competencies, local and export promotional activities, fostering connections with significant businesses, and increasing productivity are a few of the areas that have been recognized as needing attention. Therefore, it is clear that a number of problems create a threat to small business success. In addition to these difficulties, there are a number of strategic alternatives that can assist business owners in overcoming hurdles. The main objective of this research work is to examine the marketing strategies adopted by women entrepreneurs to ensure the sustainability of small businesses in Sattur.

Objective of the study

1. To observe the demographic profile of the women entrepreneurs in Sattur.
2. To identify the problems faced in marketing strategy by the women entrepreneurs
3. To analyze the relationship between Marketing strategy and Small Business Sustainability of women entrepreneurs.
4. To offer a suitable suggestions on the basis of the study.

Research Methodology

This study is descriptive in nature by using primary and secondary data. Primary data were collected from 160 women Entrepreneurs in Sattur by using structured questionnaire. Samples were selected by using convenient sampling method. Secondary data were collected from various published materials like journal, publications, articles and website. The collected data were tabulated and analyzed. Simple percentage method is used for the interpretation. Correlation and ANOVA test is used for the testing of hypothesis.

Analysis and Interpretation

Table 1: Socio Economic profile of the Women Entrepreneurs

S.No	Socio-Economic Status	No. of respondents	Percentage
Age wise classification			
1	25 – 30 years	24	15.00
2	31 – 35 years	53	33.13
3	36 – 40 years	33	20.63

4	41 – 45 years	28	17.50
5	Above 45 years	22	13.75
Marital Status			
1	Married	81	50.60
2	Unmarried	79	49.40
Educational Qualification			
1	Upto HSC	28	17.50
2	Under graduate	62	38.80
3	Post graduate	47	29.40
4	Professional	23	14.40
Annual Income Turnover			
1	Less than Rs.15000	42	26.20
2	Rs.15001 – Rs.30000	44	27.50
3	Rs.30001 – Rs.45000	38	23.80
4	Rs. 40001– Rs.60000	24	15.00
5	More than Rs.60001	12	7.50
Total		160	100.00

Source: Primary Data

From Table 1, interprets that out of 160 respondents, majority of the respondents 33.13 per cent are between 31 – 35 years, 50.60 per cent of the respondents were married, 38.80 per cent educational qualification upto Under graduate level, 27.50 per cent were earned annual turnover Between Rs.15001 – Rs.30000.

Ho: There is no significant relationship between the Marketing strategy and Small Business Sustainability of Women Entrepreneurs. (Using Correlation Analysis)

Table 2: Relationship between Marketing strategy and Small Business Sustainability of Women Entrepreneurs

		Monthly Income	Budget before buying
Marketing Strategy	Pearson Correlation	1	0.450**
	Sig. (2-tailed)		.000
	N	160	160
Small Business Sustainability	Pearson Correlation	0.450**	1
	Sig. (2-tailed)	.000	
	N	160	160

** . Correlation is significant at the 0.01 level (2-tailed).

As the correlation value is 0.450, the two variables have a positive relationship. So, there is high degree of positive correlation between the Marketing Strategy and the Small Business Sustainability of Women Entrepreneurs.

Small Business Sustainability

Ho: *There is no significant difference between the age and Small Business Sustainability of women Entrepreneurs. (Using ANOVA Test)*

Table 3: Age and Small Business Sustainability

	Sum of Squares	df	Mean Square	F	Significance
Between Groups	.159	2	.080	.420	0.657
Within Groups	29.753	157	.190		
Total	29.912	159			

Source: Computed Data

The calculated value 0.657 is greater than the significant value 0.05. Hence the null hypothesis is accepted and there is no significant difference between age and Small Business Sustainability of women Entrepreneurs. Hence it can be concluded that the age factor does not influence the Small Business Sustainability of women Entrepreneurs

Suggestions of the study

- ❖ Small businesses should engage in sales marketing since it will increase the demand for their goods and services and increase the accessibility of their items.
- ❖ Small businesses should spend money on advertising their goods and services since it will increase customer spending and raise awareness of the goods and services.
- ❖ To encourage small firms to market their goods and services, the government ought to subsidize the expenses of media advertising.

Conclusion

Small businesses creates lot of opportunities and challenges as a result of globalization. They require entrepreneurs with good behaviors and effective marketing techniques to overcome the obstacles. Finding the link between marketing strategy and business sustainability is the main goal of this study. According to the study, the following marketing strategy like product, place, pricing, packaging, and after-sales service were both significantly independent and combined predictors of business sustainability.

However, the study found no link between marketing approach and the sustainability of women entrepreneurs' small businesses. Moreover, it was discovered that there is no discernible connection between women entrepreneurs' ages and their capacity to sustain their small businesses.

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SUSTAINABILITY IN ENERGY WITH RELEVANCE TO SELF-RELIANT INDIA

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Abstract

The pursuit of sustainability in the energy sector is a paramount concern in the context of a self-reliant India. This conference proceeding delves into the multifaceted aspects of achieving energy sustainability while aligning with the 'Atmanirbhar Bharat' (self-reliant India) initiative. It explores the current energy landscape, strategies for promoting self-reliance, and the role of renewable energy, all of which are critical components in India's journey towards a sustainable and self-reliant energy future.

Keywords: Sustainability, Energy, Self-Reliance, Strategies, Environment, Atmanirbhar Bharat.

Introduction

India's energy sector plays a pivotal role in the nation's economic development and self-reliance goals. The integration of sustainability principles into this sector is crucial to ensure a resilient and self-sufficient future. This section sets the stage for the conference proceeding, highlighting the significance of sustainable energy practices in the 'Atmanirbhar Bharat' initiative.

India's Energy Landscape

Understanding the existing energy infrastructure and consumption patterns is crucial to chart the path toward sustainability and self-reliance. India's energy mix, dominated by fossil fuels, presents both opportunities and challenges. This section provides a comprehensive overview of:

- i. **Energy Sources:** The role of coal, oil, natural gas, renewables, and nuclear energy in India's energy mix.
- a) **Coal:** Coal has historically been the dominant source of energy in India. It is used for electricity generation and industrial processes. India has substantial coal reserves, and coal-fired power plants continue to play a significant role in the energy mix.

- b) **Oil and Natural Gas:** Oil and natural gas are essential for transportation, industrial processes, and as feedstocks for the petrochemical industry. India imports a significant portion of its oil and natural gas to meet domestic demand.
- c) **Renewable Energy:** India is making significant strides in the field of renewable energy. This includes solar, wind, hydropower, and biomass. Solar and wind energy, in particular, have seen substantial growth in recent years, with India becoming one of the world's largest producers of solar energy.
 - ❖ **Solar Energy:** Solar power, harnessed through photovoltaic cells, is a rapidly growing energy source in India. The country's solar capacity has expanded through large-scale solar parks and rooftop solar installations.
 - ❖ **Wind Energy:** India has a substantial wind energy capacity, and wind farms are spread across various states, especially in coastal areas and regions with favorable wind conditions.
 - ❖ **Hydropower:** Hydropower plants utilize the flow of water to generate electricity. India has several hydropower projects, especially in regions with abundant water resources.
 - ❖ **Biomass Energy:** Biomass, including agricultural residues and organic waste, is used for electricity generation and as a source of renewable energy in rural areas.
- d) **Nuclear Energy:** Nuclear power plants are another source of electricity in India. These plants use nuclear reactions to generate heat, which is then converted into electricity.
- e) **Natural Gas:** Natural gas is used for electricity generation, industrial processes, and as a cleaner alternative to coal in some power plants.
- f) **Rural Energy Sources:** In rural areas, energy sources include traditional biomass, such as firewood and cow dung, for cooking and heating. Efforts are being made to transition to cleaner and more sustainable energy sources in these areas.
- g) **Electricity Imports:** Some regions in India rely on electricity imports from neighboring countries to meet their energy needs, particularly during times of high demand.
- ii. **Energy Consumption Patterns:** Energy consumption patterns in India are influenced by various factors, including the country's large population, economic growth, industrialization, and diverse climate conditions. Understanding these consumption patterns is crucial for policymakers and energy planners. Here are some key aspects of energy consumption in India:
 - a) **Residential Sector:** The residential sector is a significant consumer of energy in India. Energy is primarily used for lighting, cooking, heating, and cooling. In rural areas, traditional biomass sources like firewood and cow dung are commonly used for cooking and heating, while urban areas rely on electricity and LPG (liquefied petroleum gas). The adoption of energy-efficient appliances and building designs is growing, especially in urban areas.

- b) Industrial Sector:** India's industrial sector is energy-intensive and accounts for a significant portion of total energy consumption. Industries such as manufacturing, steel production, cement manufacturing, and textiles are major energy consumers. There is a growing focus on improving industrial energy efficiency and adopting cleaner technologies to reduce energy consumption and greenhouse gas emissions.
- c) Transportation Sector:** The transportation sector is a major and rapidly growing consumer of energy in India. It includes road transportation (private vehicles, commercial vehicles, and public transport), railways, aviation, and shipping. The reliance on fossil fuels, primarily gasoline and diesel, for transportation contributes significantly to energy consumption. The promotion of electric vehicles (EVs) and the development of public transportation systems are efforts to reduce the sector's carbon footprint.
- d) Agricultural Sector:** Agriculture plays a vital role in India's economy and energy consumption. Energy is used for irrigation, machinery operation, and processing. Diesel pumps are commonly used for irrigation in rural areas. There is an increasing emphasis on the adoption of solar pumps to reduce energy costs and environmental impacts.
- e) Commercial Sector:** The commercial sector, which includes offices, retail establishments, and educational institutions, consumes energy for lighting, heating, cooling, and electronic equipment. Energy-efficient building designs and technologies are becoming more prevalent in this sector.
- f) Renewable Energy Adoption:** India is making significant progress in adopting renewable energy sources, such as solar and wind power, to diversify its energy mix and reduce dependence on fossil fuels. Solar rooftop installations, solar parks, and wind farms have expanded rapidly in recent years.
- g) Energy Access:** Achieving universal energy access is a priority in India. Many rural areas still lack reliable access to electricity, and efforts are underway to extend the power grid and provide electricity through off-grid solutions like microgrids and solar home systems.
- h) Government Initiatives:** The Indian government has launched various *programmes* and initiatives to promote energy efficiency and conservation, such as the Perform, Achieve, and Trade (PAT) scheme, the *UJALA programme* for LED bulb distribution, and the *Pradhan Mantri Ujjwala Yojana* for LPG access.
- i) Energy Imports:** India imports a significant portion of its oil and natural gas, which also contributes to energy consumption. Efforts are being made to reduce dependence on energy imports and boost domestic production.

India's energy consumption patterns are evolving as the country strives to balance economic growth with environmental sustainability. Policies and initiatives are aimed at

promoting energy efficiency, expanding renewable energy capacity, and achieving a more sustainable and self-reliant energy future.

3. Energy Sustainability Strategies

Efforts to promote sustainability in the energy sector are multifaceted and critical for India's self-reliance goals. This section explores various strategies, including:

3.1. Renewable Energy Expansion

India's commitment to renewable energy sources, such as solar, wind, and hydro, is evident in its ambitious targets. This subsection discusses:

- i. **Targets and Incentives:** Setting ambitious renewable energy targets and providing incentives for clean energy adoption.
 - a) **Targets:**
 - ❖ **Renewable Energy Capacity Targets:** India has set ambitious targets for increasing its renewable energy capacity. The most notable target is the goal to achieve 175 gigawatts (GW) of renewable energy capacity by 2022, which was later increased to 450 GW by 2030. This includes solar, wind, hydropower, and biomass energy.
 - ❖ **Solar Power Targets:** The National Solar Mission has set specific solar power capacity targets. These include achieving 100 GW of solar capacity by 2022 and 280 GW by 2030. India aims to become one of the world's largest producers of solar energy.
 - ❖ **Wind Power Targets:** India has set targets to increase its wind power capacity, aiming to achieve 60 GW of wind power capacity by 2022 and 140 GW by 2030.
 - ❖ **Hydropower Targets:** The government has plans to add hydropower capacity, with targets set for the development of small and large hydropower projects.
 - ❖ **Biomass and Other Renewable Sources:** Targets are also set for increasing the use of biomass and other renewable energy sources.
 - a) **Incentives:**
 - ❖ **Financial Incentives:** The government offers various financial incentives to promote renewable energy. These include subsidies, tax benefits, and incentives for renewable energy projects. Special incentives are often provided for solar and wind power projects.
 - ❖ **Generation-Based Incentives (GBIs):** GBIs provide financial incentives to renewable energy generators based on the amount of electricity they produce. These incentives are designed to encourage higher renewable energy generation.
 - ❖ **Feed-in Tariffs:** Feed-in tariffs guarantee a fixed payment for electricity generated from renewable sources, providing predictability for investors and project developers.

- ❖ **Accelerated Depreciation:** Accelerated depreciation benefits allow businesses to write off a significant portion of the cost of renewable energy equipment in the early years, reducing tax liabilities.
- ❖ **Viability Gap Funding (VGF):** VGF is provided to bridge the gap between the cost of setting up renewable energy projects and the revenue generated. It helps make projects financially viable.
- ❖ **Renewable Purchase Obligation (RPO):** RPO mandates that a certain percentage of electricity purchased by utilities come from renewable sources. Non-compliance results in penalties, encouraging utilities to invest in renewables.
- ❖ **Net Metering and Feed-in Tariffs for Solar Rooftop:** Net metering allows individuals and businesses to sell excess solar power back to the grid, while feed-in tariffs provide incentives for feeding solar power into the grid.
- ❖ **Customs and Excise Duty Exemptions:** Renewable energy equipment and components are often exempt from customs and excise duties, making them more affordable.
- ❖ **Clean Energy Certificates (RECs):** RECs are tradable certificates that represent the environmental attributes of renewable energy generation. They provide additional revenue for renewable energy projects.
- ❖ **Green Energy Corridors:** Infrastructure development, such as green energy corridors, is encouraged to improve the transmission and distribution of renewable energy.
- ❖ **International Collaboration:** India collaborates with international organizations and nations to access funding and expertise for renewable energy projects.

These targets and incentives are part of India's comprehensive strategy to promote renewable energy expansion, reduce greenhouse gas emissions, and achieve its sustainable energy goals. They have contributed to significant growth in the renewable energy sector in the country.

ii. Solar and Wind Power Initiatives: India has implemented several key solar and wind power initiatives to promote renewable energy expansion and achieve its ambitious targets for sustainable energy generation. These initiatives aim to accelerate the deployment of solar and wind energy projects, attract investments, and create a conducive environment for renewable energy growth. Here are some of the significant solar and wind power initiatives in India:

a) Solar Power Initiatives:

- ❖ **National Solar Mission (NSM):** Launched in 2010, NSM is one of India's flagship programmes for solar energy expansion. It has several components, including:

- ❖ **Jawaharlal Nehru National Solar Mission (JNNSM):** The primary aim is to promote solar power generation in India and reduce the cost of solar energy through various mechanisms, such as feed-in tariffs, incentives, and subsidies.
- ❖ **Grid-Connected Solar Rooftop Programme:** Encourages the installation of solar panels on rooftops of homes, commercial buildings, and institutions. It offers financial incentives and net metering for surplus energy fed into the grid.
- ❖ **Off-Grid Solar Applications:** Promotes the use of solar power in remote and off-grid areas through decentralized solar power generation.
- ❖ **Solar Parks:** India has initiated the development of large-scale solar parks and ultra-mega solar power projects to attract investments and boost solar capacity. The parks provide the necessary infrastructure and land for solar developers.
- ❖ **Solar Energy Corporation of India (SECI):** SECI is a government-owned company dedicated to promoting solar energy projects, including the development of solar parks and auctions for solar capacity.
- ❖ **International Solar Alliance (ISA):** India co-founded the ISA, a global initiative aimed at promoting solar energy in solar-rich countries. It fosters cooperation in solar technology development, capacity building, and sharing of best practices.

b) Wind Power Initiatives:

- ❖ **Wind Energy Promotion:** India has set ambitious targets for wind power capacity expansion. The government has implemented various measures to promote wind energy, including:
- ❖ **Generation-Based Incentives (GBIs):** GBIs provide financial incentives based on the amount of electricity generated from wind power projects, encouraging higher generation.
- ❖ **Accelerated Depreciation:** Businesses investing in wind power projects can claim accelerated depreciation benefits, reducing tax liabilities.
- ❖ **Feed-in Tariffs (FiTs):** FiTs guarantee a fixed payment for wind power generation, providing predictability for investors.
- ❖ **Wind Energy Resource Assessment:** The National Institute of Wind Energy (NIWE) conducts detailed wind resource assessments to identify suitable locations for wind farms and provide wind data to potential investors.
- ❖ **Wind-Solar Hybrid Policy:** India has introduced policies to encourage the development of hybrid power projects that combine wind and solar energy generation. These projects optimize land use and grid integration.
- ❖ **Bidding and Competitive Auctions:** Wind power projects are often allocated through competitive bidding and auctions, ensuring transparency and cost-effective development.

- ❖ **Transmission Infrastructure:** Investments have been made in strengthening the transmission infrastructure to facilitate the integration of wind power into the grid.

Both solar and wind power initiatives in India aim to attract investments, reduce the cost of renewable energy, and support the transition to a cleaner and more sustainable energy future. These initiatives have contributed significantly to India's position as a global leader in renewable energy capacity expansion.

3.2. Energy Efficiency Programmes

Improving energy efficiency is a cornerstone of sustainability. This subsection addresses:

- i. **Energy-Efficient Appliances and Buildings:** Energy-efficient appliances and buildings play a crucial role in India's pursuit of self-reliance in energy. By reducing energy consumption in households and commercial structures, these initiatives not only help conserve resources but also contribute to energy security and environmental sustainability. Here are some key aspects of energy-efficient appliances and buildings in self-reliant India:

- a) **Energy-Efficient Appliances:**

- ❖ **Star Labeling Programme:** India has implemented the Bureau of Energy Efficiency's (BEE) star labeling *programme* for various appliances such as refrigerators, air conditioners, and LED bulbs. This *programme* rates appliances on their energy efficiency and helps consumers make informed choices. Appliances with higher star ratings are more energy-efficient.
- ❖ **Appliance Standards and Regulations:** The government has established minimum energy performance standards (MEPS) for various appliances, setting requirements for energy efficiency and encouraging manufacturers to produce more efficient products.
- ❖ **LED Lighting:** The Unnat Jyoti by Affordable LEDs for All (UJALA) *programme* aims to distribute energy-efficient LED bulbs to households at affordable prices. The *programme* has led to significant energy savings in lighting.
- ❖ **Energy-Efficient Fans and Air Conditioners:** BEE has introduced star labeling and energy efficiency standards for fans and air conditioners, promoting the adoption of energy-efficient cooling and ventilation systems.
- ❖ **Appliance Rebate Programmes:** Various state and central government initiatives offer rebates and incentives for the purchase of energy-efficient appliances, encouraging consumers to invest in these products.

- b) **Energy-Efficient Buildings:**

- ❖ **Energy Conservation Building Code (ECBC):** The ECBC sets energy efficiency standards for commercial buildings and aims to reduce energy consumption in the

commercial sector. It encourages the use of energy-efficient building materials, insulation, lighting, and HVAC systems.

- ❖ **Green Building Certification:** Organizations like the Indian Green Building Council (IGBC) and LEED (Leadership in Energy and Environmental Design) promote the construction of green and sustainable buildings. These certifications recognize buildings that meet specific energy efficiency and sustainability criteria.
- ❖ **Smart and Sustainable Design:** Architects and builders are increasingly incorporating passive design principles, which optimize natural lighting and ventilation to reduce the need for artificial lighting and HVAC systems. This not only conserves energy but also improves indoor comfort.
- ❖ **Energy Audits:** Energy audits of existing buildings identify areas for improvement and recommend energy-efficient upgrades, such as insulation, energy-efficient windows, and lighting retrofits.
- ❖ **Net-Zero and Zero-Energy Buildings:** There is a growing interest in designing and constructing net-zero energy buildings, which produce as much energy as they consume over the course of a year. These buildings rely on renewable energy sources and energy-efficient design.
- ❖ **Energy-Efficient Materials:** The use of energy-efficient construction materials, such as cool roofs and high-performance windows, is becoming more prevalent in building design.
- ❖ **Building Energy Management Systems (BEMS):** BEMS technologies help monitor and control energy usage within buildings, optimizing HVAC, lighting, and other systems for efficiency.

The adoption of energy-efficient appliances and building practices not only reduces energy consumption but also contributes to India's self-reliance by reducing its dependence on energy imports and enhancing energy security. These initiatives also align with India's commitment to global climate goals by reducing greenhouse gas emissions associated with energy use in buildings.

ii. Industrial Energy Efficiency: Industrial energy efficiency is a critical aspect of India's journey toward self-reliance in energy. Industries are significant energy consumers, and improving efficiency not only reduces energy costs but also enhances competitiveness, reduces carbon emissions, and conserves valuable resources. Here are key strategies and initiatives related to industrial energy efficiency in self-reliant India:

- a) Perform, Achieve, and Trade (PAT) Scheme:* The PAT scheme is a market-based mechanism that sets energy efficiency targets for energy-intensive industries like cement, steel, aluminum, and pulp and paper. Industries that achieve and exceed these targets receive energy-saving certificates that can be traded.

- b) Energy Audits:** Conducting regular energy audits helps industries identify energy-saving opportunities and implement cost-effective energy conservation measures. The government encourages industries to undertake energy audits.
- c) Energy Management Systems (EnMS):** Implementing EnMS based on ISO 50001 standards helps industries establish a systematic approach to continuously improve energy performance, reduce energy costs, and achieve energy efficiency targets.
- d) Technology Upgrades:** Encouraging industries to invest in modern, energy-efficient technologies and machinery helps reduce energy consumption and improve productivity. Subsidies and incentives are often provided for such upgrades.
- e) Waste Heat Recovery:** Capturing and utilizing waste heat generated during industrial processes is an effective way to improve energy efficiency. Combined Heat and Power (CHP) systems are commonly used for this purpose.
- f) Energy-Efficient Lighting:** Replacing conventional lighting with energy-efficient alternatives such as LEDs can significantly reduce energy consumption in industrial facilities.
- g) Lean Manufacturing and Process Optimization:** Lean manufacturing principles and process optimization techniques help eliminate energy-wasting inefficiencies and streamline production processes.
- h) Demand-Side Management (DSM):** Implementing DSM strategies helps industries manage and reduce peak electricity demand, thereby lowering energy costs.
- i) Training and Capacity Building:** Offering training and capacity-building *programmes* to industry professionals on energy-efficient practices and technologies enhances awareness and implementation of energy-saving measures.
- j) Industry-Specific Initiatives:** Tailoring energy efficiency *programmes* to specific industries, considering their unique energy requirements and challenges, helps drive sector-specific improvements.
- k) Standards and Labeling:** The BEE sets energy efficiency standards for various industrial equipment and appliances. Labeling products with their energy efficiency ratings helps industries make informed choices.
- l) Financing and Incentives:** Providing access to low-interest loans, grants, and incentives for energy-efficient projects helps industries overcome financial barriers to adoption.
- m) Research and Development:** Supporting research and development in energy-efficient technologies and processes encourages innovation and the development of cutting-edge solutions.
- n) Public-Private Partnerships (PPPs):** Collaboration between government agencies, industry associations, and private companies can facilitate the adoption of energy-efficient practices and technologies.

o) Reporting and Benchmarking: Mandating industries to report their energy consumption and efficiency data encourages transparency and competition.

By implementing these strategies and initiatives, India aims to improve industrial energy efficiency, reduce energy imports, enhance energy security, and contribute to a more sustainable and self-reliant energy future. It also aligns with India's commitment to global climate goals by reducing greenhouse gas emissions associated with industrial processes.

3.3. Environmental Conservation and Mitigation

Addressing environmental concerns is integral to sustainability. This subsection covers:

- i. Policies for Reducing Carbon Emissions:* India has implemented several policies and initiatives aimed at reducing carbon emissions and addressing climate change. These policies are critical for mitigating the impacts of climate change, enhancing environmental sustainability, and promoting a low-carbon economy. Here are some of the key policies and measures for reducing carbon emissions in India:
- a) National Action Plan on Climate Change (NAPCC):* The NAPCC, launched in 2008, is a comprehensive framework that outlines India's strategies and policies to combat climate change. It consists of eight national missions, each focusing on specific sectors, including solar energy, energy efficiency, sustainable agriculture, and water resources.
- b) Renewable Energy Initiatives:*
 - ❖ *National Solar Mission:* India's National Solar Mission aims to promote the deployment of solar energy and achieve significant solar capacity additions. It includes ambitious targets for solar power generation and incentives for solar projects.
 - ❖ *National Wind Mission:* The Wind Mission focuses on expanding wind power capacity, improving grid integration, and increasing wind energy generation.
- c) Perform, Achieve, and Trade (PAT) Scheme:* The PAT scheme sets energy efficiency targets for energy-intensive industries and allows them to trade energy-saving certificates when they exceed their targets. It encourages industries to adopt energy-efficient technologies and practices.
- d) Energy Efficiency Measures:*
 - ❖ *Standards and Labeling:* The Bureau of Energy Efficiency (BEE) has established energy efficiency standards for appliances and equipment, including air conditioners, refrigerators, and lighting. Products are labeled to indicate their energy efficiency levels.
 - ❖ *Energy Conservation Building Code (ECBC):* ECBC sets energy efficiency standards for commercial buildings, promoting the use of energy-efficient construction practices and technologies.

- e) **Carbon Pricing and Trading:** While India has not implemented a nationwide carbon pricing mechanism, there are discussions and pilot projects exploring carbon trading and carbon tax options.
- f) **Green Transportation Initiatives:** Promotion of electric vehicles (EVs) through incentives, subsidies, and charging infrastructure development to reduce carbon emissions from the transportation sector.
- g) **Reforestation and Afforestation:** India has various afforestation and reforestation programmes to increase forest cover, sequester carbon, and promote biodiversity conservation.
- h) **Sustainable Agriculture Practices:** Policies that encourage sustainable farming practices, including organic farming and efficient water use, to reduce emissions from agriculture.
- i) **Waste Management and Recycling:** Initiatives to reduce methane emissions from landfills and promote recycling and waste-to-energy technologies.
- j) **International Commitments:** India is committed to meeting its international climate obligations, including those under the Paris Agreement, which includes targets for reducing carbon emissions.
- k) **Sustainable Urban Development:** Policies promoting sustainable urban planning, public transportation, and the development of smart cities to reduce emissions associated with urbanization.
- l) **Research and Development:** Investment in research and development of clean and efficient technologies across various sectors, including energy, transportation, and agriculture.

These policies and initiatives are part of India's comprehensive approach to addressing climate change and reducing carbon emissions. They are crucial for achieving sustainability, energy security, and environmental conservation while contributing to global efforts to combat climate change.

4. Self-Reliance in Energy

India's 'Atmanirbhar Bharat' initiative is a driving force behind energy self-reliance. This section discusses:

4.1. The 'Atmanirbhar Bharat' Initiative

- i. **Goals and Objectives:** The initiative's objectives to reduce energy dependence on imports, boost domestic manufacturing, and promote indigenous solutions. The "Atmanirbhar Bharat" initiative, launched by the Government of India, aims to foster self-reliance and boost economic growth and resilience. The term "Atmanirbhar" translates to "self-reliant" in English, and the initiative encompasses various economic,

social, and governance aspects. The primary goals and objectives of the *Atmanirbhar Bharat* initiative are:

- a) **Economic Self-Reliance:** The initiative seeks to reduce dependence on imports, especially in critical sectors like defense, healthcare, and technology. It aims to make India self-sufficient in essential goods and services, thereby enhancing economic sovereignty.
- b) **Promotion of Domestic Manufacturing:** One of the core objectives is to promote domestic manufacturing, increase the share of "Made in India" products, and create a robust manufacturing ecosystem. This involves providing incentives, simplifying regulations, and improving infrastructure.
- c) **Boosting Micro, Small, and Medium Enterprises (MSMEs):** The initiative aims to support MSMEs, which play a crucial role in employment generation and economic growth. Measures include financial assistance, easier access to credit, and simplification of compliance procedures.
- d) **Agricultural Reforms:** *Atmanirbhar Bharat* seeks to transform the agricultural sector by liberalizing trade, removing barriers, and enhancing the income of farmers. Initiatives like the Agricultural Produce Market Committee (APMC) reforms and contract farming aim to empower farmers.
- e) **Infrastructure Development:** The initiative focuses on infrastructure development, including transportation, logistics, and energy. Investment in infrastructure is seen as a key driver of economic growth and job creation.
- f) **Promotion of Digital India:** Expanding digital infrastructure, internet access, and e-governance is a critical component. Digitalization is seen as a means to enhance efficiency, transparency, and accessibility of government services.
- g) **Healthcare Strengthening:** The COVID-19 pandemic highlighted the importance of a robust healthcare system. The initiative aims to enhance healthcare infrastructure, including hospitals, medical research, and pharmaceutical production.
- h) **Environmental Sustainability:** While promoting economic growth, *Atmanirbhar Bharat* also recognizes the importance of environmental sustainability. It encourages the development and adoption of green technologies and practices.
- i) **Global Engagement:** The initiative does not advocate isolationism but instead encourages global engagement on India's terms. It seeks to position India as a competitive player in the global market and forge strategic partnerships.
- j) **Employment Generation:** Creating job opportunities, especially for the youth, is a priority. Investments in various sectors are expected to generate employment, which is essential for economic and social stability.

- k) **Ease of Doing Business:** Simplifying regulatory procedures, reducing bureaucratic hurdles, and improving the ease of doing business are vital objectives. A business-friendly environment is seen as essential for attracting investments.
- l) **Social Inclusivity:** Ensuring that the benefits of economic growth reach all segments of society, especially marginalized and economically disadvantaged groups, is emphasized.
- m) **Resilience to External Shocks:** Developing resilience to external economic shocks, such as the global economic downturn, is a key objective. This includes building buffers in the form of foreign exchange reserves and reducing vulnerabilities.

Atmanirbhar Bharat represents a multi-faceted approach to economic and social development in India. Its objectives encompass economic growth, self-reliance, job creation, infrastructure development, and social inclusivity. The success of the initiative depends on effective policy implementation, public-private partnerships, and adaptability to changing global economic dynamics.

ii. **Role of Energy Self-Reliance:** Energy self-reliance plays a pivotal role in the "Atmanirbhar Bharat" initiative, which aims to make India self-reliant across various sectors. Energy is a fundamental enabler of economic growth, industrialization, and overall development. Here's how energy self-reliance contributes to the objectives of the *Atmanirbhar Bharat* initiative:

- a) **Reducing Dependence on Energy Imports:** India is one of the largest importers of crude oil, natural gas, and coal. By enhancing domestic energy production and reducing reliance on energy imports, India can improve its energy security and reduce its vulnerability to fluctuations in global energy prices and supply disruptions.
- b) **Enhancing Energy Access:** Energy self-reliance entails expanding domestic energy production, which can help provide reliable access to electricity and clean cooking fuels for all citizens, including those in rural and remote areas. This aligns with the goal of universal energy access, a crucial aspect of the initiative.
- c) **Supporting Domestic Industry:** Reliable and affordable energy is essential for the growth of domestic industries. By ensuring a stable energy supply, India can boost its manufacturing sector and reduce production costs, making its industries more competitive in both domestic and international markets.
- d) **Promoting Renewable Energy:** The *Atmanirbhar Bharat* initiative recognizes the potential of renewable energy sources like solar and wind power. Expanding domestic renewable energy capacity reduces dependence on fossil fuels, contributes to environmental sustainability, and aligns with India's commitments to combat climate change.
- e) **Energy Efficiency:** Self-reliance in energy includes improving energy efficiency across various sectors, such as industry, transportation, and buildings. Enhanced energy

efficiency not only reduces energy consumption but also lowers production costs and reduces greenhouse gas emissions.

- f) **Infrastructure Development:** Developing energy infrastructure, including power generation, transmission, and distribution, is a critical component of the initiative. Reliable and modern energy infrastructure is essential for supporting economic growth, urbanization, and industrialization.
- g) **Rural Electrification:** Expanding electricity access to rural areas is a priority. This involves not only providing electricity connections but also ensuring a reliable and affordable energy supply, which can support rural industries and agricultural productivity.
- h) **Green Technologies and Innovation:** Energy self-reliance encourages the development and adoption of green technologies and innovations. Investments in research and development can lead to breakthroughs in energy efficiency, renewable energy technologies, and sustainable practices.
- i) **Foreign Exchange Savings:** Reducing energy imports can lead to substantial savings in foreign exchange reserves, which can be allocated to other priority areas, such as healthcare, education, and infrastructure development.
- j) **Environmental Sustainability:** Reducing dependence on fossil fuels and promoting renewable energy sources contributes to environmental sustainability and helps India meet its climate commitments. It aligns with global efforts to mitigate the impacts of climate change.
- k) **Job Creation:** The energy sector, including renewable energy, offers significant opportunities for job creation. The growth of domestic energy production and related industries can generate employment opportunities, especially in rural and semi-urban areas.

The energy self-reliance is a crucial pillar of the *Atmanirbhar Bharat* initiative. It not only strengthens India's energy security and economic resilience but also supports environmental sustainability and inclusive development. Achieving energy self-reliance requires a multi-pronged approach, including investments in renewable energy, energy efficiency, infrastructure development, and policy reforms.

6. Future Prospects and Conclusion

In conclusion, sustainability in energy, as part of the *Atmanirbhar Bharat* initiative, represents a transformative journey for India. It encompasses renewable energy growth, energy efficiency, technological innovation, and inclusive development. The future prospects are promising, with India poised to become a global leader in renewable energy adoption, energy efficiency advancements, and green innovation. This pursuit of energy self-reliance not only strengthens the nation's economic resilience but also contributes

significantly to environmental conservation and social progress. As India continues on this path, it sets an inspiring example of sustainable development for the world to follow.

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AGRICULTURE - THE MAGICAL ECONOMY

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Abstract

People have invested in a farm. This is the expression of the desire to become farmers. To live a simple life, grow organic produce and practice sustainable living. In some cases, the desire is to bring change and to live a life of higher purpose. The results have been mixed. I have been following many of these initiatives for a while now.

First, there is no magic formula for making money out of agricultural ventures. Anyone who has grown food will know that it is the middlemen who make the money. Marketing agricultural produce remains a challenge. Growing food is a science and art of keen observation and intuitive understanding of cause and effect. This needs to reside above core fundamental knowledge. None of this is acquired overnight. Give yourself at least five years to figure it out somewhat. Many give up failing to grow, or failing to sell what they grew.

Second, dependence on the elements is a given. These factors will override all else you do; they will also determine what you can or cannot grow. Invest time, expertise and resources in design. The lack of this knowledge is one of the primary reasons for urbanites' foray into farming to fail.

Third, remember that you are an outsider in that ecosystem. Invaluable knowledge of the elements discussed in the previous point is usually available with locals. They need to trust you and see you as one among them to share it.

Fourth, rural living will bring challenges you may not be fully prepared for. You will be surrounded by wildlife you have never encountered before. you will deal with life even while you protect your territory and food that you grow, but they actively seek. Not to mention the magical food chain at play where prey and predators co-exist. Giving up the dependable urban amenities of road, power.

Fifth, speed of implementation of your plans might not be to your taste. It takes time to get things done. While you may dream of rolling your sleeves up to work in your farm, the reality of slogging in the sun and rain and acquiring a myriad list of skills may not always be exhilarating.

Introduction

Agricultural economics is an applied field of economics concerned with the application of economic theory in optimizing the production and distribution of food and fiber products. Agricultural economics began as a branch of economics that specifically dealt with land usage. It focused on maximizing the crop yield while maintaining a good soil ecosystem. Agricultural economics today includes a variety of applied areas, having considerable overlap with conventional economics. Agricultural economists have made substantial contributions to research in economics, econometrics, development economics, and environmental economics. Agricultural economics influences food policy, agricultural policy, and environmental policy.

Origin

Economics has been defined as the study of resource allocation under scarcity. Agricultural economics, or the application of economic methods to optimize the decisions made by agricultural producers. Another contributor, 1979 Nobel Economics Prize winner Theodore Schultz, was among the first to examine development economics as a problem related directly to agriculture. Schultz was also instrumental in establishing econometrics as a tool for use in analysing agricultural economics empirically; he noted in his landmark 1956 article that agricultural supply analysis is rooted in "shifting sand", implying that it was and is simply not being done correctly.

History of Agricultural Economics

Agricultural economics arose in the late 19th century, combined the theory of the firm with marketing and organization theory, and developed throughout the 20th century largely as an empirical branch of general economics. The discipline was closely linked to empirical applications of mathematical statistics and made early and significant contributions to econometric methods. In the 1960s and afterwards, as agricultural sectors in the OECD countries contracted, agricultural economists were drawn to the development problems of poor countries, to the trade and macroeconomic policy implications of agriculture in rich countries, and to a variety of production, consumption, and environmental and resource problems.

Agribusiness

Agribusiness is a vertically integrated industrial complex engaged in the production and processing of food. The production and marketing channels of the agribusiness industry extend from farm suppliers to farmers and ranchers, food processors and food retailers, and end with domestic consumers or international markets.

The farm is the intermediate link in the Magic Valley agribusiness complex, with backward linkages to farm suppliers and service providers and forward linkages to food processors. In turn, food retailers and restaurants are linked to processors, but they are excluded from the measure of agribusiness's contribution to the Magic Valley economy.

Gross and Base: Two Ways to Measure Economic Contribution

The contribution of agribusiness, or any other sector, to the Magic Valley economy can be measured two ways: the gross measure, which simply counts the economic activity (sales or output, number of jobs and value added) of an industry; and the base measure, which credits to an exporting industry the amount of sales, number of jobs, or value added, of its backward linkages to area businesses. Industries whose gross measures exceed the base measures are non-base, or supporting, industries. Conversely, industries whose base measures exceed the gross measures create the export base of the economy. Both the gross and base measures of economic activity tally every dollar of sales, every job, and every

dollar of value added in the Magic Valley economy. Their measures of total Magic Valley economic activity are equal, but they differ in how they slice the Magic Valley economic pie. Measuring the gross economic activity for a region is a straightforward accounting task: tallying the number of people employed, the total sales, or the total valued added of each industry.

In the field of environmental economics, agricultural economists have contributed in three main areas: designing incentives to control environmental externalities (such as water pollution due to agricultural production), estimating the value of non-market benefits from natural resources and environmental amenities (such as an appealing rural landscape), and the complex interrelationship between economic activities and environmental consequences. With regard to natural resources, agricultural economists have developed quantitative tools for improving land management, preventing erosion, managing pests, protecting biodiversity, and preventing livestock diseases.

Food and Consumer Economics

While at one time, the field of agricultural economics was focused primarily on farm-level issues, in recent years agricultural economists have studied diverse topics related to the economics of food consumption. In addition to economists' long-standing emphasis on the effects of prices and incomes, researchers in this field have studied how information and quality attributes influence consumer behavior. Agricultural economists have contributed to understanding how households make choices between purchasing food or preparing it at home, how food prices are determined, definitions of poverty thresholds, how consumers respond to price and income changes in a consistent way, and survey and experimental tools for understanding consumer preferences.

Production Economics and Farm Management

Agricultural economics research has addressed diminishing returns in agricultural production, as well as farmers' costs and supply responses. Much research has applied economic theory to farm-level decisions. Studies of risk and decision-making under uncertainty have real-world applications to crop insurance policies and to understanding how farmers in developing countries make choices about technology adoption. These topics are important for understanding prospects for producing sufficient food for a growing world population, subject to new resource and environmental challenges such as water scarcity and global climate change.[19]

Development Economics

Development economics is broadly concerned with the improvement of living conditions in low-income countries, and the improvement of economic performance in

low-income settings. Because agriculture is a large part of most developing economies, both in terms of employment and share of GDP, agricultural economists have been at the forefront of empirical research on development economics, contributing to our understanding of agriculture's role in economic development, economic growth and structural transformation. Many agricultural economists are interested in the food systems of developing economies, the linkages between agriculture and nutrition, and the ways in which agriculture interact with other domains, such as the natural environment.

Professional Associations

The International Association of Agricultural Economists (IAAE) is a worldwide professional association, which holds its major conference every three years. The association publishes the journal *Agricultural Economics*. There also is a European Association of Agricultural Economists (EAAE), an African Association of Agricultural Economists (AAAE) and an Australian Agricultural and Resource Economics Society. Substantial work in agricultural economics internationally is conducted by the International Food Policy Research Institute.

Six Core Elements of an Agricultural Transformation Plan

Although rural families often make their living from many different types of work, improvements in farming have proved to be the path toward widespread, poverty-reducing growth in the rural economy. Successful agricultural transformations have focused on the farming household, providing opportunities for farmers to earn a better income. For some, that will mean raising farm productivity or shifting the mix of production to include higher-value crops and livestock. For others, the right choice will be to do less farming and take advantage of employment options off the farm. As farmers have more money in their pockets, they spend more in the local economy, creating jobs, opportunity, and more demand for agricultural goods. The question is how to accelerate, sustain, and scale these growth cycles. For that, a well-crafted agricultural plan is required as part of a country's overall economic development approach. There are six elements that distinguish a superior agricultural plan.

Prioritized and Differentiated Strategies

Developing an agricultural transformation plan demands prioritization—a plan will not succeed if it tries to cover everything. Instead, it should focus on the changes that are most likely to kick-start rural economic growth. Successful plans identify goals in a limited number of crop and livestock value chains, cross-cutting agriculture sector enablers (such as lower transportation costs or access to irrigation), and specific geographies. Ethiopia and Morocco are experiencing transformations that show clear focus in terms of crops,

transformation enablers, and geographies. Morocco's Plan Vert started with seven value chains, expanded to nine, and focused on six geographic areas. Ethiopia's agricultural transformation plan initially prioritized three value chains and five geographic areas. Countries often prioritize a combination of both food security crops as well as export or higher-value commodities. Rwanda's Crop Intensification Program, launched in 2007, for instance, balanced land use between intercropping of diverse crops and monocropping of a set of six priority crops. The country's 2013 agricultural transformation plan included specified priority agricultural value chains in both food and export commodities (including apiculture, dairy, fisheries, and meat).¹ Our experience suggests that many countries' agricultural transformation plans are overly ambitious, cover too many value chains, and fail to focus critical resources. Eight of the 13 national agricultural plans that we analyzed in Africa didn't set clear priorities.

A second related success factor is differentiation. Successful agricultural transformation plans differentially target agri-food systems and geographic areas with tailored strategies. For example, more productive land that is already well connected to markets, such as irrigated land in Morocco, can support large- or small-scale farms; agribusiness is easier to scale there. In more remote areas, though, with bad roads, poor-quality land, and less well-connected markets, different strategies are needed. These might involve greater focus on staple crop productivity and social safety nets. Most plans don't make these distinctions.

A third related success factor lies in weighing the trade-offs among multiple objectives. Governments work toward a number of different goals, including growth in agro-processing, reduced unemployment, lower poverty incidence, food self-sufficiency, economic growth, increased exports, or lower rates of malnutrition. If these trade-offs are explicitly considered and communicated when developing the agricultural transformation plan, it is possible to tailor the choice of value chains, cross-cutting enablers, and geographies to differentially achieve the government's chosen goals. For example, one strategy might focus on raising the productivity of smallholder farmers' food crops in a particular region where rural poverty and stunting (from malnutrition) rates are high, while a concurrent strategy focuses on what is needed to accelerate growth in the coffee sector to boost export revenue and job creation. When the trade-offs among multiple objectives are not explicitly integrated into the agricultural transformation plan, progress is characterized by underdelivery across too many, sometimes competing, objectives.

Market-Driven Opportunities for Farmers

Agricultural transformations often focus too much on volume rather than value and on productivity of row crops rather than opportunities for high-value crops, downstream processing, and livestock. Farmers everywhere are businesspeople. Farming households in developing countries balance a portfolio of crops, livestock, and nonfarm work. Because

they feed their families with some of the farm output as well as sell into markets, they make decisions based on their potential profit, risk, and cash flow across family food consumption as well as sales. Too often, agricultural plans recommend particular commodities without paying attention to this basic calculus of farmer household economics. Successful agricultural transformation plans give farmers the opportunity to raise their household incomes.

The appropriate choice of change agent might vary depending on what part of the transformation plan is involved and the characteristics of the country's agri-food systems. The key is to ensure the use of appropriate metrics and incentives, sufficient training, and performance management of the change agents. Selecting change agents is critical in every agricultural transformation, yet we rarely see this step addressed systematically.

Finding the Right Starting Points for Scale

Change in agricultural systems requires multiple parallel advancements. For example, improvements in agricultural extension and seed systems might enable farmers to switch to a more productive hybrid seed, but lack of access to fertilizer (upon which the hybrid depends) could prevent productivity increases and leave the farmer unwilling to buy hybrid seed next time. As in any complex economic system, when so many elements are interrelated, any one of them can become a constraint and stall progress.

Pragmatic approach with an investor mind-set

Approaching transformations with an investor mind-set is critical to the success of the process. In kick-starting agricultural transformations, coordination among government, donors, and civil society is critical, but it is equally important from the start to plan for private-sector engagement. Without this, the transformation may proceed more slowly, stall, or not reach scale.

Progress on Enabling Policies

Agricultural transformation is more than changes in farming practices. It is about catalyzing transformation of a country's rural economy. As such, more than agricultural trade and subsidy policies are in play. For example, laws and regulations that influence banking, labor, infrastructure, land ownership and access, access to water, telecommunications, taxes, and insurance are also critical considerations.

Finally, effective policy making for agricultural transformation needs to become more evidence-based over time. Policy makers should invest in making use of existing data and analytics to comparatively assess the costs and likely outcomes of different potential transformation programs. Policy makers also need to use data and analytics to set reasonable targets and redirect programs where outcomes are not meeting targets. Evidence-based policy making builds better plans and integrates accountability into the systems responsible for implementing the policies.

Managing the Transformation

An agricultural transformation is not just a planning exercise. It takes management over time. Our experience suggests that creating a project management office (PMO) can greatly increase the chances of carrying out a successful large-scale change program. A PMO can concentrate talent, monitor implementation, act as a source of truth, and, in general, help get things done. The office can apply accepted project management technologies to break the transformation into discrete initiatives, each with specific goals, timing, and responsibility. A PMO is also charged with engaging relevant stakeholders when problems arise.

There has been strong progress on country and state-level agricultural development plans throughout the world, but we believe there are still large opportunities for improvement, as described in the first part of this article. The how-to elements of a transformation described in the second part offer an even greater opportunity to accelerate agricultural transformations. Our experience suggests that they are the biggest controllable factors leading to successful conclusions. They are high-return-on-investment actions that can make the “what to dos” – the larger investments in areas such as processing facilities, roads, and fertilizer – have a much likelier chance of success.

Conclusion

Agricultural transformation is essential to the future well-being of developing nations and therefore also to a world with more equitable economic development. We hope that this article contributes to the thinking about agricultural transformation and encourages governments and other stakeholders to reflect on the steps they should take next.

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FOSTERING INDEPENDENCE: MSMEs DRIVING SUSTAINABLE PROGRESS FOR A SELF-RELIANT INDIA

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Abstract

It explores the pivotal role of Micro, Small & Medium Enterprises (MSMEs) in catalyzing sustainable development, with a focus on the burgeoning field of battery technology. The narrative unfolds against the backdrop of India's quest for self-reliance, emphasizing the potential of MSMEs as agents of change. Through innovation, collaboration, and environmental consciousness, these enterprises emerge as key contributors to economic growth, job creation, and the pursuit of sustainable energy solutions. The abstract delves into the intricate interplay between MSMEs, research institutions, and governmental support, envisioning a future where locally-driven, eco-friendly battery technologies redefine energy landscapes. The holistic approach not only envisions profitability for businesses but also underscores the intrinsic link between economic prosperity and environmental stewardship. This abstract serves as a glimpse into a narrative that transcends business and embraces a culture of sustainability, envisioning a self-reliant India at the forefront of green innovation.

Introduction

In the epoch of globalization, where economic interdependence often takes center stage, the quest for self-reliance becomes a nuanced endeavor, especially for a nation as vast and diverse as India. Amidst this complexity, Micro, Small & Medium Enterprises (MSMEs) emerge as the unsung heroes, threading the delicate balance between economic autonomy and environmental sustainability. This paper embarks on a multifaceted exploration, weaving together the narratives of sustainable development and the dynamic role played by MSMEs, spotlighting their transformative potential in the domain of battery technology¹.

India's pursuit of self-reliance is not merely a national agenda; it is a paradigm shift in redefining economic strategies and fostering resilience. Within this transformative landscape, MSMEs take center stage, not merely as contributors to GDP but as torchbearers of innovation, agility, and localized sustainability. As we navigate through this discourse, the focus sharpens on the realm of battery technology – a linchpin in the transition towards cleaner, greener energy sources. This narrative unfolds against a backdrop where collaboration becomes a cornerstone, where the innovative spirit of MSMEs converges with the research acumen of institutions, propelled by the supportive winds of governmental initiatives².

The synergy of these forces paints a vision of a self-reliant India not just economically robust but also environmentally conscientious. Beyond the profit margins and market shares, the exploration here delves into the intrinsic connection between business practices and ecological resilience. MSMEs, often characterized by their adaptability and creativity, stand as dynamic contributors to a future where battery technology isn't just a commodity but a gateway to sustainable progress. Join us in traversing through the layers of this narrative, where the aspirations of a self-reliant India find resonance in the sustainable innovations orchestrated by MSMEs. It's a journey through interconnected realms—economic, environmental, and societal—where the heartbeat of progress is not just measured in financial gains but in the sustainable cadence of a nation charting its course towards a resilient future³.

Strategic Framework: Advancing Sustainable Development Through MSMEs in Battery Technology⁴⁻⁷

Collaborative Ecosystem Building:

Objective: Foster collaboration between MSMEs, research institutions, and governmental bodies to create a robust ecosystem.

Actions:

- ❖ Establish innovation hubs that bring together MSMEs and researchers.
- ❖ Facilitate knowledge-sharing platforms and collaborative projects.
- ❖ Encourage public-private partnerships for shared infrastructure.

Research and Development Incentives:

Objective: Stimulate innovation in battery technology through targeted R&D incentives.

Actions:

- ❖ Introduce financial incentives for MSMEs engaged in sustainable technology development.
- ❖ Create grants and subsidies for collaborative research initiatives.
- ❖ Establish technology parks specifically focused on battery R&D.

Skill Development and Capacity Building:

Objective: Enhance the capabilities of MSMEs in the field of battery technology.

Actions:

- ❖ Implement skill development programs tailored to the needs of the battery industry.

- ❖ Establish training centers and workshops for technology adoption.
- ❖ Encourage academic-industry partnerships to bridge skill gaps.

Market Access and Funding Support:

Objective: Facilitate market access and financial support for MSMEs in the battery sector.

Actions:

- ❖ Create a dedicated funding mechanism for sustainable technology ventures.
- ❖ Develop market linkage programs connecting MSMEs with potential buyers.
- ❖ Simplify loan processes and provide low-interest loans for sustainable projects.

Regulatory Framework for Sustainability:

Objective: Integrate sustainability criteria into regulatory frameworks.

Actions:

- ❖ Develop standards for eco-friendly battery technologies.
- ❖ Incentivize compliance with sustainable practices through tax benefits.
- ❖ Establish a certification system for environmentally responsible products.

Public Awareness and Consumer Education:

Objective: Build awareness about the importance of sustainable battery technologies.

Actions:

- ❖ Launch public awareness campaigns on the environmental impact of batteries.
- ❖ Provide consumer education on choosing eco-friendly products.
- ❖ Recognize and promote MSMEs that prioritize sustainability in their products.

International Collaboration and Export Promotion:

Objective: Position Indian MSMEs as global leaders in sustainable battery technology.

Actions:

- ❖ Encourage collaboration with international research institutions.
- ❖ Facilitate participation in global technology exhibitions and conferences.
- ❖ Develop strategies for promoting sustainable battery exports.
- ❖ This strategic framework aims to create a conducive environment for MSMEs to thrive in the battery technology sector while fostering sustainability and contributing to India's self-reliance goals.

Technology Transfer and Licensing:

Objective: Accelerate technology adoption by facilitating the transfer of sustainable battery technologies.

Actions:

- ❖ Create platforms for MSMEs to access patented technologies through licensing agreements.
- ❖ Establish technology transfer offices to streamline the process.
- ❖ Encourage established players to mentor and support smaller enterprises in technology adoption.

Circular Economy Integration:

Objective: Embed circular economy principles in the battery life cycle, from manufacturing to disposal.

Actions:

- ❖ Incentivize MSMEs to design batteries with recyclability and reusability in mind.
- ❖ Establish collection and recycling facilities for end-of-life batteries.
- ❖ Introduce regulations mandating environmentally responsible disposal practices.

Government Procurement Support:

Objective: Drive demand for sustainable batteries through government procurement policies.

Actions:

- ❖ Prioritize the procurement of eco-friendly batteries in government projects.
- ❖ Include sustainability criteria in tendering processes.
- ❖ Create a certification system for MSMEs supplying to government projects.

Networking Platforms for MSMEs:

Objective: Enhance collaboration and knowledge-sharing among MSMEs in the battery sector.

Actions:

- ❖ Establish a dedicated online platform for MSMEs to connect, share experiences, and form partnerships.
- ❖ Organize industry-specific conferences and networking events.
- ❖ Facilitate mentorship programs where successful MSMEs guide newcomers.

Risk Mitigation Mechanisms:

Objective: Provide financial instruments to mitigate risks associated with sustainable technology adoption.

Actions:

- ❖ Create an insurance scheme to cover risks related to innovation and market uncertainties.
- ❖ Establish a fund for MSMEs to access in case of unforeseen challenges.
- ❖ Develop a risk-sharing mechanism in collaboration with financial institutions.

Inclusive Innovation Grants:

Objective: Promote inclusivity by supporting innovation from diverse groups within MSMEs.

Actions:

- ❖ Allocate grants specifically for women-led and socially inclusive MSMEs.
- ❖ Encourage projects that address the energy needs of underserved communities.
- ❖ Establish a mentorship program to guide innovative projects from underrepresented groups.

Benchmarking and Impact Assessment:

Objective: Continuously evaluate the impact of MSME initiatives in sustainable battery technology.

Actions:

- ❖ Develop key performance indicators (KPIs) for sustainability in battery technology.
- ❖ Conduct regular impact assessments to measure economic, environmental, and social outcomes.
- ❖ Recognize and celebrate MSMEs achieving notable milestones in sustainability.

Regulatory Sandboxing for Innovation:

Objective: Encourage experimentation and innovation by providing a regulatory sandbox.

Actions:

- ❖ Create a controlled environment where MSMEs can test new technologies without full regulatory compliance.

- ❖ Establish a streamlined process for transitioning successful innovations into mainstream regulatory frameworks.
- ❖ Encourage collaboration between regulatory bodies, MSMEs, and environmental experts to ensure responsible innovation.
- ❖ This extended strategic framework aims to address various facets of sustainable development through MSMEs in battery technology, covering technology adoption, circular economy practices, government support, networking, risk mitigation, inclusivity, impact assessment, and regulatory innovation.

Conclusions

As we draw the threads of this strategic framework together, a compelling narrative emerges—one that envisions a future where Micro, Small & Medium Enterprises (MSMEs) play a transformative role in India's journey towards self-reliance and sustainability. The intricate dance between economic progress and environmental stewardship finds its harmonious rhythm in the innovative endeavors of these enterprises within the battery technology sector⁸.

The collaborative ecosystem envisioned—forged through partnerships between MSMEs, research institutions, and governmental bodies—creates a fertile ground for innovation. Incentives for research and development, skill enhancement, and market access act as catalysts, propelling MSMEs towards the forefront of sustainable progress.

By embracing circular economy principles, fostering technology transfer, and integrating inclusivity into innovation grants, the strategy outlined here is designed not just for economic growth but for societal well-being. Government procurement policies and regulatory sandboxes provide the necessary scaffolding for these enterprises to experiment, evolve, and lead in the green revolution⁹⁻¹⁰.

As we anticipate the outcomes of this strategic vision, it becomes clear that the impact extends beyond business bottom lines. It's about nurturing a culture where sustainability isn't a buzzword but a way of life. MSMEs, often celebrated for their agility and creativity, emerge as the engines of change, steering the nation towards a future where sustainable battery technologies redefine not only energy landscapes but also societal norms.

This isn't just a strategy; it's a roadmap towards a self-reliant India that thrives on innovation, resilience, and a profound respect for the environment. It's a call to action, inviting stakeholders from all sectors to join hands in shaping a future where progress isn't measured merely in economic indices but in the sustainable cadence of a nation marching towards a resilient and eco-conscious tomorrow.

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ENERGY EFFICIENCY AND RENEWABLE ENERGY ADOPTION FOR SELF RELIANT INDIA

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Abstract

This study highlights the critical importance of energy efficiency and renewable energy adoption in India's journey towards self-reliance. With a growing population and increasing energy demands, India faces the challenge of ensuring energy security while minimizing its carbon footprint. This paper puts a focus on the diverse benefits of investing in energy-efficient technologies and scaling up renewable energy sources to achieve energy independence. By taking up these sustainable solutions, India can enhance its energy adaptability, reduce greenhouse gas emissions, create new job opportunities and secure a sustainable future for its citizens. This research explores the policy, technological and economic avenues that can accelerate the transition to a self-reliant and environmentally responsible energy landscape in India.

Keywords: *renewable energy, self-reliance, greenhouse gas, sustainable future*

Introduction

India, with its growing population and rapid urbanization, faces formidable challenges in meeting its growing energy demands. Historically reliant on fossil fuels, this dependence not only strains the nation's energy security but also contributes significantly to environmental degradation and global climate change¹. Recognizing the urgency of the situation, India has embarked on a transformative journey, seeking to harmonize economic development with environmental stewardship through a multifaceted approach. Simultaneously, the integration of renewable energy sources takes center stage. India's vast and diverse geography offers a wealth of renewable energy resources, from the abundant sunlight in the arid plains to the brisk winds along coastal regions, and the unexploited potential of biomass and hydroelectricity. Harnessing these resources through innovative technologies and strategic investments has the potential to redefine India's energy landscape².

Energy Resources and Consumers

Energy resources and consumers in India are critical components of the country's energy landscape, which is undergoing significant changes due to growing demand, environmental concerns, and efforts to enhance energy security. Balancing the growing energy needs of India's diverse consumer base with the imperative of sustainability and energy security poses significant challenges. India's policymakers, businesses, and civil society are actively working to address these challenges while exploring opportunities for

clean and efficient energy solutions. This dynamic relationship between energy resources and consumers in India is central to the nation's aspirations for sustainable and self-reliant energy development, making it a topic of crucial importance in the global energy landscape³.

The Importance of Energy Efficiency

Energy efficiency is a fundamental aspect of sustainable development and a key driver in achieving energy self-reliance for India. It refers to the practice of using less energy to accomplish the same tasks or achieve the same level of output. The importance of energy efficiency cannot be overstated, as it offers a wide range of economic, environmental and societal benefits. Energy efficiency measures lead to reduced energy consumption, resulting in lower energy bills for households, businesses, and industries. These cost savings can be substantial over time and significantly improve economic well-being⁴.

Renewable Energy in India

India is one of the world's largest greenhouse gas emitters. Renewable energy sources, such as solar and wind power, produce little to no greenhouse gas emissions during electricity generation, making them essential for mitigating climate change⁵. The use of renewable energy reduces reliance on fossil fuels, which are a significant source of air pollution and health issues in India. By transitioning to cleaner sources, India can improve air quality and public health. Renewable energy adoption plays a crucial role in achieving self-reliance in energy for a nation. It reduces dependence on imported fossil fuels, enhances energy security, and promotes sustainable development.

Renewable energy adoption

Renewable energy adoption is a critical component of achieving energy self-reliance in India. The country's energy demand is growing rapidly, and reducing dependence on fossil fuels through the use of renewable energy sources can help secure a sustainable and self-reliant energy future. India's journey toward energy self-reliance through renewable energy adoption requires a multi-faceted approach that includes policy support, incentives, infrastructure development, and public awareness. By prioritizing these strategies, India can reduce its dependence on fossil fuels, mitigate environmental impacts, and ensure a more sustainable and self-reliant energy future⁶.

Empowering India's Self-Reliance through MSMEs

Micro, Small, and Medium Enterprises (MSMEs) are the backbone of India's economy. They play a crucial role in fostering economic growth, generating employment opportunities, and promoting entrepreneurship. Empowering India's self-reliance through

MSMEs is not just an economic imperative. it's a strategic approach to achieving sustainability and resilience in the face of global challenges⁷. Empowering India's self-reliance through MSMEs is a multifaceted strategy that involves job creation, innovation, technology adoption, regulatory reforms, and sustainability practices. By nurturing and supporting the growth of MSMEs, India can enhance its economic independence and resilience, contributing to the nation's overall development and self-reliance goals.

Conclusion

In conclusion, energy efficiency and renewable energy adoption are not only essential for India's energy security but also for its economic growth, environmental preservation, and social development. As India continues to make strides in these areas, it is positioning itself as a global leader in sustainable energy practices, contributing to a brighter and more self-reliant future. However, achieving these goals will require sustained efforts, collaboration among stakeholders, and a commitment to clean and sustainable energy solutions. To achieve these benefits and strengthen self-reliance, India must continue to invest in research and development, implement supportive policies and incentives, enhance public awareness, and foster collaboration among various stakeholders. By doing so, India can secure a sustainable, resilient, and self-reliant energy future, reducing its carbon footprint and ensuring access to reliable energy for all its citizens.

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ROLE OF MICRO, SMALL AND MEDIUM ENTERPRISES (MSME'S) IN ACHIEVEING SUSTAINABLE DEVELOPMENT GOALS

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Abstract

Micro, Small, and Medium Enterprises (MSMEs) play a pivotal role in driving economic development worldwide, and India is no exception to this trend. The researcher presents a set of recommendations aimed at enhancing the sustainability of MSMEs. These measures are designed to foster the resilience and longevity of these enterprises, which, in turn, would bolster their capacity to contribute meaningfully to the achievement of the SDGs. In essence, MSMEs emerge as not just economic actors but as essential agents of change in the global pursuit of a sustainable and equitable future as envisioned by the SDGs.2. MSMEs have a significant part to play in achieving several SDGs, with a particular focus on goals like Poverty Alleviation (Goal 1), Decent Work and Economic Growth (Goal 8), and Industry Innovation and Infrastructure (Goal 9). However, their impact extends beyond these goals, as they also directly or indirectly contribute to other SDGs. In this research paper, we delve into the multifaceted role of MSMEs in advancing the SDGs. We categorize their contributions based on various activity attributes, demonstrating their involvement in the attainment of different goals.

Keywords: *Poverty Alleviation, Sustainable and Equitable Future, Decent Work and Economic Growth, Multifaceted Role, Industry Innovation and Infrastructure, Global Pursuit.*

Introduction

The term "Sustainable Development" was initially coined by Barbara Ward in the "Cocoyoc Declaration" of 1974. It has since been extensively discussed in various international gatherings, summits, conferences, and reports, including notable mentions in the IUCN Reports of 1980 and 1990 and the World Commission on Environment and Development (WECD). The WECD's seminal report, titled "Our Common Future," marked a significant milestone by emphasizing sustainability as the only viable path to mitigate threats to humanity's survival.

This concept gained further traction during events like the Earth Summit in 1992 and The Norway Round Table in 1995. The Earth Summit of 1992 yielded two critical documents for sustainable development, namely "Agenda 21" and the "Rio Declaration on Environment and Development." The Norway Round Table also established key principles to advance the cause of sustainable development.

While major summits and agreements have raised concerns and laid foundations for sustainable development, they have not yet offered a comprehensive global approach. The member states of the United Nations took a significant step in 2000 by adopting the Millennium Development Goals (MDGs) with a primary objective of global poverty reduction. These MDGs have since evolved into the Sustainable Development Goals (SDGs) outlined in the 2030 Agenda for Sustainable Development, comprising 17 SDGs and 169 specific targets to be achieved by 2030.

These goals and targets collectively aim to promote peace and prosperity worldwide. Both developed and developing nations are tasked with achieving these objectives through global cooperation and partnerships. The central focus of this ambitious agenda is to eradicate poverty by 2030, enhance healthcare and education, reduce inequalities, stimulate economic growth, address climate change, and safeguard vital natural resources such as oceans and forests.

Review of Literature

Kamal-Chaoui, 2017) asserted that SDGs could only be achieved if the countries build strong SMEs. Discussing the importance of SME in innovation, employment generation, gender equality, inclusive development etc. the researcher emphasized that policies are needed to create a good business environment to make SMEs more productive. He raised concerns over financing and participation of SMEs in global value chains, banking sector reforms and new approaches to financing.

Oncioiu, Raluka, Bilcan, & Petrescu, 2017) studied the relationship between innovation, financial performance and economic growth. They found that there exists a positive relationship between innovation, financial performance and economic growth. They also pointed out that Indian SMEs are focusing on the environmental dimension of sustainable innovation and are implementing cleaner production methods to improve their economic and environmental performance. They also opined that innovation is the key to entrepreneurial success in India.

(Freimann, Ham, & Mijoc, 2014) studied thoroughly about the measurement of objective well-being (economic development) and Subjective Well-being (perception of residents about the quality of life). They argued that monitoring and quantification of objective well-being are necessary for measuring sustainable development. They talked about various indicators for measuring sustainable developments and raised concerns over systematic monitoring and measurement. They concluded that benchmarks and indicators measure the efforts and results related to sustainable development to some extent.

(Liu, 2017) discussed the importance of MSMEs in achieving SDGs while outlining the opportunities and challenges in the path of MSMEs growth. The author also emphasized

the role of MSMEs in employment generation but argues on the other hand that employment opportunities created by MSMEs may not always be as per job requirements.

Objectives of the Study

1. To analyse major problems that MSME's faces in recent times.
2. To investigating the contribution of Micro, Small, and medium enterprises in advancing the United Nations' sustainable development goals.
3. To arrive at conclusion based on the study.

Methodology

RESEARCH TYPE : Descriptive Research.

DATA COLLECTION : Secondary data has been used for the study.

Major problems that MSME's face and how we could address them to ensure their sustainability

Access to Finance: MSMEs often struggle to access credit facilities at various stages, hindering their growth. The government should ensure the availability of financial resources through a range of schemes and policy interventions.

Lack of Supportive Government Policies: The absence of conducive government policies and regulatory frameworks dampens the entrepreneurial spirit, especially among talented young entrepreneurs. To foster a thriving startup ecosystem and encourage new business ideas, the government should establish a coherent and supportive environment.

Insufficient Skilled Manpower: Many micro and small enterprises lack skilled personnel, negatively impacting their performance. The government can play a crucial role by offering vocational training programs aimed at enhancing the skills and capacity of small entrepreneurs and their employees.

Basic Infrastructure: A significant proportion of Indian MSMEs face challenges related to essential infrastructure, including machinery, buildings, and technological support. Addressing these infrastructural deficiencies is essential to enable MSMEs to operate effectively.

Promoting Entrepreneurship: Leveraging the potential of rural youths and women entrepreneurs can be a powerful tool in combating poverty, gender inequality, and income disparity. Unfortunately, these segments often face discouragement from their communities and limited opportunities for entrepreneurship. Changing this mindset and actively encouraging entrepreneurship within these demographics can yield significant results.

Bringing Informal Units into the Formal Sector: Efforts should be directed towards integrating informal MSMEs into the formal ecosystem. This approach would enable better

monitoring of their progress, performance, contributions, and requirements. Initiatives like MUDRA Bank and Priority Sector Lending (PSL) norms are crucial policy measures in achieving this goal.

Findings

In this research paper, we have identified that Micro, Small, and Medium Enterprises (MSMEs) hold significant potential for advancing all aspects of sustainable development. Whether through direct or indirect means, MSMEs exert a substantial influence on the progress toward sustainable development goals. Furthermore, our findings indicate that micro-enterprises encounter various challenges that hinder their ability to operate effectively. To maximize the participation and contribution of MSMEs in the pursuit of sustainable development goals, it is imperative that this sector receives strong promotion and support.

Suggestions

To harness the potential of Micro, Small, and Medium Enterprises (MSMEs) in advancing Sustainable Development Goals (SDGs), a multifaceted approach is essential. Firstly, it's crucial to invest in capacity-building programs aimed at equipping MSMEs with the knowledge and skills required for sustainable practices and responsible business operations. Simultaneously, facilitating easier access to affordable finance can empower these enterprises to invest in sustainable technologies and practices. Encouraging the adoption of environmentally friendly technologies, responsible sourcing, and sustainable supply chain practices should be a priority. Advocacy for supportive government policies and regulations that create an enabling environment for MSMEs, aligned with SDGs, is paramount. Collaboration, both among MSMEs and with larger corporations, government agencies, and NGOs, can pool resources and expertise for impactful sustainability initiatives. Furthermore, promoting awareness about the significance of SDGs, fostering innovation, and establishing monitoring and evaluation systems to track progress are essential steps. Ultimately, incentives and recognition for MSMEs actively contributing to SDGs through their operations can serve as powerful motivators. Through these concerted efforts, MSMEs can become catalysts for sustainable development, simultaneously enhancing their competitiveness and resilience in the global marketplace.

Conclusion

The SDGs are ambitious, striving for a better future for both the planet and its people. Achieving them in just fifteen years is a formidable task. Many nations, including India, are committed to these goals, which encompass various dimensions of sustainable development. Among key contributors to SDGs, the MSME sector stands out for its

potential impact. Its operational diversity and flexibility make it crucial in areas like job creation, poverty reduction, regional balance, and equality promotion, all pivotal to SDG progress. To harness this potential, addressing MSME challenges through government interventions and nurturing entrepreneurship is vital in today's competitive landscape.

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EMPOWERING INDIA'S FUTURE: MSMEs AS CATALYSTS FOR SUSTAINABLE DEVELOPMENT AND SELF-RELIANCE

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Abstract:

In the pursuit of a self-reliant India, the role of Micro, Small, and Medium Enterprises (MSMEs) is pivotal. This paper explores the multifaceted contributions of MSMEs to India's self-reliance, focusing on three key subthemes: the pivotal Role of MSMEs in achieving self-reliance, the transformative potential of Digital Industry 4.0 in empowering these enterprises, and the integration of Sustainable Business Principles in the dynamic landscape of startups. Firstly, the paper delves into how MSMEs serve as the backbone of India's economic landscape, contributing significantly to job creation, innovation, and localized development. Their resilience and adaptability have been particularly evident in times of crisis, making them essential for building a self-reliant nation. Secondly, the advent of Digital Industry 4.0 presents an unprecedented opportunity for MSMEs to leapfrog into the future. We explore how technology-driven advancements can enhance productivity, expand market reach, and facilitate efficient resource utilization for these enterprises. Lastly, the paper emphasizes the importance of integrating sustainable business principles into the DNA of startups. As India aspires towards self-reliance, ensuring that the growth of new businesses is anchored in environmental and social responsibility is crucial for long-term success.

Keywords: MSMEs, Self-reliant India, Sustainable development, Digital Industry 4.0, Sustainable business principles, Startups, Economic empowerment.

Introduction

In the pursuit of self-reliance and sustainable development in India, this paper examines the crucial role of Micro, Small, and Medium Enterprises (MSMEs). It explores their contribution to job creation, innovation, and localized development. Additionally, it delves into the transformative impact of Digital Industry 4.0 on MSMEs and emphasizes the importance of integrating sustainable principles into startups. This study aims to illuminate how MSMEs can serve as a pathway to India's self-reliant future, leveraging their adaptability, technology adoption, and commitment to sustainability.

The Role of MSMEs in Self-Reliant India:

Introduction

- ❖ MSMEs, or Micro, Small, and Medium Enterprises, are critical to India's economic landscape, comprising a substantial portion of businesses.

- ❖ They are instrumental in realizing the country's vision of self-reliance by contributing to economic growth, job creation, and innovation.

Historical Significance

- ❖ Historically, MSMEs have been prevalent in India, especially in sectors like textiles, handicrafts, and small-scale manufacturing.
- ❖ They have played a pivotal role in economic activities, particularly in rural and semi-urban areas.

Contribution to Employment

- ❖ MSMEs are major job creators, employing millions across India, including skilled and unskilled labor.
- ❖ They provide livelihoods to a diverse workforce, including women and marginalized communities.

Innovation and Localized Development

- ❖ MSMEs foster innovation and localized development by responding to specific regional needs and market demands.
- ❖ Their agility allows them to introduce novel products and services, contributing to economic dynamism.

Government Initiatives

- ❖ The Indian government has introduced several initiatives to support and promote MSMEs, such as "Make in India," "Startup India," and "Atmanirbhar Bharat Abhiyan."
- ❖ These initiatives aim to boost entrepreneurship, ease regulatory burdens, and provide financial support.

Challenges Faced

- ❖ Challenges include limited access to finance, high interest rates, and bureaucratic hurdles in obtaining licenses and permits.
- ❖ Infrastructure limitations, especially in rural areas, impact productivity and distribution networks.

Digital Industry 4.0: Empowering MSMEs:

Introduction to Digital Industry 4.0

- ❖ Industry 4.0 is the fourth industrial revolution characterized by the integration of digital technologies into manufacturing and business processes.
- ❖ It encompasses IoT, AI, data analytics, automation, and cyber-physical systems.

IoT and Automation

- ❖ IoT enables MSMEs to monitor and control machinery and equipment remotely, improving efficiency and reducing downtime.
- ❖ Automation minimizes human intervention, resulting in consistent quality and reduced operational costs.

AI and Data Analytics

- ❖ AI can optimize production processes, predict maintenance needs, and enhance product quality.
- ❖ Data analytics provides valuable insights for decision-making, market trends analysis, and customer behavior prediction.

Access to Global Markets

- ❖ Digital platforms and e-commerce open new avenues for MSMEs to reach global customers and participate in international trade.
- ❖ Effective digital marketing strategies can expand market presence beyond geographical boundaries.

Cost Reduction and Efficiency

- ❖ MSMEs can streamline operations, reduce waste, and optimize resource allocation through technology adoption.
- ❖ Technology investments can lead to long-term cost savings and improved competitiveness.

Sustainable Business Principles in Startups:

The Importance of Sustainability

- ❖ Sustainability in business involves considering environmental, social, and governance (ESG) factors alongside financial objectives.
- ❖ Increasingly, consumers, investors, and regulators demand ethical and sustainable practices.

Integration of Sustainable Practices

- ❖ Startups can integrate sustainability by designing eco-friendly products, minimizing waste, and adopting renewable energy sources.
- ❖ Sustainable sourcing and supply chain transparency are essential components.

Social Responsibility

- ❖ Social responsibility initiatives include community engagement, supporting local education and skills development, and ethical labor practices.
- ❖ Startups can create positive social impact while pursuing profitability.

Investor and Consumer Demand

- ❖ Sustainable startups often attract socially responsible investors and consumers who prioritize products and services aligned with their values.
- ❖ Sustainable financing options, such as green bonds, impact investment, and social impact bonds, support these ventures.

Future Outlook:

Synthesis of Key Points

- ❖ MSMEs are pivotal to self-reliance in India, supported by technology adoption and sustainable practices.
- ❖ These three elements are interconnected and contribute to holistic economic development.

Importance of Integration:

The synergy between MSMEs, technology, and sustainability holds the key to India's self-reliance, as it enables growth, resilience, and ethical practices.

Policy Recommendations

- ❖ Governments should continue supporting MSMEs with tailored policies and incentives.
- ❖ Promoting digital literacy and technology diffusion in rural areas is crucial.
- ❖ Encouraging sustainable practices through regulations and incentives can accelerate adoption.

Call to Action

- ❖ Continued research and innovation in MSMEs, technology, and sustainability are imperative.
- ❖ Empowering MSMEs, promoting technology adoption, and embracing sustainability will be instrumental in realizing India's self-reliance and sustainable development goals.

Conclusion:

In the pursuit of self-reliance and sustainable development, Micro, Small, and Medium Enterprises (MSMEs) stand as pillars of progress in the Indian economic landscape. This paper has illuminated the multifaceted contributions of MSMEs and their intertwined relationship with technology adoption and sustainable business principles. As we conclude, we draw together the key insights and implications of our exploration. Yet, MSMEs are not without their challenges. Access to finance, bureaucratic hurdles, and infrastructure limitations pose obstacles to their growth. To overcome these challenges and realize their potential fully, MSMEs are turning to digital Industry 4.0.

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EMPOWERING INDIA'S MSMEs: PATHWAY TO ECONOMIC GROWTH, RESILIENCE, SOCIAL INCLUSION

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Abstract

Micro, Small, and Medium Enterprises (MSMEs) play a pivotal role in India's economic landscape. They contribute significantly to employment generation, GDP growth, and foster economic inclusivity. The study begins by providing an overview of the MSME sector's current state, acknowledging its challenges and potential. It then delves into the strategies necessary for fostering growth and resilience. These strategies include streamlined regulatory frameworks, access to finance, technology adoption, skill development, and market linkages. Moreover, it highlights the need for a supportive ecosystem that encourages innovation and entrepreneurship. It emphasizes the importance of gender diversity and equitable opportunities for marginalized communities. Inclusive growth not only ensures a fair distribution of economic benefits but also enhances social harmony and stability.

Keywords: *Self-Reliant India Mission, MSME, Self-reliant and globally competitive*

Introduction

Micro, Small, and Medium Enterprises (MSMEs) stand as the backbone, serving as engines of growth and innovation. These nimble and dynamic entities collectively form the bedrock of economic activity, contributing significantly to GDP, generating employment opportunities, and fostering regional development. The unparalleled potential of India's MSME sector to drive economic growth, build resilience in the face of challenges, and promote social inclusion cannot be overstated. It delves into the myriad ways in which these enterprises have consistently emerged as pillars of economic development, even in the face of adversities. Furthermore, it underscores the imperative of empowering MSMEs, providing them with the resources, support, and opportunities necessary to unleash their full potential.

India's MSME sector is remarkably diverse, encompassing a wide range of industries from manufacturing to services. It is characterized by its adaptability and ability to cater to both domestic and international markets. As a major source of employment, particularly for marginalized sections of society, it acts as a catalyst for social inclusion and poverty alleviation. However, the sector also faces numerous challenges, ranging from access to finance to technology adoption. In an increasingly interconnected and competitive world, it

is critical for India's MSMEs to not only survive but thrive. With the right interventions, these enterprises can transform into global players, enhancing India's economic standing while improving the lives of millions of its citizens. Moreover, it will provide insights into the strategies, policies, and innovations that can empower MSMEs, bolstering their contribution to India's economic growth, resilience, and social inclusion.

Empowering India's MSMEs

Empowering India's Micro, Small, and Medium Enterprises (MSMEs) is indeed crucial for the country's economic growth, resilience, and social inclusion. MSMEs play a pivotal role in the Indian economy, contributing significantly to employment generation, industrial output, and export earnings. Here are some key points highlighting the importance of empowering India's MSMEs:

Employment Generation: MSMEs are major employers in India. They provide employment opportunities to a diverse workforce, including skilled, semi-skilled, and unskilled labor, thus contributing to reducing unemployment and poverty.

Access to Finance: Improve access to affordable credit and capital for MSMEs through initiatives like the MUDRA Yojana and credit guarantee schemes. Encourage the development of alternative funding sources, such as venture capital, angel investors, and peer-to-peer lending.

Economic Growth: MSMEs make up a significant portion of India's GDP and industrial output. Their growth and success directly impact the overall economic growth of the country. They are often considered the backbone of the Indian economy.

Innovation and Entrepreneurship: Many innovative and entrepreneurial ideas are born in the MSME sector. By supporting and empowering these businesses, India can foster a culture of innovation and entrepreneurship, leading to economic diversification and growth.

Resilience: A diverse landscape of MSMEs can make the economy more resilient. During economic downturns, smaller businesses are often better equipped to adapt quickly to changing circumstances and recover faster.

Export Potential: MSMEs contribute significantly to India's exports. When these businesses are empowered, they can tap into global markets, contributing to foreign exchange earnings and economic stability.

Social Inclusion: Empowering MSMEs can help bridge the urban-rural divide and reduce regional disparities. It provides opportunities for entrepreneurship and income generation in rural and semi-urban areas, thereby promoting social inclusion.

Financial Inclusion: Expanding access to credit and financial services for MSMEs is vital. By improving financial inclusion, these businesses can access the capital needed for growth and expansion.

Technology Adoption: MSMEs can benefit from the adoption of modern technologies and digital tools. This can enhance their efficiency, productivity, and competitiveness, thereby contributing to overall economic growth.

Skill Development: Investment in skill development programs for MSMEs can help enhance the capabilities of the workforce and the competitiveness of these enterprises.

Regulatory Simplification: Streamlining regulations and reducing bureaucratic red tape can make it easier for MSMEs to operate and grow.

Policy Support: The government should continue to implement policies that support MSMEs, including access to finance, simplified regulatory procedures, and incentives for innovation. Strengthening the business environment will encourage entrepreneurship and create more jobs.

Digital Transformation: Encouraging MSMEs to adopt digital technologies and e-commerce platforms can help them expand their reach, increase efficiency, and adapt to changing market dynamics.

Skill Development: Investing in skill development and vocational training programs can enhance the capabilities of the MSME workforce, making them more competitive and adaptable.

Infrastructure Development: Improving physical and digital infrastructure, including transportation, logistics, and broadband connectivity, can reduce costs and increase the competitiveness of MSMEs.

Access to Global Markets: Promoting exports and international trade can be a significant growth driver for MSMEs. The government should facilitate easier access to global markets and provide support for compliance with international standards.

Resilience Planning: MSMEs should develop resilience strategies that include risk management, diversification, and contingency planning to mitigate the impact of unforeseen disruptions, such as the COVID-19 pandemic.

Environmental Sustainability: Encouraging MSMEs to adopt eco-friendly practices not only helps protect the environment but also opens up opportunities for green growth and access to international markets.

Inclusivity: Fostering an inclusive environment that promotes gender equality and social diversity within MSMEs can harness the full potential of the workforce and contribute to social development.

Data and Research: Regular data collection and research on the MSME sector are essential to make informed policy decisions and track progress.

Credit Guarantee and Insurance Schemes: Strengthen credit guarantee schemes and insurance options for MSMEs to mitigate risks and encourage lending by financial institutions.

Create platforms that connect MSMEs with insurers and credit providers.

Entrepreneurship Support: Foster entrepreneurship by offering mentorship, guidance, and startup incubation programs. Encourage collaboration between larger corporations and MSMEs for knowledge transfer and business opportunities.

Quality Certification and Standards: Promote adherence to quality standards and certifications, enhancing the competitiveness of Indian MSMEs in domestic and international markets.

Government Procurement: Reserve a portion of government procurement contracts for MSMEs, providing them with a stable source of revenue and opportunities for growth.

Networking and Clusters: Support the formation of industry clusters where MSMEs can collaborate, share resources, and collectively address challenges.

Sustainability and Green Initiatives: Encourage MSMEs to adopt sustainable and eco-friendly practices to meet growing global demand for green products and services.

Empowering India's MSMEs requires a multi-faceted approach that involves government support, private sector collaboration, and a focus on innovation and technology adoption. By addressing these key areas, India can create a more conducive environment for MSMEs to thrive and contribute significantly to the country's economic development.

Conclusion

Empowering MSMEs is not just about economic growth; it's about creating a more resilient and inclusive society. As MSMEs flourish, they can drive economic development, create jobs, reduce poverty, and ultimately lead to a more prosperous and socially inclusive India. Government, industry, and civil society must work together to realize this vision, and it will require a sustained commitment to fostering an enabling environment for MSMEs to thrive.

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ROLE OF GREEN CRACKERS IN ENVIRONMENTAL SUSTAINABILITY

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Abstract:

Environmental challenges in recent times have increased the trend of “going green” in businesses like no way ahead. “leafage business” is getting popular day by day. It's the new buzzword in business. Though the generality of green business is not new, it's getting increasingly vital in moment's business climate. The world is moving towards green and so are the companies. Now in this competitive world, going green has come the new success mantra in request to separate the products and services from others. Green business has come a platform to move towards invention. presently, farther associations are choosing the green path either directly or indirectly to meliorate their business in turn making a sustainable environment. It is the responsible of every human to protect the natural environment and to ensure that it can continue to support for the present and future generations. Environmental sustainability involves a variety of principles and practices aimed at minimizing harm to the environment while promoting the well-being of both human and non-human species. This paper deals with the generality of “green business” in fire crackers business and its significance for the companies and functional benefits of using green crackers on the society as a whole and making a sustainable environment.

Keywords: *Green business, Green crackers, Environmental sustainability.*

Introduction:

Green business is “smart business”. Natural coffers are being depleted at preliminarily unheard of situations, associations are faced with new challenges in resource and waste operation, and consumers are getting more curious about the origins and environmental footmark left by the products they consume. In the last 25 times air pollution, ozone reduction, dangerous waste, water pollution, global warming etc. is so common that we need to address them as soon as possible to sustain our ecosystem. The seen environmental enterprises have evolved through numerous different phases (Straughan and Roberts, 1999). It started in the 1960s with the greening conception, concentrating on pollution and energy conservation. subsequently, due to increased social and political pressure, associations have moved beyond these generalities to follow three R's reduce, exercise and reclaim. According to a check conducted by the Boston Consulting Group (BCG) in January 2009, the trend toward buying green continues. further consumers bought green products in 2008 than in 2007, and more consumers were willing to pay a advanced price for green

products if they were considered to be of advanced quality. Green business, also known as sustainable or environmentally friendly business, refers to companies and associations that operate in a way that minimizes their negative impact on the terrain while seeking to contribute appreciatively to society and the frugality. The primary thing of green businesses is to balance profitability with environmental and social responsibility.

Review of Literature:

Farinelli, Bottini, Akkoyunlu and Aerni (2013) emphasize entrepreneurs' ability to migrate from dirty traditional business model in which business organizations are over reliant on the economic profit at the expense of sustainable development which was the main thrust of green entrepreneurship.¹

The **Organisation for Economic Cooperation and Development (2011)** advocates for policy mechanisms that would encourage green entrepreneurship in view of reconfiguring the global economic narrative towards environmental friendliness (OCED, 2011). Dean and McMullen (2007) observe that green entrepreneurs are taken advantage of market failure of old business practices by filling these need gaps in the emerging green markets. Hussain (2018) argues that environmental sustainability is attracting increase attention. The researchers believe that very little is known about the characteristics of green entrepreneurship (old or new) with regard to the process involved in penetrating the market and recording innovative performance despite efforts of previous scholars (e.g Criscuolo & Menon, 2015;).²

Farineli et al., 2013; Unauthentifiziert | Heruntergeladen 09.01.20 01:55 UTC International Journal of Entrepreneurial Knowledge Issue 2/2019, Volume 7 19 Esty & Winston, 2009). In addition, very few studies (e.g. **Costantini & Mazzanti, 2012; Sunny & Shu, 2017; Hörisch, Kollat & Brieger, 2017**) have highlighted unresolved issues in the green entrepreneurship field as well as investigating green entrepreneurship from the perspective of change management despite the fact that the role of change management in any change process is germane.³

Khan (2015) opines that the only strategic solution to the problem of sustainability is for entrepreneurs to establish their businesses and rely on "go green" for prosperity and long term survival.⁴

¹ Farinelli, Bottini, Akkoyunlu and Aerni (2013)
https://www.researchgate.net/profile/Sule-Akkoyunlu/publication/256498518_Green_Entrepreneurship

² Organisation for Economic Cooperation and Development (2011)
<https://www.oecd.org/greengrowth/48012345.pdf>

³ Farineli et al., 2013; Unauthentifiziert | Heruntergeladen 09.01.20 01:55 UTC International Journal of Entrepreneurial Knowledge Issue 2/2019, Volume 7 19 Esty & Winston, 2009).
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⁴ Khan (2015)
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3417040

Researchers (e.g. **Darnall & Edwards, 2006; Zhaojun, Jun, Yali & Ying 2017**) have observed that true green enterprises are bound to enjoy high level of customer loyalty despite the growing interruption of green-washing.⁵

Demuth (2014) views green creative entrepreneurship as an entrepreneur's ability to obtain stakeholders' approval for his ideas, takes control of the value chains and gets rewarded for his ingenuity to solve environmental problems.⁶

Zhaojun et al. (2017) argue that green entrepreneurs' tendency to explore different scenarios due to flexibility and adaptability rooted out of creativity often results in superior solution to business and societal challenges. **Yousuf, Awang and Iranmanese (2017)** argue that green entrepreneurs are perceived as disruptive thinkers who are capable of salvaging the sociological landscape from environmental menaces.⁷

Malavisi (2018) posits that green entrepreneurs are those who are involved in modern green business practices through creative and innovative competencies. According to **Barbieri, Ghisetti, Gilli, Marin and Nicolli (2016)**, firm's ability to innovate and commercialise is largely dependent on the stage at the technological and industry lifecycle. Thus the literature reveals that green entrepreneurship is preponderance in terms of success compared to traditional firms in the long-run despite the initial challenge in technological life cycle at the point of market entry.⁸

Why Go Green?

There are a number of important reasons to Go Green in the business. A green business adopts principles, policies, and practices that improve the quality of life for its customers and employees. Today in all over the world, most of the leading businesses is going green because they know that, it helps to:

- ❖ Improve Profitability with Cost Savings
- ❖ Capitalize on Competitive Advantage
- ❖ Mitigate Risk against rising energy prices
- ❖ Engage employees and customers
- ❖ Makes the World a Safer and Healthy
- ❖ Environmental Sustainability
- ❖ Renewable Energy
- ❖ Eco-Friendly Products and Services
- ❖ Waste Reduction and Recycling

⁵ Darnall & Edwards, 2006; Zhaojun, Jun, Yali & Ying 2017

<https://ijek.org/index.php/IJEK/article/view/90>

⁶ Demuth (2014) <https://ijek.org/index.php/IJEK/article/download/90/87>

⁷ Zhaojun et al. (2017) https://journals.co.za/doi/10.10520/ejc-afgrow_v20_n1_a2

⁸ Malavisi (2018)

https://www.researchgate.net/publication/338466067_Green_Entrepreneurship_Literature_Review_and_Agenda_for_Future_Research

- ❖ Corporate Social Responsibility
- ❖ Carbon Neutrality
- ❖ Green Marketing
- ❖ Regulatory Compliance
- ❖ Innovation and Research

Significance of Green Business in the Field of Crackers Business:

A firecracker is a small explosive device used for festivity or entertainment in colorful carnivals. It's primarily designed to produce a large quantum of noise, especially in the form of a loud bang and with visual effect is incidental to this thing. They've fuses and are wrapped in a heavy paper covering to contain the explosive emulsion. The elevated sound situations of firecrackers beget restlessness, temporary or endless hail loss, high blood pressure and trouble sleeping. It also causes breathing problems, similar as habitual or antipathetic bronchitis, bronchial asthma, sinusitis, rhinitis, pneumonia and laryngitis. Bursting crackers increase heat, carbon dioxide and numerous poisonous feasts in the atmosphere, which causes a rise in the temperature of the earth and defiled air leads to global warming. While green crackers replace certain dangerous agents in traditional crackers with lower contaminating substances with the end to reduce the noise intensity and emigrations. They don't contain barium nitrate, which is the most dangerous component in conventional crackers. These green crackers include flower pots, pencils, sparklers, maroons, losers, and chakkar and have been developed by the National Environmental and Engineering Research Institute(NEERI), a CSIR lab. In this composition, we shall bandy in detail herbage crackers and their need with the adding air pollution. Also, the composition and background of its development have been bandied then.

What are Green Crackers?

Green crackers are being developed with an end to control the adding air pollution and several other goods to the terrain. They're eco-friendly and don't contain factors that causes detriment to the terrain. Green crackers use nitrate as compared to other crackers which use barium mariners. The development of Green crackers and perpetration of their use by the general public are given below:

- ❖ It's developed by the Council of Scientific and Industrial Research (CSIR) and an agreement has been inked with around 230 companies for manufacturing and dealing these green crackers in the request.
- ❖ The green- crackers are anticipated to beget at least 30 lower air pollution in comparison to the traditional fire crackers.

- ❖ The manufacturing cost of these crackers will nearly be the same or may indeed bring lower than the traditional crackers.
- ❖ The system of Quick Response (QR) coding has been developed to separate green crackers from the regular bones.
- ❖ The main motive of producing green crackers is to control the environmental disturbance from dangerous goods
- ❖ These green crackers have been named grounded on the three Safe Water Releaser (SWAS), Safe Thermite Cracker(STAR), and Safe Minimal Aluminium(SAFAL).
- ❖ Testing for these green crackers have been ongoing for numerous times, but a bulk of original testing green crackers was done in Sivakasi, Tamil Nadu, one of the major capitals for cracker manufacturing diligence.

Grounded on the current ecological situation, green crackers in India have come a necessity and all Indian countries intend to acclimatize the selling of these fireworks from the coming times.

What is the Difference between Traditional & Green Crackers?

Composition of Green Crackers – Barium nitrate which is one of the most dangerous rudiments present in the regular cracker isn't set up in Green crackers.

Composition of Regular Crackers – A traditional firecracker comprises of six crucial rudiments

- ❖ Energy substantially Charcoal or Thermite
- ❖ Oxidising Agents Nitrates and Chlorates which produce oxygen inside the cracker
- ❖ Reducing Agents Like sulphur, which can burn the oxygen present in the firecracker
- ❖ Controllers to insure the speed and intensity with which a cracker bursts
- ❖ Colouring Agents Multiple colours appear when a cracker bursts, this part is played by the colouring agents similar as
- ❖ Strontium mariners – Red Colour
- ❖ Burning of essence – White Colour
- ❖ Sodium mariners – unheroic Colour
- ❖ Barium mariners – herbage Colour
- ❖ Calcium mariners – Orange Colour
- ❖ Bobby mariners – Blue Colour

Binders: All the factors of the firecracker bear a medium which can bind them Green crackers will therefore help in upping the quality of air and insure that minimal dangerous material is released into the atmosphere with its smothers.

Advantages of Green Crackers:

It's set up that every time the quality of air has been declining and seems like fog as if it's downtime and is called as gauze (bank fog). therefore, the preface of these Green Crackers in India will bring a positive change in the quality of air.

It's also seen that over the times numerous accidents have come up where children and grown-ups have failed due to firecracker incidents. This condition may reduce with green cracker manufacturing.

Though it has the below advantages, one of the biggest disadvantages of Green crackers is that only the manufacturers who have inked a deal with CSIR will be allowed to manufacture these crackers. The other diligence which produce the traditional type of crackers may be left jobless and small manufacturing units won't be allowed to produce green crackers.

Still, 70% of India's crackers are manufactured in Sivakasi, Tamil Nadu, which continues to be the leading supplier of Green Crackers in India.

Green Crackers: SWAS, Star & SAFAL:

Green crackers have three different names

- ❖ **SWAS – safe- deposit box Water Releaser**
- ❖ Release water vapour in the air in such a way that suppresses the dust released
- ❖ It does not contain potassium nitrate and sulphur
- ❖ A diluent is released for gaseous emigrations
- ❖ The particulate dust released is reduced roughly by 30 percent
- ❖ **STAR – Safe Thermite Cracker**
- ❖ Does not contain potassium nitrate and sulphur
- ❖ Reduced particulate matter disposal
- ❖ Intensity of sound is less
- ❖ **SAFAL – safe- deposit box minimum Aluminium**
- ❖ Aluminium operation is less
- ❖ Magnesium is used rather of aluminium
- ❖ Compared to traditional crackers sound is reduced

Thus, considering the tremendous deterioration in the quality of air, it's in critical need to take up strict conduct to control Air Pollution in our country. In 2018, the Supreme court of India banned the traditional crackers containing pollution causing barium nitrate, thus promoting the use of green crackers rather and to come eco – friendly for the nature.

Due to the transition in to the world of green crackers, this time we have only 70 of stock as compared to last time because the maturity of big cracker brands have supplied less traditional crackers. In September 2022, the Delhi Pollution Control Committee announced a complete ban on bursting crackers – including green crackers – till January

2023. multitudinous countries in India analogous as Assam, Tamil Nadu, Rajasthan have allowed the use of green crackers during festivals. West Bengal used green crackers during Durga Puja fests and Punjab has allowed to burst green crackers for two hours on the day of Diwali. still, the present chemical substances on supposedly green cracker packets have made green crackers an oxymoron for the ₹ 3,000 crore cracker sedulity in India.

In May 2019, the Supreme Court had given blessing for the use of green crackers to control pollution. Green crackers are certified by CSIR- National Environmental Engineering Research Institute. Last time, during the epidemic period, in the cosmopolises with poor air quality indicator (AQI), the Supreme Court had corroborated its ban on crackers to cover those cosmopolises. Because when the air quality becomes farther dangerous, it would inadequately affect the aged citizens and people who have recently recovered from Covid - 19. In an interview with TOI, Dr Mukul Kumar Singh, an epidemiologist at Nalanda Medical College Patna said, "People should avoid fireworks during Diwali, especially those who have asthma, citizens above 60 times of age, small youths or who have recovered from severe symptoms of Covid- 19.

" According to a report by Centre for Science and Environment (CSE) released in May this time, Delhi- NCR is formerly the most weakened region in north India. This is especially true for the public capital, where paddy burning from Punjab has made the air thicker and further delicate to breathe. The eco-friendly druthers during Diwali are green crackers but there are claims dismissing their authenticity.

Conclusion:

Thus it is concluded that Green Crackers are environmentally friendly fireworks and can reduce the air pollution caused by traditional firecrackers. It preserves the world's natural resources. It is the responsibility of every individual both at work and at home to make a sustainable environment. The usage of environmentally friendly solutions is urgent and will eventually lead to a bigger effect. These tiny but substantial steps will also contribute to global efforts to reduce climate change and bring a healthier world.

Let's Show Keen in Making World Green

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ROLE OF MSME'S IN ECONOMIC DEVELOPMENT OF INDIA

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Abstract:

Micro, Small, and Medium Enterprises (MSMEs) form the backbone of India's economy, contributing significantly to its growth and development. This article provides a comprehensive analysis of the pivotal role played by MSMEs in India's economic landscape. By delving into the diverse sectors within MSMEs, the study explores their contributions to employment generation, innovation, and export promotion. Additionally, the article examines the challenges faced by MSMEs, including limited access to finance, technology, and markets, and proposes policy recommendations to enhance their competitiveness and sustainability. Through a detailed review of government initiatives and their impact on MSMEs, this research sheds light on the integral role these enterprises play in fostering inclusive economic growth, poverty alleviation, and socio-economic development in India.

Introduction:

Micro, Small, and Medium Enterprises (MSMEs) constitute a vital sector of India's economy, contributing substantially to employment generation, industrial production, and export earnings. In recent years, these enterprises have gained increased recognition for their significant role in fostering economic development, poverty reduction, and inclusive growth. This article delves into the multifaceted contributions of MSMEs to the Indian economy. It explores how these enterprises serve as engines of innovation, entrepreneurship, and employment, empowering diverse sections of society. Through a nuanced analysis, this article aims to highlight the pivotal role MSMEs play in India's economic development, underscoring the need for tailored policies and support mechanisms to further enhance their impact and sustainability.

Financing of MSMEs

Financing of MSMEs (Micro, Small, and Medium Enterprises) involves the provision of financial resources to support their operations, growth, and development. Due to their significant contribution to the economy, ensuring adequate financing options for MSMEs is crucial. Various financing methods are available, including traditional banking loans, government schemes, venture capital, angel investors, and crowdfunding. These financial resources help MSMEs invest in technology, manpower, and infrastructure, enabling them

to expand their businesses, create employment opportunities, and contribute to economic development. Access to affordable and timely financing is vital for MSMEs to thrive, innovate, and play a pivotal role in the overall economic growth of a country.

Small & Medium Enterprises Sector contribute about 40% of total manufacturing and 34% of total exports and is crucial to India's economic growth, employment generation and entrepreneurial development. A Policy Package for Stepping up Credit to Small and Medium Enterprises was announced in the Parliament on August 10, 2005 in order to achieve a minimum 20% year-on-year growth in credit to the SME Sector by the Public Sector Banks. The objective is to double the flow of credit to the SME sector by 2009-10, i.e. within a period of 5 years. The progress of MSME lending by PSBs for the year ending March, 2009 shows a growth of 29.58% over March 2008. Year on year growth in June 2009 over June 2008 has been 29.40%. MSME Act, 2006 has also been enacted by the Government to give more strength to the MSME Sector. The target has since been achieved. The year-on-year growth has been more than 20% since 2007. In the Budget Announcement 2008-09, it was announced to create two funds of Rs.2,000 crore each in SIDBI one for risk capital financing and the other for enhancing refinance capability to the MSME sector. RBI had initially allocated Rs.1600 crore for the MSME (Refinance) Fund and Rs.1000 crore for the MSME (Risk Capital Fund). Recently, RBI has enhanced the MSME (Refinance) Fund from Rs.1600 crore to Rs.3600 crore and SIDBI has started getting fresh funds in this regard. On December 7, 2008 in the package containing measures for stimulating the economy, it was announced that to facilitate the flow of credit to MSMEs, RBI has announced a refinance facility of Rs.7000 crore for SIDBI which will be available to support incremental lending, either directly to MSMEs or indirectly via banks, NBFC.

Challenges Faced By Msme In India

1) Financial issues:

In the Indian economy, access to finance has always been an issue for smaller firms and businesses. This is a major hindrance for businesses as well as the MSME sector. However, the most disturbing fact about it is that only 16% of SMEs get access to timely finance, resulting in small and medium firms being forced to rely on their own resources. It is not just small firms that face this problem, but larger firms do as well because even those bigger players face significant difficulties in accessing cheaper credit from formal banks.

2) Regulatory issues:

Several regulatory issues have been identified over time, including problems like tax compliance and changes to labor laws which have ended up costing the MSME sector dearly. In an attempt to make this sector more competitive among others, certain labor reforms were attempted some years back. Still, they failed to make any dent in improving

things for MSMEs despite making them more competitive than larger firms. As a result, it has become very difficult for MSMEs to comply with these regulations and register for tax compliance, which has resulted in many operating on low capital or even shutting shops.

3) Infrastructure:

In India, the infrastructure sector is extremely important because we are often referred to as the 'world's back-office' because so many works in this sector are carried out overseas. Applications such as eCommerce and BPO have created more jobs in low-wage countries like India.

4) Low productivity:

MSMEs are not necessarily very productive, but they perform certain tasks that emit more value than they produce. Retailers sell consumer goods to end-users at relatively lower prices. In fact, MSMEs may be very productive only when it comes to being cost-efficient and are capable of creating high volume at very low costs. But given that their production is on a small scale with low margins, low productivity can put them at a disadvantage, especially when compared with larger firms.

5) Lack of innovation:

Indian MSMEs are not very innovative, and the majority of the products that they produce are based on outdated technologies. There is a severe lack of entrepreneurs in this sector, which has prevented it from adopting new technologies and tools which have brought about significant changes in other sectors like eCommerce and call centers, etc. As a result, MSMEs have had to struggle with outdated technology as well as low levels of productivity, especially when compared with larger firms.

6) Technical changes:

There has been no dearth of technical changes over time, and most industries have undergone some form of change in order to remain competitive. As a result, Indian MSMEs have had to deal with some very important changes which have affected their growth potential. At first, there was a change in the ownership right of land, which has made the sector more prone to mismanagement and, with it, a fall in productivity.⁷⁾ Competition:

Due to various factors, such as the rise of eCommerce and the advent of globalization, bigger firms have forced MSMEs out of their markets. However, this is not new because MSMEs were facing competition from year one, but they could fight it off successfully compared to professional firms. In fact, MSMEs continue to face competition in many areas, including agricultural machinery, garments, and tourism.

8) Skills:

When it comes to skills, Indian MSMEs are far behind their counterparts in other countries because they depend heavily on the help of informal workers, who are not paid well and lack the technical skills which can help enhance productivity. As a result, smaller firms are forced to take up jobs that require low levels of skill and expertise, which further affects their growth prospects in the long term.

9) Lack of professionalism:

A majority of Indian MSMEs lack professionalism despite being vital for larger industries' growth. As a result, they are highly prone to corruption and abuse of power, which has a huge impact on the productivity of their businesses.

10) Lack of standardized policies:

There are very few MSME policies in India. As a result, there is no consistency when it comes to MSME development as well as entrepreneurship promotion programs. However, positive progress has been made in Delhi over the years, but this needs to be done on a national level so that Indian firms can become more competitive across the world for global companies and investors.

Advantages of MSME

Preference of the Tender to the MSME

Recently, MSME has been given preference in bids exclusively open to these kinds of companies. The Finance Minister made this statement on unfair competition from foreign firms in acquiring Government bids regarding size and strength in the last COVID-19 relief package.

Concession on Electricity Consumption

The Government also provides a concession on electricity bills for the registered MSMEs. You just have to submit an application, a registered MSME certificate, and a copy of your electricity bill to apply for this incentive. Subsidies on Intellectual Property like Patent registration and Industrial design Up to 50% subsidy is provided to companies established under the Micro, Small and Medium Enterprise Act to register patents. You can benefit from this perk by formally applying to the pertinent Ministry. The Government also provides funding for industrial design and promotion to enhance growth.

Access to the international market

Corporate delegations from India are given financial assistance to attend international conferences, trade fairs, exhibitions, business meetings, and seminars. This international

partnership program makes it possible to become exposed to the more contemporary features of industrialisation.

Now, after going through the advantages if you are excited and avail of them, then we suggest you to get ready with your UDYAM certificate. Incase if you don't have one, read our guide on how to apply for UDYAM certificate.

Disadvantages of MSMEs in India

Piling of interest

The first issue is the amount of interest that must be paid. The interest that must be paid on loans accumulates rapidly. Despite being the interest rate lower than other loans, the interest accumulates and costs much money when paid.

Tedious Loan Procedure

While the loan has a high acceptance rate, the sanctioning procedure takes a long time. It takes a lot of time to apply for an MSME loan since various documents must be submitted. Documents such as income tax returns, profit and loss statements, bank account information, bills of receipt and payment, and much more are required to prove the lender's validity.

No collateral requirement

Despite being advantageous to the lenders, this might cause issues for the banks. The loan becomes secured when collateral is requested. It is secured because the lending institution will not suffer any loss if a loan becomes an NPA.

Review of literature

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Conclusion

MSMEs play a crucial role in the economic development of India. They contribute significantly to employment generation, innovation, and export growth. MSMEs are the backbone of the Indian economy, especially in rural areas, as they promote inclusive growth and reduce regional disparities. They also foster entrepreneurship and contribute to GDP growth. By providing opportunities for self-employment and supporting local industries, MSMEs contribute to poverty reduction and overall economic development. It is essential to continue supporting and promoting the growth of MSMEs to unleash their full potential and drive India's economic progress.

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A STUDY ON HUMAN HEALTH AND SOCIAL CARE ACTIVITIES

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Abstract

Social relationships both quantity and quality affect mental health, health behavior, physical health, and mortality risk. Sociologists have played a central role in establishing the link between social relationships and health outcomes, identifying explanations for this link, and discovering social variation (e.g., by gender and race) at the population level. Studies show that social relationships have short- and long-term effects on health, for better and for worse, and that these effects emerge in childhood and cascade throughout life to foster cumulative advantage or disadvantage in health. This article describes key research themes in the study of social relationships and health, and it highlights policy implications suggested by this research.

Keywords: Relationships, Social support, Social integration, Stress, Cumulative disadvantage.

Introduction

Captors use social isolation to torture prisoners of war to drastic effect. Social isolation of otherwise healthy, well-functioning individuals eventually results in psychological and physical disintegration, and even death. Over the past few decades, social scientists have gone beyond evidence of extreme social deprivation to demonstrate a clear link between social relationships and health in the general population. Adults who are more socially connected are healthier and live longer than their more isolated peers. This article describes major findings in the study of social relationships and health, and how that knowledge might be translated into policy that promotes population health. Key research findings include: (1) social relationships have significant effects on health; (2) social relationships affect health through behavioral, psychosocial, and physiological pathways; (3)

relationships have costs and benefits for health; (4) relationships shape health outcomes throughout the life course and have a cumulative impact on health over time; and (5) the costs and benefits of social relationships are not distributed equally in the population.

Social Relationships

Social scientists have studied several distinct features of social connection offered by relationships (Smith and Christakis 2008). Social isolation refers to the relative absence of social relationships. Social integration refers to overall level of involvement with informal social relationships, such as having a spouse, and with formal social relationships, such as those with religious institutions and volunteer organizations. Quality of relationships includes positive aspects of relationships, such as emotional support provided by significant others, and strained aspects of relationships, such as conflict and stress. Social networks refer to the web of social relationships surrounding an individual, in particular, structural features, such as the type and strength of each social relationship. Each of these aspects of social relationships affects health. We discuss the broad effects of these features of relationships for health, and, for ease of discussion, we use the terms “social relationships” and “social ties” interchangeably throughout this article.

Social Relationships Benefit in Health

Many types of scientific evidence show that involvement in social relationships benefits health. The most striking evidence comes from prospective studies of mortality across industrialized nations. These studies consistently show that individuals with the lowest level of involvement in social relationships are more likely to die than those with greater involvement. For example, [unintelligible] showed that the risk of death among men and women with the fewest social ties was more than twice as high as the risk for adults with the most social ties. Moreover, this finding held even when socioeconomic status, health behaviors, and other variables that might influence mortality, were taken into account. Social ties also reduce mortality risk among adults with documented medical conditions. For instance, Grummet and colleagues found that, among adults with coronary artery disease, the socially isolated had a risk of subsequent cardiac death 2.4 times greater than their more socially connected peers.

In addition to mortality, involvement in social relationships has been associated with specific health conditions as well as biological markers indicating risk of preclinical conditions. Several recent review articles provide consistent and compelling evidence linking a low quantity or quality of social ties with a host of conditions, including development and progression of cardiovascular disease, recurrent myocardial infarction, atherosclerosis, autonomic high blood pressure, cancer and delayed cancer recovery, and slower wound healing Everson-Rose and Lewis Poor quality and low quantity of social ties

have also been associated with inflammatory biomarkers and impaired immune function, factors associated with adverse health outcomes and mortality. Marriage is perhaps the most studied social tie. Recent work shows that marital history over the life course shapes a range of health outcomes, including cardiovascular disease, chronic conditions, mobility limitations, self-rated health, and depressive symptoms.

Behavioral Explanations

Health behaviors encompass a wide range of personal behaviors that influence health, morbidity, and mortality. In fact, health behavior explains about 40 percent of premature mortality as well as substantial morbidity and disability in the United States. Some of these health behaviors such as exercise, consuming nutritionally balanced diets, and adherence to medical regimens tend to promote health and prevent illness, while other behaviors such as smoking, excessive weight gain, drug abuse, and heavy alcohol consumption tend to undermine health. Many studies provide evidence that social ties influence health behavior. For example, Berkman and Breslow's (1983) prospective study in Alameda County showed that greater overall involvement with formal (e.g., religious organizations) and informal (e.g., friends and relatives) social ties was associated with more positive health behaviors over a ten-year period. Being married (Waite 1995), having children (Denney 2010), and ties to religious organizations have been linked to positive health behaviors (although, notably, as we will discuss below, marriage and parenthood have also been associated with behaviors that are not beneficial to health including physical inactivity and weight gain).

Psychosocial Explanations

Research across disciplines and populations suggests possible psychosocial mechanisms to explain how social ties promote health. Mechanisms include (but are not limited to): social support, personal control, symbolic meanings and norms, and mental health. While most studies focus on only one or two of these mechanisms, it is clear that connections between mechanisms are complex, and that these interconnections may explain the linkage between social ties and health better than any single mechanism.

Social support refers to the emotionally sustaining qualities of relationships (e.g., a sense that one is loved, cared for, and listened to). Hundreds of studies establish that social support benefits mental and physical health. Social support may have indirect effects on health through enhanced mental health, by reducing the impact of stress, or by fostering a sense of meaning and purpose in life. Supportive social ties may trigger physiological sequelae (e.g., reduced blood pressure, heart rate, and stress hormones) that are beneficial to health and minimize unpleasant arousal that instigates risky behavior (Uchino 2006). Personal control refers to individuals' beliefs that they can control their life outcomes.

through their own actions. Social ties may enhance personal control (perhaps through social support), and, in turn, personal control is advantageous for health habits, mental health, and physical health.

Physiological Explanations

Psychologists, sociologists, and epidemiologists have contributed a great deal to our understanding of how social processes influence physiological processes that help to explain the link between social ties and health. For example, supportive interactions with others benefit immune, endocrine, and cardiovascular functions and reduce allostatic load, which reflects wear and tear on the body due, in part, to chronically over worked physiological systems engaged in stress responses. These processes unfold over the entire life course, with effects on health. Emotionally supportive childhood environments promote healthy development of regulatory systems, including immune, metabolic, and autonomic nervous systems, as well as the hypothalamic-pituitary-adrenal (HPA) axis, with long-term consequences for adult health. Social support in adulthood reduces physiological responses such as cardiovascular reactivity to both anticipated and existing stressors, continuously married adults experience a lower risk of cardiovascular disease compared with those who have experienced a marital loss, in part due to the psychosocial supports conferred by marriage.

Cumulative Advantage and Disadvantage

All Americans are not at equal risk for risky health behaviors, morbidity, and premature mortality. Throughout life, we are exposed to social conditions that promote or undermine health, and over time these exposures accumulate to create growing advantage or disadvantage for health in socially patterned ways. Thus, social variation in relationships/health processes provides information that may be used to address social disparities in health.

The most salient social ties for health vary over the life course, with parents having the greatest influence on children's health, peers becoming particularly important in adolescence, intimate partners becoming most important in adulthood, and adult children taking an elevated role in later life. The principal explanatory mechanisms may also vary over the life course. For example, stressful family interactions may have their greatest impact on children's health, while peer pressure and the social meaning of health habits (e.g., pressure to experiment with tobacco, alcohol, and drugs) may have their greatest impact in adolescent relationships, and social control of health habits may be most important in adult relationships.

Some effects of social ties are more immediate, while others slowly build over time. For example, at any given point in time, ongoing social ties affect mental health and health

behavior for better or for worse. These effects may or may not dissipate over time, but recent work on the effects of distressed, disrupted, and emotionally unsupportive childhood environments on adult health shows that these effects reverberate throughout the life course. Certainly, chronic isolation or strain in social ties take an increasing toll over time on a host of health indicators including allostatic load, blood pressure, physical health, and mortality risk.

Costs and Benefits of Social Relationships: Inequalities

Both quantitative (size and diversity) and qualitative (benefits and costs) aspects of social ties are demographically patterned and socially constructed. Regarding size, women tend to have larger confidant networks than men, as do whites compared with blacks, better-educated adults compared with less-educated, and, to a lesser extent, younger adults. Moreover, the diversity of social ties varies in patterned ways with, for example, better-educated adults engaged in more diverse personal networks. Socio-demographic variation in quantitative aspects of social ties may partly explain parallel variation in health disparities because both size and diversity of social ties enhance health. People with a greater number of ties have a larger pool of confidants from which to connect and to receive social support and health-relevant information.

In general, we know little about how the benefits and costs of social ties vary across socio-demographic groups, but some evidence suggests that there is variation. Most attention has been devoted to gender differences, particularly in the context of marriage. Historically, marriage has conferred more health gains for men than for women. Men not only experience greater health benefits through the positive lifestyle and health behaviors that often accompany marriage (Waite 1995), they also experience fewer costs from spousal care giving, childrearing, caring for aging parents, and balancing work/family demands (Spain and Bianchi 1996).

The availability, costs, and benefits of social ties may also vary by race. For instance, blacks are less likely to be married than whites. Yet evidence regarding costs and benefits is mixed. African Americans may experience more marital strain and receive fewer economic gains from marriage compared to whites, yet some studies find African Americans have historically received more health benefits from marriage. Disparities in the quantity and quality of social ties exist across socioeconomic statuses as well. More educated adults have a larger number of close confidants and may experience less stress in their relationships. For instance, women with a high school degree or less are roughly twice as likely to divorce within 10 years of their first marriage compared with women having at least a bachelor's degree. Notably, differential access, benefits, and costs to social ties across socio-demographic groups are not immutable; recent work shows that these differentials have changed significantly over the time.

Socialties and Health of the Population

Social ties and their connection to health have important implications for health policy. Indeed, some existing social policies and programs implicitly and indirectly incorporate social ties as mechanisms for enhancing population health and well-being. For example, many programs concerned with health of the elderly (e.g., home health services and meal deliveries) direct attention to the impact of social isolation/connection on health. Healthy People 2010, a nationwide health promotion plan developed by the Department of Health and Human Services, recognizes that social ties play an important role in influencing health the Healthy Marriage Initiative recognizes that marriages characterized by supportive interactions benefit the health of children as well as spouses (U.S. Department of Health and Human Services. The Family Medical Leave Act (FMLA) allows eligible employees to take up to 12 weeks of unpaid, protected leave over a 12-month period to attend to certain medical and family-related needs, such as the birth of a child or caring for an immediate family member.

Conclusion

Solid scientific evidence shows that social relationships affect a range of health outcomes, including mental health, physical health, health habits, and mortality risk. Sociologists have played a major role in establishing these linkages, in identifying explanations for the impact of social relationships on health, and in discovering social variation (e.g., by age and gender) in these linkages at the population level. The unique perspective and research methods of sociology provide a scientific platform to suggest how policy makers might improve population health by promoting and protecting Americans' social relationships. Recent and projected demographic trends should instill a sense of urgency in developing policy solutions. Specifically, the confluence of smaller families, high divorce rates, employment-related geographical mobility, and population aging means that adults of all ages, and in particular the elderly, will be at increasing risk of social isolation and shrinking family.

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ROLE OF FINTECH - INNOVATION AND ADOPTION IN SUSTAINABLE BUSINESS START-UPS

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Abstract

The integration of new technologies and the digitization of society have created a favourable environment for the development of Fintech startups in India. The FinTech Industry has seen tremendous growth in India over the last decade since it caught pace after expansion of interest services in the country. In India Fintech adoption rate is 87% against the global average of 64%⁴. By providing the access to banking and financial services for unbanked people, the FinTech industry plays a predominant role to bettering financial inclusion. This paper explores the various segments and significance of Fintech industries in the success of digital transformation and it also inspects the regulatory legal framework, Government initiatives, the key principles and thrust areas of the Fintech start-ups. Besides this it also tried to identify the emerging trends, issues and challenges in Fintech revolution.

Keywords: *Digital Startups, Fintech Innovation, Sustainable Development, Business Start-ups etc.,*

Introduction:

Financial technology (better known as Fintech) is used to describe new tech that seeks to improve and automate the delivery and use of financial services⁴. The Fintech companies plays an major role in improving access to the gamut of financial services like AePS, Aadhar Pay, Remittances, and Recharges for the masses². With over 2,000 FinTech businesses officially recognized by DPIIT (Department for Promotion of Industry and Internal Trade) in India and projections indicate that the total addressable market for the Indian FinTech industry is set to reach \$ 1.3 trillion by 2025⁵.

Fintech companies are innovative, nimble, and have lower operational costs than traditional banks⁶. They can lead the way through taking financial services, increasing access to credit, innovating with speed and compliance, promoting a cashless economy to the farthest corners of the country⁶. Fintech companies can play a key role in boosting financial inclusion by leveraging the existing financial ecosystem and emerging technologies to make banking simpler, more accessible, and cost-effective for millions of unbanked and underbanked Indians⁶.

FinTech is increasingly becoming an important focus area for all the key stakeholders in India's Financial Services industry – Regulators, Traditional Banks, NBFCs, Payment Banks, Investors, Payment Service Providers, Broking and Wealth Management Companies, Insurance providers and pure-play FinTech players. The FinTech

infrastructure backbone has been strengthened tremendously with the host of options available to market participants such as BBPS, Bharat QR, India Stack, UPI³.

Statement of the Problem:

The FinTech infrastructure backbone has been strengthened tremendously with the host of options available to market participants such as BBPS, Bharat QR, India Stack, UPI, etc³. In India Fintech adoption rate is noted as 87% against the global average of 64% ⁴. According to a World Bank analysis more than 190 million Indians lack access to formal financial services, 20 percent of the Indian population is still unbanked, implying enormous untapped economic potential⁶. Rural India has only 17% internet penetration compared to 60% in urban India³. Above these two interpretations make an argument and couldn't judge the exact state of Fintech development in India.

To know the present scenario of Fintech startups in India, the following questions were raised?

What are the various segments and significance of Fintech startups in India?

What are the factors associated with the growth of Indian Fintech industry?

What are all the issues, challenges faced by Fintech companies in the current economic climate?

What are the emerging trends predicted by Fintech industry?

Objectives of the Study:

This study makes an attempt to find the solutions for the questions asked in the statement of the problem. Accordingly the following objectives have been framed.

1. To know the various segments and significance of Fintech startups in India.
2. To identify the factors associated with the growth of Indian Fintech industry.
3. To identify the regulatory legal framework and Government Initiatives for Fintech in India.
4. To explore the issues, challenges faced by Indian Fintech companies in the current economic climate.
5. To identify emerging trends in Fintech startups in sustainable development.

Research Methodology:

As the research paper is of conceptual and review nature, the researcher has applied exploratory research design by using varied secondary data availed from the secondary data sources. Based on the secondary data and review, the researcher has reported on important role of Fintech - Innovation and adoption in India

Review of Literature:

Mr. Nishant kumar published an article titled as “Role of Fintech in India’s Digital Economy” in Nasscom community website on March16,2023. In this article he reveals that the role of Fintech in Indian Digital Economy, the key benefit of Fintech for business in India, challenges of Fintech in India and the future of Fintech in India. He noted that in India the future of Fintech companies is bright, the immense potential.

The Times of India published an article entitled as “The role of Fintech companies in strengthening the banking and online payment sector in rural India” on October12, 2022 written by Amit Tyagi. The author express that India’s Fintech market is among fastest growing and is ranked the third largest market. He denotes that the companies have the potential to reshape the financial services and financial inclusion in India. He added that the companies plays an major role in improving access to the gamut of financial services like AePS, Aadhar Pay, Remittances, and Recharges for the masses.

Deloitte the Learning Academy conducted a study and published an article in the name of “FinTech in India – Ready for Breakout”. This article denotes the critical issues addressed by Indian FinTech companies and few of the critical structural issues afflicting Indian financial services as increase outreach, improve customer experience, reduce operational friction, and foster adoption and usage of the digital channel. This report suggests the financial companies can learn and adopt best practices around risk and internal controls, operational excellence, compliance culture, and employee engagement.

Fintech Segments –Area wise classification

Deloitte report analyzed the breakout potential of India’s Fintech sector across six segments i.e Payments, Credit, Investment Management, Personal Finance Management, BankTech and InsurTech and across twenty sub-segments. Customer Loyalty, Technology & IT Infrastructure.

Area	Fintech Segments	Area	Fintech Segments
Credit	Peer-to-Peer Lending Crowd Funding Market Place for Loans Online Lenders – on-book lending by NBFCs Credit Scoring Platforms	Payments	M-wallets and PPIs Merchant Payments and PoS Services International Remittance Crypto Currencies
Investment Management	Robo Advisors Discount Brokers Online Financial Advisors	Personal Finance Management	Tax Filling and Processing Spend Management and Financial Planning Credit Scoring Services

Bank tech	Big Data Blockchain Customer Onboarding Platforms	Insur tech	Insurance Aggregator IOT, Wearables and Kinematics
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Source : Deloitte Analysis

Significance of Fintech Startups in India:

- ❖ **Promoting Financial Inclusion in India** – Most of the Indian people in rural area remain outside the formal financial system, and the use of financial technologies can bridge the gap left by traditional banking.
- ❖ **Finance for Micro, Small and Medium Enterprises (MSME)** – Lack of capital is the biggest threat to MSME, FinTech startups can play a key role and solve the issue of credit availability and offering easier and quick access to loans.
- ❖ **Improve Customer Experience** - FinTech start-ups provide better customer experience in terms of convenience, personalization, transparency, accessibility and developing credit scores and underwriting credit for customers for improving financial services penetration in India by leveraging big data, machine learning and alternative data.

Growth Factors of Indian FinTech Sector:

Customer Loyalty, Funding environment, Technology & IT Infrastructure, Value proposition, Innovative use of Data, Cost of operation are considered as a key factors, leading to success of Fintech companies³.

The following seven factors are likely to drive the growth of the Indian FinTech sector, in the medium to long term³:

- ❖ Combination of steady economic growth with low penetration of financial services.
- ❖ Large public sector banks and insurers lagging market growth.
- ❖ Regulatory forbearance toward FinTech.
- ❖ Indian Millennials rapidly ascending the adoption S-curve of digital financial services and thus perceiving higher friction from incumbents.
- ❖ India Stack and internet data proliferation to improve financial services utility infrastructure and connectivity to support digital financial services.
- ❖ Advances in technology and adoption of cloud services leading to asset light models with almost zero unit costs at transaction levels could enable subsidization without building scale.
- ❖ Lower real interest rates in Indian economy.

Regulatory Legal Framework and Government Initiatives for Fintech in India:

Owing to the overlapping and non-linear business models of fintech businesses, there is no single all-encompassing regulatory legal framework for fintech in India. The applicable laws and rules governing a fintech business will generally depend on the nature of the business being conducted⁷. It is usually regulated by the RBI, SEBI, the Insurance Regulatory and Development Authority of India (IRDAI), the Pension Fund Regulatory and Development Authority (PFRDA), and IFSCA⁷. Aspects that are regulated by the aforementioned authorities include online payments and transactions, payment aggregators and gateways, data and privacy, lending and collection of deposits, trading of securities and derivatives, offering of insurance products and services, etc. For many financial offerings, prior approvals and licenses need to be obtained from the RBI, SEBI or IRDAI for a business to commence⁷.

The government has already laid the groundwork for the Fintech industry to provide flexible and innovative digital banking with regulations like the Unified Payment Interface (UPI), Aadhaar, and open application programming interfaces (APIs)⁶. The Government also announces measures to specifically promote investments in tech/fintech/start-up businesses in India, or which have a positive impact on those sectors. Additionally, IFSCA has also introduced an incentive scheme for, inter alia, domestic fintechs seeking access to overseas markets as well as foreign fintechs seeking market access to IFSCs in India. The Government also proposed many tax-related relaxations, including an extension of timelines (from March 31, 2023, to March 31, 2025) for funds relocation to IFSC GIFT City. Tamil Nadu FinTech Policy 2021, offering collaboration and incentives for select fintech startups⁷.

The laws and regulations that may apply to fintechs in India are listed below:

RBI

- ❖ Payment and Settlement Systems Act, 2007.
- ❖ Master Directions on Prepaid Payment Instruments (MD-PPIs), 2021.
- ❖ Framework for Scale Based Regulation for Non-Banking Financial Companies, 2021.
- ❖ Directions for opening and operation of Accounts and settlement of payments for electronic payment transactions involving intermediaries, 2009.
- ❖ Guidelines for Licensing of Payments Banks, 2014 and Operating Guidelines for Payments Banks, 2016.
- ❖ Framework for Recognition of a Self-Regulatory Organisation for Payment System Operators, 2020.
- ❖ Guidelines on Regulation of Payment Aggregators and Payment Gateways, 2020.
- ❖ Circular on Processing of e-mandate on cards for recurring transactions, 2019.
- ❖ Circular on Tokenisation – Card transactions, 2019.
- ❖ Guidelines on Digital Lending, 2022.

- ❖ RBI Master Directions on Credit Card and Debit Card – Issuance and Conduct, 2022.

National Payments Corporation of India (NPCI)

- ❖ Various circulars on Unified Payments Interface (UPI) payments.

SEBI

- ❖ Circular on Mutual Funds, 2021.

IRDAI

- ❖ Guidelines on Insurance Repositories and Electronic issuance of Insurance Policies, 2015.
- ❖ Guidelines on Insurance e-commerce, 2017.
- ❖ Insurance Regulatory and Development Authority of India (Issuance of e-Insurance Policies) Regulations, 2016.

IFSCA

- ❖ International Financial Services Centres Authority Act, 2019.
- ❖ Framework for FinTech Entity in the International Financial Services Centres (IFSCs), 2022.

Apart from these the following initiatives are taken by the government for the benefit of public.

- ❖ **Jan Dhan Yojana** – This initiative is considered as a world largest financial inclusion and it has helped in new account enrolment of over 450 million beneficiaries for direct benefit transfer and accessibility to a host of financial services applications such as remittances, credit, insurance, and pensions. It helps the Fintech companies to build technology products to enter the large consumer base in India ⁴.
- ❖ **India Stack** – It is a set of APIs that allows governments, businesses, startups and developers to utilise a unique digital Infrastructure to solve India's hard problems towards presence-less, paperless and cashless service delivery ⁴.
- ❖ **UPI (Unified Payments Interface)** – It is an advanced mobile app-based payment system to transfer funds between bank accounts developed by the National Payments Corporation of India in 2016, is the multiplier force behind the Fintech revolution in India. 338 banks registered under the platform, recorded more than 6.28 billion transactions in July 2022 worth 10.62 lakh crore ⁴.
- ❖ **Digital Rupee** - India launched its Central Bank Digital Currency (CBDC) or digital rupee or e-rupee recently. It is an electronic version of cash and will primarily accelerate the growth of the FinTech market in India⁴.
- ❖ **Fintech Hub** - **Fintech** Valley Vizag, O-hub Bhubaneswar, Bandra Kurla Complex, FinTech Hub Kolkata, Mumbai Fintech Hub are Fintech parks created by the respective Government to promote business infrastructure in the state, and attract investors and multinational financial corporations to set up their offices in the hub.

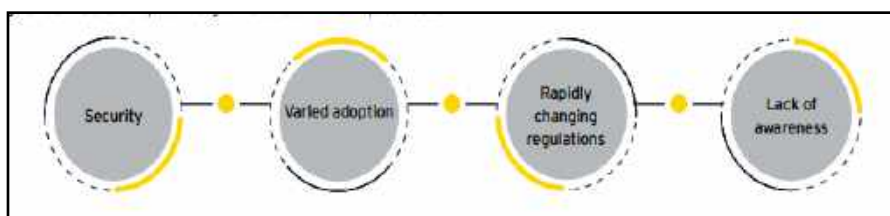
Issues, Challenges faced by Fintech Companies in the Current Economic Climate

Fintech systems are vulnerable to hackers by automation of processes and digitization of data. Absence of regulatory authority has led to increased chances of fraud threat to investor protection and movement of money in the economy. Due to the diversity of offerings in FinTech, it is difficult to formulate a single and comprehensive approach to these problems.

According to RBI financial literacy is only 27% of Indian adults and 24% of women meet the minimum level of financial literacy. The lack of financial literacy is also considered as a main issue. During the pandemic, digital lending through mobile apps became popular, but more than half of these digital loan providers were operating illegally. Many apps used tactics to exploit the widespread lack of financial literacy, charging interest rates up to 500%⁴.

The true legal status of cryptocurrency continues to be a grey area in India⁷. The Government of India introduced a draft Cryptocurrency and Regulation of Official Digital Currency Bill, 2021 (Cryptocurrency Bill), which provides for: (a) the creation of a framework for official digital currency to be issued by the RBI; and (b) the prohibition of all private cryptocurrencies in India – with certain exceptions, in order to promote the underlying technology of cryptocurrency and its uses⁷. As per a recent report, WazirX, India's biggest Cryptocurrency exchange registered an annual trade of over \$43 billion.

Nearly three-quarters of population resides in rural India Fintech industries making its route to reach digitalization. Infrastructural costs, low usage due to lack of awareness, inconsistent availability of electricity, theft, and vandalism are some of the major deterrents for physical bank branches and ATM operators in rural areas².



Source : Deloitte Analysis

Emerging Trends in Fintech Industry:

Fintech companies can rapidly roll out new features and products by testing new innovations in secure sandboxes while checking for adherence to government regulations and data security. This enables Fintech companies to provide innovative products and services in a faster yet secure manner⁶. The Fintech activities are divided into three broad categories: the Banking Sector; Capital Markets; and Funds Management and the Insurance Sector, and the notable Fintech trends include BNPL (Buy Now, Pay Later), Digital Banks, Robo Advisory, Blockchain, Sustainable Finance products, neo-banks, Embedded finance/

Insurance, Cyber Insurance, Artificial intelligence (AI) and the metaverse etc., are some notable trends of the year and it could change the scope and landscape of Fintech and it continued to show an upward trend too⁷. The Fintech areas/activities expressly include Agri Tech, Climate/Green/Sustainable Tech, Space Tech, Solutions for Banking, Financial Services and Insurance domain leveraging (AI, Chatbots, Web 3.0, etc)⁷.

Conclusion:

Through the mobile applications and online platforms, Indian FinTech companies have been successful in offering various financial services to this population. It likely to reduce costs and improve quality of financial service and it will develop unique and innovative models of assessing risks and it will create a more diverse, secured and stable financial services land shape³. The government should require Fintech companies to ensure that the data harvested from consumers will not be used for any purpose other than serving the consumer's interest⁴. Establishing technological safeguards, educating and training customers will also help in democratizing Fintech and guarding against cyberattack issues. FinTech will create a more diverse, secured and stable financial services landscape. FinTech companies are less homogenous than incumbent banks, and offer great learning templates to improve, both, capabilities and culture³.

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WOMEN CUSTOMER'S OPINION TOWARDS NETWORK SECURITY IN ONLINE PURCHASE

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Abstract

Online shopping or e-shopping is a form of electronic commerce which allows consumers to directly buy goods or services from a seller over the internet using a web browser. Alternative names are; e-web-store, e-shop, e-store, internet shop, web-shop, web-store, online store, online storefront and virtual store. English entrepreneur Michael Aldrich invented online shopping in 1979. His system connected a modified domestic TV to a real-time transaction processing computer via a domestic telephone line. In March 1980 he went on to launch Region's Office Revolution, which allowed consumers, customers, agents, distributors, suppliers and service companies to be connected on-line to the corporate systems and allow business transactions to be completed electronically in real time. The rate of cyber crimes has been increasing and bank details have been misused which raise privacy issues. Customers have to be careful in revealing their personal information. Some of the e-retailers are unreliable. I have collected data from 50 respondents, percentage analysis and chi-square test was used for analysing data. The main objectives of the study were too known about the opinion of women consumer's about network security. This study concluded that Most of the women consumers consider that there are lot of risks in payment and giving personal details.

Keywords: Online shopping, cutomers and women customer's

Introduction

Online shopping or e-shopping is a form of electronic commerce which allows consumers to directly buy goods or services from a seller over the internet using a web browser. Alternative names are; e-web-store, e-shop, e-store, internet shop, web-shop, web-store, online store, online storefront and virtual store. English entrepreneur Michael Aldrich invented online shopping in 1979. His system connected a modified domestic TV to a real-time transaction processing computer via a domestic telephone line. In March 1980 he went on to launch Region's Office Revolution, which allowed consumers, customers, agents, distributors, suppliers and service companies to be connected on-line to the corporate systems and allow business transactions to be completed electronically in real time.

Online shopping portals are witnessing a whopping 200% growth in the sale of electronic items every year. This is driven by the demands like mobile phones, iPods and MP3 players not only from metros but also from small cities. Apparels and accessories (30%) emerged as the second biggest product category after consumer electronics (34%) and is expected to become bigger than consumer electronics this year. Other popular searched categories include books (15%), beauty & personal care (10%), home and furnishings (6%), baby products (2%) and health care (3%). Fitness equipment like tread mills and lifestyle items like sunglasses are a big hit among Punjabis. Some Online shopping portals in India are www.homeshop18.com, www.flipkart.com, www.yebhi.com, www.myntra.com. American online retail agent Amazon.com has also made an entry into the Indian market in 2012 with Junglee.com, an online shopping site powered by the \$48 billion company. Apart from the technology development, there are certain cyber crimes also occurring in online purchase. Sometimes, there is the disappearance of shopping site itself. In addition to above, the online payments are not much secured. So it is essential for e-marketers and retailers to pay attention to this issue to boost the growth of e-commerce. The rate of cyber crimes has been increasing and bank details have been misused which raise privacy issues. Customers have to be careful in revealing their personal information. Some of the e-retailers are unreliable.

Statement of the problem

Shopping online became an alternative solution for the women consumers, since it is more comfortable than conventional shopping. They can shop at their leisure time i.e., after completing their house works, they can sit comfortably and shop in online. Nowadays lot of cyber crimes occur. How far it is safe and secure in case of online shopping? This article is primarily to identify and get insight of women consumer's opinion in online shopping and the network security.

Objectives of the study

To analyse the women consumer's opinion about online shopping

To know about the opinion of women consumer's about network security

Methodology

The present study is mainly based on primary data. The data has been collected by distributing the questionnaire to the women consumers residing in Pollachi taluk. Convenience based random sampling has been used to collect the data from 50 women consumers who purchased products in online.

Review of Literature

Mathimithra S and Dr.P.Archanaa in their article on factors influencing the female consumers in buying mobile phones found out that majority of the female consumers have strongly agreed that Good Model at reduced price, Special Offer and Personal recommendation influenced them to purchase the mobile phones.

Saranya W and Palanivelu P in their article about a study on customer preference and satisfaction towards online shopping on Flipkart in Coimbatore district found that most of the women consumers shop through online when offers and discounts are offered to the goods.

Brinda devi.K and Dr.S.Saravanan in their article about a study on online buying behaviour with special reference to Coimbatore city aimed to find about the level of awareness about the internet, which makes them better positioned to identify and take decision for products and services

Analysis and Interpretation

Table No.1

Particulars	Total	Percentage
Area of Residence		
Rural	27	54
Urban	23	46
Total	50	100
Age		
Below 20 years	11	22
21-40 years	30	60
Above 40 years	09	18
Total	50	100
Marital Status		
Married	39	78
Un married	11	22
Total	50	100

Table No.1 reveals that, out of 50 consumers, 27(54%) consumers are from rural area and the remaining 23 (46%) consumers are from urban area; 11 consumers are below 20 years of age, 30 consumers are in the age group of 21 – 40 years and the remaining 9 consumers are in the age group of above 40 years of age. Out of 50 consumers, 39(78%) are married and the remaining 11(22%) are unmarried.

Table No.2**(HA - Highly Agree; A - Agree; N - Neutral; NA- Not Agree)**

Particulars	HA	A	N	NA
Opinion in online shopping				
Convenience shopping	12	20	0	18
Easy Payment	6	8	0	36
Lot of varieties	32	18	0	0
Reasonable price	13	29	0	08
Stress free	37	8	0	5

From the above table it is clear that most of the women consumers consider online shopping is convenient for them, there are lot of varieties of materials are available, price is also reasonable and it is a stress free for them to shop in online.

Table No.3**(HA - Highly Agree; A - Agree; N - Neutral; NA- Not Agree)**

Particulars	HA	A	N	NA
Opinion in Network Security				
Risk of Duplicate sites	18	20	0	12
Risk in payment	19	16	0	15
Risk in giving personal details	24	16	0	10

Table No.3 reveals that most of the women consumers consider that there are lot of risks in payment and giving personal details.

Findings

- ❖ Most of the women consumers are from Rural area who shop through online
- ❖ Most of the consumers are in the age group of between 21 to 40 years of age.
- ❖ Majority of the women consumers are married.
- ❖ Most of the women consumers consider online shopping is convenient for them, there are lot of varieties of materials are available, price is also reasonable and it is a stress free for them to shop in online.
- ❖ Most of the women consumers consider that there are lot of risks in payment and giving personal details.

Suggestions

This world is a competitive one. In every industry the companies compete each other to survive. It is the same case in online also. In order to attract more customers, various online shopping sites are offering lot of offers, discounts etc., Women consumers can be given

special attention, because they are the decision makers in many situations. But many women consumers consider that there are lot of risks in online shopping, regarding their security issues. So these issues can be rectified by the online shopping websites.

Conclusion

This study is framed with an attempt to discuss the women customer's opinion about online shopping and network security who are residing in Pollachi Taluk. This study reveals that most of the women customers are felt online shopping are more convenient for them and also it produces more risks in online payment and giving personal details. It is necessary to remove fear regarding these problems of women customers.

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DIGITAL INDIA AND INDUSTRY 4.0

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Abstract

The globalization and the competitiveness are enforcing organizations to readdress and innovate their production processes. The world is entering a new era of industrial emanating technology in automation and data exchange through the use of Internet of Things called fourth technological revolution or Industry 4.0. It represents the amalgamation of tools already used in the past such as big data; cloud, robot, 3D printing, simulation, etc. are now connected into an internet to transmit digital data. For the implementation of this new paradigm, there are many opportunities and also many challenges. This paper highlights brief introduction on challenges and opportunities for implementation of Industry 4.0 in India. Digitization of product and service offerings: Complete descriptions of the product and its related services through intelligent networks. Introduction of innovative digital business models: The high level of interaction between systems and technology opportunities develops new and integrated digital solutions. The basis of Industrial Internet of Things is the integrated and concurrent availability and control of systems across the organization.

Introduction

An industrial revolution can be defined as a disruptive leap in the industrial process, a development that produces fundamental transformations in the society and the economy. First industrial revolution started in 1784 with the introduction of the first machines that used steam for power. Many people worried and opposed because use of machines may reduce the requirement of manual workers. The second industrial revolution, which initiated around 1870, started the production system which manufactured the components in large scale by adopting assembly line production system which used electricity as source of power. The third industrial revolution which switches the technology driven by mechanical and analog electronic to digital electronics began with the introduction of the robotics and automation in the year 1969. Industry 4.0 has enlarged the capabilities of digital revolution and increased its significance to the organization. Industry 4.0 combines and connects the Internet of Things, digital and physical technologies; robotics, artificial intelligence, cloud computing, additive manufacturing, and others to propel more responsive, versatile and interconnected establishments to make more enlightened decisions. Industry 4.0 carries with it seemingly endless options for technological investments and endless opportunities. The Industry 4.0 is based on the concept of factory of future, where the equipment are integrated with workers through cyber-physical systems (CPS). Industry 4.0 is a new level of establishments that operates, manages and controls the whole value chain of personalized products to satisfy customer needs. The

most important component in Industry 4.0 is Digitalization because it enables to connect technology with human beings.

Industry 4.0 enables complete customization which gives very high flexibility for manufacturers to meet changing requirements from their consumers, who are increasingly favoring more customizable and flexible outputs over standard product offerings. This initiative allows sportsman's to customize and personalize their sports footwear to fulfill their styling and performance needs. In their effort to bring manufacturing closer to their customers in the respective countries, Adidas has also planned to open its first fully automated factory in Germany. Such technologies have also helped manufacturers in minimizing lead time for prototype development. As a result, companies are able to speed-up their time to market. The success metrics for organizations will also change from achieving low cost effectiveness to obtaining higher returns on capital investment. Profitability is increased by Industry 4.0 by facilitating greater customization, minimizing the complexity cost and reducing labor costs. Simultaneously, it enables to high return on the capital invested by allowing asset utilization and greater flexibility.

Opportunities for Industry 4.0

India is very much eager to implement Industry 4.0 and several measures have been adopted. According to Indian Brand Equity Foundation (IBEF), by 2025, the Government of India intends to raise the production sector's contribution from the present 16% rate to 25% of Gross Domestic Product (GDP). India is also prepared to face global competition by undertaking the Make in India and skill development programs. It is all set to lead the world with Smart Manufacturing. The following are the opportunities for industry 4.0 in India:

- (i) Young Population:** Employers want to invest in young people and see them as a future asset. With an average age of less than 30 and nearly 10 lacks individuals joining the workforce every month, India offers the ideal atmosphere for first time young job seekers to pursue opportunities in emerging fields of interest in the Indian manufacturing industry - consumer electronics, automotive, aeronautics and aerospace.
- (ii) Favorable Policies:** The 'Make in India' program is India's plan of action to encourage Indians to create products for the world market. India has the resources, policy and workforce in place. What is needed is experts from foreign industries to crank-up a manufacturing revolution in the areas of automobile and aerospace. Relaxed FDI policies and better protection for company's intellectual property, coupled with industry favorable government policies have created competition amongst Indian states to attract foreign direct investments in the manufacturing sector. With the

increase in World Bank's Ease of Doing Business ranking is also a welcome sign that first time foreign investors are positive about the country's growth potential.

- (iii) **Skilled workforce:** With a strong high school and university ecosystem, Indian students are sought after by multinationals all over the world. Fast Changing times and a slow adaptive to education system however, have rendered man qualities gained in academics Redun- dant in today's work environment. The efforts of governments and private industry to set up reskilling and skill upgrading centres to raise employability.
- (iv) **Large population base ready to go digital:** The emphasis on ' Digital India ' and the government's intervention in 2016 to suppress uncoun ted cash from the sy stem through a huge demonetization effort are all pushing Indians too quickly to adjust to the use of digital payments. Rapid growth is set for this sector. Indian government has also begun attempts to link the nation digitally by providing a Unified Payment Interface (UPI), a zero-cost payment gateway and cash enterprises.

Industry 4.0 Benefits

- (i) Lower Cost.
- (ii) Additional Revenue.
- (iii) Enabling Industrial Companies to optimize customer relationship.
- (iv) Transparency in the production process.
- (v) Clarity on the status of all aspects of production system in real time.
- (vi) Industrial companies that successfully implement Industry 4.0 no longer need to choose between focusing on a better top or bottom line. They can improve both at the same time.
- (vii) Logistics processes become leaner.
- (viii) Reduced inventories.
- (ix) Standardization of maintenance processes.
- (x) Cent percent traceability

Challenges for Industry 4.0

The ministry of heavy industries and public enterprises provide supports to facilitate four centres in the country to help SMEs materialize Industry 4.0. Bengaluru is in the process of setting up India's first smart factory. This smart factory is driven by the Internet of Things (IoT) and data exchange. This Smart Factory is being established with financial assistance from The Boeing Company at the Centre for Product Design and Manufacturing (CPDM) department of Indian Institute of Science (IISc). The goal of Government of Andhra Pradesh to make the state into an Internet of Things (IoT) hub by 2020. With the participation of the private sector, the state government plans to set up 10 IoT hubs that will create 50,000 direct jobs in different IoT verticals. Since more than 80% of the

manufacturing industry in India is in the MSME sector, the implementation of Industry 4.0 is a major challenge.

- (i) **Investment:** A huge issue for many enterprises who wish to implement Industry 4.0 is a buying strategy that is less than clear for a lot of them. As a result, there are often unclear economic incentives for development and organizations find themselves having to spend over the odds to implement these new initiatives. Such a technological transformation will require a significant investment in new technology. For such a transformation, the decision will be taken by the highest management level. Even then, it is necessary to calculate return on investment and take the risks seriously. In addition to the requirement of huge capital, such transformation will isolate small businesses and might lose their market share in the future.
- (ii) **The workforce:** Optimizing Talent: Bringing together smart factories and manufacturing automation will bring remarkable levels of effectiveness and speed to a business, but the drawback of this is that many organizations will see a workforce that will be unused to the new developments taking place, and ill-equipped to adapt to them. While it remains early to make a judgment on working circumstances with the global implementation of Industry 4.0, it is safe to say that workers will need to acquire different or an all-new set of skills. This may help to increase the employment rates but it will also isolate a big sector workers. The sector of workers whose work is to perform repetitive tasks will face a challenge in keeping up with the industry 4.0. Different forms of education must be initiated, but it still doesn't solve the problem for the experienced workers. This is an issue that might take longer time to solve.
- (iii) **Standardisation:** Integrating Software, Hardware, Operating Systems and standards play an important role in forming industry 4.0. Developments and coordination of standards and proposals will promote efficient development of industry 4.0 infrastructures and applications, services and devices. There is some confusion with companies trying to innovate as to which standards will be adopted in the next five years. A huge challenge to overcome will be to derive a standardized system that works for all parties and allows for both horizontal and vertical integration, and results in maximum value for both present and future investments. In today's network world, global standards are more relevant than local agreements.
- (iv) **Data security:** Medium and Small scale organizations are primed to benefit the most from Industry 4.0, but this represents a quandary. Compared with traditional manufacturing data security, privacy issues of Industry 4.0 become more prominent. Much information includes privacy of users, so that protection of privacy becomes an important security issue in industry 4.0. Because of combination of things, services and networks, security of Industry 4.0 needs to cover more management objects and levels than traditional network security. Existing network security architecture that is

designed from the prospective of human communication may not be suitable and directly applied to Industry 4.0. The existing security mechanism will block logical relationship between components in Industry 4.0.

- (v) **Technical Challenge:** Technology for industry 4.0 can be complex for various reasons. Firstly there are legacy heterogeneous architecture in the existing networking technologies and applications, For example different environments and applications requires different networking technologies and the ranges as well as other characteristics of cellular, wireless local area networks and RFID technologies are much different from each other [5][21]. Secondly communication technologies including fixed and mobile communication systems, power line communications, wireless communication technologies for both fixed and mobile devices either simple or complicated should be low cost and with reliable connectivity.
- (vi) **Real-time constraints:** Industry 4.0 requires some amount of real-time performance if they are going to control machines and factories [22]. Industrial control systems require real-time reaction, making changes to the systems very difficult. Downloading the required data from the cloud for plant system operation requires the system of the plant to access "big data" in real time in cyberspace. Loading accessible software versions on the malware scanners and antivirus programs of the system could affect the process performance. Any real-time interaction must be quick enough to promote the demands for system automation. For example, Safety Instrumented Function (SIF) for turbine over-speed protection may need to react within 10 ms on demand.

Conclusion

Industry 4.0 creates a newer manufacturing environment and knowledge economy. Industry 4.0 encompasses many technologies such as IoT, WSN, Communication technologies, low power electronics etc. The development of Industry 4.0 in India exposed many challenges that includes lack of fundamental theory supporting, immature standards, Technical challenges and lack of investment. With these challenges, India has several opportunities for industry 4.0 implementation. Such opportunities are large young population ready to go for digitalization, central government policies like Make in India and skill development, significant experience in developing IT- related infrastructure, Companies collaboration with educational institutes etc.

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MICRO, SMALL AND MEDIUM ENTERPRISES IN INDIA (MSME) - SCHEMES & OPPORTUNITIES FOR SUSTAINABLE DEVELOPMENT

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Abstract

Micro, Small, and Medium Enterprises are the backbone of an Indian economy and its creating noticeable growth rate and generating job possibilities. In many established and emerging nations, this sector has been viewed as a catalyst for both social and economic progress. MSMEs have made a remarkable contribution to the Indian economy in terms of creating jobs, reducing regional inequities, promoting equitable economic growth, and increasing the nation's export potential. The MSME sector in India includes a broad range of companies and makes a substantial contribution to the GDP, exports, and job creation of the nation. But these businesses encounter a number of difficulties, such as financial availability, technology adoption, skill development, and regulatory compliance. The study aims to identify significant Schemes and provide recommendations to address the enormous growth potential and prospects for the development of the MSME sector that are present in India.

Keywords: MSMEs, Sustainable Development, National Economy, Schemes

Introduction

MSMEs (Micro, Small, and Medium Enterprises) are essential to India's efforts to achieve sustainable development. These businesses support the whole Indian economy and provide a significant contribution to job creation, GDP growth, and socioeconomic advancement. India is a developing nation with a significant number of low-capital-investment Micro, Small, and Medium-Sized Enterprises. These businesses are not up to par to compete with global quality standards. Despite this, these businesses employ a sizable workforce. Because of the numerous challenges they face with regard to raw materials, finances, marketing, and other factors, MSMEs are unable to significantly boost the Indian economy. The Indian government has implemented a number of programs and policies both before and after liberalization to advance job possibilities and expand this industry. The Indian economy is concentrating on achieving the aim of sustainability through MSMEs by using locally accessible resources for the manufacturing, labor-intensive processes, and resettlement. The article examines the growth and importance of MSMEs in India. Additionally, this study provides the sustainable an opportunity and Schemes for MSMEs developments.

Objectives of the Study

1. To know the role of the MSMEs in India.
2. To Examine the Schemes & Opportunities for MSMEs sustainable development.

Research Methodology

The study is descriptive in nature. The present study is based upon the secondary sources of data; the secondary data was collected through the literature, Books, research papers, research articles, and various other publications, Websites. The main objective of this study is to bring out the Schemes & Opportunities for MSMEs Sustainable Development in India.

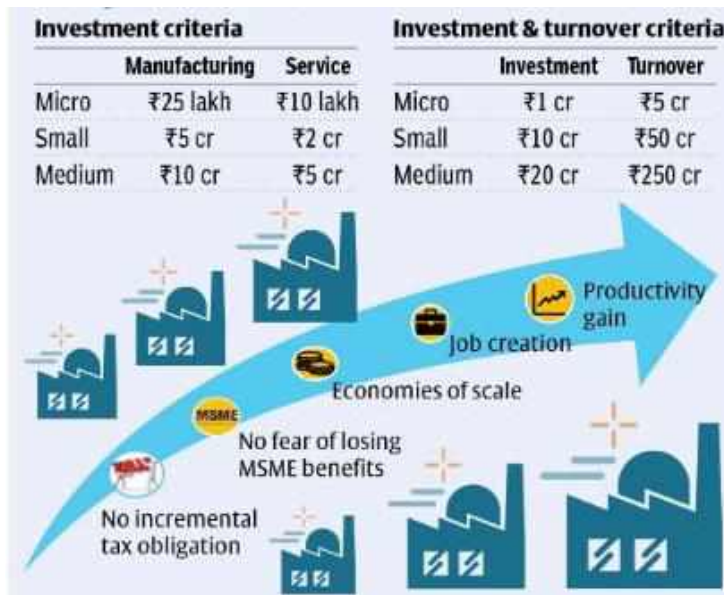
Review of Literature

1. **Rajamohan. S. and Sathish. A., (2019)** in their study the importance of MSME in sustainable society development was highlighted in Rajamohan S. and Sathish A.'s report, "MSME in India for the Sustainable Societal Development," published in 2019. According to the study, India's GDP and GVA account for around 32% and 29%, respectively, and play an essential role in the growth of entrepreneurship and job creation annually.
2. **Sarita Satpathy, Sailaja Rani, and Nagajyothi, M.L. (2017)** the study, "Study of Micro, Small and Medium Enterprises; the Backbone for Economic Development of Indian Economy," highlighted the importance of MSMEs in terms of total product, GDP, employment, and fixed investment in the Indian economy. It also focused on the MSME sector's growth rate relative to other sectors. Researchers identified and came to the conclusion that this sector has enough potential and opportunities to speed up industrial growth in programs like "Make in India," and they recommended that the government adopt further measures for the betterment of people.
3. **K.Vasanth, K. Krishna (2012-** In their study, the authors claim that networks of SMEs will become crucial for tackling the systemic issues underlying industrial ecology, organizational resilience, and global supply chain sustainability because multiple effective models of the sustainable SME are steadily evolving.
4. According to **De, Sankar (2009)**, there are many difficulties that SME's in India must overcome, but maybe none are as challenging as finding short- and long-term finance.

Growth of MSMEs in India

Micro, Small, and Medium-Sized Enterprises (MSMEs) would still be important to India's economy and society in 2023. These businesses have evolved in reaction to the shifting economic and technical environments, and they contribute to numerous parts of the nation's development. MSMEs are still an essential component of India's economic

expansion. They make significant contributions to the GDP, export revenue, and employment creation of the nation. The ability of MSMEs to quickly adapt to market changes and support settings that are economically resilient is well known. The Indian government plans to increase the number of jobs in the MSME sector by 5 crore from the current level of 11.10 crore by the year 2025, according to the National Sample Survey (NSS), which was done between the years of 2015 and 2016. As of December 2022, 9.31 crore people including 2.18 crore women were employed in 1.28 crore MSME registered industries, according to the most recent data from the Udyam portal.



Source: MSME

Role of MSMEs in India

1. **Employment Generation:** MSMEs have been a significant source of employment in India, helping to create jobs in both the urban and rural areas. They give many people, including semi-skilled and skilled employees, the chance to find employment.
2. **Encouragement of entrepreneurship:** MSMEs act as a crucible for entrepreneurship, encouraging it. They promote entrepreneurship, which promotes innovation and economic expansion. Initiatives like "Make in India" have helped to encourage manufacturing and entrepreneurship in the nation.
3. **Regional Growth:** MSMEs have the potential to encourage balanced regional development by forming industrial clusters and creating job opportunities in rural and underdeveloped areas. This aids in minimizing the movement of people from rural to urban areas.

4. **Skill Development:** MSMEs frequently offer chances for skill development and vocational training, helping to up skill the Indian workforce.
5. **Access to finance:** Through programs like the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE), the government and financial institutions have taken steps to boost MSMEs' access to credit. This makes it possible for MSMEs to obtain loans and grow their businesses.
6. **Technology Development:** To increase productivity and competitiveness, MSMEs are progressively implementing digital technology and automation. Their growth and sustainability depend on this digital change.

Schemes for MSMEs Development in India

1. The "Make in India" initiative and the "Atmanirbhar Bharat Abhiyaan" (Self Reliant India Campaign) have been instrumental in promoting trade and domestic manufacturing in the nation, particularly MSMEs, also known as the "backbone of the Indian economy."
2. The Prime Minister Employment Generation Program was established with the goal of generating employment opportunities for MSMEs in the nation.
3. MSME and Small Industries Development Bank of India established the Credit Guarantee Trust Fund for Micro & Small Enterprises (CGTMSE) to offer collateral-free loans (up to INR 1 cr.) to specific Micro and Small Enterprises (MSEs).
4. Interest Subsidy Eligibility Certificate (ISEC): This program was launched as a means of financing the khadi initiatives carried out by khadi institutions around the nation. To close the gaps between the amount of money that is available from budgetary sources and the amount that is actually needed, it mobilizes money from banking institutions.
5. Support for MSMEs through the ZED Certification Program Financially - The program's goal is to implement Zero Defect & Zero Effect (ZED) practices in Indian MSMEs' manufacturing in order to support the "Make in India" drive. The Government of India offers MSMEs a subsidy of up to 80% under the program.

Scheme & Incentives Provided for MSMEs in Tamil Nadu

One of the most important states for success in the MSME sector is Tamil Nadu. Its vibrant and active culture has spawned small- and micro-scale businesses. To further boost the sector's growth, the state government has also offered a variety of incentives and awards for the various industries. Especially in the MSME sector, Tamil Nadu is unquestionably a land of opportunity. It is full of talented individuals who can continuously provide high-caliber services. It has more than five million micro, small, and medium-sized enterprises, making it the third-largest Indian state in terms of MSMEs.

1. New entrepreneur Cum enterprise development scheme

2. Unemployed youth employment generation program
3. Pacts with TANSIDCO and TAICO bank
4. Capital Subsidy
5. Tamil Nadu small industries development corporation (SIDCO) initiative

Conclusion

MSMEs' sustainable development in India is crucial for both accomplishing broader social and environmental objectives as well as economic progress. And also an important part of India's economic growth, and government programs and opportunities are crucial to their expansion and advancement. This study reveals that the development of MSMEs is supported by both the central and state governments. These programs have contributed to the sustainable growth of MSMEs in India by offering assistance and resources to these businesses. It is important that the government continues to assist and give resources to MSMEs in order to ensure their success and growth since the importance of MSMEs in sustainable development cannot be overstated.

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INDUSTRY 4.0 IN INDIA: EMBRACING THE DIGITAL REVOLUTION IN MANUFACTURING

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Abstract

India's manufacturing sector has been a key driver of its economic growth, contributing significantly to employment and GDP. However, to remain globally competitive, Indian manufacturers need to adopt advanced technologies and processes. Industry 4.0 provides the perfect framework for this transformation. By leveraging digital technologies, Indian manufacturers can enhance their productivity, improve product quality, reduce costs, and respond more effectively to changing market demands. The world is currently witnessing a significant transformation in the manufacturing sector. With the advent of Industry 4.0, the world is currently witnessing significant changes in the manufacturing sector. The fourth industrial revolution is characterized by the integration of digital technologies such as the Internet of Things (IoT), artificial intelligence (AI), big data analysis and robotics into production processes. India, with its growing economy and vast manufacturing sector, has also embraced this digital revolution, paving the way for a new era of manufacturing excellence.

Introduction

Industry 4.0 takes digitalization to a whole new level with connections between physical and digital spaces through the Internet of Things (IoT), big data and analytics, cloud, autonomous robots, artificial intelligence, machine learning and augmented reality, as well as access to real-world resources. temporal data. Industry 4.0 is revolutionizing the way companies manufacture, improve and distribute their products. Manufacturers are integrating new technologies, including the Internet of Things (IoT), cloud computing and analytics, artificial intelligence and machine learning, into their production facilities and throughout their operations. These smart factories are equipped with advanced sensors, integrated software and robots that collect and analyze data and enable better decision making. Even more value comes when data from manufacturing operations is combined with operational data from ERP, supply chain, customer service and other business systems to create a whole new level of visibility and insight into previously hidden information. These digital technologies are leading to greater automation, predictive maintenance, self-optimizing process improvements and, most importantly, new levels of efficiency and responsiveness to customers that were not previously possible. The goal of Industry 4.0 is to enable companies to make faster and smarter decisions while minimizing costs and human intervention.

Digital India

Digital India is a flagship program of the Government of India aimed at transforming India into a digitalized society and knowledge economy. It has the following goals:

- ❖ Digital infrastructure as an essential tool for every citizen: This includes the availability of high-speed internet to all citizens, building a digital identity for life, providing a mobile phone and a bank account to all citizens, easy access to public services, etc. in a secure cyberspace .
- ❖ On-demand management and services: includes the seamless integration of government services between ministries or jurisdictions, the provision of real-time services on online and mobile announced as part of the Digital India Initial platforms, electronic and cashless financial transactions, and the use of geographic information systems (GIS) for support systems decisions and development.
- ❖ Digital Citizenship: includes digital literacy, widely available resources in local languages, collaborative platforms for participation in governance and virtual rather than physical presentation of documents.

Some key Digital India initiatives relevant to Industry 4.0 includes:

- ❖ Center of Excellence for Internet of Things (COE-IT): The Center for Internet of Things was announced as part of the Digital India Initiative, which aims to rapidly launch the IoT ecosystem by leveraging the strengths of Indian IT and helping the country take a leading role in the convergence of space hardware and software. The main goal of the center is to develop innovative applications and domain functions. Additionally, the center will help create employable talent, a startup community and an entrepreneurial ecosystem for 45 IoT. It was created in collaboration with NASSCOM and the strategic partners are Bosch, Intel, GE, Cisco, TCS and Microsoft.
- ❖ Electronics Development Fund (EDF): Part of the government's Digital India program to develop the Electronic Systems Design and Manufacturing (ESDM) sector to achieve 'zero net imports' and make India an ESDM hub too to meet Indian domestic demand than exports. To this end, the Electronic Development Fund (EDF) was created as a "fund of funds" to participate in professionally managed "children's funds" which in turn provide venture capital to companies developing new technologies in the fields of electronics and nanoelectronics. and information technology (IT) National Supercomputing Mission(NSM): The National Supercomputing Mission aims to strengthen national academic and research and development institutions across the country by creating a vast supercomputing network with more than 70 high-performance computing facilities. These supercomputers will also be connected to the National Supercomputing Network through the National Knowledge Network (NKN).

Elements of Industry 4.0

- ❖ **Huge amount of data:** The system collects too much data, making it difficult to identify relevant information and trends that can lead to intelligent analysis. Nowadays, enormous data analysis techniques are emerging. They help determine the performance of an individual component and its operating limits to prevent future production problems and take preventive measures.
- ❖ **Cloud Computing:** There has been a big change in the use of cloud solutions in the industry. The cloud will be used for applications such as remote services and performance benchmarking, and its role in other business areas will continue to grow. For example, commercially available smart watches have turned our wrists into smartphone cases that allow us to send text messages, make phone calls, and more. Devices like Fitbit and Jawbone have helped revolutionize the fitness world. With the right connections and data, IoT can solve congestion and reduce noise and pollution.
- ❖ **Simulation:** You can use system simulations to evaluate various scenarios. Once scenarios are assessed, cost-effective solutions can be developed, tested and implemented much more quickly, resulting in lower costs and faster time to market.
- ❖ **Autonomous robots:** They are used to automate production processes in various industries and are based on the concept of the Internet of Things (IoT). This allows computer devices and machines to communicate with each other.
- ❖ **Autonomous mobile robots (AMR)** can move materials around the factory by avoiding obstacles, coordinating with fleet colleagues, and identifying pickup and delivery locations in real time. By connecting to a central server or database, the activities of robots can be coordinated and automated better than ever. They can perform tasks intelligently and with minimal human intervention. i.e. ASRS stacker cranes, roller shutter trolleys, etc.
- ❖ **Augmented Reality (AR)** Increasingly popular, augmented reality efficiently provides real-time information to help users better integrate and interact with electronic systems. Examples include providing part repair information that can be viewed on various devices or training personnel using 3D simulations and visualizations of the plant or equipment.
- ❖ **Cybersecurity:** Information security will become critical as we move away from closed systems and toward greater connectivity via the Internet of Things and the cloud. Security and reliability enable the successful implementation of a truly modern and digital production workflow that takes full advantage of a connected environment.

- ❖ **System integration:** In most cases, systems are highly automated in their operation and have difficulty communicating with other systems. Standards and open architecture facilitate the transfer of information to both the company and the customer/end user. This may include establishing common languages for data exchange, such as JDF for task information.
- ❖ **Additive Manufacturing:** This is becoming increasingly important for low-volume applications or for producing unique parts or customized products. This information is used directly by customers or suppliers to improve projects and thus increase efficiency, flexibility and profitability.
- ❖ **Edge computing:** The demands of real-time manufacturing operations mean that some data analysis must be performed at the “edge” where the data is created. This minimizes the delay between data generation and the required response. For example, detecting a safety or quality issue may require near real-time equipment intervention. The time required to transfer data to the corporate cloud and then to the factory can be prohibitive and depends on the reliability of the network. Using edge computing also means data stays close to the source, reducing security risks.
- ❖ **Digital Twin:** Digital transformation through Industry 4.0 has enabled manufacturers to create digital twins, which are virtual replicas of processes, production lines, factories and supply chains. A digital twin is created by collecting data from internet-connected sensors, devices, controllers, and other IoT objects. Manufacturers can use digital twins to increase productivity, improve workflows and design new products. By simulating a production process, for example, manufacturers can test changes to the process to find ways to minimize downtime or improve capacity.

Trends in Industry 4.0

- ❖ Below are the three most important Industry 4.0 trends that are changing the way of life of industrial companies and their employees today:
- ❖ **Digitalization:** Production processes in all sectors, from high technology to the plant industry, are now being transformed by digital technologies .
- ❖ **Industrialization:** Companies are already integrating these technologies for improvement and development purposes.
- ❖ **Optimization:** Advanced manufacturers are discovering that improving the production process of even the simplest products opens up new development opportunities.

Conclusion

Industry 4.0 will revolutionize manufacturing around the world, just like the first three industrial revolutions. Thanks to global supply chains and highly interactive markets, this revolution will be completely different than previous ones: it will happen much faster and bring previously unexpected results. It will highlight the fact that small changes in one area of the manufacturing ecosystem will result in significant changes across the entire ecosystem due to the connectivity throughout the supply chain and the speed of information dissemination. Also Industry 4.0 enables the flow of information not only from the manufacturer to the product, but also between manufacturers, products and especially customers. The ability to embrace Industry 4.0 and take advantage of opportunities that arise quickly (and in many cases unexpectedly) will be key to success in the new global marketplace. Taking this innovation from concept to mass product will be critical to success. Equally important will be ensuring a talent pipeline within 's manufacturing workforce, enabling to rapidly innovate Industry 4.0.

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POVERTY ALLEVIATION AND RURAL DEVELOPMENT THROUGH MSMEs

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Abstract:

It is a reiterated fact that India is one of the fastest-growing countries in the world. The government has taken various initiatives to accelerate the growth of the country. Various Government and non-government institutions are working relentlessly to take the country to new heights of growth. The challenge here is to take care of every section of society and every sector of the economy for overall sustainable development. The problem of poverty still persists in rural areas. The rural development and poverty alleviation are the major challenges which hinder the growth of the country. The Micro, Small and Medium Enterprise Sector is one of the crucial sectors that could prove a game-changer in rural development and poverty alleviation. In this paper, an attempt has been made to study the situation of rural economy and poverty in the country. The researchers have tried to list out the possibilities that MSMEs could offer to alleviate poverty and contribute to sustainable rural development.

Keywords: *Rural development, Micro, small and medium enterprise MSMEs, Rural economy*

Introduction:

MSMEs have a critical role to play in the development of rural India. They not only bring employment opportunities but also help in various other ways such as getting recognition, facilitating economic growth and so on. Here is how small industries are helping achieve rural development. When it comes to MSME and rural development, there is the valuable role of small-scale industries in rural India, and the contribution of the cottage industry. Traditional businesses such as cotton weaving, silk weaving, handicrafts, etc., have been instrumental in the growth of the region, by ways of eradicating poverty, generating employment, contributing towards economic growth and so on.

Definition of MSMEs:

The definition of MSMEs in India has been ever-changing as per the growth in the economy. First systematic and robust definition of MSMEs was provided in the MSMED Act, 2006. Which defined the MSMEs in terms of investment criteria for both manufacturing and service enterprises. The definition has been changed again in June 2020,

where the criteria of definition the MSMEs as manufacturing and service enterprises has been removed and the units are defined on the basis of investment and turnover.

MSMEs in Rural Development:

MSMEs have a big role to play in rural development. They help rural population and facilitate development in various ways. Here is how:

- ❖ Employment generation
- ❖ Making workforce employable
- ❖ Economic development of the rural area
- ❖ Getting recognition on the global map
- ❖ Generating foreign exchange
- ❖ Self-reliance or Aatmairbharata

Employment generation:

MSMEs in rural areas create employment opportunities for youth in the nearby villages. Apart from direct employment, the business also creates opportunities for other businesses indirectly. For example, a small-scale food manufacturing unit in the village generates employment for workers in the factory. Additionally, it also creates opportunities for allied sectors such as local raw material suppliers, machinery and tool manufacturers, logistics and transport service providers, and so on. As the rural population gets employment and business, it helps in eradicating poverty in the region. In other words, MSME sector acts as tool for poverty eradication. Government schemes, like the ASPIRE scheme of 2015, is centred around supporting entrepreneurship in agro-based businesses in rural India for employment generation and economic development.

Making workforce employable:

Many a times, MSMEs provide initial training to enable the local workforce to undertake specific jobs. This gives local people an opportunity to learn new skills and be relevant with current time and age. For example, the local workforce may not have the skills required to work on a new high-tech machine. However, with training they can be taught and acquire new skills and be ready for this job and similar opportunities. Also, it helps the workforce to be more employable in the future and grow in their careers.

Economic development of the rural area:

By generating employment and creating business opportunities, the role of small-scale industries in rural India development is enormous. They provide better earnings that translates to better quality of life for the rural population. As the buying capacity of the rural population increases, it leads to the economic development of the region too.

Getting recognition on the global map:

The MSME sector, especially the cottage industry like saree weaving, carpet weaving etc., are classic examples of family run businesses (or generational businesses). Generally, the entire family is engaged in the business and in some cases, the whole village. Through the arts, the artisans' creativity gets exposure in the national and global markets. Many traditional sarees such as Banaras silk from Uttar Pradesh, Kanchipuram silk sarees from Tamil Nadu, Paithani from Maharashtra, etc., are known for delicate work. They are not only popular in the country but are also exported globally.

Generating foreign exchange:

As mentioned, many MSMEs in the rural sector are engaged in exports and generate foreign exchange, in turn helping the national economy to grow. For example, India is the 5th largest exporter of leather goods and accessories, according to Invest India. Leather exports reached \$4.03 billion in FY 2020-21. Each exporting MSME has contributed to reach this milestone.

Self-reliance or Aatmairbharata:

As the MSMEs in the rural areas mostly source raw materials and workforce locally, they are aligned with the central government's mission of self-reliant India or Aatmanirbharata Bharat.

How can your business help rural development?

Source locally: Procurement strategy of sourcing locally can help your business to be cost effective. Additionally, you generate business for another local/rural business and help it grow too.

Hire local workforce: You can hire local talent. If the need be, they can undergo training to acquire new skills for the job. Many large companies having manufacturing units in the rural region have a policy of acquiring a certain percentage of talent from the local area.

Collaborate with rural businesses: Instead of competition, forge collaborations with alike or complementing businesses in the region. This will help you as well as other businesses grow and expand.

MSMEs and Poverty Alleviation:

India is the second most populated country after China accommodating about 1.25 billion people. The country is the seventh-largest country in the world with an area of 3,287,000 km². (SOS Children Village Canada). According to the Global Multidimensional Poverty Index released by the joint collaboration of UNDP-Oxford University in September

2018, there were 364 million poor in India. Currently, in the wake of COVID-19 effect, the IMF World Economy Outlook suggests that by the end of 2020, some 690 people are likely to be poor in India. This would be a mammoth increase of 47.25% within two years. The challenge lies in providing employment and works to the people so that this poverty level is minimised. The COVID-19 has hit badly every nation around the globe, as per the World Bank estimates, the fact that the global economy is set to shrink by 5.2 per cent in 2020 and per capita income is expected to decrease by 3.6 per cent adds to the problem of poverty in the India. Ironically, the first goal of The United Nations Sustainable Development Goals is Reducing poverty. These goals have to be completed before 2030. In the wake of COVID-19, the task is now a bit difficult as more people are going to be dragged below the poverty line. In such a scenario, the local MSME business is going to play a major role in the country like India. The MSMEs have been a great employment generator in the past and helps most disadvantaged people in society by employing them in various kind of establishments. Central to the problem of poverty is unemployment. If everyone has something to do which earns them money for fulfilling the basic necessities of life, then there will be no poverty. Having something to do and making an earning out of it is a privilege which unemployed people lack. Poverty is cancer in any economy which does not let the economy grow. The MSMEs can be a game-changer in poverty reduction.

As these MSMEs are mostly labour intensive, they are able to accommodate more manpower and create more jobs than large enterprises. These MSMEs help poor earn income for living and improve their socio-economic status. Also, they provide quality employment without displacing the rural folk from their native place as they are located in far reaching rural areas only. The MSMEs are the largest non-farm employment generator in rural India. The table below shows the employment generation capabilities of the MSME sector.

Suggestions:

- ❖ Emphasis must be given to establishing more agro based units in the rural areas as farm products can be easily procured by them without any extra transportation cost. Many entrepreneurs in villages have started their own businesses in rural areas to use the farm produces to transform them into saleable products.
- ❖ These types of entrepreneurs must be provided proper support in the form of technical assistance, marketing support etc.
- ❖ Promoting rural tourism with the help of rural MSMEs can be one of the best ways to boost the rural economy. Many natural hill stations and cultural sites are situated in rural areas. They can be developed as a tourist spot with the help of local people which would generate employment and source of income to the local people for many generations to come.

- ❖ Skill Development Programs and Entrepreneurship Development Programs must be provided in the rural areas so that the rural youths can be imparted skills other than farming activities that their ancestors have been doing since ages. This would encourage them to take initiatives for undertaking entrepreneurial activities. Panchayat Bhawan and Primary schools could be used for these purposes.
- ❖ Setting up of ancillary units of large enterprises in the rural area could generate more employment in the rural areas. These ancillary units would supply the farm produces and other finished and semi-finished goods to large enterprises. These ancillary units must be made mandatory to employ the village people only.
- ❖ Lack of infrastructure in rural areas has remained a major problem since independence. The government must ensure that Infrastructural support in the form of uninterrupted water and electricity supply is provided to the MSMEs in rural area along with the road connectivity for transport.

Conclusion:

MSMEs can be an effective medium to use local resources for more productive purposes with the coordination of government and local institutional bodies. It is required that MSMEs must be backed and supported in the mission to reduce poverty and unevenness in the development. The Problems faced by MSMEs must be addressed properly and special attention should be given to Micro enterprises. The Government of India has taken a slew of measures and is striving to improve the economic and social conditions of the rural population and non-farm sector. Setting up of Micro-Units Development and Refinance Agency (MUDRA) Bank is one such step in this regard. The government should continuously and comprehensively monitor such schemes. Through government interventions in the form of financial, infrastructural and technological support, MSMEs must be strengthened create more employment which would ultimately lead to rural development and poverty alleviation. More the MSMEs flourish, more it paves the way for poverty alleviation and rural development in the country.

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SUSTAINABLE DEVELOPMENTS THROUGH MSME'S: A PATHWAY TO SELF-RELIANT INDIA

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Abstract:

The Industrial Internet of Things (IIoT) has emerged as a transformative technology in the modern industrial landscape, enabling organizations to achieve unprecedented levels of efficiency, productivity, and competitiveness. While larger enterprises have been quick to adopt IIoT solutions, its adoption among Micro, Small, and Medium-sized Enterprises (MSMEs) has been a subject of growing interest and research. This paper aims to provide a comprehensive overview of the benefits that IIoT brings to MSMEs, shedding light on its potential to revolutionize operations, improve decision-making, and drive sustainable growth. Through an in-depth analysis of existing literature and real-world case studies, this research explores the multifaceted advantages of IIoT adoption for MSMEs. These benefits include enhanced operational efficiency, predictive maintenance, reduced downtime, improved product quality, and streamlined supply chain management. Moreover, IIoT enables data-driven decision-making, empowering MSMEs to make informed choices and optimize resource allocation. The paper also discusses the potential for IIoT to facilitate remote monitoring and control, thereby reducing the need for on-site personnel, a significant cost-saving advantage for smaller enterprises. Furthermore, the paper examines the role of IIoT in fostering innovation and facilitating the development of new business models. MSMEs can leverage IIoT data to create value-added services, explore new revenue streams, and enhance customer experiences. Additionally, IIoT opens the door to sustainability initiatives by optimizing energy consumption and reducing waste, aligning MSMEs with global environmental goals.

Keywords : IIoT - Industrial Internet of Things, IoS - Internet of Services, ICT - Information and Communication Technologies, MSMEs - Micro, Small, and Medium-sized Enterprises, IoT - Internet of Things, AR - Augmented Reality, OT - Operational Technology, ERP - Enterprise Resource Planning, SCM - Supply Chain Management, SRM - Supplier Relationship Management, CRM - Customer Relationship Management.

Introduction

Industrial Internet of Things (IIoT) is a concept that refers to the use of internet-connected devices and sensors within industrial processes and environments. It involves the integration of physical machinery, equipment, and infrastructure with digital technologies, allowing these assets to collect, transmits, and exchange data. IIoT leverages data analytics, cloud computing, and other advanced technologies to enable real-time monitoring, control, and optimization of industrial operations. In the annals of industrial history, there have been several pivotal moments that have fundamentally altered the way we manufacture goods, organize production, and drive economic progress. From the

advent of the steam engine in the 18th century to the electrification of factories in the late 19th century and the automation revolution of the 20th century, each of these transitions marked a distinct industrial revolution.

Today, we find ourselves at the cusp of another transformative era known as Industry 4.0. This fourth industrial revolution is characterized by the convergence of digital technologies, physical systems, and data-driven processes, heralding a new age of intelligent and Interconnected manufacturing and industrial operations. Industry 4.0 represents a quantum leap in the way we envision, design, and conduct industrial activities, ushering in an era of unprecedented efficiency, flexibility, and innovation.

Industry

Industrial Internet of Things (IIoT) is a concept that refers to the use of internet-connected devices and sensors within industrial processes and environments. It involves the integration of physical machinery, equipment, and infrastructure with digital technologies, allowing these assets to collect, transmits, and exchange data. IIoT leverages data analytics, cloud computing, and other advanced technologies to enable real-time monitoring, control, and optimization of industrial operations.

Key technologies involved in Industry 4.0 Industry 4.0 aims at enhancing and upgrading the current manufacturing facilities, management and maintenance systems and technologies to an intelligent level by utilizing key technologies such as IoT, Internet of Services (IoS), CPSs, autonomous, flexible and cooperative robotics, simulations that leverage real-time data and mirror real world into a virtual model, big data analytics, augmented reality (AR), additive manufacturing, information and communication technologies (ICT) and advanced networking technologies (e.g. cloud computing etc.).

Moreover, it seeks to address the dynamic global market and the competitive nature of today's industries in line with the continuously changing customers' and market needs. Horizontal and vertical system integration will allow that capabilities, functions, departments and enterprises evolve in an interconnected network that enables an automated value chain. Intelligent manufacturing will pave the way for the advancement of modern industry and economy as it will apply cutting-edge technologies to various traditional products and systems.

In an Industry 4.0 context, data collection, analysis and comprehension from many diverse sources, including production systems and equipment, as well as customer management enterprise systems, will become the norm to support decision making in real time.

Some of the key technologies involved in Industry 4.0 are briefly described and analyzed below:

Industry 4.0 represents a paradigm shift from “centralized” to “decentralized”. By decentralizing intelligence, intelligent object networking and independent process management are developed. A crucial new aspect of the manufacturing and production process is the dynamic interaction between the real and virtual worlds in which the industrial production machinery no longer simply processes the products, but it also communicates with them. As a result, industry, production value chains and business models are radically transformed into intelligent ones, thus leading to the development of smart factories.

This new manufacturing paradigm lays high emphasis on creating smart products and developing smart processes by utilizing smart machines and transforming conventional manufacturing systems in smart factories. Smart factories allow the development of intelligent manufacturing environments throughout the entire value chain and they are the outcome of integration through digitalization, usage of flexible and adaptive structures and strategies as well as of artificial intelligence methods.

1. Issues and Challenges in Industry:

The discovery of new technologies has made industry development from the early adoption of mechanical systems, to today’s highly automated assembly lines, in order to be responsive and adaptive to current dynamic market requirements and demands. Challenges like embedment, predictability, flexibility and robustness to unexpected conditions .There are some challenges and fundamental issues occurs during the implementation of industry 4.0 in the current manufacturing industries are given as

- ❖ **Intelligent Decision-Making and Negotiation Mechanism:** In smart manufacturing system needs more autonomy and sociality capabilities as key factors of self organized systems whereas the today’s system have 3C Capabilities i.e. lack of autonomy in the systems
- ❖ **High Speed IWN Protocols:** The IWN network used today can’t provide enough bandwidth for heavy communication and transfer of high volume of data but it is superior to the weird network in manufacturing environment.
- ❖ **Manufacturing Specific: Big Data and Analytics:** It is a challenge to ensure high quality and integrity of the data recorded from manufacturing system. The annotations of the data entities are very diverse and it is an increasing challenge to incorporate diverse data repositories with different semantics for advanced data analytics.
- ❖ **System Modelling and Analysis:** In system modelling, to reduce dynamical equations and conclude appropriate control model, systems should be modelled as self-organized manufacturing system. The research is still going on for complex system.

- ❖ **Cyber Security:** With the increased connectivity and use of standard communications protocols that come with Industry 4.0, the need to protect critical industrial systems and manufacturing lines and system data from cyber security threats increases dramatically.
- ❖ **Modularized and Flexible Physical Artifacts:** When processing a product, Equipment for machining or testing should be grouped and worked together for distributed decision making. So there is a need of creating modularized and smart conveying unit that can dynamically reconfigure the production routes.
- ❖ **Investment Issues:** Investment issue is rather general issue for most of new technology based initiatives in manufacturing. The significant investment is required for implementing industry 4.0 is an SME initially. The implementation of all the pillar of industry 4.0 requires huge amount of investment for an industry.

MSME

Micro, Small, and Medium-sized Enterprises (MSMEs) are the backbone of many economies worldwide. They represent a diverse group of businesses characterized by their size, operational scope, and contribution to economic development. The definition of MSMEs varies by country, but typically, they are categorized based on criteria such as the number of employees, annual revenue, or total assets.

The Key Characteristics of MSMEs are:

1. **Size:** MSMEs are characterized by their relatively small size compared to large corporations. They often have a limited number of employees and lower annual revenues.
2. **Independence:** MSMEs are typically independently owned and operated businesses, although they may form partnerships or be part of family enterprises.
3. **Local and Regional Focus:** Many MSMEs serve local or regional markets, providing goods and services tailored to the needs of their communities.
4. **Adaptability:** MSMEs are known for their agility and adaptability, which allows them to respond quickly to market changes and customer demands.
5. **Diverse Industries:** MSMEs can be found across a wide range of industries, from manufacturing and retail to services and technology.

The Significance of MSMEs:

MSMEs play a crucial role in economic development and job creation. They Contribute to economic growth, innovation, and entrepreneurship in the following ways:

1. **Job Creation:** MSMEs are significant employers, often providing job opportunities for a large portion of the workforce.

2. Job Creation: innovation: MSMEs are known for their innovation and creativity, driving advancements in various industries.
3. Economic Resilience: MSMEs can help diversify economies and reduce dependence on a small number of large corporations.
4. Local Development: They often contribute to the development of local communities by providing essential goods and services.
5. Export Potential: Many MSMEs have the potential to become exporters, boosting international trade.

IIOT

The Industrial Internet of Things (IIoT) represents a transformative force in the World of manufacturing, offering numerous benefits to organizations of all sizes. This journal article explores the specific advantages that IIoT technologies can bring to Micro, Small, and Medium-sized Enterprises (MSMEs). MSMEs are the backbone of many economies, and harnessing IIoT can significantly enhance their competitiveness, efficiency, and overall sustainability.

The global landscape of manufacturing is rapidly evolving, and it is driven by Advancements in technology and the adoption of Industry 4.0 principles. MSMEs play a vital role in the manufacturing sector, and IIoT offers those opportunities for growth and innovation previously reserved for larger enterprises. Through the use of appropriate services, networking technologies, applications, sensors, software, middleware and storage systems, IIoT provides solutions and functions which develop insight and improve the potential and capability of monitoring and controlling enterprises processes and assets.

IIoT services and applications provide vital solutions for effective and efficient Scheduling, planning and controlling of manufacturing operations and. additionally, through the various interconnected devices that are able to communicate and interact both with each other and with more centralized controllers, IIoT will decentralize analytics and decision-making, thus rendering real-time responses and reactions feasible. As a result, the overall availability and maintainability of enterprises is enhanced, their operational efficiency is improved, productivity is accelerated, their product time-to-market is decreased by reducing unplanned downtime and their overall operational efficiency is optimized accomplishing, thus, enormous potential for unprecedented levels of economic growth and productivity efficiency.

IIoT over traditional operational technologies:

Technology like programmable logic controllers (PLCs), supervisory control and Data acquisition (SCADA) systems, etc., are traditional operational technologies.

The Benefits of IIoT over the same are:

- ❖ More effective data collection in terms of cost, speed, and scalability.
- ❖ Ability to collect and analyse a large number of data from various sources including IT

Database that helps in decision making with centralising Database.



2. Benefits of IIoT:

The backbone of economies across the globe, Micro, Small, and Medium-sized Enterprises (MSMEs) form a vital component of industrial ecosystems. Their nimbleness, adaptability, and potential for innovation make them crucial contributors to economic growth and employment. In today's fast-paced and interconnected world, harnessing the power of technology is essential for MSMEs to thrive, and one such transformative technology is the Industrial Internet of Things (IIoT).

3. Increased operational Efficiency:

Data collected from sensors and other sources are processed and used to decide the optimal setting of the production equipment's parameters as such to reduce human intervention in the system.

4. Reduced maintenance cost with the help of predictive maintenance:

The AI-based technique is used in predictive maintenance to sense potential Equipment failure and appropriate calls for the actions. The combination of a large amount of data, both live and historical with the help of AI processing can be used to anticipate possible equipment failure. Timely action will help to prevent breakdowns and reduce maintenance costs.

5. Integration of ERP system with shop floor operation:

All the interconnected systems on the shop floor can be synchronised with Enterprise Resource Planning (ERP) software. This IIoT application is very useful for MSME companies where the people on the shop floor are not competent enough to understand the signals provided and the data available. Or maybe shop floor people don't have sufficient resources to analyse data and decision-making authorities. In such a scenario integration of IIoT devices with the shop floor operations proves to be the key driver in timely decision making on important aspects. With this kind of integration, data can be utilised in an optimal way for decision making which leads to cost-saving and safety of the plant and human resources.

5. Supply chain optimization:

With IIoT, real-time information of various stages of the supply chain is available. Integration of IIoT at vendor end helps to avail real-time information about the supplies. Real-time status on the shop floor is available so that the rest of the supplies from outside resources can be managed optimally without extra burden on inventory and priority-based expediting of the input material. Real-time tracking and expected arrival of goods are also added benefits of the integrated supply chain with the IIoT devices.

6. Data analytics:

Every organisation has a large number of data available at a different location and in different forms. Maybe some are on the shop floor with the stores department and others are with the quality and production department. Some with finance and some with the admin. But utilisation of this scattered data is very much less, particularly in MSME organisations. Even the other department or team members are not aware of the availability of useful information in some location. Modern data analytics solutions are very helpful for MSME companies for proper and timely decision-making. This technology helps in collecting, manipulating, transforming, and analysing data. Many solutions are available in the general IT domain and more are available with IoT. The most useful application of data analytics for MSME companies is to measure operational efficiency. Use of KPIs (Key Performance Indicators) for evaluating the efficiency of production plants, energy efficiency, manpower utilisation, and other factors related to company success.

7. Incorporating IoT capabilities in products:

Smart functionalities in products manufactured are as important as they are in plants and machinery. IIoT application in the plant and machinery to improve productivity and safety is called "internal use" and the IIoT feature built-in with the final product is "external use". Built-in IIoT capabilities in the products are having significant market

opportunities. In the coming few years huge market demand for products with built-in IIoT capabilities are expected. The design of such products is usually done in partnership with companies that are specialists in software development. The most important and useful feature for end-users is remote monitoring of the information about equipment performance. Another important application is monitoring for maintenance and services.

8. Fleet Management :

With the installation of the IIoT device, fleet management has also become more efficient. Large number of small fleet operators are in operation whose vehicles are moving across the country. With the help of smart devices real-time monitoring of the fleet is now very easy. Apart from the real-time location of the vehicle, other important parameters like speed, fuel consumption, etc., are also accessible to the business owner. This is very helpful for the business owners to identify malpractices if any by the drivers.

For the manufacturing company, the goal is not only to produce the goods that meet the customers' needs. But also to ensure that customers get the best quality products at affordable prices and on time. On the other hand, business leaders also have to make sure to create value for their shareholders. To remain competitive, it is the need of the hour for the organisation to deploy all its physical, financial, and human resources most productively and efficiently by becoming real-time information-driven.

For achieving these goals, manufacturing information technology solutions are key drivers to success. The use of automation systems to control production processes, known as Operational Technology (OT), and enterprise solutions, such as Enterprise Resource Planning (ERP), Supply Chain Management (SCM), Supplier Relationship Management (SRM), Customer Relationship Management (CRM), and others.

Conclusion

In conclusion, the implementation of Industrial Internet of Things (IIoT) technologies in Micro, Small, and Medium Enterprises (MSMEs) offers a multitude of significant benefits. These advantages encompass improved operational efficiency, enhanced data-driven decision-making, increased productivity, reduced downtime, and enhanced product quality. Furthermore, IIoT can enable cost savings through predictive maintenance, resource optimization, and streamlined processes. MSMEs can also benefit from increased competitiveness in the global marketplace, as IIoT helps them stay agile and adaptable in rapidly evolving industries. Moreover, IIoT facilitates better customer satisfaction through personalized products and services, ultimately leading to stronger customer relationships and brand loyalty. Additionally, the integration of IIoT can empower MSMEs to monitor and reduce their environmental footprint, contributing to sustainability goals and compliance with regulatory requirements. However, it's crucial to acknowledge that the

successful implementation of IIoT in MSMEs also presents challenges, such as initial investment costs, cyber security concerns, and the need for skilled personnel. Therefore, while the benefits are substantial, MSMEs must carefully plan and strategize their IIoT adoption to maximize the advantages while mitigating potential risks. In summary, embracing IIoT technology holds immense promise for MSMEs by revolutionizing their operations, enhancing competitiveness, and contributing to sustainable growth. As technology continues to advance, it is imperative for MSMEs to stay at the forefront of IIoT adoption to unlock its full potential in a rapidly evolving industrial landscape.

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ROLE OF MSME SECTOR IN BUILDING SELF-RELIANT INDIA AND ROLE OF COMPANY SECRETARY IN THE MSME SECTOR

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Abstract:

Every catastrophe serves as a learning opportunity for the people, business organizations and the government. The COVID-19 pandemic is proving to be quite challenging for Indian economy as it has negatively impacted every sector of the economy. The Prime Minister in his speech while addressing the nation emphasized on five pillars of Indian economy namely i.e., economy, demography, system, infrastructure, and demand which need to be reinforced to widen the essence of revitalization and to preserve the prosperity of Indian Economy. The need of the hour is to capitalize the opportunities available to India in COVID-19 phase and help the nation to become 'Atmanirbhar'. The article accompanies the key contribution of the professionals in fabricating Self-Reliant India. It also contains the challenges faced by MSME sector and the policy reforms taken up by government of India to accelerate the pace of growth and investment in micro and small enterprises and some instances of how investment in MSME sector will help India in fueling the engine of growth and development amid COVID-19 financial and economic distress phase. The professional is the helping hand in the period of disguise their support will help the nation in the field of innovation and how to sustain life in this new normal. The government of India should focus on holistic growth of nation by ensuring that business is shared with SMEs and MSMEs to build a robust ecosystem.

Introduction

Micro, Small and Medium Enterprises (MSME) sector has emerged as a highly vibrant and dynamic sector of the Indian economy over the last five decades. The MSME also play an important role in the development of the economy with their effective, efficient, flexible and innovative entrepreneurial spirit. The MSME sector contributes notably to the country's overall industrial production output, employment and exports. It is recognized with generating the maximum employment growth as well as accounting for a major share of industrial production and exports.

They have distinctive advantages due to their size and they required low investment. They have relatively high capital-labour ratio and they require a minimum gestation period. They try to capture and focus smaller markets; they make sure a more fair distribution of national income. They make possible an effective utilization of capital and skill resources and they motivate the growth of industrial entrepreneurship. The MSME sector in India is vast heterogeneous in terms of the size, variety of product and services and level of technology.

This sector is large contributes to the socioeconomic development of the country. The MSME sector is an important pillar of Indian economy as it contributes greatly to growth of Indian economy with a vast network of around 30 million units, creating employment of about 70 million, manufacturing more than 6000 products, contributing about 45% to manufacturing output and about 40% of exports, directly and indirectly. This sector even assumes greater importance now as the country moves towards a faster and inclusive growth agenda.

Growth of MSMEs

It is to be noted that growth of any sector is gauged on various yardsticks, like the number of enterprises being registered; employment opportunities created; turnover; increase in the number of offshore business units; activity wise, i.e. number of organisations getting registered under manufacturing and service segments etc. In light of the mentioned variables of measuring growth of a sector, in this article, the parameters considered for gauging the growth of MSME sector in India are:

3. Year wise and MSME wise registration.
4. Year wise and major Activity wise registration.

Year wise and MSME wise registration

The number of registered MSMEs in FY20 has increased by 18.49 per cent to 25.13 lakh units from 21.21 lakh in FY19, according to government data. Overall the number of registered MSMEs in India in the past five years stood at 90.19 lakh. According to the MSME Ministry's FY19 annual report, the MSME sector is dominated by micro-enterprises. India has 6.33 crore MSMEs out of which 6.30 crore, i.e. 99.4 per cent are micro-enterprises while 0.52 percent, i.e. 3.31 lakh are medium and 0.007 per cent, i.e. 5,000 are medium enterprises.

The growth of MSMEs in India with reference to the year wise and MSME wise registration may be comprehended under the following key points:

1. The percentage share of Micro Enterprises registered out of the total MSMEs registered during 2015-16(from Oct., 2015), 2016-17, 2017-18, 2018-19 and 2019- 20 (till Dec., 2019) are 85.15%, 90.51%, 88.60%, 88.18% and 87.61% respectively.
2. The percentage share of Micro Enterprises registered out of total MSMEs registered from 2015-16(from Oct., 2015) to 2019-20 (till Dec., 2019) is 88%.
3. The percentage share of Small Enterprises registered out of total MSMEs registered during 2015-16(from Oct., 2015), 2016-17, 2017-18, 2018-19 and 2019-20 (till Dec., 2019) are 14.31%, 9.12%, 10.95%, 11.36% and 11.92% respectively.
4. The percentage share of Medium Enterprises in the MSMEs during 2015-16 (from Oct., 2015), 2016-17, 2017-18, 2018-19 and 2019-20 (till Dec., 2019) are 0.53%, 0.36%, 0.43%, 0.44% and 0.46% respectively.
5. Maharashtra tops the list of number of Micro, Small & Medium Enterprises registrations during 2015-16(from Oct., 2015) to 2019-20 (till Dec., 2019).

Linear equation trend is: $y = bx + a$

Where:

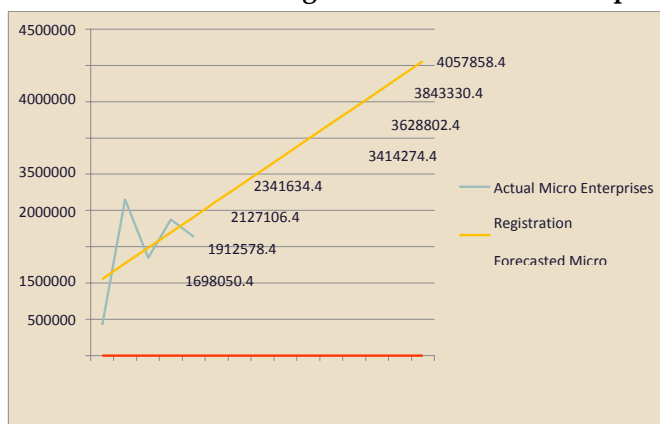
- ❖ b is the slope of a trend line.
- ❖ a is the y-intercept, which is the expected mean value of y when all x variables are equal to 0. On a chart, it's the point where the trend line crosses the y axis.

i) Forecasted value of Registration of Enterprises under Micro Segment of MSME Sector

Years		Actual Micro Enterprises Registration	Forecasted Micro Enterprises Registration
2015-16	1	421516	1054466.4
2016-17	2	2147908	1268994.4
2017-18	3	1344612	1483522.4
2018-19	4	1870932	1698050.4
2019-20	5	1632644	1912578.4
2020-21	6		2127106.4
2021-22	7		2341634.4
2022-23	8		2556162.4
2023-24	9		2770690.4
2024-25	10		2985218.4
2025-26	11		3199746.4
2026-27	12		3414274.4
2027-28	13		3628802.4
2028-29	14		3843330.4
2029-30	15		4057858.4

The forecasted trend of registration of Micro Enterprises under MSME sector till 2030 is presented in the exhibit 2

Exhibit 2 - Forecasted Registration OF Micro Enterprises



Role of Company Secretaries in MSMEs

Company Secretaries under the new Companies Act are considered as 'Governance Professional' and in view of this their role in business ecosystem has increased prodigiously. Today, a Company Secretary plays a crucial role right from setting up of a business entity to its closure. He acts as an advisor to the Board of Directors, Compliance Officer, Registered Value, GST Professional, Key Managerial Personnel etc.

In light of the paramount position that a Company Secretary holds in today's business world, it may be opined that they have tremendous scope in MSME sector too. Since MSME may comprise of various forms of organizations, i.e. sole proprietorship, partnership, limited liability partnership, private limited company, one person company, etc. their role cannot be ignored especially, if an MSME is formed under limited liability partnership, private limited and one person company categories.

Right from assisting the owners / management of the organisation in procuring capital, registration of the company, obtaining of certificate of commencement of business, advising the board / management on both organic and inorganic growth of business and in case, the business becomes unsustainable then its winding-up, Company Secretary is the key.

As the business environment is always in a state of flux, the role of Company Secretaries become more significant in steering the organisation from tempest to truce. Further, in this era of globalisation, where phenomenal business opportunities exist in offshore markets, Company Secretaries through their corporate and legal wisdom may play a pivotal role in setting up of business entities under MSMEs in foreign lands.

Conclusion

MSME sector has been the backbone of the Indian economy. Apart from various schemes offered by the Government of India to strengthen the sector, the following key initiatives under unique and innovative 'Atmanirbhar Bharat' approach, i.e. Rs. 3 Lakh Crores Collateral-free Automatic loans for businesses, including MSMEs due to the menace of COVID 19, to provide additional funding in order to meet built up operational liabilities, procure raw materials and restarting of business; Allocation of Rs. 20,000 Crores Subordinate Debt for stressed MSMEs. Under this arrangement, equity assistance would be provided to the stressed MSMEs; Government of India will facilitate provision of Rs.20,000 Crore as subordinate debt; MSMEs which are functioning and currently having non-performing assets (NPAs) or stressed will be eligible to seek assistance under this arrangement; Government of India will provide a support of Rs. 4000 Crore to CGTMSE; CGTMSE to provide partial Credit Guarantee support to banks; Promoters of the MSMEs will be provided debt by banks, which will then be infused by promoter as equity in the

business unit. It is heartening to note that this initiative will benefit approximately two lakhs MSMEs across the country.

Another significant measure under 'Atmanirbhar Bharat' is Rs. 50,000 Crore equity infusion for MSMEs through Fund of Funds in view of the fact that MSMEs witness acute paucity of equity. In this initiative, a Fund of Funds with corpus of Rs.10,000 Crores will be established to provide equity funding to MSMEs with growth potential and feasibility. In order to make this approach viable, Fund of Funds will be operated through a Mother Fund and few Daughter Funds. This initiative will assist the MSMEs substantially in expanding their business as well as capacity and foster MSMEs to get listed on main board of Stock Exchanges.

Further, as discussed above that MSME sector is poised for huge growth in view of the forecasted trends of micro, small and medium enterprises in terms of both numbers and activity-wise coupled with the prevailing schemes and initiatives announced under Atmanirbhar Bharat will pave the way for a gigantic growth of MSME sector in India and in this phenomenon of growth, the Governance Professionals, i.e. Company Secretaries will play a key role in various dimensions of the business activities of the micro, small and medium enterprises.

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EFFORTS OF GREEN FINANCING AND DIGITAL INDIA TOWARDS THE DEVELOPMENT OF MICRO ENTERPRISES IN INDIA

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Abstract

Microenterprises are small businesses that are financed by microcredit, a small loan available to people who have no collateral, credit history, savings, or employment history. The modest loans are often sufficient to get a small local business off the ground. These businesses serve a vital purpose in improving the quality of life for people in developing countries, and generally provide a product or service in their communities. As the hazards connected to ecologically destructive products and services rise, green finance is becoming a mainstream phenomenon. Green finance delivers economic and environmental advantages to everybody. It broadens access to environmentally-friendly goods and services for individuals and enterprises, equalizing the transition to a low-carbon society, resulting in more socially inclusive growth. Digital India is a programme to transform India into digital empowered society and knowledge economy. The Digital India is transformational in nature and would ensure that Government services are available to citizens electronically. This article highlights the efforts of green financing and digital India towards the development of micro enterprises in India.

Keywords: *Micro Enterprises, MSMEs, Green finance, Green economy, Digital India, Economic development.*

Introduction

Microfinance seeks to help microenterprises by loaning small amounts of capital to these businesses. This allows individuals or families with moderate, low, or no income to start their own businesses, earn income, and contribute to their communities. Many banks grant microloans to those in need, but many are provided by non-profit organizations that cater specifically to microenterprise. Like regular loans, repayment with interest is required. Digital India programme was launched on 1st July, 2015 to enable digital delivery of services to citizens. Based on the success of the programme, the Union Cabinet during August 2023 approved the expansion of the Digital India programme. The total outlay is ₹14,903 crores. It broadens access to environmentally-friendly goods and services for individuals and enterprises, equalizing the transition to a low-carbon society, resulting in

more socially inclusive growth. This results in a 'great green multiplier' effect in which both the economy and the environment gain, making it a win-win situation for everyone.

Micro Enterprises

The term microenterprise, also known as a microbusiness, refers to a small business that employs few people. A microenterprise usually operates with fewer than 10 people and is started with a small amount of capital advanced from a bank or other organization. Microenterprises are small businesses, often funded with modest startup loans. They are financed by microcredit, a type of credit available to people who have no collateral, credit history, or employment history. Microcredit has helped improve the quality of life for people in developing countries, and generally provides a product or service needed in their communities.

Microenterprises are small businesses that are financed by microcredit, a small loan available to people who have no collateral, credit history, savings, or employment history. The modest loans are often sufficient to get a small local business off the ground. These businesses serve a vital purpose in improving the quality of life for people in developing countries, and generally provide a product or service in their communities. Microenterprises not only help improve the quality of life for business owners, but they also add value to the local economy. They can boost purchasing power, improve income, and create jobs.

Microfinance seeks to help microenterprises by loaning small amounts of capital to these businesses. This allows individuals or families with moderate, low, or no income to start their own businesses, earn income, and contribute to their communities. Many banks grant microloans to those in need, but many are provided by non-profit organizations that cater specifically to microenterprise. Like regular loans, repayment with interest is required.

In India

MSME (Micro, Small, and Medium Enterprise) term was introduced by the Government of India in agreement with the Micro, Small & Medium Enterprises Development (MSMED) Act, 2006. MSME is initiated and managed under the Ministry of MSME (MoMSME) are entities engaged in the production, manufacturing, processing, or preservation of goods and commodities. MSME sector is considered the backbone of the Indian economy and contributes nearly accounts for 27% of the country's GDP. It primarily works for the development of people from backward and rural areas.

As per the official MSME annual report of 2021-22, the Total number of MSMEs in India are 6,33,88,000 out of which 3,24,88,000 MSMEs (51.25%) are in rural area and 3,09,00,000 lakh MSMEs (48.75%) are in the urban areas. As per the official data of IBEF.com as of 25th

Nov 2022 as provided by Ministry of Micro, Small and Medium Enterprise (MoMSME), there are 12,201,448 Registered MSMEs in India at Udyam Registration Portal, wherein Micro-enterprises are 11,735,117 (96.17%), Small enterprises are 426,864 (3.49%) and Midsized enterprises are 39,467 (0.32%).

Green Financing

Simply put, green finance is a loan or investment that promotes environmentally-positive activities, such as the purchase of ecologically-friendly goods and services or the construction of green infrastructure. As the hazards connected to ecologically destructive products and services rise, green finance is becoming a mainstream phenomenon. Green finance delivers economic and environmental advantages to everybody. It broadens access to environmentally-friendly goods and services for individuals and enterprises, equalizing the transition to a low-carbon society, resulting in more socially inclusive growth. This results in a 'great green multiplier' effect in which both the economy and the environment gain, making it a win-win situation for everyone.

Types of Green Financing

Green Mortgages

They allow lenders to provide better terms to home purchasers of properties with a high environmental sustainability rating or if the buyer agrees to invest in enhancing the environmental performance of a property.

Green Loans

These are loans used to support environmental initiatives such as household solar panels, electric automobiles, energy efficiency projects, and more.

Green Credit Cards

Green credit cards such as Aspirations' Zero card plant a tree every time a customer makes a purchase. They enable customers to direct their expenditure toward green finance in order to have a lasting impact on the environment.

Green Banks

Green banks operate similarly to traditional banks, but they employ public funds to spur private investment in renewable energy and other environmentally friendly initiatives. According to a 2020 research, the number of green banks in the US increased from one to 20 between 2011 and 2020, investing \$7 billion in renewable energy.

Green Bonds

Green bonds account for the vast bulk of green funding. They include bond investments, the earnings from which are used to support a variety of green initiatives such as renewable energy, clean transportation, and conservation, among others.

Digital India

Digital India is a programme to transform India into digital empowered society and knowledge economy. The Digital India is transformational in nature and would ensure that Government services are available to citizens electronically. It would also bring in public accountability through mandated delivery of government's services electronically, a Unique ID and e-Pramaan based on authentic and standard based interoperable and integrated government applications and data basis.

Digital India programme was launched on 1st July, 2015 to enable digital delivery of services to citizens. Based on the success of the programme, the Union Cabinet during August 2023 approved the expansion of the Digital India programme. The total outlay is ₹14,903 crores. The vision is centred on three key area are: Digital infrastructure as Utility to Every Citizen, Governance and services on demand and Digital empowerment of citizens

Digital Infrastructure as Utility to Every Citizen

- ❖ Availability of high speed internet as a core utility for delivery of services to citizens.
- ❖ Cradle to grave digital identity that is unique, lifelong, online and authenticable to every citizen.
- ❖ Mobile phone and Bank account enabling citizen participation in digital and financial space.
- ❖ Easy access to a Common Service Centre.
- ❖ Shareable private space on a public Cloud.
- ❖ Safe and secure Cyber-space.

Role of Digital India in Micro Enterprises

Digital technology can significantly enable India's micro, small and medium enterprises (MSME) segment, provided the emerging infrastructure has joint buy-in from the government, solution providers and importantly users. The digital landscape catering to businesses has drastically changed in recent years, several elements have emerged that can start shaping the contours of a strong digital ecosystem. The challenges reside in addressing a complex and heterogeneous MSME segment, dominated by micro enterprises at different stages, and different levels of digital readiness. The incentive for businesses to

fully embrace digital technology would be to provide a digital ecosystem that provides end-to-end solutions, from finance access, payments, operations, management to even skilling and knowledge sources that are convenient.

MSMEs are a major contributor to the Indian economy, accounting for around 30% of Gross Domestic Product (GDP) and providing employment to over 110 million people (ministry of MSME, Annual Report 20–21). However, a more sombre story emerges when examining details. The Indian MSME sector is unique in its long fat tail of relatively unproductive micro enterprises, which are unregistered or informal, new-to-formal-credit, and characterised by low growth and employment per unit. Most of the micro enterprises are sole proprietorships with less than five employees. Furthermore, informal micro enterprises are responsible for 80% of employment while contributing only 20% of output. This highlights the composition of India's current business landscape of tiny self-employed informal enterprises with low quality human capital. Conversely, there is a severe deficit of formal, productive, and job-creating small and medium enterprises.

Furthermore, while the MSME segment is perceived as a significant job creator, the quality and conditions of the jobs created are often precarious and in the form of casual labour, daily labour and self-employment, often with very little or no job security. For most micro enterprises, the entire focus is on making sure the business stays afloat, and not on growing the business. This business stagnation hampers many crucial aspects for an enterprise to grow and achieve scale, such as efficiency, innovation and production quality. While the magnitude of these problems is well known, little progress has been made to address them efficiently given the complexity and interconnectedness. In effect, three critical ingredients needed for any early stage business to thrive, namely access to markets, skills and working capital, are sorely missing for most enterprises. On the other hand, significant public investment would be required to address these gaps and create effective market linkages, skills and mentorship, and access to finance.

Role of Green Financing for Micro Enterprises

In India it is projected that MSMEs contribute roughly 70 percent to the industrial pollution. These sectors are usually dominant in industries by relatively high resources and emission intensity. Green bonds offer a range of options for MSME financing, including the issuance of green bonds from banks that aggregate MSME loans, the securitisation of MSME loans into asset-backed securities and the issuance of mini-bonds by medium-sized enterprises. An added advantage of green bonds is greater market transparency. Green finance is any financial activity undertaken to deliver better environmental outcomes. With Green funding, sustainable development projects that contribute energy efficiency and cleaner production are applicable for the scope of this scheme.

MSMEs can help in increasing entrepreneurial activities, create employment opportunities and function in backward areas thereby creating sustainability. MSMEs have capability to create a large number of earning opportunities (though smaller) catering to a big segment of population ecosystem. The Green Action Plan (GAP), adopted in July 2014, aims to help small and medium-sized enterprises (SMEs) take advantage of the opportunities offered by the transition to a green economy. The GAP is expected to: raise SMEs' awareness of: Resource Efficiency improvements and Sustainability. Green financing incorporates principles of sustainability into their business decisions in order to reduce their negative impacts on the global or local environment. They do this by selling environmentally friendly products or by greening their processes to make them more environmentally sustainable

Conclusion

The study concluded that healthy environmental policies should take into account carbon-free and ecologically friendly ways if sustainable environmental goals are to be attained. Green mortgages, bonds, and other forms of “green financing” may help us reach our goal of environmental sustainability. A digital connected India can result in the growth of the social and economic status of people. This can be achieved by the development of non-agricultural economic activities. Instead of providing access to health, education, and financial services. MSMEs are the backbone of a resilient national economy. Prioritising their development is critical to the future of the country. The government has come out with a variety of enabling mechanisms over the last few years.

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A STUDY OF TEACHER EFFICIENCY AND JOB SATISFACTION AMONG SECONDARY SCHOOL TEACHERS

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Abstract

If the country's teacher-education programme improves, teaching may regain its former noble position. Teachers are a group of people who are starkly separated from the rest of the community and who are training for their life's work in institutions where their fellow students will also be doing the same. The teaching profession is completely trusted by the National Policy of Education. The teaching profession is completely trusted by the National Policy of Education. It demands a significant upgrade in both the standard of teacher preparation and working circumstances.

Keywords: *Teacher efficiency, Profession, Job Satisfaction, School Teacher.*

Introduction

As long as Indian education has existed, so too has the history of teacher education in India. There must have been teachers and pupils there if there had been any kind of education in the community. The calibre of a nation's instructors determines its progress, making teaching the noblest of all professions. If the country's teacher-education programme improves, teaching may regain its former noble position. Teachers are a group of people who are starkly separated from the rest of the community and who are training for their life's work in institutions where their fellow students will also be doing the same. The teaching profession is completely trusted by the National Policy of Education. The teaching profession is completely trusted by the National Policy of Education. It demands a significant upgrade in both the standard of teacher preparation and working circumstances. The Policy also underlines the responsibility of the teachers to the students, their parents, the community, and their own field. Teacher effectiveness is a relative term made from of the phrases effectiveness and teacher. A person with teaching experience and specific teaching-related qualifications is referred to as a teacher. The idea of "Job Satisfaction" comes from industrial psychology and is currently one of the most thoroughly

researched aspects of human productivity at work. When a job is satisfying, it is completed carefully and sincerely. Job satisfaction is the sum of all the elements of a job that a person needs to appreciate their workplace and be willing to go to work each day without complaining.

Review of Literature

- ❖ Aashka R. Sharma et al.(2020) in the title “A study of teacher effectiveness and job satisfaction among secondary school teachers” examined that the Teacher effectiveness is a relative word consists of two words- teacher and effectiveness. Teacher means a person who has teaching skills and possesses certain professional qualities of teaching. The concept is related to such issues as identification with the job as well as motivation and the attractiveness of the workplace to the employee. Dissatisfaction among workers is undesirable and dangerous in any profession. The well-adjusted and satisfied teacher can contribute a lot to the well-being of his/her pupils.
- ❖ Fredy Wilson Ngimbudzi.(2009). Job satisfaction among secondary school teachers in tanzania: the case of njombe district explained that the motivated me to conduct the current study as an attempt to create awareness about the phenomenon of job satisfaction to educational policy makers, school administrators, employers and school owners with the hope that it would provide possible solutions to some of the issues I have mentioned previously for the good of beneficiaries of the education service in Tanzania.

Statement of the Problem

The secondary education system is crucial in determining how pupils will develop in the future, and secondary school teachers' effectiveness and job satisfaction are crucial in assuring the standard of instruction. However, given that these elements have a substantial impact on the entire educational experience and outcomes, it is urgent to investigate the relationship between teacher effectiveness and job satisfaction among secondary school instructors.

Objectives of the Study

- ❖ To know the Socio – economic profile of the respondents.
- ❖ To analyse the efficiency of the secondary School Teachers.
- ❖ To study the job satisfaction of the Secondary School teachers.

Methodology

This study aims to analyse teacher efficiency and job satisfaction among secondary school teachers. Sample of the study is 60 and convenience sampling method has been

adopted to collect the primary data. In order to collect the primary data, well structured questionnaire was designed for the college students. The secondary data has been collected from journals, published and unpublished theses.

Results and Discussion

Table :1
Demographic Profile of the Respondents

S. No	Demographic Classification	Category	Number of Respondents	Percentage
1	Age	25 - 30 years	13	21.7
		30 – 35 years	23	38.3
		35- 40 years	17	28.3
		More than 40 years	7	11.7
		Total	60	100.0
2	Gender	Male	48	80.0
		Female	12	20.0
		Total	60	100.0
3	Marital Status	Married	48	80.0
		Unmarried	12	20.0
		Total	60	100.0
4	Educational Qualification	UG with B.Ed	19	31.7
		PG with B.Ed	41	68.3
		Total	60	100.0
5	Income of the Family	Below 20000	25	41.7
		20001-40000	16	26.7
		40001-60000	9	15.0
		above 60000	10	16.7
		Total	60	100.0
6	Number of family members	Two members	5	8.3
		Three members	11	18.3
		Four members	36	60.0
		More than four members	8	13.3
		Total	60	100.0

Source : Primary Data

From the table 1, it is inferred that 38.3 per cent of the respondents were in the age group of 30 – 35 years; 80.0 per cent of the respondents are male; 80.0 per cent of the respondents were married; 68.3 per cent of the respondents have completed PG with B.Ed

qualification; the income of the family is revealed that 41.7 per cent of the respondents are having below 20,000; 60.0 per cent of the respondents are living in four members of the family.

Table: 2
Job Satisfaction of Secondary School Teachers

S. No	Particulars	Strongly Agree	Agree	Netural	Disagree	Strongly Disagree
1	Give Opportunity for Career Enchancement	28 (46.7)	23 (38.3)	5 (8.3)	1 (1.7)	3 (5.0)
2	Achieve my short and long term goals	8 (13.3)	32 (53.3)	17 (28.3)	1 (1.7)	2 (3.3)
3	Requires high skills and Knowledge	14 (23.3)	25 (41.7)	16 (26.7)	3 (5.0)	2 (3.3)
4	The job is achievable and attainable	17 (28.3)	13 (21.7)	26 (43.3)	3 (5.0)	1 (1.7)
5	Increase my responsibility and commitment	27 (45.0)	23 (38.3)	8 (13.3)	1 (1.7)	1 (1.7)

Source :Primary Data

Table 2 started that the opinion about the Job Satisfaction of Secondary School. The average score of the respondents opinion are calculated by using 5 point scaling techniques for that the following points are given to each factor. Strongly Agree (S.A) - 5, Agree (A) - 4, Netural (N) - 3, Disagree (DA) - 2, Strongly Disagree (SDA) - 1.

Table :3
Average Score for Over All Opinion About the Job Satisfaction of
Secondary School Teachers

Particulars	SA	A	N	D	SD	Weig.Total	W.Aver.Score	Rank
Give Opportunity for Career Enchancement	115	112	15	2	3	247	4.11	II
Achieve my short and long term goals	40	128	51	2	2	223	3.71	V
Requires high skills and Knowledge	70	100	48	6	2	226	3.76	IV
The job is achievable and attainable	85	104	39	6	1	235	3.91	III
Increase my responsibility and commitment	115	108	24	2	1	250	4.16	I

Source: Primary Data

Table 3 Clearly understand that, most of the respondents are giving first rank to the Increase my responsibility and commitment, second rank Give Opportunity for Career Enchancement, third rank to the job is achievable and attainable, fourth rank to the requires high skills and Knowledge and finally the achieve my short and long term goals.

Table :4
Teachers Efficiency of Secondary School Teachers

S. No	Particulars	Strongly Agree	Agree	Netural	Disagree	Strongly Disagree
1	To help my students to think critically	21 (35.0)	28 (46.7)	8 (13.3)	2 (3.3)	1 (1.7)
2	Craft good questions for my students	13 (21.7)	30 (50.0)	2 (3.3)	14 (23.3)	1 (1.7)

3	To help my students value Learning	28 (46.7)	21 (35.0)	2 (3.3)	1 (1.7)	8 (31.3)
4	Improve the understanding of a student who is failing	23 (38.3)	18 (30.0)	1 (1.7)	16 (26.7)	2 (3.3)
5	Able to use a variety of assessment strategies	20 (33.3)	25 (41.7)	13 (21.7)	1 (1.7)	1 (1.7)

Source:Primary Data

From the table 4 , it is revealed that 28(46.7) respondents are Agree with the statement of “To help my students to think critically” 30(50.0) respondents are agree with the statement of “Craft good questions for my students” 28 (46.7) respondents are strongly agree with the statement of “To help my students value Learning” 23 (38.3) respondents are strongly agree with the statement of “Improve the understanding of a student who is failing” 25 (41.7) respondents are agree with the statement of “Able to use a variety of assessment strategies” .

Conclusion

In conclusion, the crucial relationship between a teacher's efficacy and job satisfaction of school teachers. In order to increase school teachers' effectiveness, it is crucial to empower and inspire them on all of these fronts. The greater the benefits for employees, the harder they would work. In a similar vein, an employee would respond, probably with gratitude or loyalty, to a greater or lesser level depending on how much his requirements are met at work. Teachers will therefore offer their kids their best effort and be willing to change secondary education when they are happy in their positions. They will also be prepared to help the student change and get ready for further education.

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THE ROLE OF MSMEs IN ECONOMIC SELF-RELIANCE: DRIVING SUSTAINABLE GROWTH

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Abstract

In the dynamic landscape of today's global economy, achieving economic self-reliance has become a pressing objective for nations worldwide. This article explores the pivotal role played by Micro, Small, and Medium Enterprises (MSMEs) in driving sustainable growth and fostering economic self-reliance. MSMEs contribute significantly to job creation, innovation, and regional development, promoting self-sufficiency and reducing reliance on external forces. This abstract provides a glimpse into the multifaceted contributions of MSMEs in building resilient and self-sufficient economies, emphasizing their crucial role in achieving economic self-reliance.

Keywords: MSMEs, Economic Self-Reliance, Sustainable Growth, Job Creation.

Introduction

Micro, Small, and Medium Enterprises (MSMEs) play a pivotal role in fostering economic self-reliance for nations around the world. These small businesses are the backbone of many economies, contributing significantly to employment generation, innovation, and overall economic development. In this article, we will explore how MSMEs contribute to economic self-reliance and why they are essential for building resilient and sustainable economies.

In today's rapidly changing global landscape, the concept of economic self-reliance has taken on renewed significance for nations worldwide. As countries strive to reduce their vulnerabilities to external economic shocks and strengthen their domestic capabilities, Micro, Small, and Medium Enterprises (MSMEs) emerge as pivotal players in this pursuit. This article delves into the crucial role that MSMEs play in driving sustainable growth and promoting economic self-reliance, shedding light on their multifaceted contributions to building resilient and self-sufficient economies. From job creation to innovation and regional development, MSMEs form the bedrock upon which nations can craft a more self-reliant and prosperous future.

Defining MSMEs

MSMEs encompass a wide range of businesses, from microenterprises with just a few employees to small and medium-sized enterprises with a more substantial workforce and higher revenue. The precise definition of MSMEs can vary from one country to another, but they typically share the common characteristic of being smaller in scale compared to large corporations.

The MSME-Led Economic Self-Reliance and Sustainable Growth

The role of Micro, Small, and Medium Enterprises (MSMEs) in driving economic self-reliance and sustainable growth can be understood through a theoretical framework that underscores the interconnectedness of various elements. This model posits that MSMEs serve as catalysts for economic self-reliance, which, in turn, contributes to sustainable growth. Here's a breakdown of the key components of this theoretical framework:

MSME Vitality: At the heart of this model are MSMEs, comprising a diverse array of businesses varying in size and sector. MSMEs are characterized by their agility, innovation, and responsiveness to changing market conditions. They are adept at identifying niche markets, adapting to evolving consumer preferences, and swiftly integrating technological advancements into their operations.

Economic Self-Reliance: Economic self-reliance refers to a nation's ability to meet its essential needs through domestic production and resources, reducing dependence on external sources. MSMEs play a pivotal role in achieving this self-reliance through the following mechanisms:

a. **Diverse Production:** MSMEs offer a wide range of products and services, contributing to the diversification of economic activities. This diversity reduces reliance on a single sector or industry, making the economy more resilient to external shocks.

b. **Local Employment:** MSMEs are significant employers, particularly in rural and semi-urban areas. They create jobs, enhance income distribution, and reduce poverty, thereby strengthening a nation's social fabric and reducing dependence on social welfare programs.

c. **Innovation and Adaptation:** MSMEs are fertile grounds for innovation. Their nimbleness allows them to experiment with new ideas, products, and processes. This continuous innovation enhances a country's capacity to meet changing consumer demands and technological advancements domestically.

d. **Supply Chain Localization:** MSMEs can strengthen domestic supply chains, reducing the need to import critical goods and services. This localization enhances a nation's self-sufficiency and resilience in the face of global economic uncertainties.

Sustainable Growth: Economic self-reliance, facilitated by a vibrant MSME sector, paves the way for sustainable growth. Sustainable growth encompasses economic, social, and environmental dimensions. MSMEs contribute to sustainable growth by:

a. **Balanced Regional Development:** MSMEs are often located in underserved regions, promoting balanced regional development and reducing urban-centric concentration.

b. **Social Inclusion:** MSMEs provide opportunities to marginalized groups, fostering social inclusion and reducing income inequality.

c. **Environmental Considerations:** As sustainability becomes paramount, MSMEs can adopt eco-friendly practices, contributing to environmentally sustainable growth.

In conclusion, the MSME-Led Economic Self-Reliance and Sustainable Growth Model posits that a thriving MSME sector is instrumental in achieving economic self-reliance through diversification, local employment, innovation, and supply chain localization. This, in turn, sets the stage for sustainable growth by fostering balanced regional development, social inclusion, and environmental responsibility. Recognizing and nurturing the vital role of MSMEs is essential for nations aspiring to build resilient, self-reliant, and sustainable economies.

The Economic Significance of MSMEs

- ❖ **Job Creation:** MSMEs are a significant source of employment. They create job opportunities for a large segment of the population, including youth and women, which can help reduce unemployment rates and alleviate poverty.
- ❖ **Innovation and Entrepreneurship:** MSMEs often serve as incubators for innovation and entrepreneurship. They are more agile and adaptable to change, which allows them to experiment with new ideas and technologies. Many successful startups and disruptive innovations originate from MSMEs.
- ❖ **Diversification of Economic Activities:** A robust MSME sector diversifies economic activities by offering a wide range of products and services. This diversification helps in reducing the dependence on a single sector and makes the economy more resilient to external shocks.
- ❖ **Regional Development:** MSMEs are dispersed across various regions, including rural and semi-urban areas. Their presence helps in promoting balanced regional development by reducing the concentration of economic activity in urban centers.
- ❖ **Export Promotion:** MSMEs can play a crucial role in enhancing a country's export potential. Many MSMEs are engaged in export-oriented activities, contributing to foreign exchange earnings.
- ❖ **Social Inclusion:** MSMEs often provide opportunities to marginalized and disadvantaged groups, such as women, minorities, and people with disabilities. This fosters social inclusion and reduces income inequality.

Promoting Economic Self-Reliance through MSMEs

- ❖ **Resilience and Self-Sufficiency:** MSMEs can make economies less reliant on imports by producing essential goods and services domestically. This enhances a nation's resilience in times of global economic uncertainties and disruptions.
- ❖ **Reducing Dependence on Multinational Corporations:** A strong MSME sector can reduce the dominance of multinational corporations in a country's economy, thereby preserving domestic control and ownership.
- ❖ **Strengthening Supply Chains:** MSMEs are often part of the supply chains of larger enterprises. By nurturing and supporting MSMEs, countries can develop robust domestic supply chains, reducing dependence on foreign suppliers.
- ❖ **Encouraging Innovation:** MSMEs are hotbeds of innovation. Governments can promote economic self-reliance by providing incentives and support for research and development activities within MSMEs.
- ❖ **Access to Finance:** Access to affordable and readily available financing is crucial for the growth of MSMEs. Governments and financial institutions can work together to create favorable lending conditions for small businesses.
- ❖ **Skill Development:** Investing in skill development and entrepreneurship education is essential to empower individuals to start and manage MSMEs successfully.

Conclusion

The role of MSMEs in economic self-reliance cannot be overstated. These enterprises are the engines of growth, innovation, and employment generation in many economies. By promoting the growth and sustainability of MSMEs, governments can take significant steps toward achieving economic self-reliance, reducing dependence on foreign imports, and building resilient and self-sufficient economies. It is imperative for policymakers, financial institutions, and society as a whole to recognize and support the vital contributions of MSMEs in the journey toward economic self-reliance.

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DIGITAL INDIA AND INDUSTRY 4.0

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Abstract

Digital India and Industry 4.0 are two transformative paradigms that are reshaping the landscape of technology, governance, and industry on a global scale. The vision of Digital India is to bridge the digital divide, empower citizens, and drive economic growth through digital inclusion. Industry 4.0, often referred to as the Fourth Industrial Revolution, represents the convergence of physical and digital technologies in manufacturing and production. It leverages technologies such as the Internet of Things (IoT), artificial intelligence (AI), big data analytics, and automation to create "smart factories" that are highly efficient, adaptive, and connected. Digital India and Industry 4.0 are intricately connected as the digital infrastructure and capabilities developed under Digital India provide a strong foundation for the adoption of Industry 4.0 technologies. It emphasizes on digital literacy and skill development under Digital India is crucial for preparing the workforce to thrive in the era of Industry 4.0.

Keywords: *Industry 4.0, digital India, Technology, development*

Introduction

In the 21st century, India has been undergoing a significant transformation, driven by rapid advancements in technology. The convergence of digitalization and Industry 4.0 has played a pivotal role in reshaping the country's industrial landscape. "Digital India" is a visionary initiative launched by the Indian government to harness the power of technology and digitization for inclusive growth and development across various sectors. Simultaneously, the global paradigm shift toward Industry 4.0, characterized by smart manufacturing, automation, and data-driven decision-making, has had a profound impact on India's industrial sector. This article explores the intersection of Digital India and Industry 4.0, highlighting how these two forces are shaping the nation's future. Digital India is an ambitious initiative launched by the Indian government in 2015 with the goal of transforming the country into a digitally empowered society and knowledge economy. The

program encompasses various pillars, including digital infrastructure, digital governance, digital literacy, and e-governance. It aims to bridge the digital divide, provide affordable and accessible digital services to all citizens, and leverage technology for efficient governance.

Key Achievements of Digital India:

1. **Digital Infrastructure:** The deployment of high-speed internet and the proliferation of mobile connectivity have connected even remote areas of India, enabling access to digital services.
2. **Digital Payments:** The introduction of digital payment platforms like UPI (Unified Payments Interface) and digital wallets has revolutionized the way transactions are conducted in the country.
3. **E-Governance:** Digital platforms like Aadhaar, e-signature, and DigiLocker have simplified government processes, reducing paperwork .
4. **Digital Literacy:** Initiatives like Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA) have been launched to promote digital literacy among citizens.
5. **Start-up Ecosystem:** India has emerged as a global hub for technology startups, fostering innovation and entrepreneurship.

Impact of Industry 4.0 in India:

1. **Smart Manufacturing:** Indian industries are adopting smart manufacturing practices, optimizing production processes, reducing waste, and enhancing product quality.
2. **IoT and Data Analytics:** The IoT is being used to monitor and control machinery and equipment in real time, while data analytics is aiding in predictive maintenance and better decision-making.
3. **Robotics and Automation:** Automation is increasing productivity and reducing labor-intensive tasks, making industries more efficient and cost-effective.
4. **Supply Chain Optimization:** Digitalization of supply chains is improving logistics, reducing lead times, and ensuring timely deliveries.
5. **Skill Development:** Industry 4.0 is driving demand for a new skill set, prompting investments in education and training to meet the evolving workforce needs.

Impact of Digital India and Industry 4.0 on Various Sectors:

1. **Healthcare:** The healthcare sector in India has witnessed a significant transformation with the adoption of digital health records, telemedicine, and IoT-enabled medical devices. This has improved access to healthcare services, especially in rural areas, and enabled data-driven healthcare management.

2. **Agriculture:** Farmers are benefiting from digital platforms that provide real-time weather information, market prices, and agricultural best practices. IoT sensors are being used to monitor soil conditions and optimize crop yields.
3. **Education:** Digital education platforms have become more accessible, enabling remote learning, online courses, and digital libraries. Virtual reality and augmented reality technologies are enhancing the learning experience.
4. **Manufacturing:** Industry 4.0 technologies are making Indian manufacturing more competitive. Businesses are adopting predictive maintenance to reduce downtime, implementing robotics to enhance production lines, and using AI for quality control.
5. **Financial Services:** The financial sector has experienced a digital revolution with the widespread adoption of mobile banking, digital wallets, and online investment platforms. Fintech startups are driving financial inclusion.

Challenges and Opportunities:

1. **Digital Divide:** Despite significant progress, the digital divide still exists. Bridging this gap and ensuring that all citizens have access to digital services remains a challenge.
2. **Data Privacy and Security:** As more personal and sensitive data is digitized, protecting data privacy and cybersecurity becomes paramount. India needs robust regulations and cybersecurity infrastructure.
3. **Skill Shortage:** Industry 4.0 requires a highly skilled workforce proficient in technologies like AI, IoT, and data analytics. Upskilling and reskilling programs are essential.
4. **Infrastructure Development:** Continued investment in digital infrastructure, including high-speed internet access in remote areas, is vital for the success of both Digital India and Industry 4.0.
5. **Regulatory Framework:** The government needs to develop a clear regulatory framework to support the integration of Industry 4.0 technologies, including standards for IoT devices and AI ethics.
6. **Global Competitiveness:** The synergy between Digital India and Industry 4.0 is making India more competitive on the global stage. Indian companies are increasingly becoming global players, exporting technology solutions and expertise to other countries.
7. **Sustainable Development:** Both Digital India and Industry 4.0 have the potential to contribute significantly to sustainable development. Smart cities, energy-efficient manufacturing, and eco-friendly practices can help reduce the environmental footprint.

8. **Innovation Ecosystem:** India's innovation ecosystem is thriving, with startups and technology incubators at the forefront. Government initiatives like "Startup India" are promoting entrepreneurship and innovation.
9. **Global Collaboration:** Collaborative partnerships with other countries, particularly in research and development, can accelerate technological advancements and enhance India's global influence.

Future Prospects:

1. **Smart Cities:** Digital India and Industry 4.0 concepts will play a pivotal role in the development of smart cities. These cities will incorporate IoT, data analytics, and automation to enhance services like traffic management, waste disposal, and public safety.
2. **AI and Healthcare:** AI-driven healthcare solutions, including predictive analytics and telemedicine, will become more prevalent, improving healthcare access and patient outcomes.
3. **Education Revolution:** Online and digital learning platforms will continue to evolve, making quality education accessible to a broader population. Virtual labs and immersive learning experiences will enhance STEM education.
4. **Advanced Manufacturing:** India is poised to become a hub for advanced manufacturing with a focus on robotics, 3D printing, and precision engineering. This will enhance the country's manufacturing capabilities and exports.
5. **Digital Payments and Financial Inclusion:** The digital payments ecosystem will continue to expand, including the use of blockchain for secure transactions. Financial inclusion efforts will reach underserved populations through mobile banking and digital financial services.
6. **Cybersecurity:** As digitalization deepens, the demand for robust cybersecurity solutions will grow. India can develop a thriving cybersecurity industry to safeguard its digital infrastructure and data.
7. **Rural Development:** Digital India initiatives will increasingly benefit rural areas by providing access to digital services, improving agriculture through precision farming, and enhancing rural healthcare delivery.

Conclusion

The convergence of Digital India and Industry 4.0 represents a powerful force that is reshaping India's economy and society. As the country continues to digitize and embrace Industry 4.0 technologies, it is poised for significant growth and competitiveness on the global stage. The synergy between these two initiatives is not only driving industrial transformation but also enhancing the overall quality of life for Indian citizens through

improved services, greater efficiency, and increased opportunities for innovation and employment. To fully harness this potential, continued investment in digital infrastructure, education, and research and development is essential, ensuring that India remains at the forefront of the digital revolution in the years to come.

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AN INVESTIGATION ON THE RELATIVE SIGNIFICANCE OF MICRO, SMALL AND MEDIUM-SIZED ENTERPRISES IN TERMS OF ECONOMIC SELF-RELIANCE

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Abstract:

Micro, Small and Medium enterprises are vital to the development of a country because they guarantee significant economic growth and foster innovation, job creation, and export expansion. The study attempts to classify the role of MSME in terms of Micro, Small, and Medium industries using Udyam Registrations for employment generation, social and gender-wise classification, and registrations. A typical certification known as Udyam registration enables Micro, Small, and Medium-Sized businesses to register with the government. The MSME receives a certificate of recognition and a unique identification number upon registration. According to the study report, the Micro industry had the greatest registration rate and produced the most job opportunities among other businesses. Men predominate in this sector, and the General category dominates the socio-economic class within the MSME sector.

Keywords: *Udyam Registrations, MSME, Employment, Gender, Social class.*

Introduction:

The Micro, Small, and Medium-Sized Enterprises (MSME) sector of the Indian economy has grown significantly in size and vibrancy over the last fifty years. These enterprises offer opportunities on a wide scale at a relatively lower capital cost than larger businesses, which contributes to the industrialization of rural and undeveloped areas in addition to being vital sources of employment. As a result, there is a more equitable distribution of wealth and income throughout the country, which helps to correct regional imbalances. MSMEs also significantly contribute to the nation's overall socioeconomic development by acting as ancillary units to larger businesses. In order to help MSMEs become more competitive and access markets, the Ministry of Micro, Small, and Medium Enterprises (MSME) manages a number of programmes. These programmes include infrastructure development, financial support, technology support and training, and skill enhancement and training.

MSME:

Under the Atmanirbhar Bharat package, which was unveiled on May 13, 2020, the definition of micro manufacturing and services units was broadened to encompass an investment of Rs.1 crore and a turnover of Rs.5 crore. For small firms, the investment and turnover thresholds have been increased to Rs.10 crore and Rs.50 crore, respectively. In a similar vein, the investment and turnover thresholds for Medium units were increased to Rs.20 Crore and Rs.100 Crore, respectively. As a result, on June 1st, 2020, the Indian government decided to further amend the MSME Definition, capping turnover at Rs.250 crore and restricting investments for medium-sized businesses to Rs.50 crore.

Review of Literature:

The literature review of current study provides a deep insight about research. It gives clarification and ideas for further research.

Ujjal Bhuyan (2016) in his article on “A Study on the Performance of Micro, Small and Medium Enterprises (MSMEs) in India” illustrated how important the sector is to the country's economy, but also how susceptible it is to socioeconomic shifts and how much of an impact it has on the creation of job opportunities. **Abhijeet Biswas et al., (2018)** in their article entitled "A Study of the Factors Influencing the Financing Gap for the MSME Sector" showed that a number of factors, including the imposition of credit rationing, market imperfections, bankruptcy laws, property rights, issues with adverse selection, and moral hazard, have an impact on the funding gap in MSME, and that MSMEs have far greater credit constraints than large firms. **Jeeban Jyoti Mohanty (2018)** in his study on "A Study on Micro, Small and Medium Enterprises (MSMEs) in India: Status and its Performance" depicted that MSME sector is driving economic growth in India and has seen positive increases in unit count, employment, and market value. The MSME is essential to the advancement of both urban and rural residents. The article titled “Covid-19 Pandemic- Bountiful for MSMEs and Indian Economy” carried out by **Lamba and Jain in 2020**. It said that while India's economy is still expanding, both labour and capital-intensive industries must be supported. Due to their ability to produce in huge quantities with comparatively little investment, micro, small, and medium-sized enterprises (MSMEs) have the potential to boost economies during times of global downturn and liquidity crisis. The country has once more recognised the value of the MSME sector and how it has helped the country in times of financial crisis and medical emergency as a result of the COVID-19 epidemic. The goal is to fortify small and medium-sized businesses by providing funding and equipping them to combat the COVID-19 epidemic, which will ultimately alleviate financial strain, the financial crisis, and jobless dread. A study titled "Pivotal Role of MSME and Professionals in Fabricating Self-Reliant India" was carried out in **2021** by **Jonika Lamba and Esha Jain**. According to the study, professionals are a country's best friend during times of disguise. They can assist the nation in embracing new ideas and learning how to live under these

new standards. The Indian government should prioritise the inclusive growth of the country by ensuring that business is shared with SMEs and MSMEs in order to create a vibrant ecosystem. **Finny Redjeki and Azhar Affandi (2021)** conducted a study on “Utilization of Digital Marketing for MSME Players as Value Creation for Customers during the COVID-19 Pandemic”. The study demonstrated that, because to its many advantages, digital marketing is particularly beneficial for MSME operators in Indonesia, as it may raise their sales turnover.

Based on the literature research, the MSME sector is significant to the Indian economy. Small and medium-sized businesses make up the MSME. The Indian economy's micro, small, and medium-sized businesses were not given an industry-by-industry analysis in the earlier research. Research from the past didn't cover till December 31, 2022. In order to investigate the performance of micro, small, and medium-sized businesses through December 31, 2022, an effort has been made.

Objectives:

The following are the objectives of the study.

1. To examine the micro, small, and medium-sized enterprise registration breakdown according to Udayam registration.
2. To compare the population of a social group with the MSME registrations based on social class.
3. To categorize micro, small, and medium-sized businesses in order to understand how the MSME sector creates jobs.

Research Methodology:

As the present study uses quantitative data, the necessary secondary data were collected from MSME Annual Reports 2022–2023. Based on a breakdown of Udayam Registration in India, the study employs percentage analysis to evaluate data for Micro, Small, and Enterprises.

Results and Discussion:

The study results were presented in the following tables along with the figures and interpretation.

(i) Distribution of Micro, Small and Medium Enterprises as per Udayam Registrations

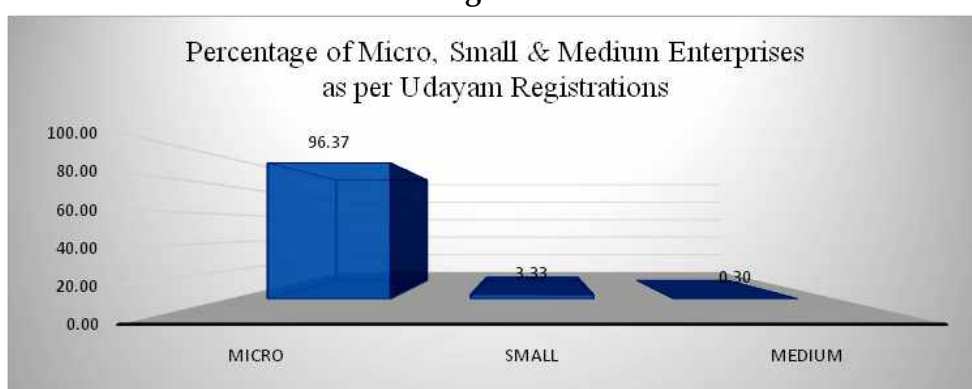
The distribution of Micro, Small and Medium enterprises as per Udayam registration (as on 31st Deceimber, 2022) is provided in the following table.

**Table 1: Distribution of Micro, Small and Medium Enterprises
as per Udayam Registrations**

Industry	Distribution as per Registrations (As on 31.12.2022)	Percentage of Distribution
Micro	12617959	96.37
Small	435885	3.33
Medium	39854	0.30
Total	13093698	100.00

Source: Annual Reports of MSME, 2022-23

Figure 1



Source: Annual Reports of MSME, 2022-23

The table above depicts that the micro industry has the largest percentage of registrations i.e. 96 per cent, compared to other businesses. This demonstrates how small businesses, with their pitiful three per cent registration rate, have very little influence on MSME. Additionally, it has been noted that medium-sized businesses require more capital than other business types because they have the lowest Udayam registration in the MSMEs sector.

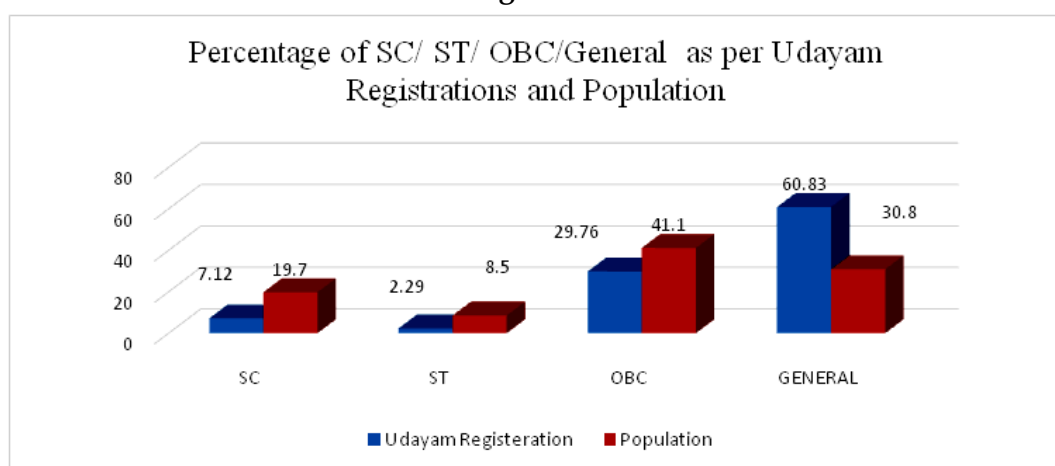
(ii) Distribution of SC/ST/OBC/General enterprises as per Udayam Registrations:

The term social justice means ensure equitable distribution of resources. The primary motto of government is to provide an equal opportunity to all social groups according to proportion of people living in the country. The following table provides a community-wise data as per Udayam Registrations.

Table 2: Distribution of SC/ ST/ OBC/General enterprises as per Udayam Registrations

Social class	Distribution enterprises as on 31.12.2022	Percentage of Distribution	Population %
SC	931643	7.12	19.70
ST	299173	2.29	8.50
OBC	3891979	29.76	41.10
GENERAL	7953959	60.83	30.80

Source: Annual Reports of MSME, 2022-23 and Population Census 2011

Figure - 2

Source: Annual Reports of MSME, 2022-23 and Population Census 2011

The aforementioned table shows the distribution of Udayam registration by social class and the proportion of the population per class according to the 2011 Population Census. It is observed that General category has the highest percentage of registration with MSME i.e. 60 per cent. On the other hand, the people belong to other backward classes have the second most impact in MSME with a registration of nearly 30 per cent. Together, scheduled tribes and scheduled castes make up about 10 per cent of the population. It is also evident that not all social classes were equally served by MSMEs, since the percentage of individuals from the SC, ST, and OBC social classes who have registered with the MSME sector is the lowest of all the categories. Therefore, additional efforts are needed to raise awareness among all social classes.

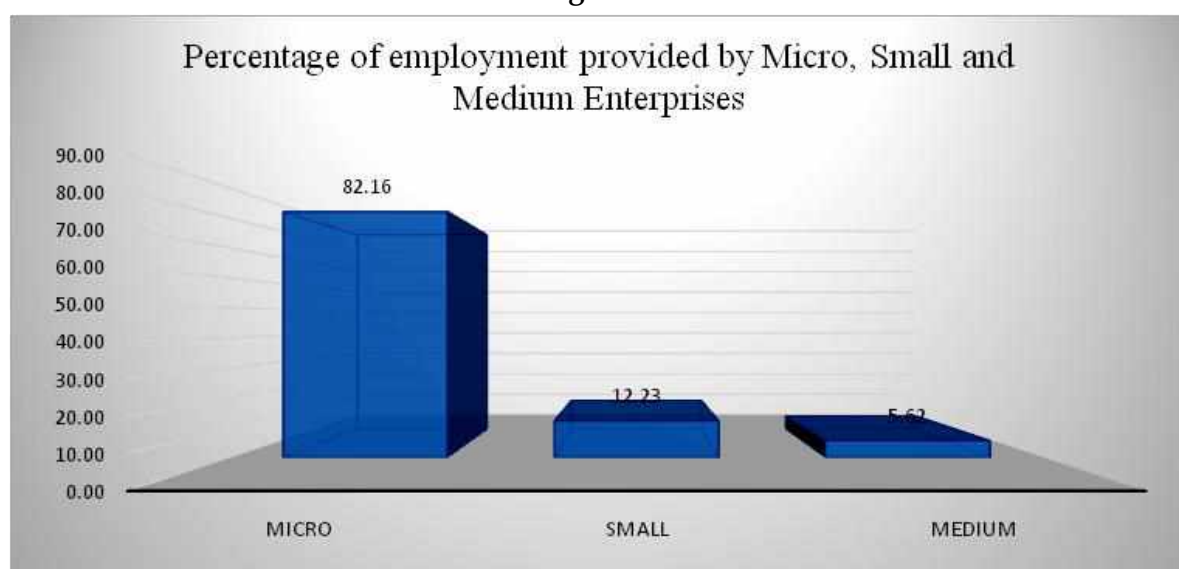
(iii) Distribution of employment provided by Micro, Small and Medium Enterprises:

The MSMEs sector provides various employment opportunities to Indian citizens. The following table provides the details for employment generation of Micro, Small and Medium enterprises in India.

Table 3: Distribution as per Employment creation in Micro, Small and Medium Enterprises

Industry	Distribution as per Employment Creation (as on 31.12.22)	Percentage
Micro	78262228	82.16
Small	11645727	12.23
Medium	5350926	5.62
Total	95258881	100.00

Source: Annual Reports of MSME, 2022-23

Figure-3

Source: Annual Reports of MSME, 2022-23

The aforementioned table illustrates the contribution of micro, small, and medium-sized businesses to the generation of jobs. According to the data, it is found that approximately 82 per cent of employment in the MSME sector is provided by the micro industry, which accounts for a larger share of employment than other industries. Small businesses account for 12 per cent of MSME sector employment, while medium-sized businesses account for over six percent.

Conclusion:

The foundation of Indian businesses is the MSME. According to the study, the micro, small, and medium-sized business sector has the highest percentage of Udayam registrations and employment creation among all business sectors through 2022. This

indicates that the micro industry will be important to the MSMEs sector in terms of both Udayam registrations and employment creation. Furthermore, it is noted that women participate in the MSME sector at a relatively low rate, with men dominating the gender in MSME firms. The General category leads the MSME registration among social classes. The Scheduled Tribes and Scheduled Castes have the lowest involvement in the MSME sector when it comes to the social class proportion of the population. Thus, in terms of registration and job generation, microbusinesses have a significant impact on society's economic self-reliance.

Additionally, research showed that the bulk of businesses in the MSME sector are Micro industries. According to the report, the government should focus more on small and medium-sized businesses and lend money to residents who want to start their own businesses, especially women who are running MSME businesses. The government should priorities assisting women who have graduated in order to improve the lot of women who were formerly employed as proxies by men for loans. In addition, by using panchayats to organise more awareness camps in rural regions, the government should encourage Scheduled Tribes and Scheduled Castes to work in the MSME sector.

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EFFECTIVENESS OF RISK MANAGEMENT IN THE MSME SECTOR: A SYSTEMATIC REVIEW

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Abstract

Enterprise Risk Management (ERM) has come a long way over the past two decades. While the concept has always existed, it has now emerged as an important function in the organizational management matrix. In North America and Europe, studies have been undertaken in the field of Enterprise Risk Management for the sustainability and growth of the MSME sector. Emerging markets and developing countries have also begun empirical research in this field in recent years. Though regarded as the engine for economic growth worldwide, the sector is highly susceptible to risks and is still observed to be vulnerable to business disruptions. In a highly globalized business environment, the impacts of several issues keep hampering businesses; their repercussions span rapidly across continents. In light of the above, this paper is an attempt to understand the effectiveness of ERM techniques deployed by MSMEs so as to avoid business disruptions and achieve their business objectives without deflection.

Keywords: MSMEs, Risk, Enterprise Risk Management(ERM), ERM Practices, Performanceetc.,

Introduction

The Indian MSME sector has always been an important pillar of the country's economy. Since India's economic liberalization in 1991, the sector has grown by leaps and bounds. Currently, it accounts for nearly 31% of the country's GDP and also accounts for nearly half of Indian Exports. Over the past decade, this sector has always outperformed the overall Indian economy in terms of growth. Still, the sector is not without its own set of problems. Predominantly family owned and conservative-minded, it is struggling to develop a robust business model (Annual Report 2021-22, MSME Ministry, Govt of India).

Growth rarely happens without problems and more often than not, the costs to be paid for growth are irrecoverable. For instance, industrial growth has almost always happened at the cost of the environment, no matter whether the economy is capitalistic or socialistic, rich or poor, developed or emerging. As the developed economies rely more and more on developing/emerging economies for their manufacturing and service-related activities, the technological, economic, and social disparity between them appears to be widening rather

than shrinking (Gao, 2001). Needless to say, these factors have also impacted the organizational management scenario to a very large extent.

ERM is now a globally accepted practice across economies for the sustainable growth of businesses. Over the past couple of decades, a lot of research has been conducted all over the world to build successful and sustainable business models among the MSMEs through it. Due to its potential to generate employment at lower costs and its ability to transform the rural economic landscape, governments have always tried to support this sector (Bhatnagar, 2013). Yet, it is observed to be the most susceptible sector to risks as well as business disruptions. As a result, ERM has emerged as an important area of focus for all stakeholders. The key to developing a robust ERM framework is its proper implementation. This research paper is an attempt to identify and review the existing literature pertaining to the effect of ERM practices on the performance of MSMEs.

Micro, Small and Medium Enterprises (MSME) sector has emerged as a highly vibrant and dynamic sector of the Indian economy over the last five decades. MSMEs not only play crucial role in providing large employment opportunities at comparatively lower capital cost than large industries but also help in industrialization of rural & backward areas, thereby, reducing regional imbalances, assuring more equitable distribution of national income and wealth, the process of globalization is an inevitable phenomenon in human history which has been bringing the world closer since the time of early trader and exploration through the exchange of goods, products, information, jobs, knowledge and culture.

The Micro, Small and Medium Enterprises Development (MSMED) Act was notified in 2006 to address policy issues affecting MSMEs as well as the coverage and investment ceiling of the sector. The Act seeks to facilitate the development of these enterprises as also enhance their competitiveness. It provides the first-ever legal framework for recognition of the concept of “enterprise” which comprises both manufacturing and service entities. It defines medium enterprises for the first time and seeks to integrate the three tiers of these enterprises, namely, micro, small and medium. The Act also provides for a statutory consultative mechanism at the national level with balanced representation of all sections of stakeholders, particularly the three classes of enterprises; and with a wide range of advisory functions.

The Micro, Small and Medium Enterprises (MSME) sector has emerged as a highly vibrant and dynamic sector of the Indian economy over the last five decades. It contributes significantly in the economic and social development of the country by fostering entrepreneurship and generating largest employment opportunities at comparatively lower capital cost, next only to agriculture. MSMEs are complementary to large industries as ancillary units and this sector contributes significantly in the inclusive industrial development of the country. The MSMEs are widening their domain across sectors of the economy, producing diverse range of products and services to meet demands of domestic

as well as global markets. An overview of the growth and performance of MSME Sector.

India is not only rural but also an agricultural country where every eight out of ten live in rural areas and every seven out of ten depend on agriculture. This fact is reinforced by its unchanging occupational structure ever since. India is facing myriad problems like marginalization of cultivators, increasing casual labour and consequently unemployment, underemployment and poverty. To create employment in rural areas and improve the economic conditions of rural poor, we need rural industrialization. In India the rural dwellers, who constitute more than 70 per cent of India's population are facing the acute problems of unemployment and under-employment. The miseries of these people led Mahatma Gandhi to come out with the 'Back to the Village' ideology with its emphasis on uplifting the poor. To stress the importance of the development of the rural areas and people who inhabited therein, he said, "Swaraj has no meaning for the millions if they do not know how to employ their enforced idleness. Mahatma said that, "The economic development is meaningful if aimed at the lifting up of the small peasant and converting the small producer himself into an active participant in productive activity. Therefore, he said that the objective of real development means the development of the rural people". Rural industries mainly cover the gamut of unorganized traditional sector, which is known as the Village and Small Industries (VS) sector.

Significance of small-scale industry lies in offering alternative employment opportunities to the rural masses, using local resources and limited capital and catering to the local markets. Since independence, India has had strong policies to promote the small-scale industrial sector: it is labor intensive and thus creates more jobs, it contributes to decentralized industrial development and the units are flexible and able to quickly reorient themselves to emerging demands. Small Scale Industries (SSIs) today account for 40 per cent of the industrial production, 35 per cent of the total exports, and employs almost 17 million people in 3.2 million industrial units. They are involved in food processing, hosiery and garment, and leather and leather products. All these sectors are globally competitive and have a high export earning potential. The share of small enterprises directly and indirectly is estimated to be 60 per cent of the total manufactured exports of India.

Objectives of the Study

The main objective of this study is to pinpoint the advantages derived from the effective implementation of ERM as well as the challenges involved in it that are relevant to a broader area of study, viz Effectiveness of Risk Management in the MSME Sector. Overall, the objectives can be listed as:

1. To understand the ERM processes in the MSMEs
2. To study their impact on the ERM practices
3. To identify and review the existing literature pertaining to the impact of ERM on the performance of MSMEs

Research Methodology

This study is based on secondary data and the outputs derived are based largely on the studies undertaken in recent years. As very little research is undertaken in India in this field and also in keeping with the rapid globalization of the MSMEs, studies from abroad obviously form the focus of this study. The major share is claimed by papers from emerging economies in recent years. The biggest advantages of studying recent papers include:

- a) They cover recent risks like COVID-19 and Climate Change
- b) They give insights into the assessment, evaluation, and treatment with the latest techniques
- c) They are recent enough so the issues raised therein are still prevalent

From among 60 odd papers, 30 were selected for their content, topicality, and relevance. I have included papers from North America, Europe, Asia, Africa, and China. Interestingly, the biggest contribution comes from Southeast Asia, Africa, and the Czech Republic with Malaysia, Iran, and China being the biggest contributors from Asia. As a result, the core of these studies is dominated by the norms followed by export aspiring emerging economies as strict regulations dictated by developed economies are more often than not the main reason for MSMEs to engage in ERM practices.

Having selected the papers, the next task was to tabulate them so as to have an overview, thereby giving a snapshot of the literature along with the chronology and relevance. The literature having direct relevance to the topic was categorized with the relevance as High, the ones which address a part of the topic were categorized as Medium and those that formed the context or background of the study were categorized as Low. Categorization was followed by a detailed study of the literature followed by its analysis. The analysis is aimed at deciphering the effectiveness of ERM practices in the respective researchers' areas of study – both geographical and scholastic. Through this, I have also attempted to follow the evolution of ERM and its effectiveness over the past couple of decades. This analysis is presented in the subsequent chapter followed by the conclusions derived therefrom.

Enterprise Risk Management (ERM) is an integrated process to predict, mitigate, handle, and reduce the impact of various risks (D'Arcy, 2001). All experts agree that risk is the product of the Frequency of Occurrence of an event and the Severity of its Impact (Henschel, 2008). Lately, there has been a lot of research in ERM in Europe and North America; however, in spite of the crucial role played by MSMEs in industrial, economic, and social development, little research has been undertaken in developing countries toward building a sustainable model for MSMEs' growth and success (Kanu, 2021).

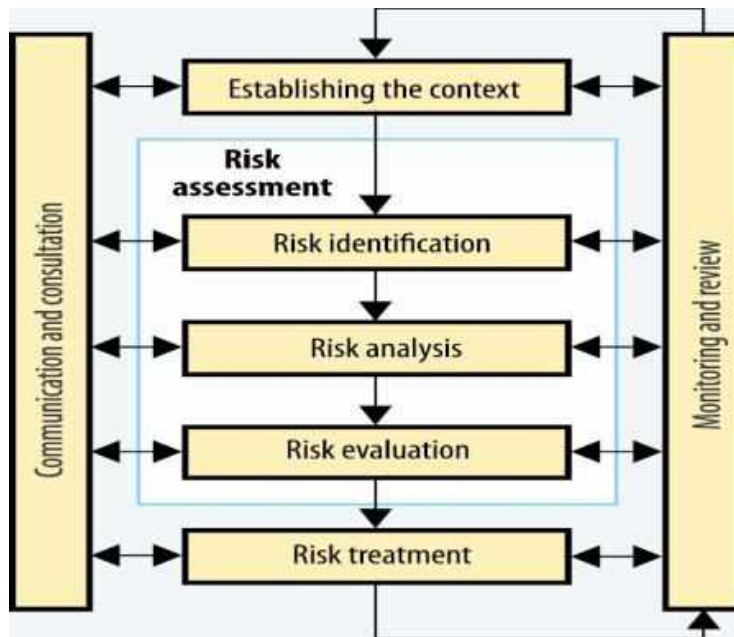


Figure 1: Risk Management Process

With the changing nature of risks, the ERM process has also undergone a lot of changes. This obviously is a continuous process as more and more challenges keep emerging every now and then.

Emerging risks are the risks that may develop or are detected anew; these are the risks that are difficult to quantify or may culminate into huge losses. Frequent occurrences of natural calamities & disasters, climate change, product/service liabilities, genetic engineering, and nanotechnology are seen as emerging risks (Kapoor, 2018). Application of Artificial Intelligence, monitoring and managing the Internet of Things, high-risk innovation, vigilance, and flexibility to complement prevention is seen as the major areas to be focussed on in the ERM process over the coming years. Disruption risk, Reputation risk, and Collective risk management due to a networked economy as the emerging areas of focus in ERM. It is also observed that the advent of technology in decision-making and behavioral aspects is a new area of focus related to ERM in the future (Deloitte, 2021). Data-driven risks, the involvement of top management in ERM decision-making, and ever-increasing regulatory compliance requirements have a bigger role to play in organizations (Unnikrishnan, 2022).

As this study concentrates on the effectiveness of ERM in the MSME sector, I have zeroed in on the literature giving insights into that aspect of ERM. I have selected studies that show the evolution of ERM, the implementation strategies thereof, and necessarily depict the effectiveness achieved therefrom. Thus, the selected literature has rendered a lot of insights into the topic under study. The major gap observed herein is the lack of literature pertinent to the Indian MSME sector. As mentioned earlier, the purpose of this

study is to pinpoint the papers for the broader study in analyzing the effectiveness of ERM practices. As the data used are secondary, papers were selected on the basis of the depth of their content, their relevance to this study, and their originality. It was pertinent that the selected literature covers the impact of the ERM process.

In recent years, studies have shifted towards more of an objective-based approach. The importance of managing risks in the global supply chain has also come under the scanner. Mitigation of risks in the supply chain was found to lead directly to an improvement in an organization's performance. It is also seen as an opportunity for MSMEs to have robust growth (Hariharan, 2018). As for the comprehensive management of risks, a balanced scorecard was proposed and an organization's response to risks, communication & monitoring, and setting objectives for ERM was seen as a critical factor in it. The internal environment within an organization was found to play a major role in the effectiveness of ERM. The age of a firm seemed to have a significant impact on it (Suttipun, 2018). The emergence of third-world countries as manufacturing hubs led to the holistic implementation of ERM among those economies. Here, the role of financial literacy on the part of entrepreneurs came to the fore as it was found to have a strong correlation with the effectiveness of ERM and hence found to result in a competitive advantage for them in an increasingly competitive business environment (Yang, 2019). ERM adoption helps improve internal decision-making and operational efficiency which leads to improved business performance. However, integrating ERM with the organization's overall functioning and ownership of risks are major obstacles in this process. Hiring qualified staff and responding to changes in the business environment play a major role in this (Adeyele, 2019). Thus, it can be safely said that ERM has a positive and significant effect on SME performance. The objective setting has a significant effect on SME performance, while the internal environment, identification of risks, risk assessment, risk treatment, operational control, information & communication, and monitoring were found to make an insignificant impact. This is largely because ERM in MSMEs is yet to mature compared to larger organizations (Yakob, 2019). Most entrepreneurs usually have an understanding of the risks involved in their respective businesses and the most significant gap exists in amalgamating ERM with the overall functioning. Internal factors including ERM have a positive impact on an organization's performance (Hanggraeni, 2019). In small economies, scarcity of capital and credit facilities, a dearth of skilled workers, raw materials-related issues, poor infrastructure, an acute shortage of manpower with the required skills, and the haphazard use of the latest and dynamic technologies were observed as the barriers to MSME performance. The mitigating factor for this was found to be the techno-financial literacy on part of all the ERM stakeholders (Kalathunga, 2020). The impact of intangible assets and intangible factors on the performance – financial as well as non-financial - of ERM-practicing MSMEs is an interesting factor that cannot be ignored. ERM

itself can be seen as an asset for an organization as it is highly organization specific, not replicable, and not saleable (Saiedi, 2020). It is important to note that ERM's effect on organizational performance depends on the development of risk culture and strategic planning. There is no substantial evidence as of now supporting a linkage among these factors (Kanu, 2021). Contemporary studies in this area continually concentrate on bridging the several gaps observed by previous researchers. Even for start-ups, it was recommended to have a prior analysis and formulation of their Risk Matrix in advance and to have strict monitoring of the same over the first five years so as to ensure the existence of a sustained business module (Ghazali, 2022). The relationship between internal environments, Monitoring, Event Identification, Risk Response, and Risk Assessment all significantly influenced ERM at a much higher level. The findings indicated that an enterprise's effort in detecting and managing risks has a substantial effect on the performance of SMEs (Ntare, 2022).

Conclusions

Based on the study of selected available literature, many interesting findings have emerged. It can definitely be concluded that ERM does have a positive impact on the performance of MSMEs. There are many significant gaps that entrepreneurs and stakeholders need to bridge so as to achieve their business objectives without deflection.

Broadly, the effective implementation of ERM is observed to result in the following advantages to the MSMEs:

- ❖ Sustained business module
- ❖ Competitive advantage
- ❖ Improved profitability
- ❖ Improved operational efficiency
- ❖ Better evaluation by financial institutions
- ❖ Reduction in direct and indirect cost of risks
- ❖ Efficient operational and strategic decision making
- ❖ Improved confidence levels among the customers

However, the effective implementation of ERM is a challenging task. The major challenges observed were:

- ❖ Entrepreneurs' perception and understanding of ERM
- ❖ Lack of skilled manpower
- ❖ Identifying and responding to risks
- ❖ Integrating ERM with the organization's overall functioning
- ❖ Setting functional ERM objectives

- ❖ Stringent monitoring of ERM processes
- ❖ Technological upgradation
- ❖ Detecting Potential Risks

In all, ERM is a well-accepted practice that has evolved over the past decades. It has percolated well across emerging economies and the emergence of new challenges, new markets, and new products have helped the process mature. A large number of gaps continue to exist and will always remain; however, the benefits certainly outweigh the challenges. This study also had its limitations. Firstly, it is reliant on secondary data, hence the intention of the authors may not match the objective of the study. Secondly, not all the literature covered MSMEs and certainly not all of it covered the MSMEs in emerging economies. As a result, there remains ample room for further studies in this area.

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SUSTAINABLE DEVELOPMENT THROUGH MSME'S: A PATHWAY TO SELF-RELIANT INDIA: INTERNET OF THINGS FOR PERISHABLE INVENTORY MANAGEMENT SYSTEM

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Abstract:

The advancement of Industry technologies has affected every aspect of supply chains. Recently, enterprises have tried to create more value for their businesses by tapping into these new technologies. Warehouses have been one of the most critical sections in a supply chain affected by Industry technologies. Methods: By recognizing the role of inventory management in a supply chain and its importance, this paper aims to highlight the impact of IoT technologies on inventory management in supply chains and conducts a comprehensive study to identify the research gap of applying IoT to inventory management. Results: Our findings show that the research on this topic is growing in various industries. Conclusions: Upgrading a supply chain into an integrated supply chain is beneficial. Given the changes in fourth-generation technology compared to previous generations, the approach of conventional inventory replenishment policies seems not responsive enough to new technologies and is not able to scope with IOT systems well.

Keywords: MSME, Inventory management, Internet of Things, Perishable, Warehouse management

Introduction

In the pursuit of fostering sustainable economic growth and achieving self-reliance, the role of Micro, Small, and Medium Enterprises (MSMEs) cannot be overstated. These enterprises form the backbone of India's industrial landscape, contributing substantially to employment generation, GDP growth, and overall socio-economic development. As India strides towards a self-reliant future, harnessing the potential of these enterprises through innovative technological applications becomes imperative. One such transformative technology is the Internet of Things (IoT), presenting a unique opportunity to propel sustainability and efficiency in the management of perishable inventory within the MSME sector.

This article elucidates the symbiotic relationship between sustainable development, MSMEs, and the application of IoT in perishable inventory management. It explores how

leveraging IoT technologies can empower MSMEs, improve their sustainability quotient, and subsequently contribute to India's vision of self-reliance. By delving into case studies, best practices, and innovative IoT solutions, this research aims to shed light on the potential of a technologically empowered MSME sector in fostering sustainability and self-sufficiency, ultimately driving the nation towards a brighter, more prosperous future.

Inventory Management

Micro, Small, and Medium Enterprises (MSMEs) are the backbone of the Indian economy, contributing significantly to employment, industrial output, and exports. To achieve sustainable development and foster self-reliance, it's imperative to empower MSMEs through innovative technologies like the Internet of Things (IoT) for efficient inventory management, especially in handling perishable goods.

1. Importance of Efficient Perishable Inventory Management

Minimizing Food Waste: Perishable goods like food and pharmaceuticals are prone to spoilage. Efficient inventory management helps in minimizing waste by ensuring optimal stock levels and timely utilization, contributing to sustainability goals.

Energy and Resource Efficiency: Proper inventory management reduces the need for excessive energy and resources to maintain and dispose of excess perishable inventory, aligning with sustainability objectives.

Financial Savings: Optimizing perishable inventory helps in reducing carrying costs and capital tied up in excess stock, leading to financial savings and increased profitability for MSMEs.

2. Implementing IoT for Perishable Inventory Management

Real-time Monitoring and Tracking:

- ❖ Utilize IoT sensors to monitor temperature, humidity, and other relevant parameters in real-time.
- ❖ Transmit data to a central system, allowing for immediate responses and adjustments to ensure optimal storage conditions.

Predictive Analytics:

- ❖ Apply advanced analytics on the collected data to predict potential issues or spoilage events based on historical patterns and environmental conditions.
- ❖ Optimize stocking levels and order quantities to align with demand patterns, reducing excess inventory.

Remote Control and Automation:

- ❖ Integrate IoT devices with inventory control systems to automate processes such as reordering and adjusting storage conditions remotely.
- ❖ Enhance responsiveness to market demands and unexpected changes, minimizing the risk of product spoilage.

Supply Chain Optimization:

- ❖ Integrate IoT data across the supply chain, enabling stakeholders to collaborate and make informed decisions to streamline processes and reduce inefficiencies.

Compliance and Quality Assurance:

- ❖ Utilize IoT for compliance with regulatory standards by monitoring and recording storage conditions, ensuring quality and safety requirements are met.

Internet of Things

Internet of Things (IoT) was coined by one of the executive directors of the AutoID Center. The idea of network devices has led to the idea that machines could work dynamically as an integrated system without the interrelated interference of a human interface which may lead to errors or time wasted. This method of making the machines smart machines introduces a picture of manufacturing and production systems, like the smart factory. The IoT driver receives much attention as one of the Industry modules in this idea. It is a robust communication between the physical and digital world used in different areas to make goods, operations, and services smarter in the value chain by offering new potential solutions to alter their functions. Internet-based wireless technology connects all the devices together for interactions that lead to smarter functions. System awareness of the environment is also possible via sensors, where devices transmit a large amount of data in real time. IoT can have a significant effect on the supply chain in the effective use of resources, transparency and visibility of the entire supply chain, real-time management of the supply chain, optimizing the supply chain, and increasing agility of the supply chain.

1. IoT Applications

Noting the definition of IoT, its applications are broadly imaginable in many areas such as safety, security, sustainability, etc. In fact, the applications of IoT technologies are everywhere around us, such as smart homes, smart cities, self-driven cars, IoT retail shops, farming, wearables, telehealth care, hospitality, smart supply chain management, etc.

2. Benefits of IoT-based Perishable Inventory Management System Reduced Wastage:

Real-time monitoring of perishable goods helps in maintaining optimal storage conditions, reducing spoilage, and minimizing wastage, ultimately leading to economic and environmental sustainability.

Enhanced Shelf Life:

Precise monitoring and control of environmental parameters such as temperature and humidity extend the shelf life of perishable items, improving their quality and market value.

Cost Efficiency:

Efficient inventory management through IoT leads to cost savings by minimizing excess inventory and streamlining supply chain processes.

Sustainable Resource Utilization:

By optimizing inventory levels, IoT enables MSMEs to utilize resources such as energy and storage space more efficiently, contributing to sustainability goals.

Market Competitiveness:

Improved product quality and reduced wastage enhance the competitiveness of MSMEs in the market, attracting more customers and potential business partners.

Data-Driven Decision-Making:

Access to real-time and historical data allows MSMEs to make data-driven decisions, which can significantly impact their overall operations and growth.

Perishable

Sustainable development through Micro, Small, and Medium Enterprises (MSMEs) is a critical pathway to achieving self-reliance in India. MSMEs play a pivotal role in fostering economic growth, generating employment, promoting innovation, and reducing regional disparities. When focusing on perishable inventory management systems using the Internet of Things (IoT), we can significantly enhance the sustainability and efficiency of these enterprises.

Perishable inventory, such as food, pharmaceuticals, and other time-sensitive products, presents unique challenges in supply chain management. Effective management is crucial to reduce waste, improve product quality, lower costs, and ensure that products reach consumers in optimal condition. Here's how IoT can contribute to sustainable development in this context:

- ❖ **Real-time Monitoring and Data Analytics:** IoT sensors can monitor various parameters like temperature, humidity, and freshness of perishable products in real-time. This data can be analyzed to make informed decisions, optimize storage conditions, and reduce waste
- ❖ **Reducing Food Waste:** IoT-enabled inventory management systems can alert stakeholders when products are approaching their expiry or spoilage date. This helps in timely distribution or discounting, reducing food waste and promoting sustainable consumption.
- ❖ **Energy Efficiency and Cost Savings:** IoT can help optimize energy consumption in storage facilities. Automated systems can regulate temperature and humidity based on real-time data, reducing energy waste and operational costs
- ❖ **Enhanced Supply Chain Visibility:** By incorporating IoT, stakeholders across the supply chain can have real-time visibility into the location and condition of perishable goods. This enables better coordination, shorter delivery times, and reduces delays and losses.
- ❖ **Improved Quality and Safety:** IoT can continuously monitor the quality and safety of perishable products, ensuring compliance with regulatory standards and enhancing consumer trust. Prompt alerts for deviations from acceptable parameters enable timely corrective actions.
- ❖ **Remote Monitoring and Management:** IoT allows for remote monitoring of inventory, enabling businesses to manage and track perishable items even in remote or inaccessible locations. This facilitates more efficient operations and inventory control.
- ❖ **Optimized Resource Utilization:** By using IoT data analytics, MSMEs can optimize resource utilization, such as determining the most efficient transportation routes or the best locations for storage facilities, thereby minimizing environmental impact.
- ❖ **Encouraging Technological Adoption among MSMEs:** Implementing IoT solutions in perishable inventory management can encourage MSMEs to embrace technology, fostering innovation and productivity within the sector.

Warehouse Management Warehouse Management in MSMEs

- ❖ Explanation of the role and significance of effective warehouse management for MSMEs.
- ❖ Overview of challenges faced by MSMEs in warehouse management.

IoT Applications in Warehouse Management

- ❖ How IoT can be applied to improve efficiency and productivity in warehouse operations.
- ❖ Examples of IoT-enabled features like real-time tracking, automated inventory control, and predictive maintenance.

Benefits of Implementing IoT in Warehouse Management Improved Inventory Accuracy and Management

- ❖ How IoT technologies enhance inventory tracking, reduce errors, and streamline stock replenishment.

Enhanced Operational Efficiency

- ❖ Streamlining of processes and optimization of resources through IoT-driven automation and data analytics.

Cost Savings and ROI

- ❖ How IoT implementations can lead to cost savings in terms of labor, energy, and resource optimization.

Components of an IoT-enabled Warehouse Management System Sensors and Devices

- ❖ Overview of various sensors (e.g., RFID, temperature sensors, motion sensors) and devices used in IoT-enabled warehouse management.

Connectivity Solutions

- ❖ Explanation of communication protocols (e.g., MQTT, CoAP) for data transmission between devices and the central system.

Cloud Computing and Data Analytics

- ❖ How cloud platforms and data analytics play a vital role in processing and analyzing data collected from IoT devices.

Implementation Challenges and Solutions Security and Privacy Concerns

- ❖ Addressing security issues related to data privacy and unauthorized access.

Integration and Scalability

- ❖ Strategies to seamlessly integrate IoT solutions into existing warehouse management systems and scale as needed.

Case Studies and Success Stories

Case Study 1: IoT in Inventory Management

- ❖ A detailed case study showcasing how an MSME improved inventory management using IoT.

Case Study 2: Automated Warehouse Operations

- ❖ Highlighting a successful implementation of IoT to automate various warehouse operations.

Future Trends and Advancements

IoT Trends in Warehouse Management

- ❖ Discussing upcoming trends in IoT that could shape the future of warehouse management for MSMEs.

Integration with Emerging Technologies

- ❖ Exploring potential synergies between IoT and emerging technologies like AI, blockchain, and edge computing.

Conclusion

In conclusion, leveraging Micro, Small, and Medium Enterprises (MSMEs) for sustainable development is indeed a pathway to a self-reliant India. When we specifically integrate the Internet of Things (IoT) into the management of perishable inventory within MSMEs, we unlock significant potential for enhancing efficiency, reducing waste, and promoting sustainability.

IoT technology allows for real-time monitoring and tracking of perishable inventory, ensuring optimal storage conditions and minimizing losses due to spoilage. This translates to cost savings for MSMEs, contributing to their economic viability and overall sustainability. Moreover, by reducing waste, we contribute to a more sustainable and environmentally conscious approach to business operations.

Furthermore, integrating IoT into perishable inventory management in MSMEs can enhance supply chain efficiency. Collaborative efforts involving government support, industry partnerships, and technology advancements are crucial in overcoming these obstacles and ensuring widespread adoption of IoT in MSMEs. In conclusion, the fusion of sustainable development strategies through MSMEs and the integration of IoT for perishable inventory management holds immense potential for fostering a self-reliant India. This symbiotic relationship can drive economic growth, minimize environmental impact, and enhance the resilience and sustainability of the nation's business landscape.

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A STUDY ON INNOVATION AND PRODUCT DEVELOPMENT IN INDIA

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Abstract :

Innovation is a critical driver of economic growth and competitiveness in the global marketplace. This study explores the landscape of innovation and product development in India, a country renowned for its vibrant technology sector and entrepreneurial spirit. The research aims to shed light on the factors influencing innovation, the challenges faced by innovators, and the impact of innovation on the nation's economy.

Keywords: *Innovation, Product development, Ecosystem, Government Policies, International collaborations.*

1. Introduction:

Innovation and product development play a pivotal role in the economic growth and competitiveness of nations, and India is no exception. As one of the world's fastest-growing economies, India has been steadily advancing its position as a global innovation hub. This study aims to explore the dynamic landscape of innovation and product development in India, shedding light on the key drivers, challenges, and future prospects within this realm.

In conclusion, this study seeks to provide a comprehensive analysis of the innovation and product development landscape in India, offering insights that can inform policymakers, businesses, and entrepreneurs alike. By understanding the current dynamics and identifying potential areas for improvement, we aim to contribute to the ongoing discourse on how India can continue to harness its innovative potential for sustainable economic growth.

2. Objectives of the Study:

- ❖ To study the benefit of innovation and product development.
- ❖ To identify the challenges faced by the innovation and product development.
- ❖ To analyse the product development that can be adopted by the business to improve it.
- ❖ To give suggestions and solution.

3. Research Methodology

Secondary data refers to information that has been collected by someone for different purposes and it is used by researchers in their own studies and analysis. The paper is exploratory in nature and based on available secondary data such as books, journals, magazines and other internet sources.

4. Benefit of Innovation and Product Development:

1. Save Money:

According to a report by Fundera, it is estimated that around 20% of the new businesses fail in the first year. This is due to improper market research, incompetence, and economically viable business models. The new product development process is designed to eliminate these risks from your business by testing the potential of your idea and the current market situation.

2. Innovation and Idea Generation:

Developing and nurturing a culture of innovation is crucial to the commercial growth of the business and its staff. The new product development process is the promoter and driver of new ideas for your business. Having a framework to test your new product's viability will naturally lead to its implementation.

3. Strengthen and Formalize the Concept Development Process:

Just like a new business, you need to properly define your product concept at the beginning of the new product development life cycle. It must be done by considering the anticipated consumer, and hence you must describe the product in meaningful consumer terms.

The typical steps to be followed are:

- ❖ A product concept is pitched to senior staff or stakeholders in the business.
- ❖ The macro idea is approved or shelved depending on its merit.
- ❖ If approved, the product is passed for development into the alternative product concepts, often branching out to target the different groups.

4. Concept Testing:

The above-mentioned concept development process is best paired with the concept testing process. Once the idea is finalized, it is necessary to test it against the market condition and target it.

5. Marketing Strategy:

The new product development process can help with marketing strategies for your product. It is a natural course of action once your concept has been designed and tested.

You can turn this into a marketing strategy with the intel you collected in the development phase. This process is then simplified and accelerated. The three critical areas of your marketing strategy include:

- ❖ Identifying the target market and different ways to connect with them.
- ❖ Analyzing the metrics such as product price, distribution method, first year's marketing budget.
- ❖ Projected long-term sales and profit margins.

5. Challenges Faced by the Innovation and Product Development:

1. Identifying your customer's pain points.
2. Striking the balance between immediate requirements and long-term objectives.
3. Creative block.
4. Ideas' generation.
5. Creating the right product architecture.
6. Assembling the right team.
7. Creating the right product architecture.
8. Adapting the product vision.
9. Working with remote teams asynchronously.
10. Effective workflow management.

6. Practises that can be Adopted by the Business to Improve it:

1. Identify the needs of the target audience.
2. Use market research and consumer feedback for the product effectively.
3. Communicate across your company for more knowledgeable feedback and insights.
4. Make use of available frameworks for the new product development process. Never develop a new product without a system in place first.
5. Validate your product concept soon in the NPD cycle. For some products, it might include the "soft launch" in which you test the product in small parts before full-scale market release.
6. Invite your cross-functional team into the brainstorming and ideation stage. Great insights for your market can come from everywhere.
7. Set realistic development timelines.
8. Concentrate on the ideas your company has both the resources and the expertise to execute.

7. Suggestions and Solution of Innovation and Product Development:

1. **Market Research:** Conduct thorough market research to understand customer needs and preferences. Use this data to identify gaps in the market and potential areas for innovation.
2. **Cross-Functional Teams:** Create cross-functional teams that include members from various departments such as marketing, engineering, and design. This diversity can lead to more creative ideas.
3. **Customer Feedback:** Collect feedback from customers regularly to gain insights into their pain points and desires. Use this feedback to refine existing products or develop new ones.
4. **Prototyping:** Develop prototypes or minimum viable products (MVPs) to test ideas quickly and gather user feedback before investing heavily in production.
5. **Collaboration:** Partner with other companies, startups, or research institutions to access new technologies and expertise that can drive innovation.
6. **Sustainability:** Consider environmental sustainability in product development. Eco-friendly products are increasingly in demand.
7. **Technology Integration:** Incorporate emerging technologies like AI, IoT, or blockchain to enhance product functionality and create new value propositions.

8. Conclusion:

In conclusion, innovation and product development are essential drivers of success in today's competitive business landscape. Throughout this project, we have explored various strategies, tools, and methodologies for fostering innovation and managing the product development process effectively. Key takeaways from this project include the importance of customer-centric design, cross-functional collaboration, and continuous feedback loops in the product development cycle. We have also emphasized the significance of staying agile and adaptable in response to changing market dynamics.

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Online Resources:

1. Harvard Business Review's Innovation section (<https://hbr.org/topic/innovation>)
2. Stanford University's d.school (Institute of Design) website for design thinking resources (<https://dschool.stanford.edu/>)
3. MIT Sloan Management Review's articles on innovation (<https://sloanreview.mit.edu/tag/innovation/>)

THE ECONOMIC IMPACT OF MSMEs ON INDIA: INVESTING IN INDIA'S FUTURE

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Abstract

MSMEs' contribution will be integral in making India achieve its lofty goals of becoming a developed nation by 2047. The MSME sector, which accounts for 30% of the nation's GDP, has a huge potential to propel economic growth. In India's objectives for economic growth, manufacturing MSMEs in particular will play a vital role. According to a PIB announcement, the MSME sector in India supports over 100 million jobs, generates over 40% of the nation's exports and accounts for 45% of manufacturing output. With 63.4 million units distributed throughout the nation, the sector accounts for 6.11% of the GDP from manufacturing and 24.63% of the GDP from services. He continues by saying that acquiring quality human capital is also essential. "We require government assistance to increase awareness and raise money. Without scaling up, MSMEs won't be able to pay better, and until then, they won't be able to attract the proper personnel either. Given the importance of this industry, funding for projects aimed at skilling up and upskilling workers will be crucial for MSMEs to develop in manufacturing in the future. Additionally, in order to remain competitive and survive as an organization, being open to innovation will become crucial. India cannot achieve its goals until even the tiniest MSME joins the entire chain. To get the entire network up and operating, the larger players also rely on their smaller suppliers. The ultimate objective could be difficult to achieve for many reasons. However, the fundamental tenet is that for growth to eventually occur, every link in the chain must operate successfully and efficiently.

Keywords : *Micro, Small and Medium Enterprises, Udyam Registration Portal, Gross Domestic Product*

Introduction

The manufacturing sector's share of the economy has stayed constant over the past 20 years at 17% of GDP. Mining, quarrying, power, and gas make up 10% of the industry, which makes up a total of 27%. The rates in several East Asian economies, which range from 25 to 35 percent, are much higher than this. Over the past ten years, manufacturing has grown at an average annual pace of 7%. Over the following ten years, a 12% growth rate is anticipated. Manufacturing has increased at a pace of 9 to 10% annually since 2003. According to economists, manufacturing will reach its goal over the next ten years if the

government implements the right legislative changes and the sector ramps up its productivity-improving efforts. The National Manufacturing Competitiveness Council (NMCC) was established with this purpose in mind.

The service sector is India's main economic sector. At current exchange rates, the Gross Value Added (GVA) for the services industry in 2018–19 is projected to be 92.26 lakh crore INR. 54.40 percent of India's total GVA, which is 169.61 lakh billion rupees, is produced by the services industry. The industry generates 50.43 lakh crores in GVA and contributes 29.73 percent of the GDP. 15.87 percent of the total is made up of the agriculture and related sectors. It's important to note that over 53% of the workforce is employed in the agriculture sector, with the service and secondary industries employing only 29% and 18% of the workforce, respectively.

MSMEs in India

Micro, Small, and Medium-Sized Enterprises (MSMEs) play a critical role in India, which has the potential to become one of the largest growth engines in the world. The second-largest employer after agriculture is MSMEs. According to the results of the 73rd National Sample Survey (NSS), which was carried out by the National Sample Survey Office, Ministry of Statistics & Programme Implementation, the country's non-agricultural MSMEs with unincorporated status employed an estimated 11.10 crore people in various economic activities between 2015 and 2016. According to the World Development Indicator database, India's economic contribution increased from 2.6% in 2014 to 3.2% in 2017. Additionally, according to the International Monetary Fund's October 2018 database, the Indian economy will expand at a rate of 7.4% in 2019, which is faster than China's, and will have the fastest growth in 2018–19 and 2019–20. The urbanization process, shifting consumer preferences, and the expansion of the MSME sector are the reasons underlying this increase.

According to me, the MSME sector is not an industry as the government defines it; rather, all MSMEs should be viewed as enterprises, and the people running them as entrepreneurs. There is no denying that the government has taken a number of actions to encourage private sector MSMEs to create jobs for the nation, expedite a number of projects requiring significant investment, and increase public spending on programs. The government has developed programs like Make in India, Skill India, and Digital India, which are projected to increase the job base. Additionally, the government has launched the MUDRA and START UP initiatives to support self-employment. However, a number of difficulties continue to pose as significant obstacles to the expansion of MSMEs.

For the MSME sector to have a solid infrastructure in place, it is necessary to seize the chances. To close the gaps and get over the obstacles, the government will need to make significant efforts. This is only achievable if, in addition to the expansion of IT

infrastructure, business innovations, and the adoption of improved MSME laws, the framework for growth has an increasing amount of domestic participation. For all the stakeholders, there needs to be a regulatory compliance approach as well as an incentive-based one.

MSMEs in Tamil Nadu

Undoubtedly, Tamil Nadu is a land of opportunity, particularly for MSMEs, who generate over 8,000 different goods in the state. Tamil Nadu has the most non-farm units and makes up about 15.24% of all microbusinesses in India. According to a report from the Ministry of Statistics and Programme Implementation, Tamil Nadu is the state with the most factories and industrial workers, and its estimated Gross State Domestic Product (GSDP), which will increase at a CAGR of 11.27 percent from 2015–16 to 2022–23, will be \$320.27 billion. With over 10 lakh units, Tamil Nadu also boasts the most female entrepreneurs in India.

Tamil Nadu's MSMEs are mostly involved in the coir, automotive, food processing, textile, footwear, and leather industries. The state's GDP is mostly derived from the manufacturing sector, which accounts for more than 40% of the total. The manufacture of leather and textiles, IT & ITES, auto components, electronics, biotechnology, and healthcare are key additional sectors where MSMEs are common. With almost USD 46.46 billion, the state's total exports currently hold the third-largest share of all exports nationwide. The state of Tamil Nadu offers good opportunities for businesses to grow. In addition to this, the client base has a preference for native products including fruits, dairy, vegetables, spices, and fowl. The manufacture of electronics and cellphones is also heavily concentrated in Tamil Nadu, which likewise has great infrastructure.

Additionally, the state has drawn recognition for serving as a hub for the manufacturing of auto parts thanks to the presence of reputable engineering businesses. MSMEs in Tamil Nadu hence have enormous market potential to expand their businesses. More than 8,000 products are offered by MSMEs in Tamil Nadu, ranging from dairy goods to pharmaceuticals. The fact that the state's MSME sector leads the nation in the number of factories is another outstanding accomplishment. The sector is also expanding rapidly and has fantastic future potential. The following is a list of some of Tamil Nadu's key industries.

Objectives of the Study

- ❖ To examine the role of MSME Sector.
- ❖ To analyse the total number of persons employed in MSMEs registered under Udyam registration portal.

- ❖ To identify the importance of Micro, Small and Medium Enterprises (MSME) in India.
- ❖ To list out the issues and challenges of MSME in India.

Research Methodology

The study is based on secondary data that was gathered from a variety of secondary sources, including periodicals, annual reports, the department of MSMEs, and other published publications. In light of the study's aforementioned goals, interpretations have been made of the data, which has been presented as a table.

Role of MSME Sector in the Country

According to the most recent data from the Ministry of Statistics & Programme Implementation, the Gross Value Added (GVA) of MSME during the fiscal years 2019–20, 2020–21, and 2021–22 was 30.5%, 27.2%, and 29.2%, respectively. In the years 2019–20, 2020–21, and 2021–22, respectively, the percentage of MSME manufacturing output in the total manufacturing output of India was 36.6%, 36.9%, and 36.2%. According to data from the Directorate General of Commercial Intelligence and Statistics (DGCIS), for the years 2020–2021, 2021–2022, and 2022–2023, the share of exports of MSME-specified products in all India exports was 49.4%, 45.0%, and 43.6%, respectively.

According to the Udyam Registration Portal, there were 12,36,15,681 people working for MSMEs that had been registered in India between 01.07.2020 and 01.08.2023 as of 02.08.2023. The annexure contains information broken down by State and UT. I. The Ministry of Micro, Small, and Medium Enterprises (MSME) implements a number of programs to support the growth and development of the MSME sector in the nation in the areas of credit support, new enterprise development, formalization, technological assistance, infrastructure development, skill development and training, and market assistance to MSMEs. Prime Minister's Employment Generation Programme (PMEGP), Credit Guarantee Scheme for Micro and Small Enterprises (CGTMSE), Micro and Small Enterprises-Cluster Development Programme (MSE-CDP), Entrepreneurship Skill Development Programme (ESDP), Procurement and Marketing Support Scheme (PMS), and National SC/ST Hub (NSSH) are a few of the schemes/programs mentioned above. The Government has taken a number of recent initiatives to support MSMEs in the country, include;

- ❖ Emergency Credit Line Guarantee Scheme (ECLGS) for companies, including MSMEs, worth Rs. 5 lakh crore; Rs. 50,000 crore infusion of equity through MSME Self-Reliant India Fund; new amended criteria for classifying MSMEs; and absence of international tenders for purchases up to Rs. 200 crores.

- ❖ In June 2020, the "Champions" web portal will launch. It will cover a variety of e-governance topics, including grievance redress and assistance for MSMEs.
- ❖ Retail and wholesale trades will be classified as MSMEs starting on July 2, 2021, and non-tax benefits will be extended for a further three years in the event that MSMEs' position improves.
- ❖ Roll out of Raising and Accelerating MSME Performance (RAMP) programme with an outlay of Rs. 6,000 crore over 5 years.
- ❖ Launch of Udyam Assist Platform (UAP) on 11.01.2023 to bring the Informal Micro Enterprises (IMEs) under the formal ambit for availing the benefit under Priority Sector Lending (PSL).

Million MSME Registrations

More than a million MSME registrations have been registered by five states on the Udyam Portal, suggesting that attempts to formalize small businesses are progressing quickly. After the MSME definition changed in 2020, the Center demanded that all MSMEs register. MSMEs have registered on the platform in excess of 66 lakh times by the middle of January of previous year. By March 21, 2023, there were more over 1.5 crore units registered, employing around 10.84 crore people. 1.45 crore of the total were micro-enterprises, 4.53 lakh were small businesses, and 40,678 were medium-sized businesses.

Table 1.1
Top Ten States Total Number of Persons Employed in MSMEs Registered Under Udyam Registration Portal

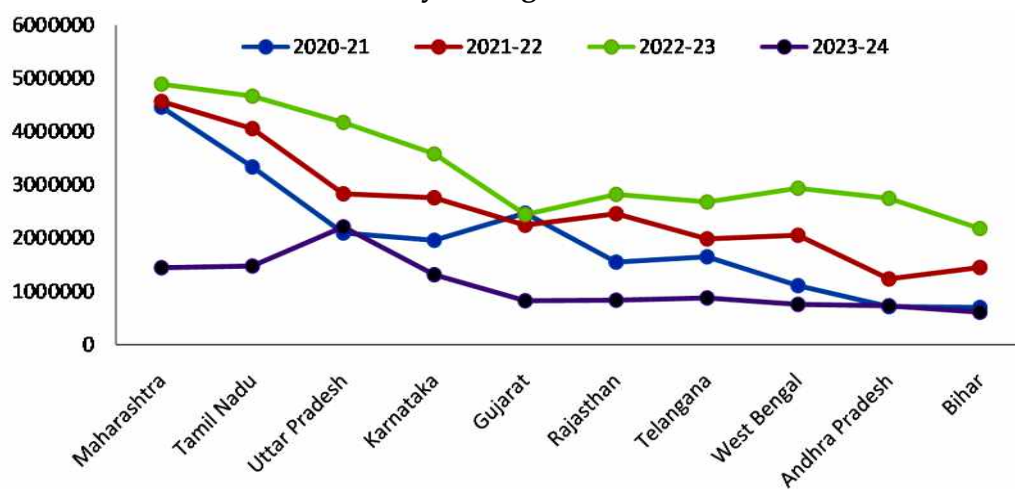
S.No.	States	2020-21*	2021-22	2022-23	2023-24#	Total
1	Maharashtra	4458451	4566130	4890908	1442862	15358351
2	Tamil Nadu	3335236	4054934	4662649	1474860	13527679
3	Uttar Pradesh	2090951	2832512	4171713	2209675	11304851
4	Karnataka	1957273	2757427	3578112	1311507	9604319
5	Gujarat	2466078	2241194	2439554	822168	7968994
6	Rajasthan	1547664	2457478	2816087	831202	7652431
7	Telangana	1648221	1982579	2677513	875418	7183731
8	West Bengal	1107009	2049849	2932684	752510	6842052
9	Andhra Pradesh	709811	1231311	2745495	727568	5414185
10	Bihar	694423	1447440	2175714	606625	4924202

**from 01.07.2020 #up to 01.08.2023*

This information was given by Minister of State for Micro Small and Medium Enterprises, Shri Bhanu Pratap Singh Verma in a written reply to the Rajya Sabha today.

Figure 1.1

Top Ten States Total Number of Persons Employed in MSMEs Registered Under Udyam Registration Portal



Maharashtra leads India in the number of micro, small, and medium enterprises held by entrepreneurs, with up to 15,358,351 enterprises, according to data provided by the Office of the Development Commissioner in the Union Ministry of MSME. Tamil Nadu holds the second and third places with 13,527,679 units and Uttar Pradesh with 11,304,851 businesses. Karnataka (9,604,319 units), Gujarat (7,968,994 units), and Rajasthan (7,652,431 units) are tied for fourth, fifth, and sixth place, respectively.

Lack of Formal Financing in MSMEs affect Job Creation

"As of March 15, 2023, Tamil Nadu and Maharashtra had the most MSME registrations, with a total of 15.43 lakh units and 27.60 lakh units, respectively. However, registrations in other states have also increased significantly. According to information presented in the Lok Sabha, 12.6 lakh, 11.27 lakh, and 11.24 lakh units, respectively, were registered in Uttar Pradesh, Gujarat, and Rajasthan. "Most MSMEs in India lack organization. Being unorganized prevents enterprises from accessing formal finance, government MSME programs, subsidies, public procurement programs, protection against major units delaying payments, and brand awareness needed to access prospective organized markets. The Government established the Portal in an effort to bring them under the control of established organized enterprise.

Crossing Rs.250-Crore Threshold

By the revised definition of MSME units, several SME companies have grown in size, with numerous firms exceeding the barrier of Rs 250 crore in revenue and becoming mid-

sized corporations. As PLI activity picks up steam, this exposes the integration of MSME units with broader value chains, according to a new SBI research paper. When compared to China, India has fewer than half as many MSMEs (64 million against 140 million Chinese businesses). More than 99 percent of the MSME units in India fall within the micro category, meaning that they would require a lot of assistance to expand naturally. Future MSME revolution might arise from this, it was noted.

More than 13 lakh micro units have been formalized using the recently released Udyam Assist Platform (UAP), which was created by SIDBI to formalize Informal Micro Enterprises (IMEs). The platform aims to make it possible for IMEs who aren't GST-registered to get a registration certificate using data from banks and NBFCs. According to the SBI assessment, the platform might help up to 5 crore IMEs, and States like West Bengal, Uttar Pradesh, Tamil Nadu, Karnataka, and Andhra Pradesh could gain from 2.6 crore IME registrations.

Importance of Micro, Small and Medium Enterprises (MSME)

The government can offer this assistance by enacting beneficial laws and regulations. This involves opening up financial and capital markets, lowering administrative and regulatory hurdles, and streamlining the tax code. In order to assist small firms and entrepreneurs in acquiring the abilities and information required for success, the government can also provide training and educational programs. Additionally, the government should support collaborations between MSMEs and bigger businesses to provide them access to resources and knowledge that they might not otherwise have. Programs for mentoring young people and collaborations with academic and research organizations fall under this category. The government may encourage the growth of incubators and accelerators, which offer funding, networking, and mentorship possibilities.

Features of the MSME Sector

The MSME sector is essential to India's economic growth and has made considerable advancements. It is essential for creating jobs and advancing underdeveloped and rural regions. There are 63 million MSMEs in India. For people looking to work in manufacturing, these businesses provide a number of benefits, such as:

- ❖ **Export Promotion and Potential:** MSMEs have the chance to advertise Indian goods in foreign markets.
- ❖ **Funding and Subsidies:** They have access to government financial assistance and subsidies.
- ❖ **Government Promotion and Support:** The expansion of MSMEs is actively encouraged and supported by the government.

- ❖ **Growing Domestic Market:** The domestic market is seeing a rise in demand for MSME products.
- ❖ **Lower Capital Requirement:** MSMEs have a lower starting and operating capital need than bigger businesses.
- ❖ **Manpower Training:** MSMEs provide their workers chances for training and skill development.
- ❖ **Project Profiles:** They may use project profiles to help them set up and manage their firms.
- ❖ **Raw Material and Machinery Procurement:** MSMEs are capable of acquiring the equipment and raw materials needed for manufacturing.

MSMEs employ more than 60 million people, make up a sizable portion of exports and manufacturing, and contribute around 8% of India's GDP. They are therefore essential to India's overall economic development.

Significance of the MSME Sector

- ❖ **Exports:** MSMEs have a huge impact on India's exports, accounting for more than 45% of the value of all exports.
- ❖ **Inclusive Growth:** MSMEs support inclusive growth by giving rural citizens, especially those from disadvantaged socioeconomic groups, job possibilities.
- ❖ **Employment:** In India, MSMEs are the second-largest source of employment after agriculture, employing around 120 million people.
- ❖ **Financial Inclusion:** By providing banking services and products to residents of tier II and tier III cities, MSMEs promote financial inclusion.
- ❖ **Promote Innovation:** MSMEs promote innovation by empowering prospective company owners to create novel goods, boosting industry competitiveness, and fostering expansion.
- ❖ **Stability and Resilience:** India's economy is based on the MSME sector, which protects it against external shocks and adversities.
- ❖ **Contribution to GDP:** MSMEs, which total 36.1 million units nationwide, make up 6.11% of the manufacturing GDP and 24.63% of the services GDP.
- ❖ **Future Goals:** By 2025, the MSME Ministry wants the sector to contribute 50% of India's GDP, in line with the country's anticipated \$5 trillion economic development.

Issues and Challenges in MSME Sector

- ❖ **Financial Constraint:** Financial difficulties have long plagued smaller enterprises and corporations in the Indian economy, which is a key barrier for both companies and the MSME sector. Even more troubling is the fact that just 16% of SMEs can get

timely financing, leaving small and medium businesses dependent on their own resources.

- ❖ **Lack of Innovation:** Since many of their goods rely on antiquated technology, Indian MSMEs lack innovation. Lack of enough entrepreneurs in the industry prevents the adoption of new tools and technology. MSMEs thus suffer with obsolete technologies and lower levels of production in comparison to larger companies.
- ❖ **The dominance of Small Firms:** Over 80% of MSMEs are micro and tiny firms, which makes it challenging to take advantage of government programs including emergency loan lines, stressed asset relief, equity involvement, and fund of funds operations owing to communication gaps and low knowledge.
- ❖ **Lack of Formalization among MSMEs:** Many MSMEs are not formally registered, which adds to the credit gap. Only 1.1 crore MSMEs are presently registered under the Goods and Services Tax, and over 86% of manufacturing MSMEs in the nation are still unregistered. The stability of MSMEs is impacted by economic uncertainty, particularly changes in raw material costs and consumer demand.

Conclusion

MSMEs play a significant role in the Indian economy. This sector has contributed significantly to the nation's economic expansion, increasing exports and creating a wealth of employment options for the low-skilled, recent graduates, and underemployed. Additionally, it enhanced the likelihood that banks would extend new loans to MSME companies. The government should pay special attention to the significance of MSME and provide more and more benefits for MSME Registration by implementing stronger rules and permitting financial institutions to extend more credit at cheaper interest rates in order to ensure the sector's long-term existence.

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SUSTAINABLE DEVELOPMENT THROUGH MSME'S: DIGITAL INDIA AND INDUSTRY 4.0

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Abstract

Digital India is the result of a number of breakthroughs and technological advancements, which is a well-known fact. These have a variety of positive effects on individuals' lives and will enhance society as a whole. The "Digital India" effort, led by the honorable Prime Minister Mr. Narendra Modi, will lead to new developments in all industries and inspire creative endeavors for geNext. The motive behind the concept is to build participative, transparent and responsive system. The Digital India drive is a dream project of the Indian Government to remodel India into a knowledgeable economy and digitally empowered society, with good governance for citizens by bringing synchronization and co-ordination in public accountability, digitally connecting and delivering the government programs and services to mobilize the capability of information technology across government departments. Today, every nation wants to be fully digitalized and this programme strives to provide equal benefit to the user and service provider. Hence, an attempt has been made in this paper to understand Digital India – as a campaign where technologies and connectivity will come together to make an impact on all aspects of governance and improve the quality of life of citizens.

Digital India

The digital world that we live in today is that where every civilian has a bright prospect to transform the lives in many ways that were hard to envision just a couple of years ago. It is the outcome of several innovations and technology advances. Today, every nation wants to be fully digitalized that will empower society in a better manner. The motive behind the concept is to build participative, transparent and responsive system. All educational institutions and government services will soon be able to provide I-ways round the clock. Digital India will provide all services electronically and promote digital literacy. Digital Technologies which includes the concept of cloud computing and mobile applications have emerged as the catalysts for express economic growth and citizen empowerment. Companies all over the world desire to invest in Digital India- the 21st century India, as a growth opportunity. Hence, an attempt has been made in this paper to understand Digital India – as a campaign where technologies and connectivity will come together to make an impact on all aspects of governance and improve the quality of life of citizens.

Vision of Digital India

1: Infrastructure as a Utility to Every Citizen

- ❖ High speed internet as a core utility
- ❖ Cradle to grave digital identity -unique, lifelong, online, authenticable
- ❖ Mobile phone & Bank account enabling participation in digital& financial space
- ❖ Easy access to a Common Service Centre
- ❖ Shareable private space on a public cloud
- ❖ Safe and secure Cyber-space

2: Governance & Services on Demand

- ❖ Seamlessly integrated across departments or jurisdictions
- ❖ Services available in real time from online &mobile platform
- ❖ All citizen entitlements to be available on the cloud
- ❖ Services digitally transformed for improving Ease of Doing Business
- ❖ Making financial transactions electronic & cashless
- ❖ Leveraging GIS for decision support systems & development

3: Digital Empowerment of Citizens

- ❖ Universal Digital Literacy
- ❖ Universally accessible digital resources
- ❖ All documents/ certificates to be available on cloud
- ❖ Availability of digital resources / services in Indian languages
- ❖ Collaborative digital platforms for participative governance
- ❖ Portability of all entitlements through cloud

Nine Pillars of Digital India

- ❖ Broadband Highways
- ❖ Universal Access to Phones
- ❖ Public Internet Access Programme
- ❖ E-Governance –Reforming government through Technology
- ❖ Errant –Electronic delivery of services
- ❖ Information for AllElectronics Manufacturing
- ❖ Electronics Manufacturing –Target NET ZERO Imports
- ❖ IT for Jobs
- ❖ Early Harvest Programmes

Impact of Digital India

- ❖ Broadband in 2.5 lakh villages, universal phone connectivity
- ❖ Net Zero Imports by 2020

- ❖ 400,000 Public Internet Access Points
- ❖ Wi-fi in 2.5 lakh schools, all universities; Public wi-fi hotspots for citizens
- ❖ Digital Inclusion: 1.7 Cr trained for IT, Telecom and Electronics Jobs
- ❖ Job creation: Direct 1.7 Cr. and Indirect at least 8.5 Cr.
- ❖ E-Governance& E Services: Across government
- ❖ India to be leader in IT use in services – health, education, banking
- ❖ Digitally empowered citizens – public cloud, internet access

Industry 4.0

Since the first Industrial Revolution, subsequent revolutions have resulted in manufacturing, from water and steam powered machines to electrical and digital automated production which makes manufacturing process more complicated, automatic and sustainable so that people can operate machines simply, efficiently and persistently. The term Industry 4.0 stands for the fourth industrial revolution which is defined as the new level of organization and control over the entire value chain of the life cycle of products, it is geared towards increasingly individualized customer requirements. The central objective of Industry 4.0 is fulfilling individual customer needs which affects areas like order management, research and development, manufacturing commissioning, delivery up to the utilization and recycling of products.

Evolution of Industry 4.0

- ❖ First Industrial Revolution-Water and Steam Power Engine(1784)
- ❖ Second Industrial Revolution-Mass Production using Electrical Energy(1870)
- ❖ Third Industrial Revolution-Use of PLC and IT systems for Automation(1970)
- ❖ Fourth Industrial Revolution-Use of IOT and CPS(Now)

Needs for Industry 4.0

To convert the regular machines to self-aware and self-learning machines to improve their overall performance and maintenance management with the surrounding interaction. Industry 4.0 aims at the construction of an open, smart manufacturing platform for industrial networked information application. Real time data monitoring, tracking the status and positions of product as well as to hold the instructions to control production processes are the main needs of I-4.0.

Big Data Analysis

The collection and comprehensive evaluation of data from many different sources production equipment and systems as well as enterprise and customer-management

systems will become standard to support real-time decision making. According to Forrester's definition, Big Data consists of four dimensions:

- ❖ Volume of data - scale of data
- ❖ Variety of Data - different forms of data
- ❖ Velocity of Data - velocity and generation of new data & analysis streaming data
- ❖ Veracity of Data - certainty / uncertainty of data, uncertainty due to incompleteness, ambiguities, latency, deceptions, model approximations, inconsistency etc.

The data analysis is a process in which previously recorded data is used to find out the threats occurred in different production processes earlier in the industry and also forecast the new issues occurring as well as the various solution to stop that from occurring again and again in industry

System Integration

Integration and self-optimization are the two major mechanisms used in industrial organization. The model of Industry 4.0 is essentially outlined by three dimensions of integration:

- ❖ horizontal integration across the entire value creation network
- ❖ vertical integration and networked manufacturing systems
- ❖ End-to-End engineering across the entire product life cycle.

The full digital integration and automation of manufacturing processes in the vertical and horizontal dimension implies as well as automation of communication and cooperation especially along standardized processes.

Cyber Security and Cyber Physical System

With the increased connectivity and use of standard communications protocols that come with Industry 4.0, the need to protect critical industrial systems and manufacturing lines from cyber security threats increases dramatically. As a result, secure, reliable communications as well as sophisticated identity and access management of machines and users are essential. The strong connection of the physical, the service and the digital world can improve the quality of information required for planning, optimization and operation of manufacturing systems. The term CPS has been defined as the systems in which natural and human made systems (physical space) are tightly integrated with computation, communication and control systems (cyber space). Decentralization and autonomous behaviour of the production process are main characteristics of CPS. The evolution of CPS mainly depends on the adoption and reconfiguration of product structures Supply Networks considered as Collaborative Cyber physical systems which are used in Manufacturing systems as well as different cyberphysical systems like city traffic control and control systems.

The Cloud (Cloud Computing)

Cloud-based IT-platform serves as a technical backbone for the connection and communication of manifold elements of the Application Centre Industry 4.0. With industry 4.0, organization needs increased data sharing across the sites and companies i.e., achieving the reaction times in milliseconds or even faster. “Digital production” is a concept of having the connections of different devices to same cloud to share information to one another and can be extended to set of machines from a shop floor as well as the entire plant.

Issues and Challenges in Industry 4.0

The discovery of new technologies has made industry development from the early adoption of mechanical systems to today’s highly automated assembly lines, in order to be responsive and adaptive to current dynamic market requirements and demands. Challenges like embedment, predictability, flexibility and robustness to unexpected conditions. There are some challenges and fundamental issues occurs during the implementation of industry 4.0 in the current manufacturing industries are given as

- ❖ **Intelligent Decision-Making and Negotiation Mechanism:** In smart manufacturing system needs more autonomy and sociality capabilities as key factors of self-organized systems whereas the today’s system has 3C Capabilities i.e., lack of autonomy in the systems.
- ❖ **Manufacturing Specific Big Data and Analytics:** It is a challenge to ensure high quality and integrity of the data recorded from manufacturing system. The annotations of the data entities are very diverse and it is an increasing challenge to incorporate diverse data repositories with different semantics for advanced data analytics.
- ❖ **System Modelling and Analysis:** In system modelling, to reduce dynamical equations and conclude appropriate control model, systems should be modelled as self-organized manufacturing system. The research is still going on for complex system.
- ❖ **Cyber Security:** With the increased connectivity and use of standard communications protocols that come with Industry 4.0, the need to protect critical industrial systems and manufacturing lines and system data from cyber security threats increases dramatically.
- ❖ **Modularized and Flexible Physical Artefacts:** When processing a product, Equipment for machining or testing should be grouped and worked together for distributed decision making. So, there is a need of creating modularized and smart conveying unit that can dynamically reconfigure the production routes.

- ❖ **Investment Issues:** Investment issue is rather general issue for most of new technology-based initiatives in manufacturing. The significant investment is required for implementing industry 4.0 is an SME (Small and Medium Enterprises) initially. The implementation of all the pillar of industry 4.0 requires huge amount of investment for an Industry

Conclusion

The paper is mainly focused on the concept of Digital India and fourth industrial revolution, called Industry 4.0 which allows smart, efficient, effective, individualized and customized production at reasonable cost. With the help of faster computers, smarter machines, smaller sensors, cheaper data storage and transmission could make machines and products smarter to communicate with each and learn from each other. The nine pillars of industry 4.0 explained with the examples to understand the application of Industry 4.0 as well as used to identify the challenges and issues with the implementation of Industry 4.0. A digital connected India can result in the growth of the social and economic status of people. This can be achieved by the development of non-agricultural economic activities. Instead of providing access to health, education, and financial services. The term Industry 5.0 has been introduced to the research areas which are considered as next industrial revolution, but it is more systematic transformation that includes impact on civil society, governance and structures, and human identity in addition to solely economic/ manufacturing ramifications.

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IMPACT OF COVID -19 AND PERFORMANCE OF MSMEs IN INDIA

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Abstract

The COVID-19 pandemic has had a huge impact on all sectors of people's lives. One of the sectors that were greatly affected was the economic sector. Mini, small, and medium enterprises are portion of the community's economical activities that are wanting to stay round, although not rarely, some are forced to walk out business. The usage of electronic commerce is a step for SMEs to endure.. This study uses the impact of the COVID-19 Pandemic, factors responsible for MSMEs' vulnerability, success beyond COVID-19, back to basics, Effect of COVID-19 and prudential regulatory responses on economic growth. To improve the capability of MSMEs to right of entry into both international and domestic markets, one of the major lessons which proved really beneficial for most of the businesses was the shift towards the e-commerce ecosystem of micro, small and medium enterprises MSMEs.

Keywords : MSMEs, COVID -19 Pandemic, E-commerce, Economic growth.

Introduction

The particular continuation of the Covid-19 pandemic with the intention of has hit the entire world for approximately the last thetwo of these years has acquired a direct impact on all sectors, especially the monetary sector, small and medium businesses. Foundation on the effects of the Katadata Insight Centre (KIC) survey conducted on mainstream of MSMEs of 82.9% feel the negative impact of this pandemic and only 5.9% knowledgeable positive development. This pandemic circumstance has even caused 63.9% of the affected MSMEs to occurrence a refuse in turnover of more than 30%. Only 3.8% of MSMEs experienced and enlarge in turnover. The KIC survey also shows that MSMEs have completed a number of hard works to maintain their business conditions. They obtain a number of competence measures such as, reducing the production of goods and services, reducing working hours and the no. of employees and sales and marketing channels. Even so, there are also MSMEs who get the differing step, namely adding marketing channels as part of their continued existence strategy.

MSMEs (micro, small, together with medium enterprises) constitute the lifeblood on the monetary development involving a country. Inside all-purpose, MSMEs play the following tasks in the national economic system: (1) as the most important reasons of economic progress, (2) as typically the most provider, (3) as leading device in local

economical development and group empowerment, (4) while inventors of new markets and reasons for innovation, and (5) as a service to the balance of payments. Throughout addition, MSMEs play a critical role in outlying monetary development, mainly in words of employment prospects and sources of income for poor people, as well as income allocation and poverty reduction.

The pandemic cause harsh disruptions in the MSME sector, especially in the manufacturing segment. When official government data is still anticipated, survey-based studies conducted during the outbreak revealed distress for this sector.

Objective of the study

- ❖ To study impact of Covid 19 pandemic era and the effect of COVID-19 and prudential regulatory responses on economic growth.

Review of Literature

Mohammad Bitar et al. (2021) discuss the implications on banks and the economy of prudential authoritarian intervention to soften the treatment of non-performing loans and ease bank capital buffers the treating non-performing loans together with easing capital term Corneille should not weaken banks' solvency within the recovery time period. Banks should maintain usable buffer in the medium-term horizon to absorb future losses, as the effect of COVID-19 on the economy might take time to fully materialize.

Ihwana As'ad et al. (2021) studied is how the implementation of e-commerce by owners of micro, small and medium enterprises (MSMEs) during the COVID-19 pandemic. This study uses qualitative methods with descriptive data analysis and is equipped with a literature study. The consequence shows that the thought of marketing products and services using e-commerce is a survival method for MSMEs during the pandemic.

Research Methodology

The design of this research is descriptive qualitative with a phenomenological approach. Qualitative research aims to understand in depth a phenomenon according to the perspective of the people who experience it. The phenomenological strategy used aims in order to produce an specific description from the trend from an encounter. In the context of this research, the phenomenon studied is how the implementation by owners of micro, small and medium enterprises (MSMEs) during the COVID-19 pandemic.

The data collection technique is done by looking for secondary data. Secondary data obtained through literature articles, websites etc. searches related to the research concept.

Meaning of MSMEs

MSME stands for Micro, Small, and Medium Enterprises. In accord with the Micro, Small, and Medium Enterprises Development (MSMED) Act in 2006, the enterprises are classify into two divisions.

1. Manufacturing enterprises – occupied in the manufacturing or production of goods in any industry
2. Service enterprises – occupied in providing or interpretation services

Features of MSMEs

1. MSMEs to provide sensiblehelp for improved access to the domestic as well as export markets for businesses
2. MSMEs sustain product development, design innovation, involvement, and packaging basics of a business
3. MSMEs hold up the improvement of technology, infrastructure, and the transformation of this sector as a whole
4. MSMEs give employment opportunity and loans
5. MSMEs offer credit limits or funding hold to various banks in the country

Role of MSMEs in the Indian Economy

The MSME sector has established to be a highly active factor in the forecasting of the Indian economy. Since MSMEs produce and manufacture a variety of products for both domestic as well as global markets, MSMEs have play an necessary role in provided that employment opportunity in deprived areas. They have help in the industrialization of such areas with a low capital cost compare to the larger industries in city. MSMEs have also contributed and played annecessary role in the country's development in different areas like the obligation of low investment, flexibility in operation, low rate of imports, and a high involvement to domestic production.

Impact of Covid-19 Pandemic

The MSMEs segment has been one of the most exposed sectors during pandemic because of its size, scale of business and accessibility of financial resources. Study and surveys shows that more or less 95% firms were impacted unhelpfully due to national lockdown imposed in April 2020, 70% of businesses remaindisrupt till August 2020. Even after progressive unlock, reports suggest that almost 40% businesses remainepisodic till the end of February 2021. The three dangerousbarrier faced by MSMEs are market access, overall productivity and getting access to more finances. An average 11% decline in business volume of Indian MSMEs has been recorded because of lockdown in 2021 in association to 46% decline during countrywide lockdown in year 2020.

The apparel manufacturing units of the export sector realized business loss of over Rs. 150 crore from March 2020 to May 2020. Loss of India's leather industries has been valued to be Rs. 11,210 crore in global market. All India Manufacturers Organization conducted survey on MSMEs and established that the self-employed MSME units, mostly 35% of MSMEs sector, do not have any scope of recovery for their businesses and have before now started winding up their units.

Factors Responsible for Vulnerability of MSMEs

Crunch of Capital- SMEs in India are mainly unorganized, most of the communication approved by them are in cash and not entered appropriately in accounting books. In the absence of exact transaction data, these businesses do not get the compulsory credit score and find it complicated to access business loans from the formal sector.

High cost of Transaction- Business volumes of MSMEs remain low in most of the cases and hence cost of dealings remains high, both in offline and online modes of payment. This affects company's profit margin considerably in medium to long run.

Risk perceptions by banks & financial institutions - In absence of high credit score or collaterals, most of the banks perceive MSMEs as risky clients. This problem amplifies when the client is any start-up. Even if banks get convinced to disburse loan, rate of interest remains higher than normal. Different MSMEs have different financial requirements, depending upon the size of business, cash flow pattern and vendor engagements. All this requires tailor made services and products.

Cybercrime- In absence of sufficient awareness and information about handling digital banking and transaction activities, SMEs are found to be more susceptible for cybercrime and phishing.

Success Beyond Covid-19

Those who have hug digitalization and e-commerce are reap the rewards. A recent study showed that two in five small and medium-sized enterprises (SMEs) that implement digitalization initiative in 2020 had stronger proceeds growth than non-adopters.

E-commerce is a fast-moving, cut-throat sector where new trends are spring to emerge, and new competitors will ultimately join the fray. Without improvements or new contributions, staying aggressive or even existing in the marketplace will be a hard effort.

For MSMEs running e-commerce sites, developing the digital infrastructure by adopting new technologies is possibly the easiest way to offer customers an improved online shopping experience. Having an automatic chatbot to handle incoming customer support query will allow quick resolution to simple problems, making it an ideal setup for MSMEs quite than setting up a physical and costly call center from scratch.

Back to Basics

Whether it is planning for a complete digital transformation, adding new features, or just a regular refreshing of the website, MSMEs have to ask themselves tough questions on how it improves the overall customer experience to address the fundamentals of their product offering.

Is there room to improve the site's navigation and user experience? Could there be an extra button, or could a page be designed better by including a shortcut? Would offering more e-wallets and payment methods make it more convenient for our customers?

According B2B e-commerce businesses are follow online retail platforms in provided that multiple delivery options to meet different cost, transfer time and service supplies.

This comes as no surprise. Customers, despite the consequences of sectors, expect strong logistics solutions that support their developing growth needs, be it for domestic or international delivery. With 11 markets and a population of 655 million, SEA itself is a huge region to cover.

At some point, MSMEs will likely also undertaking additional in their next stage of growth and we have to be prepared for that. Besides sustaining our customers with the right solutions, we also continuously keep tabs on the latest e-commerce developments across the area so we can provide them with correct, timely updates.

The authoritarian environment, in particular, can be a possible minefield to plot a course. It is very important that MSMEs stay side by side of the legal and regulatory framework governing e-commerce transactions to avoid running afoul of the law while juggle their plans for growth.

For occurrence, new business regulations in ASEAN economies such as Indonesia, Vietnam and Cambodia have been enact to standardize competition in the domestic markets from both local and foreign businesses. Other cybersecurity laws that limit data flow across limitations also present obstacles for businesses looking to expand their international trail.

Paradigm Shift

The Covid-19 pandemic most of us were locked inside our homes due to the lockdown-related limitations to restrict the spread of coronavirus, it was e-commerce that came to the liberate of most of the micro, small and medium businesses as the trade houses kept organization by changing businesses online. Stores went online to offer services to their customers and continued to earn at least some amount of money to manage the basic operating expense.

Turning crisis into opportunity

Many SME business houses which excitedly wanted to make a conversion from offline to online trade but kept procrastinating it in the name of some circumstances or the other finally turned this crisis into an opportunity in the view of pandemic. When coronavirus strike the businesses and thereafter lockdown was imposed, traders and business people were left with no other option but to hug e-commerce so as to keep the businesses running. With the help of technology and the internet, business houses made a timely entrance into the e-commerce ecosystem.

Realizing the hidden potential

Once small and medium businesses made a change from offline to online in the wake of the Covid-19 pandemic, they realize the huge possible of the entire e-commerce ecosystem. With smaller payments, traders saved more money in terms of financial limits due to the lesser number of mediator channels concerned in the entire business process right from step to end delivery. realize what all benefits the e-commerce ecosystem has to offer, many businesses which were uncertain or not so eager to hug online medium are now coming forward to make the 'offline to online' change.

Government-backed promotional schemes

Custody in view the huge and multiple benefits of the e-commerce ecosystem for MSMEs, the government too has come onward with a number of schemes to give confidence and promote the smooth 'offline to online' conversion.

Silver lining

Among the Covid-19 pandemic, MSMEs have made a very smooth evolution towards online from offline. If we compare the pre-Covid 19 era the post-Covid 19 era, we can confidently say that this offline to online shift i.e. entry into the e-commerce ecosystem by MSMEs is one of the major silver linings of the entire coronavirus episode.

The effect of COVID-19 and prudential regulatory responses on economic growth

Economic growth is country's GDP per capita collect from the World Bank's World Development indicator. COVID19 capture human casualty cause by the pandemic by means of three alternative measures: 1) the daily number of new established cases of COVID-19 (log), Number of COVID-19 cases, 2) the daily number of new death cases credited to COVID19 (log), Number of COVID-19 death, and 3) the share of COVID-19 positivity rate, COVID-19 positive rate. Health controls for national health systems and includes: Male smokers, Diabetes prevalence, Hospital beds per thousand, Life expectancy, and Extreme poverty. Our degeneration model is practical to 42 OECD and partners countries; these

countries have respond to the increase of COVID-19 pandemic with various economic and prudential release.

Prudential represent two prudential regulatory release events. The banking sector measure is the number of days beyond since the World Health Organization announcement on January 30, 2020, until the first banking sector measure taken by a government to support banking institution follow the extend of the COVID-19 pandemic. 12 The banking policy reply index is the sum of all the banking sector policy procedures taken by a government up to April 13, 2021 to moderate the effect of the COVID-19 extend. 13 BANK represents bank regulatory characteristics including capital adequacy ratio, tier 1 capital ratio, nonperforming loans ratio. We also control for profitability and liquidity using return on assets and liquid assets to assets ratio. MACRO controls for macroeconomic factors such as domestic credit to private sector as a percentage of GDP and current account as a percentage of GDP.

Findings

These findings probably point out that earlier accomplishment of prudential release packages in terms of release capital buffers and the compassionate treatment of nonperforming loans moderate the unfavorable effect of COVID-19 spread on economic growth. Nonperforming loans combined with relaxing the classification and the treatment on nonperforming loans may generate more risks in the medium term, discouragement bank solvency and probably weakening the economic impact of COVID-19 in the recovery period.

This report provide a snapshot of the current opposition and market access challenge faced by MSMEs around the world as they seek to deal with the impact of COVID-19 on their operation. It focus on the competition connected challenges cause by the pandemic, the ability to access obtainable and new markets, narrow responses to the circumstances that particularly affect MSMEs, and visible trends relevant to small and medium enterprises. It concludes with a few recommendation for future action by national governments and international organizations.

Six principle identified are common across most nations:

- ❖ Governments are placing a main concern on prop up existing firms
- ❖ More corresponding economic action is being approved by competition establishment.
- ❖ Market access is being delayed by inter and intra national limitations on the movement of people, goods and services.
- ❖ MSMEs are moving, online and seeking to enhance their aptitude to contact markets using digital technology

- ❖ More competition establishment are working directly with MSME agencies and MSME involvement.
- ❖ Informal sector MSMEs are more and more being documented as an important factor in both opposition and market access policy consideration.

Suggestion

Some recommendation is made for future action by governments and agencies of individual member states, in some cases with the support of international organizations. These are mixture of possible regulatory measures greater engagement with MSME delegate organizations, training and capacity building activities and other actions. While some are focused on competition issues, steps are also recommended to improve the ability of MSMEs to access both international and domestic markets.

Conclusion

Present are constantly two sides to every coin. The saying hold true for every situation in life as well. When coronavirus spread began and Covid-19 started show its vast depressing impacts across businesses, domains, sectors, et cetera, most of the people were of the opinion that the pandemic will ultimately leave us only with negative effects but it seem as coronavirus spread is slowly dying down and normalcy has been restore in the market, the pandemic has left us with one of the main lessons which proved really favorable for most of the businesses - Shift towards e-commerce ecosystem of micro, small and medium enterprises (MSMEs).

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A STUDY ON GIG EMPLOYEES IN MADURAI CITY - WITH SPECIAL REFERENCE TO FOOD DELIVERERS

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Abstract:

This study examines the work-life balance of gig employees, with a specific focus on food delivery workers, within the urban context of Madurai city in Southern India. Utilizing a mixed-methods research approach, including surveys, interviews, and qualitative analysis, this research aims to gain insights into the unique challenges and coping mechanisms of gig workers in achieving a harmonious work-life balance. The concept of work-life balance has been created in a variety of ways. The main concept stems from the achievement and amusement of the regions, both of which appear +people are satisfied and functioning well at work and at home with minimal role conflict This research investigates the equilibrium between work and personal life for gig employees in Madurai city, with a specialized emphasis on those involved in food delivery services. Through a mixed-methods approach encompassing surveys, interviews, and qualitative analysis, the study aims to uncover the distinct challenges and coping strategies of gig workers striving for a harmonious work-life balance Hence, the current study has been focused to give an analytical overview on the work-life balance of GIG employees in Madurai city with special reference to food deliverers.

Keywords: Hospitality, Life Stability, Disgrace, Work-life Balance, Lifestyle Balance, Challenges & Opportunities, Rule Notion and Depersonalization.

Introduction

The gig economy has witnessed a remarkable surge in recent years, revolutionizing traditional labour markets and offering individuals a new realm of employment opportunities. Madurai city, situated in the heart of Southern India, has not been immune to this transformation. Within this urban landscape, a distinct cohort of gig workers, primarily engaged in the food delivery sector, has emerged as a vital component of the local workforce. These individuals navigate a unique employment landscape characterized by flexibility, on-demand service provision, and the extensive use of digital platforms. This study embarks on a comprehensive exploration of the work-life equilibrium experienced by these gig employees in Madurai city, offering a nuanced understanding of their daily challenges, coping mechanisms, and the impact of their chosen profession on their personal lives. The focal point of this investigation is the food delivery gig workers, who form a substantial segment of the gig workforce within the city. The gig economy, often

celebrated for its flexibility and income-generating potential, also brings with it a set of distinct challenges, particularly concerning work-life balance. Food delivery gig workers, in their pursuit of meeting delivery targets and ensuring customer satisfaction, frequently grapple with irregular working hours, the absence of traditional employment benefits, and the relentless pressure to maximize income. As the gig economy continues to evolve, it becomes imperative to delve into the lives of those who constitute its workforce, understanding their aspirations and tribulations. In this vein, this study endeavors to illuminate the daily realities of food delivery gig workers in Madurai city, shedding light on their unique journey towards work-life equilibrium within the gig economy's dynamic landscape.

Literature Review:

The advent of the gig economy has reshaped the labour landscape worldwide, introducing a paradigm shift in employment dynamics (Benner & Sandvig, 2019; Katz & Krueger, 2016). Madurai, a vibrant urban centre in Southern India, reflects this global trend with a burgeoning gig workforce (Rani Shivaraj, 2020). Amid this transformation, one salient facet deserving attention is the work-life balance of gig employees, notably those engaged in the food delivery sector.

Work-life balance is inherently tied to the overall well-being of gig workers (Kalleberg, 2018). The non-standard hours, intense competition, and absence of traditional job security prevalent in the gig economy can negatively affect mental health and job satisfaction (Budd et al., 2017). Food delivery gig workers, in particular, may endure high-stress levels as they grapple with traffic, delivery deadlines, and the unpredictability of tips (Hara et al., 2017)

Objectives of the study:

- ❖ To understand the work life balance of gig workers in Madurai city.
- ❖ To know the challenges faced by the food delivers in Madurai city.
- ❖ To identify the different experience of both men and women gig workers in balancing their work and personal life.

Gig Economy and Work-Life Balance:

The gig economy, characterized by its reliance on temporary, flexible work arrangements, has been extolled for providing income opportunities and autonomy to workers (Huws, 2016). However, this newfound flexibility often comes at the cost of blurred boundaries between work and personal life (De Stefano, 2016). Gig workers, including food delivery personnel, frequently experience irregular schedules and the expectation of being constantly available, which can strain their ability to balance work and personal life (Cherry et al., 2019).

Food Delivery Gig Work in Madurai:

Madurai's gig workforce, particularly in the food delivery sector, has seen substantial growth (Sharma & Sharma, 2021). As food delivery platforms continue to thrive, an increasing number of individuals are drawn to this line of work due to the promise of flexible hours and quick income (Varma & Mukherjee, 2020). However, the realities of this work include navigating congested city streets, dealing with inclement weather, and striving to meet demanding delivery targets—all factors that can challenge work-life balance (Saini et al., 2018).

Challenges Faced by Food Delivery Gig Workers

- ❖ **Irregular Working Hours:** Food delivery workers often have irregular and unpredictable working hours, including evenings, weekends, and holidays. This can make it difficult to maintain a consistent daily routine or spend time with family and friends.
- ❖ **Physical Demands:** The job can be physically demanding, requiring workers to be on their feet for long periods, carry heavy bags, and navigate through traffic, which can lead to physical fatigue and strain.
- ❖ **Traffic and Safety Concerns:** Food delivery gig workers face the hazards of navigating through busy city streets, which can be stressful and pose safety risks, especially during adverse weather conditions or at night.
- ❖ **Income Variability:** Earnings can be inconsistent due to fluctuations in demand, seasonal variations, or changes in tips. This income variability makes financial planning and stability challenging.
- ❖ **Lack of Employment Benefits:** Gig workers typically do not receive traditional employment benefits such as health insurance, paid leave, or retirement plans, leaving them vulnerable in times of illness or emergencies.
- ❖ **Pressure to Meet Delivery Targets:** Some platforms set strict delivery targets and performance metrics. Workers may feel pressured to meet these targets, which can impact their work-life balance and well-being.
- ❖ **Isolation and Loneliness:** The solitary nature of the job, where workers often spend long hours alone, can lead to feelings of isolation and loneliness, affecting their mental health.
- ❖ **Limited Social Interaction:** Long working hours and irregular schedules can reduce opportunities for social interaction with friends and family, potentially straining personal relationships.
- ❖ **Job Insecurity:** Gig workers often lack job security and employment protections, making them vulnerable to sudden changes in their work status or earnings.

- ❖ **Lack of Career Progression:** Many food delivery gig workers perceive their work as a temporary solution rather than a long-term career, which may lead to uncertainty about future prospects.

Coping Mechanisms and Strategies:

Despite these challenges, gig workers often develop strategies to manage their work-life balance. These strategies may involve setting boundaries, using digital tools to optimize routes and schedules, and seeking social support from peers (Codagnone et al., 2016; Nambisan, 2017). Understanding these coping mechanisms is crucial in assessing the adaptability of gig workers in Madurai.

The Role of Policy and Platform Companies:

Work-life balance for food delivery gig workers is not solely an individual responsibility. It also involves the role of platform companies and policymakers (Aguilera & Fein, 2020). Ensuring fair compensation, access to benefits, and supportive working conditions are critical aspects that require attention to improve the work-life equilibrium of gig employees (Berg et al., 2018; De Stefano, 2016).

Conclusion:

This literature review underscores the multifaceted nature of work-life balance challenges faced by food delivery gig workers in Madurai city. It highlights the evolving gig economy landscape, the specific challenges within the food delivery sector, coping strategies, and the role of policy and platform companies in fostering a more balanced work-life equation. As Madurai's gig economy continues to evolve, it becomes increasingly imperative to address these issues comprehensively to improve the well being of its gig workforce.

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THE TRUTH BEHIND INDIA'S HINTERLAND

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Abstract:

This paper delves into the often misconceived domain of rural marketing, shedding light on the authentic rural consumer behavior, market trends, and infrastructure disparities, it uncovers the truth about rural marketing. Through empirical research and case studies, this study provides valuable insights for businesses seeking to navigate this complex and promising landscape, ultimately fostering sustainable and mutually beneficial relationships with rural consumers. It delves into the growth of companies, earnings from the rural market, dispels common rural marketing myths, examines the vast size of the rural market, and analyzes shifting rural consumption patterns.

Keywords

Hinterland, Consumer Engagement in Rural Areas, Market size, Consumption, Myths about Hinterland, Macro Scenario of Rural Market, Infrastructure.

Introduction:

Rural marketing, once considered a peripheral and often misunderstood aspect of the broader marketing landscape, has in recent years emerged as a dynamic and transformative arena of immense significance. Under the title "The Truth About the Hinterland," this project embarks on a comprehensive exploration of rural marketing, offering a nuanced understanding that encompasses key findings from esteemed experts such as Pradeep Kashyap. The hinterland, which represents rural areas in the context of marketing, is not a monolithic entity but rather a diverse landscape with unique characteristics and untapped potential. Our endeavor is to uncover the realities of rural marketing by dissecting various dimensions of this vibrant marketplace. Pradeep Kashyap, an authority in the field of rural marketing, has played a pivotal role in unraveling the complexities of rural markets. His extensive research, experiences, and contributions have

been instrumental in deciphering the unique characteristics of rural consumers and rural markets in general.

Kashyap emphasizes the importance of understanding and acknowledging the diverse and dynamic nature of rural India, which consists of different regions, cultural backgrounds, languages, and socio-economic statuses. Furthermore, he underscores the significance of adopting localized marketing strategies and a deep understanding of the cultural nuances and traditions that play a critical role in rural consumer behavior. By embracing these insights, companies and marketers can effectively tailor their products, services, and marketing approaches to resonate with rural consumers, thereby achieving successful market penetration.

As we delve deeper into the complexities of rural marketing, one cannot ignore the macro scenario of the rural market itself. Rural India is a vast and diverse landscape with distinct regional variations and economic disparities. Understanding this macro scenario is essential for marketers and businesses seeking to establish a presence in rural areas. It involves analyzing the demographic composition, income levels, and cultural diversity, which are vital components in shaping rural markets. It also requires acknowledging the rapid urbanization and changing lifestyles in rural areas, which are leading to shifts in consumer behavior and preferences.

Intriguingly, rural consumption patterns have evolved significantly over the years. Rural consumers are no longer confined to purchasing just agricultural or basic necessities; they have become significant consumers of a wide array of products, including fast-moving consumer goods (FMCG), electronics, healthcare, education, and more. This shift in consumption patterns reflects the changing aspirations, higher disposable incomes, and increased access to information and technology among rural consumers. Businesses that recognize and adapt to these evolving consumption patterns are better poised to tap into the burgeoning rural market successfully.

Moreover, the growth of companies in rural India has been nothing short of remarkable. Companies across various industries have recognized the vast potential of the rural market, and as a result, have experienced substantial growth in these areas. This growth can be attributed to the adaptability of businesses that have tailored their products, distribution networks, and marketing strategies to align with the specific needs and preferences of rural consumers. The success stories of these companies serve as invaluable case studies, shedding light on the strategies that have allowed them to establish a strong foothold in rural India.

The size of the rural market is monumental, with a significant proportion of the Indian population residing in rural areas. The demographic scale of rural India presents vast opportunities for business expansion. The sheer number of consumers, combined with the increasing disposable incomes, has made rural India a focal point for revenue generation.

This potential has become all the more apparent as financial inclusion expands in rural areas, enabling rural residents to participate more actively in the national economy and increasing their purchasing power.

Research Objectives:

1. To explore Pradeep Kashyap's insights
2. To analyze the growth of companies in rural market
3. To assess the earnings and revenue generation from rural market
4. To demystify common rural marketing myths
5. To quantify the size and economic significance of the rural market

Major Findings:

Macro Scenario of Rural Market:

Rural India = 1 trillion \$ market = Canadian Economy

Developed Rural India are Punjab, Haryana, Maharashtra, Gujarat and the least developed Rural India are Bihar, Madhya Pradesh, Rajasthan, Orissa, Uttar Pradesh. The macro scenario of the rural market is very positive. The rural economy is growing faster than urban economy. India is size of Europe, every state as big as any country in the world. So, In Rural market they have to use Region Specific strategy, instead of going usual root, rather than setting up something for long term.

Size of Rural Market:

The size of the rural market is monumental, with a significant proportion of the Indian population residing in rural areas. Total size of Rural India is Rs.1 trillion \$ market, which includes FMCGs, durables & agricultural products. Growth of Rural India in 2013.2014 is 12.2% of world population will continue to live in Rural India which is single largest market in the world.

Infrastructure:

The structure includes transportation networks, communicating systems, power grids, water supply systems, waste management facilities and other public services.70% of villages are connected with all weather roads, which accounts for 90% population and 95% of purchasing power.

Myth About Rural Market:

Rural market is shrinking: But the truth is that there is a trend of reverse migration from urban to rural.12.2% of world population is rural area and 65% of Indian population.

Rural is an agrarian economy: The Non-farming sector already accounts for 60% of income, in Rural India

Consumption:

FMCGs grew up to 11% in urban areas and 18% in rural area. By 2020 the market for FMCG will be 360% in rural and 200% in urban areas.

Growth of Companies:

Traditional Rural marketing companies like Unilever, ITC, Ever ready which were present from 50 years back are already reaping the benefits. Every 100 villages there is a town like a hub and spoke model.

Conclusion:

2030, India is suppose to be China in Population. The growth in China is largely urban, the growth in India is going to be in rural. So, therefore India will continue to remain a fairly isolated economy because our's is a domestically driven market largely driven by Rural India. As Mahatma Gandhi said many years back India lives in villages, but Pradeep Kashyap said India will continue to live in villages.

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GREEN MANUFACTURING AND FINANCING FOR SUSTAINABLE MSMEs

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Abstract :

Nowadays, financial corporations can gain a competitive edge by using sustainable financing (SF). A variety of activities fall under the umbrella of sustainable finance, from investing in green energy projects to buying stock in businesses that uphold ethical ideals like social inclusion or good governance. The European Union, whose Green Deal Investment Plan seeks to raise \$1.14 trillion to help cover the cost of making Europe net zero in terms of climate change emissions by 2050, claims that sustainable finance has a crucial role to play in the world's transition to net zero by channeling private money into carbon-neutral projects. The ecological system is safeguarded and restored through sustainable development. Sustainable finance is facilitated by NABARD, SIDBI, NITI Aayog, and the World Bank to support company growth from MSMEs to major Industries to have a significant global influence. Banks, corporations, international financial institutions, institutional investors, climate funds, green bonds, microfinance, Make-in-India, etc. are the main sustainable finance providers to businesses and MSME's. MSMEs are engaged in waste management, clean energy, electric vehicles, recycling, solar power plants, renewable energy, green machinery, waste management, and poverty reduction, Based on the ministry of the environment. The government of India proposed the establishment of a Social Stock Exchange, Europe Investment Bank with SBI in order to fund India's \$280 billion requirement for green infrastructure. Understanding the influence of sustainable finance on MSME with regard to green growth and sustainable development is a major goal of the study. Theoretical ideas are employed in this paper. Secondary data and the descriptive approach are utilized in this study. According to the study, climate finance is needed for MSME to build greener production infrastructure and for government of India climate change missions to increase ESG and encourage sustainable development. The findings suggest that SF is used to advertise fresh, profitable financial ventures.

Key Terms: Sustainable Finance, Green Growth, MSMEs, Climate Finance, Sustainable Development Goals.

Introduction:

The backbone of emerging nations, micro, small, and medium-sized companies (MSMEs) play a crucial role in delivering goods, services, and jobs. The performance, competitiveness, and sustainability of MSMEs and other businesses are significantly at risk due to climate change. Business operations are at risk from machinery and inventory damage to the disruption of MSME and other organizations' business models as a result of the increased frequency and intensity of extreme weather events and slow-onset disasters. One financial tool to combat climate change and its effects is sustainable finance (SF), which encourages the development of renewable energy sources and sustainable

development with an eye toward environmental, social, and governance (ESG) factors (Environmental, Social and Governance).

Sustainable development is a concentrated endeavor to create a future for people that is inclusive, sustainable, and resilient. Sustainable development is defined as meeting existing needs without sacrificing the capacity of future generations to meet their own needs. There are 169 targets to be met before 2030 and 17 SDGs (Sustainable Development Goals) in the 2030 Agenda for Sustainable Development. Ending poverty by 2030, enhancing health and education, lowering inequality, and attaining economic growth are the main goals, together with combating climate change and protecting the oceans and forests. In order to ensure that natural resources continue to offer the resources and environmental services that are essential to our well-being, green growth means promoting economic growth and development.

The main goal of green growth strategies is to make sure that natural resources can sustainably fulfill their full economic potential. The cash will be used to improve energy and resource efficiency, water services, renewable energy, green building, waste management, and sustainable agriculture, as well as to reduce pollution and carbon emissions.

Literature Review:

1. Freimann, A., Ham. M., & Mijoc. J (April 2014) -The authors conducted extensive research on the measuring of subjective well-being (the quality of life) and objective well-being (economic development). They discussed several sustainability indicators and voiced concerns regarding standardized measurement and monitoring. They came to the conclusion that benchmarks and indicators, measure the efforts and outcomes connected to sustainable development.
2. Acemoglu, D., Akcigit, U., Hanley, D., & Kerr, W. (2016)- The study highlights that many nations have created green economic growth infrastructure for resources. Environmental protection as a result of growing environmental awareness, particularly in the area of energy transformation. In order to achieve routes to green growth, green technological innovation, such as the use of renewable and non-renewable energy, is crucial. These initiatives are predicated on the idea that environmental technology continually foster both green and economic growth at the county level.
3. Kamal- Chaoui. L. (April 2017) According to author, governments can only accomplish the SDGs if they develop robust MSMEs. The researcher stressed the necessity to increase the productivity of MSMEs while discussing the significance of MSME in innovation, employment generation, gender equality, inclusive development, etc. He expressed worry about the funding of MSMEs, their

involvement in global value chains, banking sector reforms, and novel Financing strategies.

4. Shashwat Koirala. (November 2018) The paper represents that MSMEs' potential to offer equitable growth and environmental sustainability are not incompatible goals. In reality, greening has the ability to enhance the performance of MSME businesses (via cost reductions and improved sales), which can result in the creation of employment and money. However, being green can also come with fees and hassles for MSMEs, which could have the opposite result.
5. Verma, T. L., & Nema, D. K. (2019) The paper highlights the objectives of sustainable development and the ability of MSMEs to achieve sustainability because of their extensive subsidiary organisation and the use of policy approaches by the Ministry of MSME to promote industry-related waste management, lean manufacturing, credit support, collaboration, and awareness programmes for MSMEs entrepreneurs. The author focuses on MSMEs that have been supported and promoted through suitable government initiatives.

Objectives:

- ❖ To explain Sustainable Finance, Green Finance, and Climate Finance
- ❖ To comprehend MSMEs role in sustainable development and green growth
- ❖ To evaluate the development of sustainable finance in India
- ❖ To assess the steps made by the RBI, NABARD, SIDBI and Niti Ayog

Scope of the Study:

This section's focus is on informing the public about the many government initiatives to promote a sustainable green revolution, lessen pollution, and advance the nation's social and economic development. It offers a chance to save the environment and encourage financial support for these green revolutions across a range of economic sectors. This article also discusses several NABARD and SIDBI funding initiatives for sustainable development.

Methodology:

Here, using already existing sources, a comprehensive study on the effect of sustainable finance on MSMEs to promote green growth and sustainable development is conducted. Secondary data and the descriptive approach are used in this paper. Due to the utilization of just secondary sources in this methodology, the researcher's data was only gathered from reputable, published secondary sources. Journals, magazines, reports, websites, and other sources are among them. The majority of the data was gathered from the websites of the Indian government's Ministry of MSME.

Data Analysis and Interpretation:

Explanation of Sustainable Finance, Green Finance, and Climate Finance Any financial service that incorporates environmental, social, and governance concerns into company or investment choices for the long-term benefit of both clients and society at large is referred to as Sustainable Finance. Climate Finance is local, national, or international funding that is derived from public, private, and alternative sources of funding and aims to promote climate change adaptation and mitigation measures. Green Finance is a type of financing that contributes to environmentally sound initiatives and should promote sustainable development in the nation.

Role of MSMEs in Green Growth and Sustainable Development:

Role of MSMEs in green growth:

In addition to making up around 30% of the GDP, the six crore MSMEs in the nation also support inclusive growth by giving employment to about 11 crore people. MSMEs are expected to contribute 50% of India's GDP and generate 15 crore jobs over the next five to six years. MSMEs in the auto-component business are anticipated to be significantly impacted by the shift from internal combustion engine (ICE) vehicles to electric vehicles (EVs).

Role of MSMEs in sustainable development:

- ❖ Employs more than 60 million unemployed and underprivileged people in about 11 lakh businesses across India.
- ❖ Make up the vast majority of farmers and food producers, ensuring a system of food production that is sustainable.
- ❖ As part of their CSR initiatives, they assist in setting up awareness campaigns, healthcare facilities, ambulance services, free medical examinations, etc. in rural areas.
- ❖ Develop the talents of rural youngsters while educating them. MSMEs support the opening of schools in rural and underdeveloped communities.
- ❖ By advancing gender equality and women's empowerment, female entrepreneurs now own almost 123 lakh proprietary businesses.
- ❖ Reduce contaminant levels, eliminate dumping activities, and restrict the release of hazardous residual materials to aid in improving water quality.
- ❖ Generating renewable energy and energy-efficient goods.
- ❖ Raised the industries' contribution to employment, exports, and GDP (GDP).
- ❖ Accounts for 40% of the nation's entire manufacturing output and 45% of the nation's total exports.

- ❖ Through initiatives like the urban renewal project, assist cities in becoming more inclusive.
- ❖ Implemented sustainable consumption and production practices by utilizing effective technology, maximizing the use of renewable resources, reducing the release of harmful residues, etc.
- ❖ Adopting green manufacturing strategies and use resources with consideration for the environment.
- ❖ Observe the law on water purity, waste management, environmental cleanup, etc.
- ❖ Should not overuse the majority of the forest's resources.
- ❖ Should abstain from using child labour and exploiting female workers
- ❖ To attain self-sufficiency, collaboration between the public and commercial sectors is required.

Evaluation of the Development of Sustainable Finance in India

- ❖ The World Bank estimates that the variance in climate, which has conflicting effects on the living standards of the population, will cause India's GDP to decline by 3%.
- ❖ SBI, SBI cap ventures, and New funds each provided \$100 million USD to an Indian firm that prioritizes the development of electric vehicles, waste management, efficient use of raw materials, and water.
- ❖ Banks, international financial institutions, governments, institutional investors, and organisations like the UN, OECD, G20, and EIB that operate through CSR initiatives, social stock exchanges, international solar alliances with banks like the World Solar Alliance, as well as New Development Banks, are the main players in sustainable finance in India.
- ❖ Sales of the linked foreign bond have grown to \$10 billion.
- ❖ 50 million new jobs will be created by India's green economy by 2030, and 15 trillion will be created by 2070.
- ❖ To protect developing nations from numerous financial risks, the United Nations Framework Convention on Climate Change was established.

Sustainable Finance Management

Table no. 1: Sector-wise Sustainable Finance Requirement

Sr. No.	Sectors	Cumulative Investment Requirement by 2030 (USD Billions)
1	Sustainable Agriculture	194
2	Pollution abatement	50
3	Energy	404(2018-30)
4	Transport -EVs	667(2018-30)
5	Waste management	11(2018-30)
6	Afforestation	140
7	Green Buildings	1400
8	Climate-resilient cities	128

Source: IFC & India-UK Sustainable Finance Working Group (2021)

Table no. 2: The European Investment Bank Financing in India (USD 4.55 Billion)

Sr. No.	Sector	Percentage Financing
1	Industry	2.73%
2	Energy	40.63%
3	Credit Lines	8.18%
4	Transport	47.85%
5	Services	0.19%
6	Agriculture, Fisheries & Forestry	0.09%
7	Water Sewage	0.33%

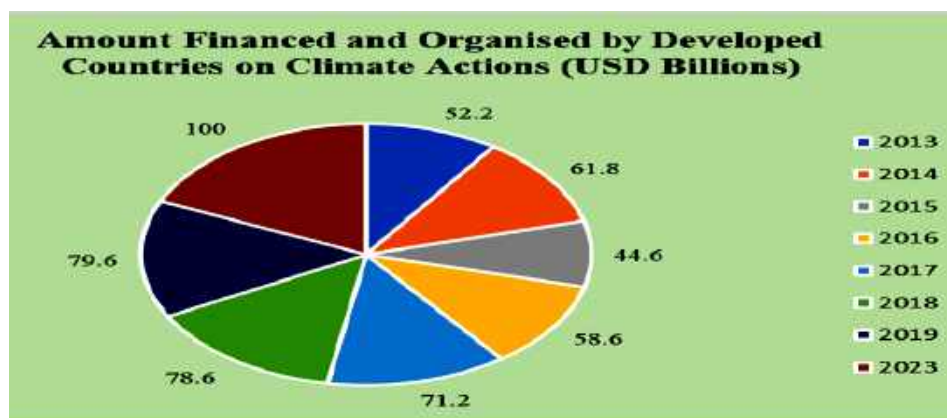
Source: European Investment Bank (2021). The European Union and India - Development Cooperation

Table no. 3: Amount Financed and Organized by Developed Countries on Climate Actions

Sr. No.	Year	Amount (USD Billions)
1	2013	52.2
2	2014	61.8
3	2015	44.6
4	2016	58.6
5	2017	71.2
6	2018	78.6
7	2019	79.6
8	2023	100

Source: Business India (November 2021) [https:// businessindia.](https://businessindia.)

Graph no. 1: Amount Financed and Organized by Developed Countries on Climate Actions



Interpretation: As per the data seen in Table 3 and Graph 1 above, developed countries funded and organized climate action projects worth 52.2 USD billions in 2013, 61.8 USD billions in 2014, and 44.6 USD billions in 2015. According to estimates, industrialized nations will finance and coordinate 100 USD billion worth of climate action in 2023.

Assessment of the Steps made by the RBI, NABARD, SIDBI and Niti Ayog:

RBI: Housing, social infrastructure, and renewable energy have all undergone changes as a result of the RBI's consideration of environmental concerns when evaluating agricultural price development in 2012 and 2015.

NABARD: Additionally, NABARD has made climate money for sustainable development easily accessible. It also offers numerous adaptation grants, green climate funds, and promotes cutting-edge agricultural technologies. APL-I, the production linked incentive, is one of the programmes NABARD launched to support organic farming, effective use of renewable resources, responsible waste management, the creation of employment possibilities, and other initiatives.

SIDBI: MSMEs' production and service activities provide 6.11 percent and 24.63 percent of the GDP and 33.4% of the manufacturing output in India, respectively, which supports the nation's economic expansion. SIDBI finances MEMEs to develop long- term green projects. The primary goals of financing the green revolution are to promote low carbon, efficient renewable resource utilization, and increased MSMEs' profitability [20].

NITI Aayog: Project Shoonya was started by NITI Aayog as a way to speed up the adoption of electric vehicles (EVs) for urban deliveries. The use of electric vehicles can reduce the need for oil as well as CO₂ and GHG emissions.

Discussions and Results:

NABARD has made climate finance easily accessible for sustainable development. It also offers numerous adaptation grants, green climate funds, and promotes cutting-edge agricultural technologies. SIDBI offers financing to promote low carbon, make optimum use of renewable resources, and increase the profitability of MSMEs. SBI, SBI cap ventures, each provided \$100 million USD to an Indian business that focuses on the development of electric vehicles, waste management, efficient use of raw materials, and water. By 2030, green building will require a total investment of 1400 USD billions, while EV transportation will demand 667 USD billions. The European Investment Bank made an investment of 4.55 billion US dollars. Transport received the highest investment (47.85%), followed by Energy (40.63%). In 2013, wealthy countries spent 52.2 USD billions financing and organizing climate action.

According to estimates, industrialized nations will finance and coordinate 100 USD billion worth of climate action in 2023. The regulatory framework for ESG disclosure was started by RBI, and commercial lending now takes environmental impact into account. Different forms of financing, such as Green Asset- backed Securities, must be employed to develop RE technology, and combined with increased subsidies, in order to achieve sustainable development. Emerging technologies like Blockchain, GPU, AI, and quantum computing have the potential to revolutionize environmental protection. Due to infrastructure and professional help in green and sustainable development, institutional engagement in ESG funds is more concentrated in the Western market than the Indian sector. The effectiveness of sustainable financing or climate finance, which is needed for MSMEs for greener production infrastructure and government of India missions on climate change, is to increase the ESG to support sustainable development, according to the final findings.

Conclusion and Suggestions:

Collaboration with international partners is essential to implementing climate change, and MSMEs are switching to green energy to reduce their activity's negative environmental impact and to focus regulatory attention on the green economy. Every ESG fund is Both investors and businesses can profit from sustainable finance, which also benefits the environment and the economy. Waste management, renewable energy, ecotourism, organic agriculture, and the development of cutting-edge technologies in MSME are all encouraged to attract more foreign direct investment. The policy actions to adopt green or sustainable finance in the ESG global wave must be started by the government.

On the basis of the study, we have some recommendations. Better connections between MSMEs and TNC (Transnational Corporations) affiliates would enable MSMEs to learn more advanced manufacturing techniques and could boost MSMEs' efficiency in terms of

value and quantity. Suppliers with a high level of development can encourage greater investment and enhance even the effects of foreign direct investment on development. To achieve the Sustainable Development Goals (SDGs) for MSMEs and to support a low-carbon, climate-resilient world, the Indian government must establish separate financial institutions for advising and re-financing financial intermediaries regarding appropriate policy, regulation, climate transition risks, legal, and market changes. These institutions must also integrate social, environmental, and governance. Charging stations and an environmentally sustainable, economically viable solution are needed to reduce pollution and accelerate the use of electric vehicles. It is necessary to improve the institutional credit support system. Along with lending options, a support network must be established so that MSMEs may talk about their issues and seek guidance from authorities. One such support scheme is Mudra Bank's credit plus strategy.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA FINANCIAL INCLUSION FOR MICRO, SMALL, AND MEDIUM ENTERPRISES (MSMES)

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Abstract

Financial inclusion is a critical driver of economic growth and development, and it plays a pivotal role in fostering the sustainability and resilience of Micro, Small, and Medium Enterprises (MSMEs). This abstract provides a concise overview of the importance of financial inclusion for MSMEs, highlighting key themes, challenges, and benefits associated with expanding access to financial services for this vital sector of the economy.

Financial inclusion for MSMEs encompasses various dimensions, including access to credit, savings, insurance, and digital payment solutions. To achieve meaningful financial inclusion for MSMEs, policymakers, financial institutions, and development organizations must address several challenges.

Despite these challenges, the benefits of financial inclusion for MSMEs are substantial. Access to credit enables MSMEs to expand their operations, invest in technology and innovation, and create more jobs. Savings and insurance products provide a safety net against unexpected events, enhancing the resilience of MSMEs.

This abstract emphasizes the importance of a holistic approach to financial inclusion, combining policy interventions, innovative technology solutions, and financial education programs tailored to the unique needs of MSMEs. Achieving financial inclusion for MSMEs can help unlock their growth potential, drive economic development, and contribute to poverty reduction.

In conclusion, ensuring financial inclusion for MSMEs is a crucial step towards achieving sustainable economic growth and development. Policymakers, financial institutions, and other stakeholders must collaborate to overcome barriers and design inclusive financial ecosystems that empower MSMEs to thrive in an increasingly interconnected and dynamic global economy.

Keywords: *Sustainability, Financial Services, Technology, Economic Development, Poverty Reduction*

Introduction

Micro, Small, and Medium Enterprises (MSMEs) are the unsung heroes of economies around the world. They are the engines of innovation, job creation, and economic growth, contributing significantly to GDP and fostering entrepreneurship. However, despite their undeniable importance, many MSMEs face a significant hurdle on their path to success: limited access to formal financial services. This limitation impedes their growth potential,

hampers their ability to invest in productivity-enhancing activities, and increases their vulnerability to financial shocks. It is in this context that the concept of financial inclusion for MSMEs takes center stage.

Financial inclusion refers to the universal access, availability, and usage of a wide array of financial services, including savings, credit, insurance, and payment mechanisms, by individuals and businesses, regardless of their income level or location. In the case of MSMEs, financial inclusion is not merely a matter of convenience; it is a catalyst for transformation, unlocking their potential to thrive, innovate, and contribute to broader economic development.

This paper delves into the complex and multifaceted relationship between financial inclusion and MSMEs, shedding light on the challenges these enterprises face in accessing formal financial services and the strategies that can be employed to bridge this gap. It explores the significance of MSMEs within the global economic landscape, emphasizing their role as critical drivers of employment and wealth creation. Furthermore, it outlines the importance of financial inclusion as a means to empower MSMEs and enhance their capacity to navigate an increasingly interconnected and dynamic business environment.

As we embark on this exploration, we invite you to journey with us through the intricate realm of financial inclusion for MSMEs. Together, we will uncover the barriers that hinder their access to financial services, examine successful initiatives from around the world, and propose recommendations to foster an environment where MSMEs can thrive and contribute more robustly to the socioeconomic fabric of their respective nations. In doing so, we hope to underscore the imperative of financial inclusion as a cornerstone of inclusive economic growth and development.

Review of Literature

Research on financial inclusion for Micro, Small, and Medium Enterprises (MSMEs) is a well-established field, and numerous studies have been conducted to understand the challenges, opportunities, and impact of financial inclusion initiatives on these enterprises. Here are some key themes and findings from previous research on this topic:

1. Access to Credit:

- ❖ Previous research has consistently highlighted the importance of access to credit for MSMEs. Lack of access to affordable credit has been identified as a significant barrier to growth and expansion for these enterprises.
- ❖ Studies have shown that when MSMEs gain access to credit, they are more likely to invest in productive assets, expand their operations, and create jobs.

2. Role of Financial Institutions:

- ❖ Research has examined the role of various financial institutions, including traditional banks, microfinance institutions, and non-banking financial institutions, in serving the financial needs of MSMEs.
- ❖ Studies have explored the impact of different financial products and services, such as microloans, savings accounts, and insurance, on MSMEs' financial well-being.

3. Technology and Fintech Solutions:

- ❖ The advent of technology and fintech innovations has transformed the landscape of financial inclusion for MSMEs. Research has assessed the impact of digital payment platforms, mobile banking, and peer-to-peer lending on these enterprises.
- ❖ Fintech solutions have been found to improve access to financial services, reduce transaction costs, and enhance the convenience of financial transactions for MSMEs.

4. Regulatory Frameworks:

- ❖ Studies have examined the regulatory environment and policy initiatives aimed at promoting financial inclusion for MSMEs. Research has assessed the effectiveness of government policies, including credit guarantee schemes and financial literacy programs.
- ❖ Regulatory reforms that simplify know-your-customer (KYC) requirements and create an enabling environment for financial institutions have been recognized as important factors in enhancing access to finance.

5. Financial Literacy and Education:

- ❖ Research has emphasized the role of financial literacy and education in empowering MSMEs to make informed financial decisions. Financial literacy programs have been shown to improve MSMEs' ability to manage their finances effectively.
- ❖ Studies have explored the impact of financial education on MSMEs' savings behavior, investment choices, and risk management practices.

Overall, previous research on financial inclusion for MSMEs underscores the importance of inclusive financial systems in fostering economic development and reducing poverty. It provides valuable insights into the strategies, policies, and interventions that can enhance access to financial services for MSMEs and promote their growth and resilience.

Financial Inclusion and MSMEs

1. Defining MSMEs:

Micro, Small, and Medium Enterprises (MSMEs) represent a diverse and dynamic segment of businesses that vary widely in size, scope, and industry. The classification of MSMEs may vary from one country to another, but there are common parameters that generally define them:

- ❖ **Micro Enterprises:** These are the smallest among MSMEs, typically employing fewer than 10 people. They often operate informally and engage in low-level economic activities, such as street vending or small-scale farming.
- ❖ **Small Enterprises:** Small enterprises are slightly larger, with employee numbers ranging from 10 to 50. They may have more structured operations, offer more specialized products or services, and contribute to local and regional economies.
- ❖ **Medium Enterprises:** Medium-sized enterprises employ anywhere from 50 to 250 people. They are often more established, have a formal organizational structure, and engage in a wider range of activities, both domestically and sometimes internationally.

2. Significance of MSMEs in the Economy:

MSMEs play a pivotal role in economies worldwide, and their significance can be summarized in several key ways:

- ❖ **Employment Generation:** MSMEs are prolific job creators. They often serve as a major source of employment, particularly in developing economies. By offering job opportunities to a large segment of the population, they contribute to reducing unemployment and underemployment.
- ❖ **Innovation and Competition:** MSMEs are known for their agility and innovation. They often introduce new products, services, and business models, driving competition and pushing larger corporations to adapt and innovate as well.
- ❖ **Local and Regional Development:** MSMEs are deeply embedded in local communities and regions. They contribute to economic development by supporting local supply chains, purchasing from local suppliers, and investing in community development initiatives.
- ❖ **Economic Resilience:** A diverse ecosystem of MSMEs can enhance economic resilience. In times of economic downturns or crises, they can pivot quickly and adapt to changing circumstances, helping to stabilize local and national economies.

3. Link between Financial Inclusion and MSME Development:

Financial inclusion for MSMEs is intrinsically linked to their development and growth prospects. Here's how financial inclusion and MSME development intersect:

- ❖ **Access to Capital:** MSMEs often require capital to expand operations, purchase equipment, hire additional staff, or innovate. Financial inclusion ensures that they have access to credit and investment opportunities, allowing them to realize their growth potential.
- ❖ **Risk Mitigation:** Insurance and risk management tools, which are part of financial inclusion, provide MSMEs with protection against unforeseen events, helping them weather financial shocks and continue their operations.
- ❖ **Increased Productivity:** Access to financial services such as digital payments and savings accounts can enhance the efficiency of MSMEs' financial transactions, reducing costs and increasing productivity.
- ❖ **Financial Literacy:** Financial inclusion initiatives often include financial education programs. These programs can empower MSME owners and operators with the knowledge and skills to make informed financial decisions and manage their businesses more effectively.
- ❖ **Market Access:** Financial inclusion can also enable MSMEs to access new markets, both domestically and internationally, by facilitating cross-border payments, trade financing, and access to e-commerce platforms.

In essence, financial inclusion serves as a catalyst for MSME development by addressing critical financial needs, reducing vulnerabilities, and unlocking the full economic potential of these enterprises. The relationship between MSMEs and financial inclusion is symbiotic, with each supporting and reinforcing the other in the pursuit of sustainable economic growth and development.

Challenges to Financial Inclusion for MSMEs

Access to Formal Financial Services, Lack of Collateral and Credit History, Financial Literacy and Education, Regulatory Barriers, Infrastructure and Technological Challenges

1. Access to Formal Financial Services:

- ❖ **Geographic Accessibility:** Many MSMEs, particularly those in rural or remote areas, struggle to access physical bank branches or financial service providers. Limited banking infrastructure in these regions can make it challenging for these enterprises to open accounts or access other financial services.
- ❖ **Financial Inclusion Awareness:** Some MSMEs are not aware of the available financial services or are hesitant to engage with formal financial institutions due to mistrust or a lack of understanding.

2. Lack of Collateral and Credit History:

- ❖ **Limited Assets:** MSMEs often lack the assets or property required as collateral to secure loans from traditional financial institutions. This absence of collateral makes it difficult for them to access credit.
- ❖ **Inadequate Credit History:** MSMEs, especially newer or smaller ones, may not have a well-documented credit history, making it challenging for financial institutions to assess their creditworthiness.

3. Financial Literacy and Education:

- ❖ **Limited Financial Knowledge:** Many MSME owners and operators may have limited financial literacy, making it challenging for them to understand complex financial products, manage finances effectively, or make informed decisions regarding loans and investments.
- ❖ **Risks and Costs:** Lack of financial education can lead to MSMEs taking on loans or financial products without fully comprehending the associated risks, terms, and costs.

4. Regulatory Barriers:

- ❖ **Overly Stringent Regulations:** Regulatory requirements can be burdensome for MSMEs, particularly in terms of compliance costs and administrative complexities. These regulations may limit the ability of smaller enterprises to access financial services or operate freely.
- ❖ **Lack of Incentives:** Regulatory frameworks may not provide adequate incentives for financial institutions to offer affordable financial services to MSMEs, especially when compared to serving larger, more profitable clients.

5. Infrastructure and Technological Challenges:

- ❖ **Limited Digital Infrastructure:** In some regions, inadequate digital infrastructure and connectivity can hinder MSMEs from utilizing digital financial services, mobile banking, and online payment systems.
- ❖ **Technological Barriers:** MSMEs may lack the technological know-how or resources to adopt digital financial tools effectively. Cybersecurity concerns may also deter them from embracing digital financial solutions.

These challenges collectively underscore the complexity of achieving financial inclusion for MSMEs. Overcoming these barriers requires a multi-pronged approach involving governments, financial institutions, non-governmental organizations, and international bodies. Efforts should focus on expanding financial literacy, streamlining regulations, improving infrastructure, and developing innovative financial products

tailored to the unique needs of MSMEs. Addressing these challenges can pave the way for greater financial inclusion, enabling MSMEs to thrive and contribute more effectively to local and national economies.

Strategies for Promoting Financial Inclusion

Microfinance and Small Business Lending, Digital Financial Services, Government Initiatives and Policies, Public-Private Partnerships, Financial Education and Capacity Building

1. Microfinance and Small Business Lending:

- ❖ **Microloans:** Microfinance institutions (MFIs) can provide small, uncollateralized loans to MSMEs, often with more flexible terms and lower interest rates than traditional banks. These loans can help bridge the gap for enterprises without access to formal credit.
- ❖ **Credit Cooperatives:** Encouraging the formation of credit cooperatives or self-help groups can promote savings and lending among MSMEs. These cooperatives pool resources and offer members access to affordable credit.

2. Digital Financial Services:

- ❖ **Mobile Banking:** Mobile banking platforms and digital wallets can reach MSMEs in remote areas, allowing them to conduct transactions, save, and access credit through their mobile devices.
- ❖ **Online Lending:** Online lending platforms and peer-to-peer lending can provide MSMEs with quick and convenient access to financing without the need for physical collateral.

3. Government Initiatives and Policies:

- ❖ **Credit Guarantee Schemes:** Governments can establish credit guarantee schemes that provide partial or full guarantees for loans made to MSMEs. This reduces the risk for financial institutions and encourages them to lend to smaller enterprises.
- ❖ **Subsidized Interest Rates:** Governments can subsidize interest rates on loans to MSMEs, making borrowing more affordable and encouraging investment in these businesses.
- ❖ **Regulatory Reforms:** Governments can streamline and simplify regulations to reduce compliance burdens on MSMEs and financial institutions, making it easier for them to engage in financial transactions.

4. Public-Private Partnerships:

- ❖ **Collaboration with MFIs:** Public-private partnerships can involve governments working with microfinance institutions and banks to extend financial services to MSMEs. Governments can provide support, funding, or regulatory incentives to encourage these partnerships.
- ❖ **Fintech Partnerships:** Governments can partner with fintech companies to develop innovative digital financial solutions tailored to the needs of MSMEs. These partnerships can help reach underserved segments of the market.

5. Financial Education and Capacity Building:

- ❖ **Training Programs:** Governments, NGOs, and financial institutions can offer financial literacy and entrepreneurship training programs for MSME owners and operators. These programs can enhance their financial management skills and business acumen.
- ❖ **Access to Information:** Providing MSMEs with information on available financial services, market opportunities, and best practices can empower them to make informed financial decisions.

Effective implementation of these strategies should be context-specific, taking into account the unique challenges and opportunities present in different regions and markets. Additionally, monitoring and evaluation mechanisms should be in place to assess the impact of these initiatives and make necessary adjustments to ensure the continued promotion of financial inclusion for MSMEs.

Policy Recommendations for Promoting Financial Inclusion for MSMEs

1. Regulatory Reforms:

- ❖ **Streamlined Compliance:** Governments should work to simplify and modernize regulatory frameworks related to MSME financing, reducing the bureaucratic burden on both financial institutions and MSMEs.
- ❖ **Risk-Based Regulations:** Implement risk-based regulations that take into account the size and nature of MSMEs, allowing for more proportionate requirements that still protect consumers and financial stability.
- ❖ **Credit Reporting Systems:** Develop or enhance credit reporting systems to ensure that positive credit histories of MSMEs are recorded and used to assess creditworthiness.

2. Strengthening Financial Infrastructure:

- ❖ **Digital Connectivity:** Invest in digital infrastructure to expand internet access and mobile coverage to remote areas, enabling MSMEs to access digital financial services.

- ❖ **Banking Correspondents:** Encourage the use of banking correspondents, agents, or outlets in underserved regions to provide basic banking services.
- ❖ **ATM Networks:** Expand ATM networks and ensure their accessibility in rural and urban areas, reducing the cost of accessing cash and conducting financial transactions.

3. Fostering Innovation and Technological Adoption:

- ❖ **Support Fintech Ecosystems:** Create a conducive environment for fintech startups and companies to innovate in the financial services sector. This can include regulatory sandboxes, tax incentives, and access to funding.
- ❖ **Digital ID Systems:** Develop secure and universal digital identification systems to facilitate e-KYC (Know Your Customer) processes, making it easier for MSMEs to access financial services.
- ❖ **Blockchain and Smart Contracts:** Explore the potential of blockchain technology and smart contracts for secure and efficient financial transactions and contract enforcement.

4. Enhancing Financial Literacy and Education:

- ❖ **Curriculum Integration:** Integrate financial literacy education into school curricula and vocational training programs to ensure that future entrepreneurs and business owners are better prepared.
- ❖ **Adult Financial Education:** Offer accessible financial literacy programs and resources for adults, focusing on practical financial management skills and knowledge about available financial services.
- ❖ **Mobile-Based Education:** Utilize mobile technology to deliver financial education content in a format that is easily accessible to MSMEs.

5. Monitoring and Evaluation Frameworks:

- ❖ **Impact Assessment:** Establish mechanisms for regular impact assessments of financial inclusion initiatives targeting MSMEs. Measure outcomes such as increased access to finance, improved business growth, and job creation.
- ❖ **Data Collection:** Invest in data collection and analysis tools to track progress and identify areas where interventions may be falling short or where adjustments are needed.
- ❖ **Stakeholder Collaboration:** Foster collaboration between governments, financial institutions, fintech companies, and civil society organizations to share data and insights that can inform policy decisions.

These policy recommendations are designed to create an enabling environment for MSMEs to access formal financial services, promote economic growth, and enhance financial inclusion. Effective implementation of these policies should be an ongoing process, responsive to evolving market dynamics and the changing needs of MSMEs. Regular assessment and adaptation of these policies will be crucial to ensuring that financial inclusion for MSMEs remains a priority on the global economic agenda.

Conclusion

Summary of Key Findings

In this study, we have explored the critical topic of financial inclusion for MSMEs and have drawn several key findings:

1. Financial inclusion plays a pivotal role in fostering the growth and sustainability of MSMEs. Access to credit, savings, and insurance services empowers these enterprises, enabling them to expand their operations, create jobs, and contribute significantly to the overall economy.
2. Government policies and regulatory frameworks, coupled with proactive involvement from financial institutions, are instrumental in promoting financial inclusion. Initiatives such as targeted loan programs, simplified KYC procedures, and financial literacy campaigns have shown promising results in enhancing access to financial services for MSMEs.
3. The rise of fintech solutions has revolutionized financial inclusion by providing accessible, affordable, and convenient financial services to previously underserved MSMEs. Mobile banking, digital payment platforms, and peer-to-peer lending have opened up new opportunities for financial inclusion.
4. However, significant challenges persist, including low financial literacy levels, regulatory hurdles, and gender disparities in access to financial services. Overcoming these obstacles remains a critical task for policymakers, financial institutions, and development organizations.

Implications for Policymakers, Financial Institutions, and MSMEs

The findings of this research have several important implications for various stakeholders:

1. **Policymakers:** Governments should continue to prioritize financial inclusion as a key component of economic development. This involves creating an enabling regulatory environment, implementing targeted policies, and investing in financial education initiatives. Policymakers should also consider the integration of fintech innovations into their strategies to promote wider financial inclusion.

2. **Financial Institutions:** Banks, microfinance institutions, and fintech startups have a pivotal role to play in expanding financial services to MSMEs. They should continue to develop innovative and tailored products that meet the diverse needs of these enterprises. Moreover, fostering partnerships with government agencies and non-profit organizations can enhance outreach and impact.
3. **MSMEs:** Small and medium-sized enterprises should take advantage of the available financial inclusion opportunities. They should seek financial literacy training, explore various financing options, and leverage technology to access financial services efficiently. By doing so, they can enhance their competitiveness and resilience in a rapidly changing business environment.

Importance of Continued Efforts towards Financial Inclusion

The journey toward full financial inclusion for MSMEs is an ongoing one, with significant implications for economic growth, job creation, and poverty reduction. The importance of continued efforts in this regard cannot be overstated. Financial inclusion has the potential to unlock the latent entrepreneurial talents and economic contributions of millions of MSMEs around the world.

In conclusion, financial inclusion for MSMEs is not merely a social or economic imperative; it is a catalyst for inclusive growth and development. By addressing the challenges, seizing emerging opportunities, and maintaining a commitment to financial inclusion, we can build more resilient and prosperous economies, where MSMEs thrive, and where no one is left behind. It is a shared responsibility that requires collaboration among policymakers, financial institutions, MSMEs, and civil society.

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TECHNOLOGY UPDATION IN MSMEs

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Abstract:

The Micro, Small and Medium enterprises (MSME) sector has emerged as a dynamic sector of the Indian economy and an essential driver of economic process. It considerably helps in developing entrepreneurship and generates second largest employment prospects. With a vast network of sixty-three million three hundred eighty thousand enterprises, more than forty per cent of exports, over twenty eight per cent of the Gross Domestic Product and generating employment for about one hundred eleven million people, the MSME sector contributes in a significant way to the development of the Indian economy. The world economy is growing at a slower rate thus a lot of emphasis is required on developing MSME sector to extend employment opportunities specifically for young people. Technology has made it possible for people from all walks of life to have access to different resources. Further, technology is also being used to equip people who need a certain type of assistance to improve their quality of life and help them avail opportunities that would otherwise be inaccessible.

Keywords: MSMEs, Technology updating

Introduction

The Micro, Small and medium enterprises of India is an important driving factor for the growth of Indian Economy. These MSMEs not only provide the employment opportunities but helps in the process of industrialization in rural areas simultaneously reducing the unequal income distribution among the residents. The MSMEs contribute significantly in the development of Indian economy through export production, domestic production, low investment requirements, operational flexibility, technology oriented enterprises etc. In India, after agriculture, small business is the second largest employer of human resources. MSMEs constitute more than 80 percent of the total number of industrial enterprises and support industrial development, 40 per cent of industrial output, 80 per cent of employment in the industrial sector, 45 per cent of value added by the manufacturing sector and 40 per cent of total exports. In this paper an attempt is made to know the growth and contribution made by Micro, Small and Medium Enterprises in India and to understand the role of MSMEs in providing employment opportunities in India.

Definition of MSMEs

In accordance with the provision of Micro, Small and Medium Enterprises Development (MSMED) Act, 2006 the Micro Small and Medium Enterprises are classified in two classes:

- a) Manufacturing Enterprises – Investment in Plant and Machinery
- b) Service enterprises- Investment in Equipment.

a) Manufacturing Enterprises:

The enterprises engaged in the manufacture or production of goods, pertaining to any industry specified in the first schedule to the industries (development and regulation) act 1951, having investment in plant and machinery of Rupees up to 25 lacs, above 25 lacs and up to 5 crores. Above 5 crores and up to 10 crores called micro, small and medium enterprises, respectively.

b) Service Enterprises:

The enterprises engaged in providing or rendering services having investment in equipment of Rupees up to 10 lacs, above 10 lacs and up to 2 crores, above 2 crores and up to five crores called micro, small and medium enterprises, respectively

Technology

Technology has always been important everywhere including economy, business and enterprises. However, the technological obsolescence is a big challenge in developing countries like India, impacting the MSME market (Mukherjee, 2018). While India has a huge collection of technical talent with well-established intellectual skills, it still scores less in terms of designing, marketing, and implementing new and innovative technologies. After the implementation of 11th Five Year Plan by Government of India (GOI), although technology adoption has considerably increased, the usage of technology especially in MSMEs still takes a back seat (Planning Commission of India, 2008). To overcome many challenges, MSMEs need to update technology and modernise through policy interventions and financial incentives. The high speed of change in technologies is quickly motivating the customers, businesses and technology firms to merge with upcoming technologies. Consequently, there exists a strong requirement for speeding up technology acceptance in the small business community also (Singh and Singh, 2014). According to a survey carried out by Tally and Kantar among 2250 MSMEs from various vertical industries in 34 cities across the country, 35% of MSMEs have already implemented applications for business management and over 40% of MSMEs use digital banking and payment services, with another 40% likely to implement digital banking and payment services in the near future (Economic Times, 2019b). Information and communication technologies (ICTs) can help a

company's business strategy by overcoming barriers of entry into competition, building of suppliers and consumers' negotiation and selling specialised and low-cost commodities.

In recent years, the rapid development of ICTs has opened up a medium for MSMEs to meet global customers. ICT lets businesses manage customer information and determine the target business segments. Practically, there is no match or alignment between large corporations and MSMEs that can implement the adoption of technology in MSMEs. Organisations such as the Common Service Centers (CSC), Entrepreneurship Development Institute (EDI) etc. have started to bring MSMEs into the digital network to provide them with a digital identity. The Ministry of Micro, Small and Medium Enterprises has decided to establish 20 technology centres in the next 3–5 years, along with extension centers nationwide. There is a proposal to have approximately 100 extension centers, each with an investment of 20 crore (The Hindu, 2019). The technical aspects can be divided into different factors, which have an individual impact for MSMEs to embrace and enforce.

Benefits for Technology Updating for business in MSMEs

1. Improved Business Agility

Technology solutions allow small businesses to remain agile and quick to respond to change within the markets. Integration of various tech leads to increased collaboration among teams leading to better product development. Faster product launches, better quality innovations, and improved product features will drive your business growth.

2. Improved Staff Coordination and Collaboration

Significant advances in communication technologies have allowed corporations to organize their teams better. Software products such as Asana and G suite improve collaboration among your staff members. VOIP systems, conference calls, and telepresence software allow employees to interact remotely from any part of the world. It improves efficiency in the running of the business as well as promotes better work-life balance.

3. Automation and Productivity

The adoption of technology solutions for business allows small and medium-sized enterprises to run as efficiently as the larger corporations. Tapping into the benefits of high-speed internet and automation software allows for better handling of vital tasks. Automation tools can enhance your digital presence and engagement with your customers.

4. Increased Revenue Streams

Technology solutions for business allow executives to generate new sources of revenue for their enterprises. The creation of e-commerce stores enables sales teams to target a broader customer base. In 2019, consumers spent over \$601.75 billion with U.S. online

merchants, up 14% when compared to 2018. Businesses are also tapping into the wonders of SEO and PPC marketing to generate more leads and revenue.

5. Better Storage Solutions

IT infrastructure modernization enables businesses to drop outdated legacy systems for cloud storage solutions. Cloud storage systems are reliable, allowing for restricted access to business information from any place in the globe. It enables your teams to work remotely, accessing the necessary information. It also eliminates the need to maintain bulky servers, saving on space and cost.

6. Financial Savings

Business and corporate executives are adopting Infrastructure as a Service, outsourcing most of their IT solutions to consultancy firms. The managed services market was valued at approximately \$170 billion by 2019. Communication solutions such as video conferencing and VOIP enable businesses to save on travel costs and accommodation. Cloud services reduce data storage costs. Automation reduces the need for surplus staff, saving on labor costs.

7. Improved Data Security

Technology solutions for business can help you better protect your corporate information. Network security threats are at an all-time high, costing the average small business approximately \$3.92 million in damages. Tech support for small businesses can help create encryptions and firewalls that enhance your data security.

8. Better Customer Experience

Intuitive web designs can help streamline your operations on the first point of contact with your potential clients. Automated tools can enable customers to book appointments and consultations. IFTTT systems help address customer issues at any given moment. These technological systems can help build consumer trust and brand image. Improved Business Agility. ...

Conclusion

Overall, digital transformation can offer a range of benefits to MSMEs in India, including increased productivity, improved customer service, enhanced sales and marketing, improved access to finance, and enhanced innovation. Digitization is like a superpower that can transform small and medium businesses into unstoppable forces in the Indian economy, as these businesses contribute almost 33% of the country's Gross Domestic Product (GDP). The MSME sector has indeed seen a boom in the adoption of digital platforms and payments post-pandemic.

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AGRICULTURAL REFORMS: NEED AND SCOPE

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Abstract

Agricultural systems worldwide are under pressure due to various challenges, including unsustainable practices, income disparities, inadequate technology adoption, and vulnerability to climate change. This article examines the pressing need for comprehensive agricultural reforms and explores the potential scope of these reforms. The need for sustainable development, equitable income distribution, technology adoption, improved market access, and climate resilience are highlighted as driving factors. The scope of reforms encompasses land distribution, financial support, extension services, market enhancements, research and innovation, policy adjustments, and education. By addressing these areas, countries can harness the full potential of agriculture, ensuring food security, livelihood improvement, and environmental sustainability. Successful implementation of agricultural reforms necessitates collaborative efforts among stakeholders, fostering a balanced and thriving agricultural sector.

Keywords: Agricultural Reforms, Sustainable Development, Environmental Sustainability.

Introduction

Agriculture plays a pivotal role in the economies of many countries, serving as a primary source of food, livelihood, and economic growth. However, the sector often faces numerous challenges that can hinder its potential contribution to sustainable development. Agricultural reforms are essential to address these challenges and unlock the sector's potential for the benefit of both rural communities and the broader economy. This article discusses the need for agricultural reforms and explores the scope of potential changes.

Need for Agricultural Reforms

Sustainable Development

The current agricultural practices in many regions are often unsustainable, leading to soil degradation, water depletion, and biodiversity loss. Reforms are needed to promote sustainable agricultural practices that ensure long-term food security and environmental health.

Income Disparities

Agriculture employs a significant portion of the population, especially in developing countries. However, income disparities between small-scale farmers and large agribusinesses are common. Reforms can help ensure fair income distribution and improve the livelihoods of small farmers.

Technology Adoption

Agricultural technology has evolved significantly, offering solutions to increase productivity, reduce post-harvest losses, and enhance resource efficiency. Reforms can facilitate the adoption of these technologies by providing access to improved seeds, machinery, and knowledge.

Market Access

Many small farmers face challenges in accessing markets due to inadequate infrastructure, limited transportation, and lack of information. Reforms can improve market access by investing in rural infrastructure, establishing market linkages, and enhancing value chains.

Climate Change Resilience

Agriculture is highly vulnerable to climate change impacts, such as erratic weather patterns and extreme events. Reforms should focus on building climate-resilient farming practices and promoting crop diversification.

Scope of Agricultural Reforms**Land Reforms**

Addressing issues related to land ownership, tenancy, and land use is crucial. Land reforms can help redistribute land more equitably among small farmers, encourage efficient land use, and reduce disputes.

Financial Support

Providing access to credit and insurance services can help farmers manage risks and invest in modern agricultural practices. Government subsidies and support programs can also be reformed to target those who need them most effectively.

Extension Services

Strengthening agricultural extension services can facilitate the transfer of knowledge and best practices to farmers. Reforms can include training programs, workshops, and the use of digital tools for disseminating information.

Market Reforms

Developing efficient marketing systems, establishing farmer-producer organizations, and creating agri-business networks can help farmers fetch better prices for their produce and reduce post-harvest losses.

Research and Innovation

Investing in agricultural research and innovation is crucial for developing new technologies and practices that address emerging challenges. Reforms can ensure that research efforts align with practical needs on the ground.

Policy Framework

Reforms should also target policy frameworks that support sustainable agriculture. This involves removing barriers, reducing bureaucracy, and promoting policies that incentivize environmentally friendly and socially equitable practices.

Education and Training

Reforms in education and vocational training can equip the younger generation with the necessary skills and knowledge to engage in modern and sustainable agricultural practices.

Conclusion

Agricultural reforms are imperative to ensure the sector's sustainable growth, enhance food security, and uplift the livelihoods of rural communities. These reforms encompass a wide range of areas, from land management to market access, and require collaborative efforts from governments, international organizations, farmers, and other stakeholders. By addressing the pressing issues faced by agriculture and embracing innovative solutions, countries can unlock the true potential of their agricultural sector while promoting economic prosperity and environmental well-being.

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WOMEN EMPOWERMENT: PROBLEMS

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Abstract

Women's Empowerment has been a topic of intense debate and consideration throughout the last few decades. This agenda has also been at the top of the lists of most government initiatives and programmes. Efforts are being made on a daily basis across nations to solve this issue and improve women's socioeconomic condition. However, it has been found that most policies and programmes approach empowerment solely in terms of economic self-sufficiency, ignoring other variables such as health, education, literacy, and so on. Introduction Woman has always been as significant as man in the history of humanity. In reality, the position, employment, and work undertaken by women in society are indicators of a country's general well-being. A country's social, economic, and political progress will be stalled unless women participate in national activities. Women make up half of humanity and labour for two-thirds of the world's hours. She owns less than one-tenth of the world's resources and gets barely one-third of the entire revenue. This demonstrates that women's economic standing is abysmal, especially in a country like India. "Women account for nearly half of the population, perform two-thirds of the work, and produce half of the food commodities consumed by the country." They receive one-third of all salaries and own 10% of the country's property or wealth."

Keywords: Women, Empowerment, Issues.

Introduction

Women were admired and worshipped as deities in ancient Indian civilization. However, during the mediaeval ages, women's standing had plummeted significantly. Women are only valued in society for their ability to raise children, care for other family members, and perform other home tasks. For years, people have held the traditional belief that men are for the field and women are just for the home. Women are now breaking down all the obstacles and problems that have been placed against them in society. Previously, women faced numerous challenges as a result of a male-dominated, patriarchal society system, the practise of old traditional beliefs, and so on. Women were only accountable for conventional roles such as child bearing and child rearing. Even in the modern world, where women's status has improved slightly, they still face challenges. They must carry out both familial and professional commitments without the assistance of their husbands. In certain circumstances, women's conditions worsen when they are mistreated by family members rather than receiving assistance. Sexual harassment by family members, relatives, neighbours, acquaintances, bosses, and others is more widespread at home and in the workplace. They must endure a great deal in their daily lives.

Issues and Problems faced by Women in India

There are various issues and problems which women generally face in the society in India. Some of the problems are mentioned and described below:

- **Selective abortion and female infanticide**

It is the most common practice for years in India in which abortion of female fetus is performed in the womb of mother after the fetal sex determination and sex selective abortion by the medical professionals.

- **Sexual harassment**

It is the form of sexual exploitation of a girl child at home, streets, public places, transports, offices, etc by the family members, neighbors, friends or relatives.

- **Dowry and Bride burning**

It is another problem generally faced by women of low or middle class family during or after the marriage. Parents of boys demand a lot of money from the bride's family to be rich in one time. Groom's family perform bride burning in case of lack of fulfilled dowry demand. In 2005, around 6787 dowry death cases were registered in India according to the Indian National Crime Bureau reports.

- **Disparity in education**

The level of women education is less than men still in the modern age. Female illiteracy is higher in the rural areas. Where over 63% or more women remain unlettered.

- **Domestic violence**

It is like endemic and widespread disease affects almost 70% of Indian women according to the women and child development official. It is performed by the husband, relative or other family member.

- **Child Marriages**

Early marriage of the girls by their parents in order to be escaped from dowry. It is highly practiced in the rural India.

- **Inadequate Nutrition**

Inadequate nutrition in the childhood affects women in their later life especially women belonging to the lower middle class and poor families.

- Low Status in the Family
- It is abuse or violence against women.
- Status of widows

Widows are considered as worthless in the Indian society. They are treated poorly and forced to wear white clothes.

Some of the significant issues that modern women continue to face are listed below:

- **Violence against women:** Almost every day, women are victims of various forms of violence, which disrupts society. Women are becoming increasingly vulnerable to violence as a result of rising crime against women (according to a report from the Central Home Ministry's Crime Record Bureau). Every 44

minutes, a woman is kidnapped, every 47 minutes, a dowry is killed, and so on. They may be subjected to violence within the family (dowry-related harassment, death, marital rape, wife-battering, sexual abuse, withholding of healthy food, female genital mutilation, and so on) or outside the family (kidnapping, rape, and murder, among other things).

- **Discrimination based on gender:** Women are viewed as a weaker segment of society than men and are given less weight. Girls' children are becoming actual discrimination victims. Because of the patriarchal culture of Indian households, there is also power and work discrimination between men and women. Gender discrimination impacts women in sectors such as nutrition, education, health, care, female population decline, job, public life, and so on.
- **Female education issues** Women's education is poor in India, particularly in rural regions, because they are discouraged from pursuing higher education such as professional and technical education.
- **Unemployment-related issues** Women are having more difficulty finding acceptable employment. They become more vulnerable to exploitation and harassment at work.
- **Boss On Purpose** Their supervisor deliberately assigns them additional work and difficult tasks. They must demonstrate their dedication, seriousness, and sincerity towards their profession on a regular basis.
- **Unbearable Situations** Women who are uneducated are more likely to divorce and be abandoned by their spouses at any age. They must live their entire lives in terror of divorce. In certain cases, they are forced to end their lives due to harsh circumstances.
- **Increasing** Dowry system is another significant women's problem in society that is getting worse by the day. Women are abused, mistreated, humiliated, tortured, and subjected to various atrocities (violence, murder, and suicide) as a result of a lack of dowry at the time of marriage. It has a significant impact on women's standing.

Conclusion

When a woman leads her family, the village and the nation advance. This is vital because their ideals and value system form the foundation of a good family, a good society, and, eventually, a good nation. Inclusion of women in the mainstream of development is the most effective approach to empower them. Women's empowerment will be real and effective only when they have enough income and riches to stand on their own two feet and establish their identity in society. Women's empowerment has emerged as one of the most pressing issues of the twenty-first century, both nationally and internationally. Government measures alone will not be sufficient to attain these objectives. There should be no gender discrimination, and society should take the effort to establish such an environment, in which women

have complete self-determination and can participate in the country's social, political, and economic life with equality.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

Volume - 1

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INDUSTRY 4.0 AND ITS IMPACT ON INDIAN ECONOMY

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Abstract

Developed economics such as Germany, Japan, the United States and Singapore have industry 4.0 to boost their manufacturing competitiveness. In terms of Industry 4.0 adoption, India presently lags behind its worldwide peers. It has, however, begun to incorporate these technologies into its industrial processes, which has resulted in a number of positive outcomes. Since the start of civilization, humans have strived to increase their capacity and power. Initially, they used wood or pebbles as equipment, but as science progressed, they found complex and efficient technology, and this process is currently ongoing. Machines are an example of a human invention. The introduction of machines sparked the first industrial revolution. It was labeled a revolution because it not only increased output but also caused significant social and economic changes. For example, in the 1790s, the French Revolution invented new concepts such as equality, liberty, and brotherhood; a few years later, the first industrial revolution infused those ideas. It shows that industrial revolutions have a huge impact on both our society and the global economy. In this framework, the current study seeks to describe the impact of Industry 4.0 on Indian industry.

Keywords: *Developed Economics, Industrial Revolution, Industry 4.0.*

Introduction

Humans have attempted to expand their capacity and strength since the dawn of civilization. Initially, they used equipment made of wood or pebbles, but as science advanced, they discovered sophisticated and efficient technology, and this process is still ongoing. Machines are one of human inventions. The first industrial revolution was caused by the use of machinery. It was dubbed a revolution because it not only raised output but also brought about enormous social and economic changes. For example, in the 1790s, the French Revolution generated new principles such as "Equality, Liberty, and Brotherhood"; the first industrial revolution, which occurred a few years later, infused those ideas. It means industrial revolutions have a huge impact on our society, not only society but it also affects the world economy.

Today, technology has advanced to the point where we are on the verge of the Fourth Industrial Revolution. New technological developments such as artificial intelligence, the internet of things, big data, and so on will alter the entire landscape of the current sector. Industry 4.0 will transform the way we work, live, think, and interact with one another. Artificial Intelligence (AI) is a key component of Industry 4.0. It helps machines to think, learn, and make decisions. AI is likely to cause a revolution in the space sector as well. In the near future, robots will be deployed to space instead of humans, resulting in new advances in space science. AI will boost not only the space industry, but every area, from

agriculture to healthcare and education. On the one hand, AI will be utilised to tackle difficult challenges such as security, terrorism, surveillance, and traffic control, and on the other, it will bring about dynamic changes in banking, airlines, medical technology, and education. We can also do important cancer surgeries using nanotechnology.

Industry 4.0 Technologies and their Industrial Applications

Another technological advance is the Internet of Things (IOT), which allows machines to connect with one another. IoT combined with AI will transform factories into smart factories, towns into smart cities, automobiles into smart automobiles, and homes into smart homes. If this occurs, human efforts will be reduced to a bare minimum. Big data analytics is another important aspect of Industry 4.0. It is primarily designed to collect consumer information and data so that manufacturers may create appropriate products and services for them. Data is extremely crucial in today's digital environment. Imagine, if this massive amount of data is properly digested, we will see magical changes all around us. We will receive proper on-time services, saving both money and time. Big Data will, in fact, radically revolutionise the governance structure. It will be more transparent and efficient as a result. Governments struggle with policy implementation. Big Data and AI are expected to work together to solve this challenge. The government will be able to reach every person in need, and no one will be denied justice. It means that in the future, Big Data will enable inclusive socioeconomic development.

Industry 4.0 Technologies and Data Privacy

According to the UN, privacy is one of the human fundamental rights. Can we ensure privacy while installing this technology? Is Industry 4.0 going to ruin our fundamental rights? Actually, when we are considering Big Data we are considering data of millions of TB. In such huge amount of data, personal data doesn't matter much. But this data can be used to influence people politically and may hamper democratic processes also. This data, if not properly guarded, may cause civil wars or riots. So this is going to be a big challenge in the future. Industrial revolution puts a big impact on world economy and changes its basic structure. For example, the first industrial revolution transformed the agrarian economy into the manufacturing economy; the second industrial revolution reshaped it into the service-based economy and during the IT revolution the world's economy became a knowledge-based economy. But in this advancement, if one had to sustain he/she has to learn new skills and techniques. For example, when tractors and electric pumps were introduced in the farming sector, only those farmers could sustain well who trained themselves in accordance with modern technology and the rest failed.

Impact of Industry 4.0 Technologies on Human and the Workforce

A huge question arises when we think about artificially intelligent machines: "Will there be any job left for humans?" Actually, jobs are not dying but they are evolving. It is obvious that Industry 4.0 will replace some jobs, but is also creating new jobs like big data

analytics, VR designer, block chain auditor, social media reporter, drone operator space visit guide and many more. It is expected that high-skilled and low skill jobs will stay as before, but middle-tier jobs will be replaced by AI robots. This is known as job polarisation in the economic terms. If workers want to sustain then they have to learn new technological skills. Researchers of Oxford University have found that jobs which are related to manual dexterity, high cognitive skills and social skills are difficult to be computerized, and workers should focus on developing these skills. Doctors are going to be replaced by AI robots in future but if a doctor is trained with hospitality skills and caretaking skills, then he/she will be preferable over a robot-doctor. It means jobs are going to be knowledge-centric and talent centric. A construction worker has to learn something about electronics apart from construction skills if he/she wants to build an automated smart home where sensors are used. Hospitality, condolence, politeness these are some qualities which should be learned as these will value add our character.

In the recent times, human race are heading towards a Gig economy. Gig means not continuous. It is predicted that normal continuous jobs will be reduced and these will be replaced by contractual jobs. If there will be no permanent jobs then there will be no paid holidays and no insurance schemes and also no fixed income. It may create unemployment like situation but I think gradually it will become part of our habit. So the beginning period is going to be tough and it is also expected that the revolution may slow down the world economy for a small period. So we should get ready for it. It is often observed “lack of reciprocity between technology and skill results in social inequality”. Those who learn new skills time to time and update their work with new technology will succeed and for the rest, fourth industrial revolution will be a big challenge. Actually, it depends on you whether Industry 4.0 will be a boon or a curse.

Economic Benefits Provided by Industry 4.0 Technologies

Industry 4.0 technologies will help in the economic regeneration by 2025 enabling enterprises to revamp India's financial status in the post-COVID era besides acting as game-changers. The role of corporations through AI is going to be key for the comeback of the Indian economy post-pandemic. New-age technologies such as block chain, big data analytics, Internet of things (IoT), advanced manufacturing, quantum computing and AI are set to give India a possibility to engrave itself a striking uniqueness as an “International nucleus” in the near future. As AI functions for “digital inclusion” in India, it is expected to have a ripple impact on economic prosperity and growth. Analysts foresee that AI can help add up nearly \$957 billion to the Indian economy by 2035 and by 2025, AI can add over \$500 billion and nearly 20 million jobs to the Indian economy. The Indian government is also in the process of implementing a robust legal framework governing the data of the country apart from constructing a data-driven society through AI that presents endless prospects to empower people, enhance society and also boost the ease of doing business. India through its AI strategy, constituting an extensive pool of AI workforce and an

emerging startup ecosystem, has a remarkable chance to be a prominent contributor to AI-driven resolutions that can further transform agriculture, healthcare, manufacturing, education and skilling thereby impacting the economy positively to a considerable extent. The adoption of AI in various sectors of the economy is seen to have produced favorable returns by lessening time and risk.

Government Initiatives to Speed up the Implementation of Industry 4.0

Recently, the Ministry of Commerce and Industry has set up a Taskforce on AI to kick-start the usage of AI for the country's economic shift. Nonetheless, AI adoption has remained at a developing stage. Therefore, the Indian government should consider establishing a separate "Industry 4.0 Ministry" for coordinating all new age technology related activities. For instance, the United Arab Emirates (UAE) in 2017 became the first nation in the world to create the post of Minister of State for AI. Today, governments globally are also taking measures to be part of the AI-led digital economy, which is assessed to contribute roughly \$15.7 trillion to the global economy by 2030. Considering India's present situation, the country is on the verge of a massive opportunity for both economic advancement and gain in the common well being of its citizens. "Inclusive economic growth" can make India the best playground for creating world-class and state of the art technology solutions. For this, the government through its annual budget must consider allocating more for Research and Development (R&D) in various sectors and also establish R&D departments in various educational institutions and universities across the country. India through General-purpose technologies (GPTs) can also influence the whole economy where GPTs have the possibility to drastically transform societies through their effect on the already existing economic and social arrangements.

Growth Potential of Industry 4.0 in Indian Economy

The adoption of AI is not confined to businesses alone, while economies have also shifted their emphasis on creating their AI capacities as a tool to boost growth where developed nations are already in the race and India as an aspiring future superpower is set to enter the AI race. Amidst the accelerated adoption of AI-based technologies, India seems to stand at the ridge of Industry.

Therefore, it would be a convenient shifting for India to create its AI abilities despite the transnational digital divide broadening even more. From the first industrial revolution until the rise in the IT revolution, the world has stood to benefit more and as per experts, AI like any other new technology in the past will produce more jobs than it destroys. Still, it is seen that the "Initial adoption of technology" has barriers for developing economies where restricted access to Industry 4.0 can broaden the income inequality, and the transformation stage of adoption is presumably to replace some jobs before it produces more jobs. While the influence of AI on the gross domestic product (GDP) and productivity is impressive, studies have also demonstrated the harmful effect of AI on employment. McKinsey Global

Institute indicated that intelligent mechanisms and robots could eliminate nearly 30 per cent of the global human labor by 2030. Also, with the rise in unemployment, this transformation could become quite difficult though in the past, new technologies have demonstrated to be worthwhile in the long-term, the short-term failures cannot be justified. Nevertheless, India still lags on essential indicators of AI development despite possessing increased levels of entrepreneurship, robust corporations and a skilled pool. Therefore for the betterment of the essential AI indicators a balanced approach, innovative local solutions and top-down policy making should be put forth. Also, the enhanced role of government along with the private sector will be instrumental in directing AI to create equitable development. Furthermore, the continued innovations and collaborations by Public-Private Participation (PPP) are necessary to lessen the cost of modern technologies, which can help the larger population thereby driving the “digital revolution”. However, India should also mainly consider improving its “hardware sector” to help redress bottlenecks since the country still lags behind which is vital for the Indian economy.

Conclusion

India is anticipated to have the world's youngest population by 2030, accounting for approximately 30% of the global workforce. As a result, AI can drastically increase the productivity of the average worker to meet the level of today's top achievers. There is also a need to foster "scientific temperament" among the people of the country regarding new generation technologies, in addition to taking the ethics and security of Industry 4.0 into account. In this regard, India's "National strategy for AI" recently advocated the establishment of ethics councils for sector-specific concerns like privacy, security, and ethics. Industry 4.0 can also assist the country in meeting the Sustainable Development Goals (SDGs), which can propel the Indian economy forward. In the long run, the Indian economy and society are clearly prepared for a sea change, and the courageous aim of making India a \$5 trillion economy by 2025 can be realised with the implementation of Industry 4.0.

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THE IMPACT OF WOMEN EMPOWERMENT SCHEMES IN TAMIL NADU STATE TRANSPORT CORPORATION LIMITED (TNSTC), COIMBATORE

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Abstract

Economic development of a country is largely conditioned by the adequacy, efficiency, regularity, safety and punctuality of transport services. It links up villages, towns, cities and metropolises and it also integrates the economy. Transport is an infrastructure, a public utility and a commercial venture and therefore it is unique in more than one sense. Among the four major modes of transport namely road, rail, water and air, the first one lends itself to a greater flexibility, variety and versatility. The road transport which encompasses the passenger and cargo segments is, in fact the best possible mode of linking remote hinterlands with growing cities. On May 7 2021 Tamil Nadu's honorable Chief Minister M.K.Stalin, announced the scheme that enables all women in the state of Tamil Nadu to travel free of cost in Government-owned city and town buses. The main intention of this scheme is to increase the rate of women participation in all the sectors and to promote public transportation. It is also said that it has generated ideas for women to undertake self-employment. Thus, present paper will highlight the Impact of Women Empowerment Schemes in Tamil Nadu state Transport Corporation Limited (TNSTC)

Keywords: Economic, Transport, Tamilnadu and Passengers

Introduction

No transport business can exist without passengers. No transport business can survive without satisfying the needs of the passengers. In general compared with other modes of transport, bus transport and its services are more indispensable, convenient and very easy to access. In certain situations, bus transport may suit with the needs of the passengers and facilitate more in all aspects. It carries the people from one place to another place to enable the people to carry out their day to day activity; business etc. therefore bus transport and its quality serviced is too important in a man's day to day life of the general public. Bus transport services are similar to central nerves system of a human body. Bus transport connects different levels of people and it aid the people to have, build their business contact, celebrating festivals and in, many ways. The increasing importance of transport in the world of agriculture can't be over emphasized. Before and after harvesting, transport plays an important role. Transport services, the productivity of agricultural of improved manures and fertilizers. Before the introduction of motor truck and railways, this

facility was not available. Besides, the transport helps marketing of agricultural products. Industrial progress depends upon transport that helps new industries. Industrial development would not have taken place if there was no transport. Transport industry has been set quantities of goods and transport millions of passengers. Thus transport has contributed to the industrial development of the world.

In 1944 British Government appointed a committee to analyse public transport in the country. On 01.01.1972, Pallavan Transport commission was established under companies act 1956 and busesoperated in Chennai and Chengalpattu were brought under it and paved the way for inception of other state transport undertakings. 21 state transport undertakings were created by bifurcation from 1972 to1996. Now it is functioning as eight from 2004.Tamil Nadu state transport corporation limited (TNSTC) is fully owned and operated by the government of Tamil Nadu. TNSTC owns 321 depots and 5 workshops with a combined fleet strength of21,678buses. TNSTC covers 38 districts with the road length of 2,16,352 km with 32,598 buses. The total number of daily bus passenger is around 1.6crore in Tamil Nadu, which implies there are839 daily passengers for every bus. An estimated 53 lakh passengers travels everyday in city and town buses in Tamil Nadu.

According to Government assumption, 40 percent of the passengers, or18 lakh, could be women. Tamil Nadu has become the third state in India to make public bus transport free for women after Delhi and Punjab and it is also the first state to introduce pass to travel in the corporation buses at free of cost for school students. On May 7 2021 Tamil Nadu's honorable Chief Minister M.K.Stalin, announced the scheme that enables all women in the state of Tamil Nadu to travel freeof cost in Government-owned city and town buses. The main intention of this scheme is to increase the rate of women participation in all the sectors and to promote public transportation. It is also said that it has generated ideas for women to undertake self-employment. After this government's announcement, most of the women passengers are likely to shift from private buses to government buses. The free travel for women in town buses across the state also led to an increase in the share of women passengers from 40 percent to 61 percent.

Passenger is the occupant of a transportation vehicle other than the person operating it. Women passengers satisfaction is indefinite and a conceptual term, which will vary from one person to another and from one service to another service. Impact is the force of impression of one thing on another. Positive and negative, primary and secondary long term effects produced by a development intervention, directly or indirectly, intended or unintended.

Objectives of the Study

To study the Impact of Women Empowerment Schemes in Tamil Nadu state Transport Corporation Limited (TNSTC), Coimbatore District.

Review of Literature

Vijayaganeh (2019), has analysed “the satisfaction level and discomfort of the passenger, using TNSTC buses” Primary data was collected through the interview method. Simple percentage method, weighted average method and Rank method was applied to find the results. The study suggested that bus conductor and driver should be trained to behave with the passenger. **Kiruthika and Ravi (2022)**, have conducted the performance of women free bus operations and the complications faced by women passengers. The data for the study was secondary data which is collected from various journals and articles. The research found out that it is very useful for college students, women who want to study, house wife’s who want to do small business at home. The study concluded that the safety and ease of travel can encourage greater numbers of women to take self-employment as well as wage employment that requires them to commute or travel. **Kalimuthu and Preethika (2023)**, have conducted “Impact of Women Passenger towards Tamilnadu Free Bus Scheme Provided by Tamilnadu State Transport Corporation “(With Special Referenceto Coimbatore City). The study reveals that most of the respondents are aware about this free bus scheme. with the gdp growth rate of the country.

Methodology

The study has a descriptive nature. Secondary data have been collected in order to prepare this document in a comprehensive manner. The data have been collected from publications in various journals, periodicals, conference papers and websites.

Profile of Tamilnadu State Transport Corporation Limited (TNSTC)

Tamil Nadu State Transport Corporation Ltd.-(TNSTC) is a Government owned public transport bus operator in Tamil Nadu, India. It operates Intercity bus services to cities within Tamil Nadu, and from Tamil Nadu to its neighboring states. It also operates town busses from major cities and towns of Tamil Nadu to its neighborhoods, with the exception of Chennai, where the public bus service is operated by MTC, a subsidiary of TNSTC. It is the largest Government bus transport corporation in India. It operates intercity bus services to cities within Tamil Nadu and from Tamil Nadu to its neighbouring states with a combined fleet strength of 23,078 buses as of 2016-17. It also operates public transport bus service in many cities of Tamil Nadu, with the exception of Chennai, where the public bus service is

operated by MTC, a subsidiary of TNSTC. TNSTC is fully owned and operated by the Government of Tamil Nadu. It caters to all the districts within Tamil Nadu and also operates services to neighbouring states of Andhra Pradesh, Karnataka, Kerala, Telangana and union territory of Puducherry.

History of Tamil Nadu State Transport Corporation (TNSTC), Coimbatore

In pursuance of Government Nationalization policy, Cheran Transport Corporation Limited was incorporated as a company under companies act on 17.02.1972. It commenced its services on 01.03.1972 with 109 buses taken over from the Anamalais Bus transport pvt. Ltd., Pollachi in Coimbatore district at the time of formation. Subsequently, it took over 121 buses from 19 private operators in Nilgiris district in pursuance of Tamil Nadu State Transport carriages and contract act 1973 on 14.01.1973.

The name of the company, Cheran Transport corporation limited, Coimbatore was changed as "Tamil Nadu state transport corporation Coimbatore Division-I limited", and the name of the company, MahakaviBharathiyar Transport Corporation Limited, Udhamandalam" has been changed as "Tamil Nadu state transport corporation (Coimbatore Division-III) Ltd., with effect from 23.07.1997.

Tamil Nadu state transport corporation (Coimbatore Division-III) Ltd., Udhamandalam was merged with M/S. Tamil Nadu state transport corporation (Coimbatore Division-I) Ltd., Coimbatore with effect from 07.11.2000 Subsequently, Tamil Nadu state transport corporation (Coimbatore Division-II) Ltd., Erode was merged with Tamil Nadu state transport corporation (Coimbatore Division-I) Ltd., from 30.12.2003, and this corporation is at present functioning in the name of "Tamil Nadu state transport corporation (Coimbatore) Ltd., Under this corporation there are four regions covered. Districts covered are Coimbatore, Ooty, Erode, Tirupur.

Scheme Details

Free travel facilities have been provided for all women including working women, Transgender and girls who are pursuing higher education in ordinary fare city buses operated under the control of the Tamil Nadu State Transport Corporation since 2021.

- Tamil Nadu Government announces and implement lots of scheme for the welfare of people of Tamil Nadu.
- One of the social welfare scheme for Tamil Nadu Women is Zero Ticket Bus Travel Scheme.
- The main objective behind launching Zero Ticket Bus Travel Scheme is to encourage women of Tamil Nadu for higher work participation and reduce the dependency on private mobility.

- Most of the Working Women, Girls Students and Women Labourers doesn't have their own convenience to commute one place to another.
- They regularly pay for travelling fare which overburden them financially.
- So to unburden the Women of Tamil Nadu financially, Government came up with a idea to provide free of cost travel in government run buses.
- Under Tamil Nadu Zero Ticket Bus Travel Scheme, No women have to any fare if they are travelling in Government of Tamil Nadu run buses.
- Zero Fare Ticket will be issued to women beneficiary at the time of travelling.
- Free of cost travel in government run buses will only valid up to 30 kilometers.
- Women Beneficiary has to carry one photographed identity card for verification purpose.
- Transgenders are also eligible for free of cost travel under Zero Ticket Bus Travel Scheme of Tamil Nadu.
- Free of Cost Bus Service will only provided in Tamil Nadu Government run Ordinary/ City Buses or Buses operated under the control of Tamil Nadu State Transport Corporation.
- There is no need to apply anywhere to avail the benefit of free of cost travel in buses.
- Women Beneficiary can directly travel free of cost under Zero Ticket Bus Travel Scheme for Women of Government of Tamil Nadu.

Benefits of Women Empowerment Schemes in TNSCT

There is a lot of gender disparity in Indian society, and the mobility of women is restricted for a host of social and economic reasons. Fare free bus travel will, therefore, lead to economic, emotional, and social benefits for women.

Economic Benefits

In most Indian households which have a vehicle (car, two wheeler or even bicycle), it is primarily used by the male members, which restricts the mobility of women to a great extent. Women, especially women from lower socio-economic backgrounds, are often forced to take up jobs in locations which are close to their residence, which restricts the number of job opportunities available to them.

- Offering fare free bus travel enables women to look at taking up jobs with are a distance away from home, and will, hopefully, lead to improved labour force participation.
- Women who are currently spending a substantial chunk of their earnings on bus fares will be able to save the amount and can then use it on other basic expenditure like education or healthcare.

- Fare free bus travel enables women to use public transport for running errands and for other purposes, therefore saving the time which might otherwise be spent on walking to their destination.
- Women who might have earlier walked to their place of work and back can now save time by taking the bus.
- Many mothers, for instance, wait outside the school compound after dropping the children off, since they cannot afford to spend on bus fare to return to their homes.
- Fare free bus travel will empower these women to spend their time more productively if they choose.

Emotional Benefits

Fare free bus travel will give women the freedom to move freely within the city, and will reduce their dependence on other family members for their mobility.

- School students who are forced to drop out of school after primary school because the secondary school is a distance away, can now avail of fare free bus travel to travel to school without imposing an additional financial burden.
- Women can visit family and friends, without having to depend on others to take them. Women, particularly from rural areas, can now access better medical facilities.
- Being able to study and work without worrying about the cost of the commute is a big benefit for women.
- Equally important, fare free bus travel empowers women to use public transport for shopping and leisure which is good for their mental well-being.

Social Benefits

- Fare free bus travel will lead to more female passengers in the bus. Since we always feel more comfortable when we are with more people like us, this will increase our perception of safety and security.
- After fare free bus travel was introduced in Delhi, women said that travelling by DTC buses had become safer than traveling by private buses. Women also reported that incidents of casual molestation had gone down with the increase in number of female passengers. This is a virtuous cycle, which will eventually lead to greater safety for women.
- Hopefully, this will lead to more women switching from private vehicles which they can ill afford to public transport.

Conclusion

The main aim of the paper is to know the impact of women passenger using TNSTC free busses provided by Tamil Nadu State Transport Corporation in Coimbatore city. Based on study findings, it can be concluded that free buses have helped women passengers to save. The money which is saved is used in household expenses of the women passengers family. Students and working women are benefited by this scheme as they can study and go to work places also and many women travel 5 kilometers-10 kilometers per day to fulfill their needs. This scheme is great initiatives by the government for the welfare of women in Tamil Nadu.

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PERSPECTIVE OF ICT TOOLS IN EDUCATION

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A STUDY ON ROLE OF ICT IN EDUCATION

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Abstract

ICT stands for information and communication technology. ICT include the use of hardware and software for efficient management of information and it also includes communication devices like radio, television, cell phones, computer, satellite systems and many more. It refers to that technology which is used to transmit, store, share, create or exchange information. Innovations in technology and globalization have leaded to an enlarged the use of ICTs in all sectors. In modern era, the world is moving rapidly towards digitalisation such as e-governance, e-health, e- education etc. 21st century. In the present era, everyone can have access to teaching material at own level and consult many experts by video conferencing from all over the world. Currently, a teacher is been teaching his students through the use of ICT even though they are geographically scattered. We can't imagine a day without ICT. Today, world without ICT means we do not have any information about the events that are occurring around. It has become a part and parcel of life. Thus, present paper will highlight the role of ICT in Education.

Keywords–Technology enhanced learning, schemes, Teacher, Student, and ICT Initiatives.

Introduction

ICT will not only include hardware devices connected to computers, and software applications, but also interactive digital content, internet and other satellite communication devices, radio and television services, web based content repositories, interactive forums, learning management systems, and management information systems. These will also include processes for digitisation, deployment and management of content, development and deployment of platforms and processes for capacity development, and creation of forums for interaction and exchange.

The National Policy on Education 1986 , as modified in 1992, stressed the need to employ educational technology to improve the quality of education.

The policy statement led to two major centrally sponsored schemes, namely,

- a) Educational Technology (ET) and
- b) Computer Literacy and Studies in Schools (CLASS)

Thus, paving the way for a more comprehensive centrally sponsored scheme – Information and Communication Technology at Schools in 2004. The significant role ICT can play in school education has also been highlighted in the National Curriculum Framework 2005 (NCF) 2005.

The ICT Policy in School Education aims at preparing youth to participate creatively in the establishment, sustenance and growth of a knowledge society leading to all round socioeconomic development of the nation and global competitiveness.

Objectives

- To know the importance and role of ICT in Education.
- To study the Importance of Students Engaging with ICT

Review of Literature

Olivier (2014) found that theology took up the challenge to utilise the printing press and should do the same with the new technology. The impact of theology is directly related to the medium used throughout the ages, Tegos et al. (2016) research indicated that the effectiveness of flexible conversational agent in productive online peer dialogue, Barak (2017) from his study found that how teacher integrate web-based technologies and their perceptions of cloud pedagogy. He found that cloud pedagogy framework facilitates individual and collaborative, synchronous and asynchronous active learning, in class.

Methodology

The study has a descriptive nature. Secondary data have been collected in order to prepare this document in a comprehensive manner. Data are obtained through publications in various journals, periodicals, conference papers and websites.

Objectives of using ICT in Education

The objectives of ICT in education include:

- Providing accessibility through online medium of education.
- Improving the quality of teaching, especially in remote areas.
- To increase transparency in the education system.
- To strengthen the policies, rules, and laws in the education system.
- To analyze the learning and participation of the students and measure its effectiveness.
- Measuring and evaluating students' behavior, involvement, and retention in the learning process.
- To analyze students' performance, placement, and application of knowledge.

The Importance and Role of ICT in Education

Online Learning

ICT and its tools had led to the emergence of online learning. Through this, the teachers and the students are learning innovative ways in the education process. Online learning has gained popularity amidst the corona pandemic to ensure that the learning continues. ICTs have looked after that education reaches through it worldwide and even in remote areas. No matter where the students are, but it has ensured that every learner derives its benefits.

Accessible to all

ICT in education allows accessibility to all types of learners. All students can learn through the material provided. Even the special needs students can maximize the benefits through the

usage of it. ICT has also covered issues like the —digital divide and allows even less fortunate people to access the tools for their educational needs and enhance learning.

Higher-Order Thinking & Skill Developments

ICT promotes high order thinking and reasoning skills. These skills enabled the process of evaluation, planning, monitoring, controlling, reflecting, etc. To use ICT tools effectively, one must be able to explain and justify the solutions to the problems. For using ICTs, the students should be able to discuss, test, and evaluate the strategies and methods they use.

Develops ICT Literacy and Capability

Literacy and capability are the 21st-century skills that are needed. One of the best ways to develop these is to equip the subject-matter with purposeful activities.

Encourages Collaboration

ICT fosters collaboration as children work collectively. It also enhances communication skills as they discuss, talk, and learn together. All you need is a laptop, tablet, or desktop computer to understand it's working. ICT tools open up the doors for developing language through fostering communication.

Motivates Learning

ICT motivates children towards learning. Children learn better through the usage of technology. They get mesmerized with technology tools and get motivated to learn effectively in the classroom or at home.

Improves Engagement and Knowledge Retention

With the inclusion of ICT in education and its tools, children get more engaged and show greater participation in learning. It is all because of technology. It has made learning fun-filled with creativity and games. It enhances learning in multiple ways. Because of it, the students learn better, leading to knowledge retention.

A Key Part of the Curriculum

As per the latest curriculum, ICT plays an important part in the education system. So, many governments across the globe have started using ICT as a major part of education and the curriculum.

The rise of the Knowledge Economy

We live in an economy that is a thirst for the production and dissemination of information properly. ICT pervades at all levels and sectors like health, education, environment, or production. So, its use is needed everywhere at all levels.

Therefore, we cannot deny the fact that ICT is an important part of our lives. It fosters collaboration and connectivity around the world. Technology is ever-changing. It is likable due to certain features like growth, creativity, joy, fun, and consumption.

Importance of Students Engaging with ICT

ICT in Education

Students should engage with ICT in order to:

- To develop 21st-century skills like ICT Literacy and capability.
- To improve retention levels.
- Make them prepared for an integrated society that is taking advantage of the ICT developments.
- Adapt ICT tools as a lifelong partner.

Advantages of ICT in Education

Individualization of learning

It means that people learn as an individual and not as the same group. As learners are varied, ICTs provide flexibility so that learners learn according to their own pace.

Interactivity

Through this feature of ICT, learners can learn properly at any point. They do not need to follow a proper sequence. Learners can learn effectively through this feature.

More economical, the higher speed of delivery and wider reach

ICT tools are more economical, and the speed of delivering content is also high. Through ICTs, the number of learners increases, thereby reducing the overhead cost of investment.

Multiple teaching functions and diverse audiences

ICT involves multiple functions like diagnosing and solving problems for accessing information and knowledge about various contents. It can be useful in drills and practices also.

Uniform quality

ICTs act as a great equalizer by producing uniform quality content for the rich and the poor, the urban and rural people. It produces good quality content for all.

Facilitates cooperative learning

ICT facilitates cooperative learning by encouraging dialogue, discussions through a more participative classroom environment.

Act as a motivating tool

ICT tools act as a motivator and encourage children to enhance their learning. Children get fascinated with technology. Teachers should use their skills to arouse interest, fun, and creativity to learn in a better way.

Distance and climate insensitive

- Regardless of the distance and climatic conditions, ICT tools provide access to all.

- These were some advantages of ICT in the education sector.
- Now let's get an insight into certain disadvantages of ICT.

Current Situation of ICT:

1. Online education: Due to Covid-19, there is no option without online education. As lockdowns don't allow to open schools, colleges, so online education is only one option through which education can be continued.
2. Use of apps: Different apps nowadays are used for online education. These apps are helpful for students and teachers to reach. Such type of apps are also used for meetings, online teaching learning process. Ex. Zoom, Google meet, Webex etc.
3. Platforms for online education: There are different platforms available for online education. Through these platforms, online classes can be taken, videos can be uploaded, recorded videos can be send. So these platforms are helpful to the students as well as teachers. Ex. Swayam, Webex, Impartus etc.
4. Use of different e-content : Due to online education there is no time limit as well as place restriction for learning. Anyone can learn from any place and at any time. So many type of education any one can take. And different e-contents are also prepared for students. These are helpful for them to enrich their knowledge.
5. Tools for teachers[iii]: GeoGebra can construct almost every conceivable geometrical object, even in 3D, Object drawing is interactive and can be moved around, modified, measured. PhET Simulations are interactive computer programs which allow a user to change variables and see the effect of the changes on the system. These are very useful in helping students explore the subject, solve problems and can also become a useful self-assessment tool.

Conclusion

The intervention of information and communication technology is redefining the way students learn. It is making the process of learning more efficient and effective for students and teachers. ICT tools in education make it easier for teachers to use the best strategies to bring out the best in their students. ICT in education sector is beneficial for the students, in addition to this, it is making it possible for schools to impart education in the finest way. Moreover, the technology enables them to manage all the management and administration functions in a seamless manner. Hence, there is no doubt that it is a boon to the education industry.

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A STUDY ON THE ROLE OF GOVERNMENT SCHEMES TO UPLIFTING THE EDUCATION OF GIRLS

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Abstract

The Central Government Schemes for girl child have been launched across India with the goal of improving the social attitude toward female children in India. These schemes also aim at elevating their status in society. Several central government initiatives, saving schemes and all under-government programmes for a girl child have been introduced in India in recent years. These programs have been a vital element of assisting females on a national as well as state-by-state basis. This scheme was created with the goal of providing financial incentives to families in order to encourage them to provide better upbringing and education for their girl child, to end sex discrimination, and to change the family's mindset toward the girl child's education by linking cash and non-cash transfers for the well-being of girl child. In the coming years, the schemes will prove to be beneficial for the girl child but as of now the reach of these schemes seems to be unclear. On a state and national level, the Department of Women and Child Development administers the majority of the schemes. Thus, present study will highlight the Role of Government Schemes to Uplift Girl's Child Education.

Keywords: Education, Schemes, Society, Children and Protection.

Introduction

In ancient Indian civilization, women had a prominent place. Boys and girls had access to education. The Vedas and Fine Arts were studied by the girls. Women received high self-worth and reached the highest level of intellectual and spiritual achievements. The Vedic period is also known as the 'Golden Age for Women'. Discrimination against women started in the later Vedic period. The ill-fated 'Sati' practice emerged during the Mauryan period. Women's liberty was further restricted by Kautilya in his 'Arthashastra'. Women's status in pre-independence India was poor due to widespread social evils such as child marriage and Sati. Only 2% of the women received an education. Sarojini Naidu, Vijay Laxmi Pandit, Aruna Asaf Ali, Sucheta Kriplani, and Rajkumar Amrit Kaur were among the ladies who came forward to promote the idea of gender equality.

In India, the government implements schemes to improve the social and economic problems of the country's inhabitants. These schemes are crucial in addressing many of the socio-economic issues that are faced by citizens, therefore citizens should be aware of them. The First Five-Year Plan aimed to 'promote the

welfare of women by assisting them in fulfilling their legal obligations in the home and community while emphasising that 'the major burden of organising activities for the benefit of the vast female population must be borne by private agencies. The development programmes of the Seventh Five Year Plan intended to improve women's economic and social condition and ensure that they benefit from national development. This is when 'beneficiary oriented programmes' began to provide direct advantages to women in many development areas. This scheme aims at providing social protection, promoting girl child development, and spreading awareness for the ill practices of female feticide and child marriage. It also aims to provide opportunities for higher education and employment to girl children.

Objectives

1. Whether people take the advantage of the Government schemes.
2. Whether the schemes are helpful to girl child.

Review of Literature

The present study is made on different aspects of government schemes related to girl child. From the study of related literature it is found that few problems have been dealt with children regarding their upliftment and solution to these problems in their progress.

Khandelwal et.al, (2014) reviewed the government program for women and children regarding their nutrition. Sadh and Kapoor studied the initiatives to save the girl child in India. Dr. Agnihotri and Malipatil, (2018) studied a brief information about Beti Bachao, Beti Padhao scheme. Department for International Development, (2005) Published a report on Girl's Education towards a Better Future for all where in Educational Problems of Girls have been dealt with.

Methodology

The study has a descriptive nature. Secondary data have been collected in order to prepare this document in a comprehensive manner. Data are obtained through publications in various journals, periodicals, conference papers and websites.

Status of Girls in the Society

The status of women in a country defines the country's economic, social and mental condition. For generations, women have been the family's caretaker and primary givers and catered to domestic needs. Young girls are brought up to learn to walk in the footsteps of women in their families and conform to their gender roles. Learning to cook, clean, sew, stitch, and ration are among the many gendered tasks that girls are expected to practise and learn. In addition, girls are taught to be soft, polite, calm, spiritual, dutiful and forgiving. Only then does society deem them fit. It has been the status of girls in society for decades and continues to persist similarly in most families. Although educated women have risen to raise their voices and fight for their rights, the social condition of women remains the same in many places. The

government is drafting schemes to educate every girl-child, and NGOs are raising awareness about the importance of educating girls to improve the current and future condition of women in society.

Importance of Girl-Child Education in the Society

The post-independence era marked a turn in the status of women in the society. The revolutionaries fought for the right to educate girls and provided them access to every opportunity that could help uplift them from the dungeons of patriarchal oppression. People need to understand that a learned woman is the forerunner of society. She can construct, grow and elevate the standards of her family and society. When girls are allowed to study, they learn and help others learn; they explore and grow both individually and collectively by educating their families and those around them. A woman has the potential to fill both gender roles; she can be a working housewife and a career-oriented professional at the same time. By encouraging young girls to study, society ensures an economically, morally, and spiritually richer future for itself.

Government Schemes for Girls' Education

There are numerous factors challenging girl education in society. Therefore, the Indian government took the initiative of drafting and launching multiple schemes to benefit the education of girls across the country.

Central Government Initiatives for Girl Child

BetiBachaoBetiPadhao

BetiBachaoBetiPadhao programme provides assistance to girls across the country. This program's primary goal is to prevent selective abortions and to improve the quality of education for a girl child. Rather than financial assistance, this is primarily an educational programme aimed at changing societal attitudes.

This initiative was supported by the Ministries of Women and Child Development, Health and Family Welfare, and Human Resource Development. The program aims to prevent the selective abortion of girl child and to ensure their inclusion in society, their well-being and education. It further supports equality of both genders and endorses the right of girl children to inherit property.

SukanyaSamriddhiYojana

SukanyaSamriddhiYojana Account is a small deposit scheme for girls. The programme enables parents to establish a trust fund for their child's future needs. The accumulated sum can help young girls pursue their dreams and negate the idea that girls are a burden. The scheme is managed by the Ministry of Finance and operated by the Post Office of India. The following are some important features of this savings account for girl child:

- The girl child should be under the age of ten.

- The account can be opened by the girl child's guardian or either of her parents.
- The minimum annual investment is Rs 250, and the maximum investment is Rs 1.5 lakhs.
- The account matures when the girl child reaches the age of 21 or when she marries after reaching the age of 18.
- On maturity, the girl child can withdraw the total sum.
- Once the girl child reaches the age of 18, she can make partial withdrawals to fund her marriage or her education.

BalikaSamridhiYojana

The BalikaSamriddhiYojana assists low income families and their daughters with financial needs. The scheme serves to improve a girl's social status and increase female enrolment in school. Some important things to note about this government plan for girl child are:

- The scheme is only available to newborns.
- At the time of her birth, Rs.500 is paid in her name.
- The girl child further receives an annual scholarship in the range of Rs. 300 to Rs. 1000 till the completion of her 10th standard.
- The maximum enrollment age is 10.
- Only two daughters from a family are eligible to apply for this program.
- The depositor must come from a family that is 'Below the Poverty Line.'

CBSE Udaan Scheme

The CBSE Udaan scheme for girls is managed and administered along with the Ministry of Human Resource Development of the Government of India. This programme works towards encouraging more girls to enroll in the best engineering colleges throughout the country. Girls in their CBSE higher secondary grades who are enrolled under this scheme can avail free course materials and online resources. Further, the scheme offers peer learning opportunities and mentorship programmes to deserving female students. In order to qualify for this scheme, the annual household income must be less than Rs. 6 lakhs and the girls must be enrolled in the subjects Physics, Chemistry, and Mathematics.

1. National Scheme of Incentives to Girls for Secondary Education

The Department of School Education and Literacy, Human Resource Development Ministry, Government of India, manages this pan-India scheme. The scheme's purpose is to promote continued enrollment in a girl child's secondary education. It is primarily intended for girls belonging to families of lower socioeconomic backgrounds.

As part of this scheme, Rs. 3000 is offered as fixed deposit in the name of the daughter. Like any other FD, this amount shall earn interest at govt. specified rates.

The entire accumulated sum can be withdrawn once she turns 18 or passes her 10th exam. To be eligible for this scheme, the girl should be enrolled in a govt. sponsored school. Further, she must be aged 16 or less, be unmarried, and must be enrolled in the 9th standard following completion of her 8th standard.

State Government Plans for Girl Child

1. MukhyamantriKanya Suraksha Yojana

Introduced by the State of Bihar, this scheme rewards parents of a newborn girl child with Rs. 2000. The birth certificate of the child is mandatory to avail of the benefits under this scheme. The parents must be permanent residents of Bihar and fall in the below poverty line category. Interested parties can claim the benefit at the Gram Panchayat, the Collector's office, or at the ZillaParishad.

2. Ladli Lakshmi Yojana

This scheme for girl child was initiated by the Madhya Pradesh Government in 2007 with the aim to promote a better life for them. The scheme further strives to improve sex ratio and girl child education in the state. The scheme deposits Rs. 6000 for 5 years in the name of the girl child, totaling an amount of Rs. 30,000. Additional deposits shall be made in the following order:

- Rs. 2000 for admission of the girl into 6th standard
- Rs. 4000 for admission of the girl into 9th standard
- Rs. 6000 for admission of the girl into 11th standard
- Rs. 6000 for admission of the girl into 12th standard
- The final sum of Rs. 1 lakh is offered to the child once she reaches the age of 21 years

3. Delhi Ladli Scheme

The objective of the scheme is to empower girl children both socially and economically in the National Capital Territory of Delhi. The following financial benefits are applicable under this scheme:

- Rs. 11000 if child delivery occurs in a medical institution
- Rs. 10000 if child delivery occurs in a home setting
- Rs. 5000 for admission of the girl into 1st standard
- Rs. 5000 for admission of the girl into 6th standard
- Rs. 5000 for admission of the girl into 9th standard
- Rs. 5000 for admission of the girl into 10th standard
- Rs. 5000 for admission of the girl into 12th standard

The annual income of the girl child's family must be equal to or less than Rs. 1 Lakh.

4. Mukhyamantri Rajshri Yojana

In Rajasthan, the Mukhyamantri Rajshri Yojana was introduced. It provides financial assistance to parents of female children from the time they are born until they complete their schooling. Further, when a girl child is born, the mother gets paid Rs.2,500. A cheque for another Rs 2,500 is issued after the child has completed one year of immunizations. Other financial assistance to the girl child include:

- Rs.4,000 when she enrolls in any public school in grade 1.
- Rs.5,000 when a child enters Grade 6.
- Rs. 11,000 when the girl enters Grade 11.

Note that only permanent residents of Rajasthan are eligible to avail of the benefits of this government plan for girl child.

5. MaziKanyaBhagyashree Scheme

The scheme was introduced by the Maharashtra government to improve the lives of girls belonging to low-income families and marginalised groups. The mother of a girl child receives Rs. 5000 per year for five years from the time she is born. After that, the family is offered Rs. 2500 in financial assistance each year till she enters her 5th grade in school. From then on till grade 12, the child receives Rs. 3000 every year. The girl child further receives Rs. 1 lakh per year for educational expenses until she reaches the age of 18.

6. Tamil Nadu Chief Minister's Girl Child Protection Scheme

The initiative aims to prevent gender inequality through direct government spending in a Fixed Deposit in the name of a girl child. The government shall deposit a sum of Rs. 50,000 if it's a single child, or Rs. 25,000 each for two daughters. The FD is made with the Tamil Nadu Power Finance and Infrastructure Development Corporation Limited.

7. Nanda Devi KanyaYojana

This programme is exclusive to Uttarakhand. Under the scheme, a newborn girl is offered Rs. 1,500 as fixed deposit. Once she completes her senior secondary education and is of 18 years of age, she receives the deposit amount along with the accrued interest. All permanent residents of Uttarakhand who fall in the category of below poverty line can avail of the perks of this scheme.

Findings

Women play an imperative role in making a nation progressive and guide it towards development. They are essential possessions of a lively humanity required for national improvement, so if we have to see a bright future of women in our country, giving education to them must be a pre-occupation Empowerment means moving from a weak position to execute a power. In an effort to restore equality among the two genders after ages, the Indian government is now making continual

attempts at creating and offering equitable opportunities to both boy and girl child in India.

Conclusion

The education of women is the most powerful tool to change the position of society. Education also brings a reduction in inequalities and functions as a means of improving their status within the family. To encourage the education of women at all levels and for dilution of gender bias in providing knowledge and education, established schools, colleges and universities even exclusively for women in the state. The education develops the idea of participation in government, panchayats, public matters etc for elimination of gender discrimination.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

Volume - 1

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ROLE OF MSMEs IN ECONOMIC DEVELOPMENT OF INDIA

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Abstract

Micro, Small, and Medium Enterprises (MSMEs) have been monumental in accelerating the growth of the Indian economy. They not only play a cataclysmal role in generating employment opportunities at relatively low capital costs but also support industrialization and formalization of the economy. They are also instrumental in ensuring financial inclusion by tapering regional imbalances. MSMEs are veritably hailed as the backbone of the Indian economy as they contribute over 30% to the GDP. With almost 50% contribution to exports, they also form an integral part of the supply chain. The government of India plans to increase MSMEs output and export contribution to 50% and 75%, respectively, by 2024, in line with the aim to make India a \$5 trillion economy. In fact, MSME promotion has been prioritized by the government as part of NITI Aayog's Strategy for New India@75, with a special focus on ameliorating credit gaps and emboldening firms to embrace Industry 4.0 practices that enhance productivity. Thus, present paper will highlight the Role of MSMEs in Indian Economy.

Keywords: *Micro, Small and Medium Enterprises, Production, Employment, poverty alleviation and rural development.*

Introduction

MSMEs are the backbone of the Indian economy, contributing approximately 30% of the country's GDP (Gross Domestic Product), 45% of manufacturing output and providing employment to 11 crores of India's population. MSMEs, in layman's terms, refer to the enterprises that are engaged in the development and manufacturing of goods and services. The Micro, Small & Medium Enterprises Development (MSMED) Act, 2006 classifies MSMEs based on investment and turnover limits, which are enlisted below.

- i) **Micro Enterprise:** Investment in plant and machinery (P&M) or equipment does not exceed Rs. 1 crore, and turnover does not exceed Rs. 5 crores.
- ii) **Small Enterprise:** Investment in plant and machinery (P&M) or equipment does not exceed Rs. 10 crores, and turnover does not exceed Rs. 50 crores.
- iii) **Medium Enterprise:** Investment in plant and machinery (P&M) or equipment does not exceed Rs. 50 crores and turnover does not exceed Rs. 250 crores.

Existing MSME Classification			
Criteria : Investment in Plant & Machinery or Equipment			
Classification	Micro	Small	Medium
Mfg. Enterprises	Investment < Rs. 25 lac	Investment < Rs. 5 cr.	Investment < Rs. 10 cr.
Services Enterprise	Investment < Rs. 10 lac	Investment < Rs. 2 cr.	Investment < Rs. 5 cr.

Revised MSME Classification			
Composite Criteria : Investment And Annual Turnover			
Classification	Micro	Small	Medium
Manufacturing & Services	Investment < Rs. 1 cr. and Turnover < Rs.5 cr.	Investment < Rs. 10 cr. and Turnover < Rs.50 cr.	Investment < Rs. 20 cr. and Turnover < Rs.100 cr.

Objectives of the Study

The following are the study's aims:

1. To learn about the importance of micro, small, and medium-sized enterprises (MSME) in spurring economic development in India.
2. To understand the role of MSMEs in the Indian economy and their performance.

Review of Literature

Vasanth, Majumdar and Krishna (2012) in their paper have stated that since several successful models of the sustainable SME are gradually evolving, networks of SMEs would become essential for addressing the systemic problems under lying the industrial ecology, enterprise resilience, and global supply chain sustainability. Nihar Ranjan Jena and Lina R Thatte (2018) analyzed that the difference in performance of the MSME sector in different states existed due to the differences in presence or absence of adequate enabling factors like labour force, economic infrastructure, regulatory national level. Present research is mainly based on the framework, size of GSDP and density of MSME clusters etc. and found that Maharashtra was the leader in terms of performance of the MSME sector which was closely followed by Gujarat, Tamilnadu, Andhra Pradesh, Uttar Pradesh, West Bengal and Kerala.

Methodology

The study has a descriptive nature. Secondary data have been collected in order to prepare this document in a comprehensive manner. The data have been collected from publications in various journals, periodicals, conference papers and websites.

Highlights of new MSMEs

‘Atma Nirbhar Bharat Abhiyan’ or the Self-Reliant India Scheme of 2020 by the Government of India has given a new definition for MSMEs.

Following are a Few Highlighting Features of New MSMEs –

1. A provision of Collateral Free Loans to MSMEs
2. An arrangement of loans to MSMEs worth of Rs. 3 lac crores
3. An offer for MSMEs to get a Moratorium period of 12 months
4. Consideration of Manufacturing and Service MSMEs as the same entities
5. MSM is a granted a repayment Tenure of 48 months
6. MSMEs are assured a 100% Credit Guarantee
7. Reclassification of MSMEs will benefit approximately 45 Lac units.

Following are Some of the Essential Elements of MSMEs –

1. MSMEs work for the welfare of the workers and artisans. They help them by giving employment and by providing loans and other services.
2. MSMEs provide credit limit or funding support to banks.
3. They promote the development of entrepreneurship as well as up-gradation of skills by launching specialized training centers for the same.
4. They support the up-grading of developmental technology, infrastructure development, and the modernization of the sector as a whole
5. MSMEs are known to provide reasonable assistance for improved access to the domestic as well as export markets.
6. They also offer modern testing facilities and quality certification services.
7. Following the recent trends, MSMEs now support product development, design innovation, intervention, and packaging.

Overview of Govt. Initiatives on MSMEs

The Government of India has been proactive to ensure that all the benefit of these MSME schemes reaches to the MSMEs in time. The Union Budget 2023-24 focuses on ease of doing business for MSMEs.

The most important measures include:

- Emergency Credit Line Guarantee Scheme (ECLGS) has delivered additional credit to more than 130 lakh MSMEs. The ECLGS will be extended up to March 2023 expanding the guarantee cover by INR 50,000 Cr to a total cover of INR 5 Lakh Cr.
- INR 2 Lakh Cr additional credit for Micro and Small Enterprises to be facilitated under the Credit Guarantee Trust for Micro and Small Enterprises (CGTMSE).
- Raising and Accelerating MSME performance (RAMP) programme with an outlay of INR 6,000 Cr to be rolled out.
- INR 50,000 Cr equity infusion through MSME Self-Reliant India Fund.

Udyam, e-Shram, National Career Service (NCS) and Aatmanirbhar Skilled Employee Employer Mapping (ASEEM) portals will be interlinked. They will now serve as portals with live, organic databases, delivering G2C, B2C, and B2B services relating to credit facilitation, skilling, and recruitment.

Launch of Udyam Assist Platform (UAP) to bring the Informal Micro Enterprises (IMEs) under the formal ambit for availing the benefit under Priority Sector Lending (PSL).



MSMEs: The Growth Accelerators

MSMEs Trends

Traditionally, MSMEs were restricted to the khadi and coir industry. Since then, they have branched out to various industries. For instance, micro and small businesses mostly deal with food and agriculture, while medium-sized firms belong to the automotive, pharmaceutical, or chemical industries. As per the MSME ministry, India has an estimated 633.88 lakh unincorporated non-agricultural MSMEs, of which 31% are engaged in manufacturing, and 36% are in trading activities. Almost 51.25% of MSMEs are in rural areas, while the remaining 48.75% are situated in urban areas. The micro sector accounts for more than 99% of the total number of MSMEs.

MSMEs act as innovation stimulants, encouraging the diffusion of skills, and inculcation of an entrepreneurial culture. They serve as a source of healthy competition and boost economic dynamism. As catalysts for the socio-economic transformation of the country, MSMEs contribute to the economy in the ways mentioned below.

Sustainable Growth

MSMEs play a considerable role in the GDP growth story on account of their contribution to production and processing. Their growth results in an increase in value addition, final output, and profitability. Furthermore, they complement large industries by acting as ancillary units, thus bringing out integration benefits.

Their contribution is increased manifold when one accounts for the multiplier effect of the economic activity undertaken by their employees and suppliers. The CSO data states MSMEs' contribution to Gross Value Added (GVA) at 30% for FY 2019-20, with the manufacturing share standing at 36.9%. MSMEs are being supported by the government through 'Make in India' with the 'Zero Defect & Zero Effect' initiative to promote sustainability and higher quality standards.

Localized Employment Generation

MSMEs typically implement labor-intensive production processes, thereby generating massive employment opportunities. Their small scale restricts them to a particular area or region, which results in the local population being hired. These productive employment opportunities consequently result in increased generation of income and poverty alleviation.

As per the 73rd Round of NSS Report on Unincorporated Non-Agricultural Enterprises', MSMEs employ 11.10 crore workers. The micro sector accounts for over 97% of the employment share as it recruits almost 10.76 crore persons.

Mushrooming Trade and Export Earnings

MSMEs contributed 45.04% to overall exports during FY22. They are expected to benefit further from the 'China plus one' policy, which is being increasingly employed by MNCs looking to diversify their production. The government is targeting \$1 trillion worth of MSMEs exports by 2027. It has even introduced the 'Capacity Building of First-Time MSME Exporters' (CBFTE) scheme for MSMEs' export growth.

Contribution to Taxes

MSMEs contribute to the government's coffers through direct business taxes levied on their revenues and profits. They also pay indirect taxes, including GST, sales tax, excise duties, and cess. The tax provision requiring MSMEs to mandatorily register on the GST portal has even incentivized the formalization of the MSME sector.

Poverty Alleviation

The MSME sector plays a significant role in alleviating poverty and correcting regional imbalances. They ensure a more equitable distribution of income due to their localized nature of business and stave off any rural-urban migration. They also stimulate entrepreneurship, hence kickstarting investment and innovation cycles.

Financial Inclusion

Out of 11 crores employees in the MSME sector, almost 24% are women. Additionally, the socially backward groups, including SCs, STs, and OBCs, collectively own over 66% of

MSMEs, with OBCs accounting for almost half of the share. Almost 74% and 59% of the MSMEs are owned by the vulnerable sections in rural areas and urban areas, respectively.

Meeting SDG Goals

MSME development can assist in better meeting SDG goals, including SDG 1 (ending poverty), SDG 2 (ensuring zero hunger), SDG 3 (promoting good health), SDG 5 (gender equality), and SDG 8 (inclusive growth and decent work).

Concerns Over Finance

As can be seen from above, a robust MSME sector is acutely required for the Indian economy to grow. But these enterprises continue to suffer from the unavailability of timely capital. This lack of access to capital forces MSMEs to scale down or liquefy their business. As a result, there has been an upsurge in the number of financial institutions, including Protium, that are collaborating with MSMEs to provide prompt financing.

Findings

MSMEs address major challenges of the overall Indian economy also, that are unemployment and poverty. By reducing regional imbalances, giving employment to local people living in rural areas, they have done their part to knock-down disparities. Acting as a motivational factor for the existing MSMEs and as an aspiration factor for the potential MSMEs, increase in the income of people and the trend of promoting the interests of consumers, there will be various opportunities for MSMEs to play with in the domestic as well as export-market.

Conclusion

The role of MSME in economic development, particularly in rural and semi-urban areas cannot be underestimated. Despite the challenges, the resilience and contribution of MSME in Indian economy remain strong. Whether through policy support or Business Loans, facilitating the growth and sustainability of MSMEs is crucial for fostering inclusive and sustainable economic progress.

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ENHANCING SAFETY AND SECURITY: UPI TRANSACTIONS FOR COLLEGE GIRLS

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Abstract

In the era of digital transformation, the Unified Payments Interface (UPI) has emerged as a pivotal tool reshaping financial landscapes. This article delves into the role of UPI in enhancing safety and security for college girls' financial transactions. By seamlessly integrating into their lives, UPI offers a secure alternative to traditional cash handling, mitigating vulnerabilities associated with physical currency. The security features of UPI, including PIN-based protection, two-factor authentication, and real-time alerts, contribute to a safer financial environment. Moreover, UPI's impact goes beyond transactions, promoting financial literacy, reducing parental concerns, and empowering college girls to manage their finances confidently. UPI's convenience and security make it a catalyst for the autonomy and financial empowerment of college girls, fostering a secure and responsible financial future.

Keywords: Digital transformation, Unified Payments Interface, security features of UPI

Introduction

In today's rapidly evolving digital landscape, financial transactions have undergone a paradigm shift, transitioning from traditional methods to modern, technology-driven platforms. One such transformative innovation is the Unified Payments Interface (UPI), a system that has revolutionized the way individuals engage in monetary exchanges. Beyond its inherent convenience, UPI has emerged as a potent tool for enhancing safety and security in financial transactions, especially for a significant demographic - college girls. Mabrouk et.al (2023) found that the digital financial inclusion has become more important during the pandemic, as it has allowed women to have greater economic involvement and decision-making power. This article delves into the profound impact of UPI transactions on college girls, shedding light on how this technology has transformed the way they manage their finances, providing not only convenience but also ensuring their safety and security. In a world marked by digitization, UPI transactions have become a pivotal component in empowering college girls to navigate their financial responsibilities with greater confidence, privacy, and autonomy.

Review of Literature

Durairaj and Joseph (2019) reveal that UPI is considered important in the day-to-day life of its users as it saves time in transferring funds between accounts instantly. UPI is a complex and sophisticated payment infrastructure that uses a unique VPA address for transfers, making it secure and reliable. The government supports UPI by providing incentives and reducing taxes for digital payments, which has increased interest in using UPI. The study reveals that more than 80% of respondents found UPI services convenient

to use, and 90% said they would use UPI in the future. Some challenges with using UPI include server-related issues and occasional application failures during transactions. Shenoy and Nataraj (2019) observed that the cashless transactions are increasing due to their convenience, speed, and safety, with digital payments being the easiest method through payment apps, contributing to financial inclusion by reducing transaction costs and providing convenience. Pawar (2021) discusses the pandemic led to a situation where people were unable to use cash for transactions, leading to an increase in the use of online payment methods. However, there were also issues faced by students in making online payments, including lack of knowledge about digital awareness and frauds by people who take advantage of lack of knowledge about KYC procedure and suggests the need for awareness programs, advisories, and digital literacy to address these issues. Zareen and Chaddha (2021) found the mobile money has the potential to improve financial inclusion in India, but its full potential has not been realized yet. A study focused on college students in Delhi found that although they were aware of mobile money services, they were reluctant to use them for daily transactions. The study investigated the user-friendliness of mobile phones for mobile banking and money transfer and the adoption of mobile money services.

Empowering College Girls: UPI as a Catalyst

Education is a crucial pathway to empowerment, and college life is a pivotal phase in a young person's journey towards independence. UPI has seamlessly integrated itself into the lives of college girls, providing them with an effective means to manage their finances. The digitization of financial transactions has empowered college girls to take control of their money matters, thereby fostering a sense of financial independence and responsibility.

The Digital Transformation of Transactions

The traditional methods of handling financial transactions, often involving cash, are associated with several vulnerabilities. College campuses, being bustling and dynamic environments, can sometimes expose young individuals to risks associated with carrying physical currency. UPI transactions mitigate these concerns by offering a digital alternative that eliminates the need for cash handling.

Security Features of UPI

The security features inherent in UPI transactions contribute significantly to the safety and confidence of college girls. Some key security aspects of UPI transactions include:

- **PIN-based Security:** UPI transactions are protected by personal identification numbers (PINs) known only to the account holder. This layer of security ensures that only authorized individuals can initiate transactions.
- **Two-Factor Authentication (2FA):** UPI transactions require two levels of authentication, typically involving a password or PIN and a secondary factor such as a biometric scan or an OTP (One-Time Password). This process enhances transaction security.
- **Device Authorization:** Transactions are linked to the user's device, ensuring that

transactions can only be initiated from authorized devices. This security measure prevents unauthorized access to the account.

- **Real-time Transaction Alerts:** UPI sends real-time alerts to users for every transaction, allowing them to stay informed about their financial activities and detect any unauthorized transactions promptly.

Reducing Vulnerabilities and Enhancing Privacy

The shift from physical cash to digital transactions through UPI significantly reduces vulnerabilities associated with carrying cash. College girls can avoid being targets of theft or harassment that might occur when handling cash, particularly in public spaces. Additionally, UPI transactions offer greater privacy, allowing individuals to conduct financial transactions discreetly and confidentially.

Safe and Secure Campus Life

The influence of UPI on college girls extends beyond basic financial transactions. It affects various aspects of campus life, including:

- **Tuition and Fees:** UPI facilitates safe and secure payments for tuition fees and other college-related expenses. This eliminates the need for students to carry large sums of cash.
- **Accommodation and Daily Expenses:** UPI transactions simplify payments for accommodation, food, and other daily expenses, ensuring that college girls can manage their finances conveniently and securely.
- **Extracurricular Activities:** College life involves participating in various extracurricular activities, events, and workshops. UPI enables secure payments for registration fees, contributing to a smoother and more organized experience.
- **Study Materials and Online Resources:** UPI transactions enable college girls to purchase study materials, books, and online resources without the hassle of physical cash.

Promoting Financial Literacy and Autonomy

The adoption of UPI among college girls goes beyond just transactional convenience. It serves as a powerful tool for promoting financial literacy and autonomy. By actively engaging with digital transactions, college girls develop a deeper understanding of financial management, budgeting, and responsible spending. These skills are invaluable as they transition to adulthood and take on greater financial responsibilities.

Parental Peace of Mind

For parents, UPI transactions provide a sense of security knowing that their daughters are using a safe and secure digital payment method. UPI's transaction tracking and real-time alerts ensure that parents can monitor their daughters' financial activities and quickly address any unusual transactions.

Conclusion

In the evolving landscape of digital payments, UPI stands as a beacon of safety and security, particularly for college girls. By embracing UPI transactions, college girls can navigate their financial responsibilities with greater ease, security, and confidence. UPI's multifaceted benefits extend beyond convenience to encompass safety, privacy, financial literacy, and empowerment. As UPI continues to evolve, it will undoubtedly play a crucial role in enhancing the financial well-being of college girls, shaping their journey towards a more secure and autonomous future.

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YOUNG WOMEN IN ENTREPRENEURSHIP: EXPLORING UPI AS A BUSINESS ENABLER AMONG COLLEGE STUDENTS

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Abstract

In the evolving landscape of entrepreneurship, college girls are emerging as a formidable force, harnessing their creativity and passion to venture into business ownership. This article delves into the synergy between entrepreneurship and the Unified Payments Interface (UPI), highlighting how UPI serves as a dynamic business tool for college girls. UPI's seamless and secure digital payment system empowers them to navigate the challenges of entrepreneurship with confidence. From secure transactions to efficient financial management, UPI enables college girls to overcome hurdles, expand their customer base, and unlock growth opportunities. Through case studies, this article illustrates how UPI-enabled ventures are reshaping various industries. As college girls redefine entrepreneurship, UPI stands as a catalyst, propelling them towards a future where innovation and economic empowerment converge.

Keywords: Entrepreneurship, College girls, Creativity and Passion, Unified Payments Interface

Introduction

In recent years, the world has witnessed a surge in entrepreneurial endeavors driven by innovative ideas and technological advancements. This trend is not limited to a specific age group or gender; rather, it has transcended boundaries, inspiring individuals from diverse backgrounds to venture into the world of business ownership. College girls, in particular, have seized the opportunity to leverage their creativity and skills to embark on entrepreneurial journeys. One of the key enablers of this phenomenon is the Unified Payments Interface (UPI), a revolutionary digital payment system that has not only transformed the financial landscape but has also emerged as a powerful tool for fostering entrepreneurship among college girls. This article explores the symbiotic relationship between UPI and entrepreneurship for college girls, highlighting how UPI serves as a dynamic business tool that empowers them to navigate the challenges of entrepreneurship with confidence, efficiency, and security. Karyotaki et.al (2022) delves into the close connection between gender equality and digital progress. As the demand for digital skills rises due to an expanding skill gap, this research seeks to understand the connection between digital technology and women's roles in business and society. It aims to uncover the factors contributing to women's underrepresentation in the growing digital sector, despite its significance. Reports often reveal a gender disparity, with men outnumbering women by a ratio of 3 to 1 in tech-related fields.

Review of Literature

Johansen et.al (2013) examines the impact of a European entrepreneurship program called the company programme (CP) in Norwegian upper secondary schools. The program aims to foster positive attitudes towards entrepreneurs among students. The research finds that both male and female CP participants are more likely to associate entrepreneurs with creativity and less likely to see them as jobless individuals, compared to non-participants. However, gender differences emerge in attitudes: female participants are less inclined to view entrepreneurs as those wanting to be their own bosses, while male participants are more likely to see entrepreneurs as seeking societal recognition and less likely to perceive them as poorly educated. The study emphasizes the need for tailored approaches to entrepreneurship education, especially considering gender-specific perspectives.

Do Paço et.al (2015) revealed Entrepreneurship education is vital for fostering entrepreneurial intentions and cultivating traits linked with entrepreneurship. This study aimed to compare these traits, behaviors, and intentions between girls from a business school and boys from a sports school. It was hypothesized that the girls' business school, with integrated entrepreneurship education, would show higher entrepreneurial behavior and intentions. Surprisingly, results demonstrated that boys from the sports school, without entrepreneurship education, had stronger intentions to start businesses. This suggests additional factors influencing entrepreneurial intentions beyond formal education.

Umaand Jayakodi (2018) delved into the factors affecting Women Entrepreneurship among college girls in Pudhukottai District. Notably, factors like Freedom of Expression, Freedom of Choice, Exposure to Entrepreneurship Development Programs, and the Political Environment had a substantial impact, shaping the way these students viewed and pursued the path of becoming successful women entrepreneurs. These factors hold significant importance in fostering Women Entrepreneurship among college girls in the district.

McAdam et. al (2020) explored the impact of digital entrepreneurship on women in societies with restricted social and cultural norms. It focuses on women's involvement in digital entrepreneurship in emerging economies, particularly in the context of practices like male guardianship and gender segregation. The study employs the lenses of entrepreneurship as emancipation and cyberfeminism. Using data from an investigation in Saudi Arabia, the research reveals that women in this environment leverage digital entrepreneurship not to evade gender constraints but to reshape their own identities and real-world experiences.

Feng, and Sumettikoon, (2022) examined that the digital technology has revolutionized every aspect of life, including female entrepreneurship education, which is crucial for achieving sustainable development goals; this report emphasizes the need for worldwide female entrepreneurship education and introduces an ecosystem model specifically designed for women and girls to overcome current hurdles and shape their future.

The Rise of College Girl Entrepreneurs

The rise of college girl entrepreneurs is a testament to the changing dynamics of society, education, and the economy. With access to knowledge, technology, and a supportive ecosystem, college girls are increasingly embracing entrepreneurship as a means to realize their dreams and aspirations. Entrepreneurship offers a platform for them to transform their innovative ideas into viable business ventures, thereby contributing to economic growth and societal progress.

UPI: Redefining Financial Transactions

The advent of UPI has revolutionized the way financial transactions are conducted. With its seamless and user-friendly interface, UPI has democratized digital payments, making them accessible to even those with limited technological proficiency. The security features of UPI, such as multi-factor authentication and real-time transaction alerts, have instilled trust and confidence among users. This newfound ease and security have had a transformative effect on various aspects of business, particularly for college girl entrepreneurs.

Empowering Entrepreneurial Ventures

UPI's impact on college girl entrepreneurs can be viewed through multiple lenses, each highlighting its transformative role:

- **Secure Transactions:** UPI's robust security features offer a safe and secure platform for financial transactions, alleviating concerns related to fraudulent activities and ensuring that their hard-earned money remains protected.
- **Digital Payment Acceptance:** College girl entrepreneurs can now accept digital payments seamlessly, whether they operate an online store, offer services, or participate in events. This eliminates the need for cash handling and broadens their customer base.
- **Financial Management:** UPI simplifies financial management for entrepreneurs by providing a real-time view of transactions, enabling them to monitor cash flow, track expenses, and make informed decisions.
- **Customer Convenience:** With UPI, entrepreneurs can offer their customers a convenient and efficient payment method, contributing to a positive customer experience and repeat business.
- **Digital Records:** UPI transactions generate digital records that aid in maintaining accurate financial records, simplifying tax compliance and business reporting.

Unlocking Entrepreneurial Potential

College girl entrepreneurs often face unique challenges, including balancing academics, managing finances, and building a brand. UPI acts as a catalyst in overcoming these challenges and unlocking their entrepreneurial potential:

- **Flexibility:** UPI's anytime, anywhere accessibility allows entrepreneurs to manage their businesses on their terms, without being bound by geographical limitations.
- **Minimal Infrastructure:** UPI eliminates the need for physical payment infrastructure, enabling entrepreneurs to start and run businesses with minimal overhead costs.
- **Growth Opportunities:** UPI-enabled businesses can seamlessly scale operations, expand customer reach, and explore new markets, thus fostering growth and expansion.
- **Financial Inclusion:** UPI empowers even those with limited access to traditional banking services, enabling them to participate in the formal economy and contribute to economic development.

Case Studies of UPI-Enabled Ventures

Several inspiring stories underscore the transformative impact of UPI on college girl entrepreneurs:

- **Online Boutiques:** College girls are leveraging UPI to set up online boutiques, where they showcase and sell clothing, accessories, and handmade crafts. UPI's secure payment process and digital invoicing enhance customer trust and simplify transactions.
- **Tutoring and Skill Classes:** College girl entrepreneurs are offering online tutoring and skill-based classes, from academic subjects to art, music, and fitness. UPI facilitates easy registration and payment for these services.
- **Food and Catering Services:** UPI has streamlined payment processes for college girls who provide homemade food or catering services. Customers can place orders and make payments seamlessly, enhancing the overall customer experience.
- **Event Management:** College girls organizing events such as workshops, webinars, and cultural activities are using UPI for ticket sales and registration fees, ensuring a hassle-free event management process.

Challenges and the Road Ahead

While UPI has undoubtedly transformed entrepreneurship for college girls, challenges remain. Limited awareness about UPI, digital literacy, and concerns related to online security can hinder its adoption. To address these challenges, educational institutions, government bodies, and financial organizations must collaborate to raise awareness, provide training, and offer support to aspiring college girl entrepreneurs.

Conclusion

In the journey towards gender equality and economic empowerment, UPI has emerged as a key player, offering college girls a platform to realize their

entrepreneurial dreams. As college girl entrepreneurs continue to shape the business landscape with their innovation and determination, UPI stands as a steadfast ally, empowering them to overcome challenges, seize opportunities, and thrive in the competitive world of business ownership. The partnership between UPI and college girl entrepreneurship embodies the spirit of progress, innovation, and empowerment, ultimately contributing to a more inclusive and prosperous society.

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AWARENESS ON CAPABILITIES FOR WOMEN EMPOWERMENT

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Abstract

Empowering of women is the self-supportive mechanism starting from decision making and ending to social well-being. Women empowerment have been successful to establish their status in terms of self-esteem, right to choice, access to opportunities and so on. They may get the opportunity to redefine gender roles, which in turn provide them more freedom to pursue desired goal. In this paper to cover the awareness of capabilities for women empowerment.

Keywords: Women Empowerment, Awareness, Capabilities.

Introduction

Empowerment aims to create an independent staff involved in decision-making. The state in which women have the ability to act freely in society, exercise their rights equally to that of men, and fulfill their potential as equal members of society, such as to determine their life outcomes, assume leadership roles, and influence decision-making in households, communities, and societies. Women's empowerment is an effort to empower themselves by having abilities or skills in accordance with the interests and talents possessed by women

Throughout history women have been subjected to the indignities of a patriarchal system that has pervaded every aspect of their lives. They have struggled to alter their relations with men, improve their social position and increase their individual and collective sense of self-empowerment. Throughout history women have been subjected to the indignities of a patriarchal system that has pervaded every aspect of their lives. They have struggled to alter their relations with men, improve their social position and increase their individual and collective sense of self-empowerment. Throughout history women have been subjected to the indignities of a patriarchal system that has pervaded every aspect of their lives. They have struggled to alter their relations with men, improve their social position and increase their individual and collective sense of self-empowerment.

Women Empowerment

Women's empowerment requires having access to good healthcare, the right to an abortion, and control over one's own body. Women who are empowered are

better able to take adequate care of their health, seek medical attention when necessary, and make decisions that will improve their well-being. Women's empowerment has five components: women's sense of self-worth; their right to have and to determine choices; their right to have access to opportunities and resources; their right to have the power to control their own lives, both within and outside the home; and their ability to influence the direction of social change to create a more just social and economic order, nationally and internationally.

Capabilities of Women Empowerment

Self-Reliance:

Self-reliance is the ability to do things and make decisions by herself, without needing other people to help them. . Self Reliance is an attitude that accepts responsibility for future, success, and achievement. Being self-reliant means that they have the ability to solve problems for herself. When they are self-reliant they think for their selves and make decisions that are best for their situation.

Women's sense of self worth:

Self esteem comes from the inside out. It means that a woman is not dependent upon anyone else to make her feel good about herself, because she already knows she's fine just the way she is. She is confident and aware of her strengths and abilities. She wants to share them with others.. A genuinely empowered woman knows her worth is beyond the measures.

Education:

Higher female literacy rates reduce child mortality. Education lowers crime rates. Girls' education reduces inequality in society. Education empowers marginalised women and helps them build better futures for themselves and their families. Gender-equitable education systems can contribute to reductions in school-related gender-based violence and harmful practices, including child marriage and female genital mutilation. Gender-equitable education systems help keep both girls and boys in school, building prosperity for entire countries. The importance of girl education in India lies in its ability to address several social issues such as poverty, gender inequality, child marriage, and population growth. Education can help girls develop critical thinking skills, improve their economic prospects, and empower them to make informed life decisions.

Individuality:

Individuality refers to all the characteristics that make a person unique—and refers to only one person. In an individualistic culture, people are considered "good" if they are strong, self-reliant, assertive, and independent. This contrasts with collectivist cultures where characteristics like being self-sacrificing, dependable, generous, and helpful to others are of greater importance. Embracing their individuality are essential for personal happiness. Trying to hide or change who we

are to fit someone else's ideals lessens our sense of self-worth, causing self-esteem to plummet and insecurities to soar.

Good Decision Maker:

A good decision-maker is someone who can analyze the available options, identify potential consequences, and make a choice that aligns with their goals and values. They are also able to take responsibility for their decisions and learn from their mistakes. Sometimes women can make better decisions than men because of the difference between making or taking the decisions. As women take decisions, they adopt the decision-making approach, get assured of the decision validity, and analyze the pros and cons before taking any.

Economic Security:

Women's economic empowerment includes women's ability to participate equally in existing markets; their access to and control over productive resources, access to decent work, control over their own time, lives and bodies; and increase voice, agency and meaningful participation in economic decision-making at all levels from the household to international institutions.

Ability to Face the Social Climate:

Major life transitions such as pregnancy, motherhood and menopause can create physical and emotional stresses for women. Negative life experiences – infertility and perinatal loss, poverty, discrimination, violence, unemployment and isolation – also impact on women's mental health and wellbeing. Even though the women's movement continues to face numerous hurdles and challenges, it has not deterred women's confidence and enthusiasm in bringing about a powerful social change. They are forging a new path toward equality and achieving socio-political and economic empowerment.

Conclusion:

The women empowerment also means when the society will also accept women as decision-makers for the economic and financial decisions of the family. We shall encourage women from all the sections of society to make their own decisions. They need not take permission from men. If women are more educated, they will have greater hygiene and care for children, and they will want their children to go to school. The more educated they are, the more they will be able to participate in everything, economically and socially. Women empowerment helps improving the standard life of women in rural and cities, preventing crimes against women, reducing domestic violence, bringing lots of social and economic gains, solving societal issues like poverty, unemployment and birth control, achieving comprehensive growth in every sector of society. It can help in nation building process by joining in defense forces, social service, politics, education and corporate levels. Women empowerment helps women promoting education which leads to

employ a large number of populations. It is actually a social development as a whole. It provides equity and equality for women in every aspects of life. That leads to a safer and peaceful environment for all worldwide.

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THE FOURTH INDUSTRIAL REVOLUTION (I4.0) IN INDIA: CHALLENGES & OPPORTUNITIES

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Abstract

The so-called fourth industrial revolution, which is being hailed as the next industrial revolution, is becoming a strong force on a global scale. It is characterized by the rising digitalization and connectivity of its business models, value chains, and products. Data volumes, computing power, the Internet of Things (IoT), business analytics, augmented reality, artificial intelligence, elemental design, simulation, advanced robotics, additive manufacturing, sensor-based technologies, and cyber-physical systems are some of the emerging technologies that are powering Industry 4.0. Industry 4.0 is the next step in fusing traditional and contemporary industrial technology. It would entail the convergence of the real and virtual worlds. As a result, the "Smart Factory" will be created, which is distinguished by adaptability, resource efficiency, ergonomic design, and direct integration with business partners. Due to the fact that modern production is cutting edge and highly skilled. The manufacturing industry is currently structurally changing on a worldwide scale. Despite relying significantly on its service sector for growth, India's manufacturing sector must have a big impact on the country's economy. The strong growth in India now needs to be supported by manufacturing. The 'Make in India' program was started by the Indian government to promote India as a global manufacturing base. After agriculture, the manufacturing sector contributes significantly to employment in India and is particularly important for MSMEs. It is crucial to boost manufacturing's proportion of the country's Gross Domestic Product from 16% to 20% in order to achieve the goals of growth and employment by 2022, to 25%, and to produce 100 million new employments. The foundation for implementing the cutting-edge technology needed for the industrial revolution is digital connectivity. The presence of businesses on the internet has become inescapable due to the growing internet penetration in India and the growth of e-Commerce. The Government of India started the Digital India Program to ensure complete broadband connectivity in industrial clusters with the goal of transforming India into an I4.0-adopted knowledge economy and digitally empowered society.

The Evolution of the Connected Ecosystem

Water and steam power caused the first industrial revolution by enabling the transition from manual to automated manufacturing. Electricity served as the foundation for the second industrial revolution's mass production. After two centuries of continuous advancement driven by mechanization, electrification, and the introduction of the assembly line, the global industrial sector adopted information technology in the 1960s as computers dominated technological advancement and sped up the process of human labor. Manufacturing was

automated during the third industrial revolution using electronics and computer technologies. The fourth is the present trend in manufacturing technology toward automation and data sharing. Since then, both operational technology and information technology have advanced significantly, and I4.0 has opened up a huge array of opportunities on the factory floor.

Mid-1780s: the first industrial revolution
Mechanization: Steam and water-powered mechanization. In 1784, the first mechanized loom was created. (mid-1870s) Second Industrial Revolution
Electrification: Using electrical power, assembly lines facilitated mass production energy. The first conveyor belt was set-up by Cincinnati's laughter house in 1870.

3rd Industrial Revolution (mid 1960s) Automation

Information technology led automation as computers were developed to simplify various tasks. The first program able logic controller was invented in 1969.

4th Industrial Revolution (2011) Cyber Physical Systems

While Industry 3.0 focused on the automation of single machines and processes, Industry 4.0 focuses on the end-to-end digitisation of all physical assets and integration into digital ecosystems with value chain partners. Generating, analysing and communicating data seamlessly underpin the gains promised by Industry 4.0, which networks a wide range of new technologies to create value.

Digitisation and Integration of Vertical and Horizontal Value Chains

Industry 4.0 digitizes and integrates processes vertically across the entire organisation, from product development and purchasing, through manufacturing, logistics and service. All data about operations processes, process efficiency and quality management, as well as operations planning are available real-time, supported by augmented reality and optimised in an integrated network. Horizontal integration stretches beyond the internal operations from suppliers to customers and all key value chain partners. It includes technologies from track and trace devices to real-time integrated planning with execution.

Digitisation of Product and Service Offerings

Digitisation of products includes the expansion of existing products e.g. by adding smart sensors or communication devices that can be used with data analytics tools, as well as the creation of new digitized products which focus on completely integrated solutions. By integrating new methods of data collection and

analysis, companies are able to generate data on product use and refine products to meet the increasing needs of end-customers.

Digital Business Models and Customer Access:

Leading industrial companies also expand their offering by providing disruptive digital solutions such as complete, data-driven services and integrated platform solutions. Disruptive digital business models are often focused on generating additional digital revenues and optimizing customer interaction and access. Digital products and services frequently look to serve customers with complete solutions in a distinct digital ecosystem.

Industry 4.0 Key Technologies

I4.0 brings together technology forces such as Internet of Things (IoT), cloud computing, big data analytics, additive manufacturing, Augmented Reality (AR), robotics, cyber security and Machine-to-Machine (M2M) communication. While some of these digital technologies are already in use in industrial applications, some others are still not ready for application at scale. Manufacturers need to carefully pick the right mix of technologies that would maximize returns on investment.

Internet of Things (IoT)

IoT enables real-time machine-machine interaction by connecting them chain Big Data Analytics: The use of data analytics to support quick and wise decision-making Augmented reality: By utilizing mathematical modeling, AI, and virtual reality, AR could improve company processes.

Cyber security

To protect data security, cyber security aids in the establishment of secure communication protocols. Cloud computing: Cloud computing provides a platform with enormous processing, storage, and networking capabilities, allowing for easier interaction across diverse technologies. Manufacturing Additive: By shortening the lead time from product design to product delivery and enhancing customization, additive manufacturing facilitates production in small batches in a time- and cost-efficient manner. Robotics: Connected robots that make it possible to automate production processes and increase productivity using industrial equipment and sensors to capture and transmit data directly to software is known as machine-to-machine (M2M) technology.

Industry 4.0's current state in India

By 2023, the I4.0 market is projected to grow to a global value of INR 13,90,647 crore.¹ I4.0 has begun to be adopted by nations such as the United States, China, Japan, and European countries like the United Kingdom, Ireland, Sweden, and Austria. The manufacturing industry is an essential component of India's long-term goal, the sixth-largest manufacturing nation, as seen by the government's intense emphasis on the "Make in India" program. By 2022, the government wants to increase manufacturing's current 17% contribution to GDP to 25%. The government has implemented a variety of initiatives and policy reforms, including the implementation of the GST (Goods and Services Tax) and relaxing the FDI policy.

Currently, India In terms of I4.0 adoption, it trails behind its international competitors. In India, a sizable chunk of the manufacturing industry is still in the post-electrification stage, with technology usage restricted to stand-alone equipment. I4.0's fundamental tenet, the integration of physical systems on digital platforms, is still in its infancy. Additionally, due to the significant cost barrier, the Micro, Small & Medium Enterprises (MSME) group has very limited access to automation technology.

The following can be used to describe the I4.0 implications' current situation in India:

1. Lack of knowledge of the technology
2. A methodical approach to upgrading.
3. A reluctance to use new technologies
4. Access to cheap labor causes hesitation to deploy automation
5. Product volume is not too great in order to adopting automation improves investment return on investment.
6. There are not enough skill sets available to utilize automation.
7. Government's Role: The Indian government is a crucial participant in the Industry 4.0 transformation. The fourth industrial revolution in India will require a considerable push in terms of resources, infrastructure, technological know-how, and exposure-areas.

To facilitate the smooth implementation of the Internet of Things, telecommunications infrastructure must be improved. Adequate cyber security rules must be developed. The convenience of doing business must also be improved. And both institutions and socio-political platforms must assume this obligation.

Governmental Initiatives

In order to capture a sizeable portion of the global IoT market¹⁵, the Indian government introduced an IoT Policy in 2015 with the goals of skill development,

technological advancements, and the creation of IoT goods tailored to Indian needs. A National Policy for Advanced Manufacturing is also being developed by the government to increase India's competitiveness in the global manufacturing market. Recently, the government declared the beginning of a mission on Cyber-Physical Systems (CPS) and allocated a starting corpus of INR 100 crore. These plans would be essential tools to increase the contribution of manufacturing output once completely implemented.

The 2017 National Manufacturing Policy By consolidating the Make in India initiative and putting a focus on the adoption of digital platforms for Industry 4.0, the government unveiled a new policy in July 2017 to increase the manufacturing sector's share of the GDP to 25%. The Centre of Excellence (CoE) on IT for Industry 4.0 would serve as a knowledge hub for entrepreneurs and startups, spreading the idea of IT and its use in I4.0.

National Artificial Intelligence Program The government stated that NITI Aayog will establish a road plan for a national AI program that will concentrate on creating new AI applications in the Union Budget 2018–19.

Cyber-physical systems mission

As per The Department of Science and Technology will start the CPS mission to support the establishment of CoE for training in robotics, AI, digital manufacturing, etc. as part of the Union Budget 2018–19.

Organizations' Functions

- If manufacturers see a return on their investments, especially major, international manufacturing corporations, they will adopt Industry 4.0. and gain from Industry. 4.0 improvements:
- Have a long-term strategic vision to guide the change of your organization.
- As Adopter (Sector of Manufacturing):
- Make MSMEs a part of their supplier chain
- embrace business model disruption
- Invest in Leadership 4.0 as a Supplier (Technology Sector): To raise the caliber of output, spend money on I4.0 research and innovation.
- Continue to create industry-specific vertically integrated technological solutions. 4.0

It is crucial to create a roadmap for technology adoption at all levels that is appropriate for varied operational scales, especially for MSMEs. The institute/organization is advised to implement the following guidelines. Talent Pool: Put an emphasis on retaining talent and retraining it; enable timely upskilling of the

workforce in line with I4.0 trends. To encourage creativity and trust within the business, create a working environment where people and robots can coexist. To reinforce corporate data privacy and cyber security policies in light of potential dangers posed by a linked ecosystem.

Role of Academia

Promote a culture of research in emerging fields like I4.0 and serve as the test beds for innovation and new learning. Improve the caliber of teachers and modernize the learning infrastructure. Align course curricula with I4.0 requirements, with well-regulated and industry-relevant updated content. Focus more on practical, result-oriented knowledge than theoretical content.

Obstacles to I4.0 Implementation

A number of obstacles must be removed in order to successfully embrace cutting-edge technologies and realize Industry 4.0's potential. Below are a few significant difficulties:

- Absence of a distinct digital vision
- A lack of data analysis skills
- Promoting a robust digital culture
- Data Security Digitization Level Large volumes of client data that are recorded, stored, and analysed carry a significant danger of being misused.
- A lack of uniformity Price and technical problems
- Inadequate Physical and Digital Infrastructure India continues to lack basic infrastructure, like roads and electricity, despite government efforts. Moreover, India's telecommunications network continues to experience slow data speeds and Unstable connection. 79 percent of Indian firms have identified cyber security as one of the top five business concerns, according to KPMG's 2017 India Cybercrime Survey Report. In addition to cyber security, the legal framework governing data privacy would need to be tightened.
- The high cost of digital technologies may make it difficult to build the factory of the future, which will have a fully interconnected system. Due to the high cost of these technologies, it is still difficult for MSMEs, who serve as the foundation of India's manufacturing industry, to access digital technology.
- Lack of Industry 4.0-ready corporate executives in India poses a skill and talent issue that may thwart efforts to make the technology widely available in the nation. Although, India Inc. has excellent traditional leadership, but it lacks digital CXOs with a clear strategy for embracing Industry 4.0. The time is now for agility. India should put leadership and overcoming this challenge first.

Although the majority of CXOs recognize the need for Industry 4.0, their ability to execute is largely unproven.

- **Skills Gap in the Workforce:** India's existing workforce is underqualified and unexperienced in cutting-edge technologies like data analytics, additive manufacturing, and IoT. To enable an industry 4.0-ready workforce, the government, business, and academics must work together.

Opportunities Should Be Seized

India's INR10,85,224 crore IT services sector is one of the main advantages of the country's entry into the I4.0 era.¹⁸ India is one of the most sought-after locations for IT outsourcing in the world and is home to some of the biggest IT firms. India's infrastructure and IT know-how can now be used locally to spur I4.0 India adoption is. In the I4.0 age, the IT industry is anticipated to have a significant impact. In order to take advantage of the untapped opportunity, Indian IT companies are already looking for ways to strengthen their I4.0 skills through R&D. For instance, a prominent IT company recently said that a "Factory of the Future" lab would be established in Bengaluru. According to reports, the lab is working on cutting-edge technological solutions to deeply integrate cyber and physical systems. In addition, Indian IT companies have been looking towards organizational alliances and partnerships to expand their I4.0 skills and offers. Companies have begun putting more emphasis on collaborating with businesses from different industries and nations to develop new IoT and M2M solutions that are pertinent to I4.0. For instance, an I4.0 cloud platform has been announced in conjunction with a global leader in automation with headquarters in Germany by a Bengaluru-based IT company. Another scenario is a major Indian IT company looking to collaborate with a significant Japanese IT firm in the field of smart factories. According to analysts, the fourth industrial revolution will modernize the production base through 4.0 solutions, enabling capital to be employed more profitably. Industry will need less capital since it will be able to better utilize its foundation. Earnings and Return on Investment The number of employed will increase and lead to new investment opportunities, which is essential for funding new projects and generating employment. Industry 4.0 technology adoption will lead to an improvement in both the quality of the manufactured goods and labor productivity. Due to the rise in demand for well-made goods, businesses will be forced to expand their capacity in order to keep up with the demand. There is no denying that some low-skilled positions will go. However, it is anticipated that increased capacity will positively impact job growth.

Conclusion

Industry associations might lead the way in India's adoption of I4.0. Overall, industry associations would need to work together to promote I4.0 adoption. These organizations can take action to spot technology advancements, locate infrastructure and political needs, evaluate the impact on various industries, and draw out a road map for worker upskilling. Additionally, the associations may closely cooperate with the The government would promote I4.0 adoption more quickly in India. Adoption of Industry 4.0 might propel India to the top of the manufacturing food chain. Jobs would be created as a result of the consumerist tendency in India's demand and volume growth, which is anticipated to somewhat offset job losses brought on by I4.0. Government can focus on improving the ease of doing business and attracting FDI investments in the space through policy reforms. Collaboration between countries, corporations as well as academia would catalyse I4.0 adoption.

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WOMEN EMPOWERMENT THROUGH WOMEN ENTREPRENEURSHIP IN MSME SECTOR

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Abstract

The role of women is most intimately related to the goal of comprehensive socio-economic development. Investing in women capabilities and empowering them in all respects is the surest way of contributing to sustainable economic growth. The development of entrepreneurship among women has become an important aspect of the overall economic development. The MSME development programmes can contribute much to the development of women folk of an economy because micro and small enterprises are easily accessible to women as they are less capital intensive. But there are many factors which prevent them from utilizing the benefits of the entrepreneurial development initiatives. The study focused on the role of entrepreneurial development programmes under the MSME sector. The extent of success attained on the entrepreneurial training programmes and the satisfaction level of women entrepreneurs were covered. This paper mainly assessed the economic empowerment of women entrepreneurs who were supported under the programmes. The problems faced by the women entrepreneurs while utilizing the specific schemes for the development were covered.

Keywords: Business Innovation, Socio-Economic development, Women Entrepreneurship, Entrepreneurial Development Programmes, MSME (Micro, Small and Medium Enterprises).

Introduction

An economy's development cannot be gauged solely by looking at its material resources, economic development, and wealth generation. The genuine indication of a society's growth can be found in its people's opportunities and capacities to discover economic resources and enable their best exploitation. Although contributing more than their good portion to society, both at home and outside of the house, and making up half of the adult population, women are usually left out of leadership roles. Hence, women are the most marginalized group in the world and the first victimized group in human history. The most pervasive type of oppression in the world is directed at women, who also have less rights than men. Even though women's economic participation has been rising, there are still significant disparities between men and women in terms of work prospects, rights, pay, and acknowledgement of their economic participation. What men and women do in any community varies greatly over time. Typically, women's work is not as valuable as men's job. If women are traders, trading is sometimes seen as basic and trivial work. Men being traders will be seen as challenging and significant. Due to the perception that males place a lower value on perceived female traits and activities, women are seen as inferior to them. Conceptual back-ground of Women Empowerment and Women Entrepreneurs

Need for Economic Empowerment of Women

For Overall Development of the Economy For the purpose of poverty alleviation, food security, equal access to institutional credit etc economic empowerment is necessary. Economic development of a country can't be fully achieved as long as its women are confined to subordinate positions and their talents remain unexplored or and no country can progress without the empowerment of its womenfolk. It is also true that poverty in both developed and developing countries has a predominantly female face. Hence economic empowerment of women plays a vital role in the progress of their family, community, nation and the world as a whole. Empowerment of women makes development inclusive, sustainable and accessible. Empowerment is a multi-dimensional process that enables individual or a group of individuals to realize their identity and powers in all spheres of life. It creates the ability of greater access to knowledge and resources, greater autonomy in decision making that enable them to have greater ability to enrich their lives, or have greater control over the circumstances that influence their lives and free them from restraints imposed on them by custom, belief and practice.

Women Empowerment

The process through which powerless people become aware of their capacity and make use of that capacity to profit from economic growth is referred to as empowerment. It is "a process of developing capacities and confidence for making decisions about one's own life at both an individual and community level and acquiring control over productive resources." The process of empowerment is made easier by raising one's awareness of their rights and obligations as well as their socioeconomic, educational, and political potential, by learning how to use their resources productively, and by participating in group activities and social life. Enhancing the capacity to build the necessary level of awareness, power resources, autonomy, and participation for starting and continuing the development is included in empowerment. Under India's National Policy of Education from 1986, it is stated that "women gain influence through group discussion and decision-making. Its goals include fostering critical thinking, fostering group cohesion, fostering decision-making and action, ensuring equal participation in the process of bringing about social change, encouraging group action to bring about change in society, and supplying the resources necessary for economic independence". (Venkataravi, Reddy & Venkataramana, 2004)

Women Empowerment through Women Entrepreneurship

In order to address the most pressing issue, unemployment, developing nations like India have given greater importance to the development of entrepreneurship and encouraged the establishment of small scale industries. Entrepreneurship has also been seen as the answer to several socioeconomic issues that the nation is currently facing. Many enterprising, independent people would not reach their full potential in large organisations, but small businesses give their abilities and energies constructive outlets. They act as a breeding ground for creative entrepreneurs and a proving ground for

emerging enterprises. They improve social cohesion, encourage savings among individuals, foster industrial ties, boost rural welfare, and overall increase the amount of public participation in the economy. (Lavanya, 2010) A women-owned business is one that is “managed by one or more women entrepreneurs in proprietary concerns, or in which she/they individually or jointly have a share capital of not less than 51% as partners/shareholders/ Directors of Private Limited Company/Members of Co-operative Society,” according to the Government of India (msme.gov.in).

Women Entrepreneurship Development in India

The National Institute of Small Industry Extension Training programme (NISIET), run in Hyderabad in 1964–1965 under McClelland’s direction, was a trailblazing step in the development of women’s entrepreneurship initiatives. This was followed in 1969–1970 by a scheme for technicians to train technically qualified individuals. a fresh business plan launched by Gujarat Industrial Investment Corporation in 1971. A number of initiatives were launched as part of the declaration of the Decade for Women (1975–1985) to better the status and circumstances of women in the nation, including training programmes under the Small Industries Development Organizations (SIDCO) and the first ever international conference of women entrepreneurs, which was held in 1975 and was organised by the National Alliance of Young Entrepreneurs (NAYE). The National Alliance of Young Entrepreneurs (NAYE) staged the second international conference of women entrepreneurs in 1981, the Bank of India ran entrepreneurship development programmes (EDPs) in 1978, SIDO performed a series of training programmes in women’s entrepreneurship through its Small Industries Service Institutes over a 19-year period for the women who benefited from the government’s TRYSEM programme, and others. The State Government simultaneously set up unique programmes to encourage women’s entrepreneurship skills across the states. Employers Federation of India (EFI), Standing Conference of Public Enterprises (SCOPE), and the All India Organisation of Employers (AIOE) have been taking effective steps to promote women’s entrepreneurial skills. The nationalised banks and other financial institutions offered special consulting services for aspiring women entrepreneurs. The National Institute for Entrepreneurship and Small Business Development (NIESBUD), which was founded in New Delhi, and the Entrepreneurship Development Institute of India (EDII), which was founded in Ahmedabad in 1983, organised a variety of entrepreneurship programmes, including women’s entrepreneurship. In the 1980s, the Industrial Development Bank of India (IDBI) developed and implemented a number of programmes, including Science and Technology Entrepreneurial Parks (STEPS), training and extension services, and refinancing options for organisations providing financial support to women entrepreneurs. In order to provide guidance on the development of women’s entrepreneurship, the government established the National Standing Committee on Women Entrepreneurs in 1986. Other significant efforts of the IDBI launched in 1989–1990 included MahilaUdhyam Nidhi (MUN), which provided seed capital assistance for women entrepreneurs, and Mahila Vikas Nidhi (MVN), which provided aid to NGOs working with women entrepreneurs. In 1990,

government-sponsored and non-governmental organisations (NGOs) rural poor women's entrepreneurship programmes received support from the Norwegian Agency for International Development (NORAD). The New Economic Policy (NEP), a crucial turning point in Indian history, had an impact on women's entrepreneurship as well. The concept of women-owned businesses was altered by the New Economic Policy. Women-owned businesses were previously classified as those in which women made up more than half of both the ownership and control and the workforce. But, according to the NEP, women-owned businesses are those where women hold more than 50% of the ownership and management positions. The employment requirement is no longer in effect.

Institutional set up and Agencies for the Development of Women Entrepreneurship

A large number of institutions were created to promote entrepreneurship in general. Yet, they have placed a greater focus on the creation of programmes to support female entrepreneurs.

- Women Development Corporation
- State Industrial and Development Bank of India (SIDBI)
- Consortium of Women entrepreneurs of India Particularly Indian Institute of Entrepreneurship (IIE)
- The National Institute for Entrepreneurship and Small Business Development (NIESBUD), Noida. The women entrepreneurs are supported by a variety of organisations, including NGOs, self-help groups, institutions, and small businesses from both urban and rural areas.

Programmes/ Schemes Offered by the Government

For the Development of Women Entrepreneurs The Indian government has developed a number of training and development initiatives aimed at creating new jobs, and the bulk of these programmes give women additional support or more flexibility in terms of the rules they must follow when starting their own businesses. The following are a few of the most important initiatives or programmes for the advancement of women business owners:

- Prime Minister Rojgar Yojana and EDPs to develop entrepreneurial qualities among rural women.
- Integrated Rural Development Programs (IRDP)
- Training of Rural youth for Self-employment (TRYSEM)
- Trade Related Entrepreneurship Assistance and Development (TREAD) scheme was launched by Ministry of Small Industries to develop women entrepreneurs in rural, semi-urban and urban areas.
- Swarna Jayanti Gram Swa-Rozgar Yojana and Swarna Jayanti Sakshari Rozgar Yojana
- State Industrial and Development Bank of India (SIDBI)
- Mahila Udyam Nidhi
- Micro Credit Scheme for Women

- Mahila Vikas Nidhi. The following training schemes especially for the self-employment of women are introduced by government:
- Support for Training and Employment Programme of Women (STEP).
- Development of Women and Children in Rural Areas (DWCRA).
- RashtriyaMahilaKosh
- RashtriyaMahilaKosh was set up to grant micro credit to poor women at reasonable rates of interest with very low transaction costs and simple procedures.
- Role of MSME Sector in Women Entrepreneurship and Economic Empowerment of Women

MSME Sector

Micro, small, and medium-sized businesses (MSMEs) are recognised on a global scale as the driving force behind economic expansion and social justice. The sector's employment potential at minimal capital cost is by far its greatest benefit. Compared to large businesses, the MSME sector has a substantially higher labour intensity. In most economies, MSMEs make up over 90% of all businesses, are recognised with creating the fastest rates of employment development, and contribute significantly to both industrial output and exports. MSMEs are essential to India's broader industrial sector and play a significant part in it. Comparing the MSME sector to the entire industrial sector in recent years, the MSME sector has experienced faster development. With its higher operational dynamism, the sector has displayed commendable inventiveness and agility to survive the recent economic slump and recession. Over the past fifty years, the Micro, Small, and Medium-Sized Businesses (MSME) sector has grown to be a very active and dynamic area of the Indian economy. Micro, Small and Medium Enterprises (MSME) sector has emerged as a highly vibrant and dynamic sector of the Indian economy over the last five decades.

Role of MSME Sector in Women Entrepreneurship

There is lot of scope for women entrepreneurship in MSME sector which plays a vital role in providing employment and income for the poor unemployed and marginalized sector of an economy. The Micro, Small and Medium Enterprises can create more opportunities for women entrepreneurs as they are less capital intensive, less labour intensive and easily manageable by them. MSMEs are complementary to large industries as ancillary units and this sector contributes enormously to the socio-economic development of the country. Women Entrepreneurship plays a prime role in industrial development. India has always been a land of entrepreneurs and also occupied a strategic position in the Indian economy. Today the village and MSME units account for about 45 per cent of the total industrial production, 30 per cent of the country exports and estimated to employ 96 million person in over 26 million units throughout the country.

Status of Women Entrepreneurs

Under MSME Sector Even though the status of women in India changed over years, there are several handicaps for them to enter into the business ownership due to the deeply

embedded traditional mindset and stringent values of the Indian society. According to fourth all India census of MSME, it was found that out of the total 15.64 lakh registered enterprises in the MSME sector, 13.49 lakhs (86.28%) were owned and managed by men and only 13.72 per cent (2.15 Lakh) of the enterprises in the registered MSME sector were women enterprises.

Objectives of the Study

1. To evaluate the women entrepreneurial programme of Ministry of Micro, Small and Medium Enterprises (MSME)
2. To assess the economic empowerment of women entrepreneurs under the support programmes.

Methodology

To get a holistic view of the research problem, the study adopts multiple secondary data sources like books, newspapers, academic journals, and websites. Since this type of study focuses more on concepts and application, relevant quantitative and qualitative data have been included. A systematic review of existing literature has been conducted to identify variables which could help women entrepreneurs who are contributing tremendously to small enterprises.

Literature Review

The Indian economy is at a crucial juncture, on the one hand, the optimists are talking of India being among the top five economies of the world by 2050 and on the other is the presence of 260 million poor forming 26 per cent of the total population. The enormity of the task can be gauged from the above numbers and if India is to stand among the comity of developed nations, there is no denying the fact that poverty alleviation and reduction of income inequalities have to be the top most priority. (Shukla & Jain, 2014) The programmes which are focusing on the development of women can only give better results in inclusive development from the bottom of the economy. Welfare of the world is not possible unless the condition of women is improved. It is not possible for a bird to fly on only one wing," said swami Vivekananda. (Bairagi, 2014) When women have economic power- defined as control of income and capital (land, livestock etc.) they gain more equality and control over their own lives, while contributing directly to their children's development (nutrition health and education) and thereby indirectly to their nation's income growth. (Gaur, 2014) When women are empowered, a society with stability is assured. Gone are the days when women were considered subservient or secondary, in almost all walks of life compared to men. It has now amply been proved that women are capable of executing any job as efficiently as men, if not more so. (Abdulkalam, 2006. p.152). Concentration of economic power, regional imbalances, exploitation by monopolists, and many other giant problems find their solutions in the development of small scale industry which is another name of entrepreneurship in the developing countries. (Arora & Sood, 2009, p.5) Micro, Small and Medium Enterprises (MSME) sector has emerged as a highly vibrant and dynamic sector of

the Indian economy. MSMEs, not only play crucial role in providing large employment opportunities at comparatively lower capital cost than large industries, but also help in industrialization of rural & backward areas, thereby, reducing regional imbalances, assuring more equitable distribution of national income and wealth. MSMEs are complementary to large industries as ancillary units and this sector contributes enormously to the socio-economic development of the country. (Annual Report, M/o MSME, 2015-16)

Limitations of the Study

- The study is based on the perceptions of the women entrepreneurs. Their attitudes may change with the change of times.
- In any case the study does not claim to be the final word in the study of women entrepreneurship.

Major Schemes Identified for the Study

Entrepreneurship Development Programmes

(EDPs) Youth talent is being encouraged through the continuous organisation of entrepreneurship development programmes that educate young people on the various facets of industrial activity needed to establish MSEs. In order to encourage students towards self-employment, EDPs are typically held in ITIs, Polytechnics, and other technical institutes. The course materials of such Entrepreneurship Development Programmes are designed to provide useful information on product/process design, manufacturing practises involved, testing and quality control, selection and usage of appropriate machinery and equipment, project profile preparation, marketing avenues/techniques, product/service pricing, and export opportunities.

2.2 Entrepreneurship Skill Development Programme (ESDP) The Ministry of MSME is dedicated to preparing young people for the workforce. The National Small Industries Corporation Ltd. (NSIC), National Institute for Micro, Small and Medium Businesses (NI-MSME), and Central Tool Room are the main institutions that provide the training (CTR). The Plan calls for financial support for the establishment of new institutions (EDIs), strengthening the infrastructure of the current EDIs, and promoting entrepreneurship and skill-building initiatives. The scheme's main goals include encouraging self-employment in rural and urban areas, continuing to expand the entrepreneurial base, and developing indigenous entrepreneurship from all walks of life. To accomplish these goals, first generation entrepreneurs are given guidance and assistance with business setup.

2.3 Credit Guarantee Fund Scheme for Micro and Small Enterprises (CGT-MSE) The Credit Guarantee Fund Plan was created with the intention of offering significant guarantees for loan facilities to borrowers in Micro and Small Businesses. To the first generation of entrepreneurs, the availability of bank loans without the hassles of collateral or third-party guarantees would be a vital source of help in realising their dream of founding a Micro and Small Company (MSE). In order to strengthen the credit delivery system and facilitate the flow of credit to the MSE sector, the Ministry of Micro, Small & Medium Businesses (MSME), Government of India, developed

the Credit Guarantee Scheme (CGS) with this goal in mind. The Credit Guarantee Fund Trust for Micro and Small Businesses was established by the Government of India and SIDBI to make the programme operational (CGTMSE). The programme went into effect on August 1st, 2000. Credit Guarantee Fund Scheme for Small Industries (CGFSI) and Credit Guarantee Fund Trust for Small Industries were the original names of the programme and trust, respectively. The Trust and the Program were renamed as the Credit Guarantee Fund Trust for Micro and Small Businesses and the Credit Guarantee Scheme for Micro and Small Enterprises, respectively, after the passage of the MSMED Act-2006. The Key Components of the Scheme. The lender should place a high priority on the viability of the project and base the credit facility exclusively on the principal security of the financed assets. The borrowers can get working capital and term loans from the same business. 2.4 Trade Related Entrepreneurship Assistance and Development Scheme for Women (TREAD) During the 9th plan period, the Indian government introduced a programme called "Trade Related Entrepreneurship Assistance and Development" (TREAD), which has since undergone minor changes and is now in action. The plan calls for the most marginalised and oppressed group in our nation to gain economic control over resources and access. The programme was created to promote the advancement of women through activities such as trade-related training, informational sessions, and counselling sessions. The programme makes financial loans available through NGOs, which also get GoI grants for capacity building. This support is given to women who want to work for themselves in any type of non-farm activity. Principal Goals of the Plan. To provide trade-related education, advice, and counselling, as well as outreach initiatives including trades, goods, and services, etc., for the economic empowerment of women the provision of credit by NGOs. Make the required information about resources for women's business development available. support for emerging markets. 2.5 Micro & Small Enterprises - Cluster Development Programme (MSE-CDP) The cluster development approach has been adopted by the Ministry of Micro, Small and Medium Enterprises (MSME), Government of India (GoI), as a key strategy for boosting the productivity and competitiveness as well as capacity building of Micro and Small Enterprises (MSEs) and their collectives in the country. Furthermore, clustering of units enables service providers, such as banks and credit agencies, to offer their services more affordably, lowering costs and increasing service accessibility for these businesses. Purposes of the plan. by addressing challenges such the advancement of technology, skills, and quality, access to markets, access to funding, etc., to support the sustainability and expansion of MSEs. to improve associations, develop self-help groups, consortia, and other organisations in order to increase MSME's ability for collectively supportive action. to build or improve infrastructure in MSE clusters and new or existing industrial zones.

Conclusion

The study focused on the effectiveness of programmes for entrepreneurship in the MSME sector. Also covered were the degree of success gained in the entrepreneurial training programmes and the level of happiness among women business owners. The

study concentrated on the function of programmes for entrepreneurship in MSME. The Ministry of MSME's programmes for women entrepreneurs were evaluated based on how well the women entrepreneurs operating under the various schemes were able to advance their economic status. The study primarily evaluated the degree to which programmes supporting women entrepreneurs have empowered them economically. The challenges of women business owners had when utilising particular development programmes were also highlighted. Areas for Further Studies: 1. Women Empowerment and Regulatory Framework for Industrial Operations 2. Women Entrepreneurship and Financial Support for Enterprise Operations

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ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT

Volume - 1

Chief Editor
Dr. R. Gayathri

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MICROFINANCE FOR SUSTAINABLE RURAL INDIA: ISSUES AND CHALLENGES

Dr.T.S.Kavitha

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Abstract

From the time of independence unemployment and poverty has been two major characteristics and challenges of India. The major cause for the above two has been the unavailability of sufficient credit facilities for the poor and unemployed. These two factors have become the most challenging roadblock in the path of sustainable development of the country. The rapidly opening economy is widening the gap between the rich and poor. To have a sustainable life style along with saving and investment, microfinance allows the poor to get the loan that leads to financial independence and growth. The poor use these loans in a productive manner to create their businesses, assets of their own and get rid of poverty once and for all. Microfinance is becoming a significant buzzword in India. Remarkable progress has been made during the last two decades in innovating techniques to deliver financial services to the poor on a sustainable basis. These loans are aimed at empowering the impoverished people to start their own businesses and to grow their money so that they can achieve long-term financial independence and develop sustainably. Economic growth, sustainable development and poverty alleviation can be achieved effectively with the help of an instrument like Micro finance. This paper will focus the challenges and suggestive measures for growth of microfinance in Indian context for a sustainable development.

Keywords: Microfinance, MFIs, Poverty Alleviation, Sustainable growth.

Introduction

Microfinance is one of the most visible innovations in anti-poverty policy in the last half-century, and in three decades it has grown radically. The most important benefit of microfinance in India is that it helps long-term financial independence in these poverty-stricken areas . Micro finance help sustained impact by educating recipients on how to create their own businesses and how to properly manage and grow their money. There is a rapid growth in the strength of microfinance in India and several other countries. Undoubtedly it has been successful in bringing formal financial services to the poor. People believe that it has provided money to the poor families and it has the strength to increase investments in health, education and empowerment of women .Microfinance institutions (MFIs) have created a massive social infrastructure uniquely positioned to reach millions of clients on a regular basis. Microfinance is no more a financing channel but it has also emerged as a strong distribution channel with numerous credit products, repayable over a longer period of time, and solar lamps, fuel-efficient stoves are some of them. In the last two years, many companies are manufacturing solar products with microfinance distribution channel to sell their products.

There are many areas where slow or negative growth is seen especially in the rural areas. There may be improvement in terms of GDP and in HDI, but the overall development of the country is still under the curtains. The benefits of development have distributed unevenly

between rich and poor nations and between rich and poor groups in individual nation. The global number of extremely poor and under nourished have remained high and in some societies it has increased. One of the major negative impacts of development has been on the environment and on existing social structure. Many traditional societies and villages have been devastated by development off rest, water system and intense off fisheries. Environmental damage of development, if unchecked, may undermine the achievement of development and even collapse of essential eco system. The growing awareness of the challenges to traditional development thinking has led to the increasing acceptance of a new concept of development i.e. sustainable development.

Statement of the Problem

Many poor in the world don't have access to basic financial services which are helpful in managing their assets and create income. They need access to borrowings, savings and investment to eradicate their poverty. Micro finance is one of the ways of fighting poverty in rural areas, the place where most of the world's poorest people live. It provides funds, insurance, savings and other ancillary financial services within the reach of the poor. Through microfinance institutions (MFIs) such as financial non-governmental organizations, commercial banks and even credit unions, poor people can fulfill their requirement of small loans and safe guard their savings.

Objectives of the Study

The broad objective of the study is to analyze the challenges and issues of micro finance in India. However the paper also throws some light on the following issues:

- Micro finance and MFIs : its present context
- Challenges faced by the MFIs
- Sustainable development through microfinance
- Suggestive measures to tackle those challenges.

RESEARCH METHODOLOGY:

The present study is a descriptive study. This study is mainly based on secondary data only. Secondary data is collected from various sources like journals, magazines and reports. So trueness of the data depends on the trueness of the source.

Sustainable Development

The most common definition of sustainable development refers to a pattern of resource use that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (1987 UN World Commission Report). The term broadly encompasses a number of inter-related global issues such as poverty, hunger, in equality, and degradation of environment.

In the extensive discussion of the concept of sustainable developments incethen, there has been recognition of three aspects of sustainable development: economic, environment

and social. An economically sustainable system must be able to produce goods and services on a continuing basis to maintain manageable levels of government's internal and external debt and to avoid unhealthy sectorial imbalance which damage agriculture or industrial production.

Microfinance : An Overview

Micro Finance may be defined as "provision of thrift, credit and other financial services and products of very small amounts to the poor in rural, semi urban or urban areas, for enabling them to raise their income levels and institutional initiatives of rural credit and to the improve living standards". At present, a large part of microfinance activity is confined to credit only. Women constitute a vast majority of users of micro-credit and savings services. Microfinance is the supply of loans, savings, and other basic financial services to the poor. (<http://cgap.org>) As these financial services usually involve small amounts of money - small loans, small savings, etc. - the term "microfinance" helps to differentiate these services from those which formal banks provide. The poor rarely access services through the formal financial sector. They address their need for financial services through a variety of financial relationships, mostly informal.

Microfinance is provided through Microfinance Institutions (MFIs). To be sustainable, MFIs ultimately have to

Organize their own resources through savings and equity, enhanced by other domestic resources like;

- Recover their loans
- Cover their costs from their operational income
- Finance their expansion from their profits
- Acquire an appropriate legal status
- Submit to appropriate regulation and supervision

Poor people do not live in a static environment of poverty. Many millions of people get out of poverty by successfully embracing new farming technologies, investing in new business opportunities, or by locating new jobs. At the same time, large numbers of people fall back into poverty due to financial setbacks, health problems, and other shocks. If available at critical moments, effective tools for savings, payment, credit, and insurance can help households capture an opportunity to climb out of poverty or weather a crisis or emergency without falling deeper into poverty.

Worldwide, approximately 2.5 billion people do not have a formal account at a financial institution, according to the World Bank's Global Financial Inclusion Database. As a result, most poor households operate almost entirely in the cash economy, particularly in the developing world. This means they use cash, physical assets (such as jewelry and livestock), or informal providers (such as money lenders and payment couriers) to meet their financial needs—from receiving wages to saving money for fertilizer. However, these informal

mechanisms tend to be insecure, expensive, and complicated to use. And they offer limited recourse when major problems arise, such as a serious illness in the family.

Following are some issues in MFIs in providing microfinance which become a challenge for them and ultimately pausing sustainable development:

Low Outreach: In India, MFI outreach is very low. It is only 8% as compared to 65% in Bangladesh.

High Interest Rate: MFIs are charging very high interest which the poor find difficult to pay.

Negligence of Urban Poor: It has been noted that MFIs pay more attention to rural areas and largely neglect the urban poor. Out of more than 800 MFIs across India, only six are currently focusing their attention on the urban poor.

Client Retention: Client retention is an issue that creates problem in growing the MFIs. There is about 28% client retention in the MFIs.

Loan Default: Loan default is an issue that creates problem in growth and expansion of the organization because around 73% loan default is identified in MFIs.

Low Education Level: The level of education of the clients is low. So it creates a problem in the growth and expansion of the organization because its percent age is around 70% in MFIs.

Language Barrier: Language barrier makes communication with the clients (verbal and written) is an issue that creates a problem in growth and expansion of the organization because around 54% language barrier has been identified in MFIs.

Late Payments: Late payments are an issue that creates a problem in growth and expansion of the organization because late payments are around 70% in MFIs.

Geographic Factors: The Geographic factors make it difficult to communicate with clients of far-flung areas which create a problem in growth and expansion of the organization. MFIs are basically aimed to facilitate the BPL population of the country but due to lack of infrastructure in those areas it becomes difficult to reach them.

Debt Management: Clients are uneducated about debt management. 70% of the clients in MFIs are unaware of the fact that how to manage their debt.

Other Factors include

Internal Factors

- High Transaction Cost
- Lack of access to Funding
- Loan Collection Method

External Factors

- Uneven Population Density
- Regional Disparity
- Deserving Poor are still not reached
- Low Depth of Outreach

- Unregulated Microfinance Institutions
- Lack of Insurance Services

Measures to Overcome Challenges

The following are some measures to overcome the challenges faced by MFIs in providing microfinance services to have a sustainable development.

Proper Regulation

When the microfinance was in its nascent stage and individual institutions were free to bring in innovative operational models, the need for a regulatory environment was not a big concern. However, as the sector completes almost two decades of age with a high growth trajectory, an enabling regulatory environment is needed that protects interest of stakeholders as well as promotes growth.

Field Supervision

In addition to proper regulation of the microfinance sector, field visits can be adopted as a medium for monitoring the conditions on ground and initiating corrective action if needed. This will keep an eye on the performance of ground staff of various MFIs and their recovery practices.

This will also encourage MFIs to abide by proper code of conduct and work more efficiently. However, the problem of feasibility and cost involved in physical monitoring of this vast sector remains an issue in this regard.

Encourage Rural Penetration

It has been seen that instead of reducing the initial cost, MFIs are opening their branches in places which already have a few MFIs operating. Encouraging MFIs for opening new branches in areas of low microfinance penetration by providing financial assistance will increase the outreach of the microfinance in the state and check multiple lending. This will also increase rural penetration of microfinance in the state.

Complete Range of Products

MFIs should provide complete range of products including credit, savings, remittance, financial advice and also on-financial services like training and support. As MFIs are acting as a substitute to banks in areas where people don't have access to banks, providing a complete range of products will enable the poor to avail all services.

Transparency of Interest Rates

As it has been observed that, MFIs are employing different patterns of charging interest rates and a few are also charging additional charges and interest free deposits (a part of the loan amount is kept as deposit on which no interest is paid). All this makes the pricing very confusing and hence the borrower feels incompetent in terms of bargaining power. So a common practice for charging interest should be followed by all MFIs so that it makes the

sector more competitive and the beneficiary gets the freedom to compare different financial products before buying.

Technology to Reduce Operating Cost

MFIs should use new technologies and IT tools & applications to reduce their operating costs. Microfinance institutions should be encouraged to adopt cost-cutting measures to reduce their operating costs. Also initiatives like development of common MIS and other software for all MFIs can be taken to make the operation more transparent and efficient.

Alternative sources of Fund

In absence of adequate funds the growth and the reach of MFIs become restricted and to overcome this problem MFIs should look for other sources for funding their loan portfolio. Various alternative sources of fund for the MFIs may be by getting converted to for-profit company i.e. NBFC, Portfolio Buyout, and Securitization of Loans etc.

Conclusion

To obtain sustainable development there must be continued growth and diversification of the rural economy, all segments of the population including farmers, rural micro-entrepreneurs and the poor should have easy access to sustainable financial services such as savings, credit and insurance provided by self-reliant, sustainable financial institutions in a conducive macroeconomic policy environment and development of MFIs. Sustainable rural microfinance requires local initiative and careful donor support for the development of institutions, enabling them to offer both savings and credit services, mobilize their own resources, have their loans repaid, cover their costs from their operational income, and finance their expansion to the poor and non-poor from their profits.

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DIGITAL STARTUPS AND WOMEN ENTREPRENEURSHIP: A STUDY ON STATUS OF WOMEN ENTREPRENEURS IN INDIA

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In the present scenario, ‘male-only’ curse in entrepreneurship don’t bother Indian women who are passionate towards their career and business goals. The increased use of internet, technologies and ease in communication is opening up new platform for women in digital business market. Digital media, is not just the medium to raise voice and get heard, but it is also the safest avenue to convert big ideas into powerful brands for women entrepreneurs around the world, including India. Moreover, it plays crucial role in removing gender biasness as the digital medium places a layer of invisibility on the seller’s identity. The concept of “Minimum Investment, Maximum Profit” in online business is helping women entrepreneurs to make their own identity in the digital startup environment. This study is an attempt to know the status of women entrepreneurs and their significance in digital startups environment in India.

Keywords: Women Entrepreneur, Digital Startups, Digital Media, Entrepreneurship.

INTRODUCTION

Nowadays, everyday challenges don’t distract women from achieving their goals as the environment as well as the scenario is getting more secured and liberal for them. Favourable economic policies along with the advent of latest communication technologies are opening new platform and gateways for aspiring women leaders in digital market. Surrounded by multitude of entrepreneurship opportunities, women in the era of digital startup revolution are giving fierce competition to their male counterparts. The high penetration of internet and use of social media is also playing critical role in clearing the roadmap to drive and scale up their digital business or start-up to conceive financial independence and profitability. Digital ecosphere has brought so many opportunities for women entrepreneurs to showcase their feminine spirit, intellect, talent and creativity and transform their ideas into realities. Digital media revolution lets women entrepreneurs conduct their business entirely on internet and

provide flexibility around their schedule by introducing virtual workplaces and digital lifestyle.

CONCEPT OF WOMEN ENTREPRENEUR

Women entrepreneur is any woman, who initiate, organize and run a business enterprise to achieve self- economic independence either individually or in collaboration by keeping pace with her personal, family and social life. The Government of India has defined women entrepreneur as “an enterprise owned and controlled by a women having a minimum financial interest of 51% of the capital and giving at least 51% of the employment generation in the enterprise to women”.

CONCEPT OF DIGITAL STARTUPS

In recent years, the rapid advent of new digital technology such as social media, big data, cloud computing, mobile computing has influenced the entrepreneurial process. Startups which are keen to innovate and take advantage of opportunities which comes from It development are recognized as Digital Startups. Digital Startups can be defined as “any attempt or any startup businesses with the objective of gaining profit in return utilize the information technology for business purposes”. Digital Startups intensively use digital technology for creating new digital business models, improving business operations, engaging customers and stakeholders through digital channels and sharpening business intelligence.

OBJECTIVES OF THE STUDY

The study was planned with the following objectives;

- To identify the motive factors that encourages women to set up digital startups.
- To list out successful women entrepreneurs of digital startups in India.
- To critically examine the major issues and challenges faced by women in digital market.

RESEARCH METHODOLOGY

The present study is purely based on secondary data collected through literature survey, journals, newspapers, websites and published articles relating to this particular topic.

SUCCESSFUL WOMEN ENTREPRENEURS OF DIGITAL STARTUPS IN INDIA

The new generation women have overcome all their hurdles and have proved themselves beyond in the world of entrepreneurship. The success stories of women entrepreneurs one after another have made the digital landscape a universal platform for enterprising opportunities. There are so many icons in terms of success who are the true inspiration to the millions of women across the country.

Some of the women e-entrepreneurs who are marching ahead in the domain of digital market are:

Successful Women Digital Entrepreneurs in India

E-entrepreneur	Position	Start-up
Suchita Salwan	Founder & CEO	Little Black Book- Online portal which shares and discovers local businesses across categories of food, shopping, events and activities through community driven recommendations.
Falguni Nayar	Founder & CEO	Nykaa- Mumbai-based multi-brand beauty retailer selling cosmetic and wellness products.
Sakshi Talwar	Co-Founder	Rugs and Beyond- The largest online retailer of exclusive handmade Rugs and Carpet
Radhika Aggarwal	Co-Founder & CBO	ShopClues- India's first online shopping portal that connects buyers and sellers online and offers a trusted and safe online shopping environment.
Sabina Chopra	Co-Founder & EVP Operator	Yatra.com- One of India's most popular online travel portals.
Suchi Mukherjee	Founder and CEO	LimeRoad- An online portal that targets the women audience to shop lifestyle products and accessories.
Richa Kar	Founder & CEO	Zivame- It is India's largest online lingerie shopping portal for women at

		lowest price.
Aditi Gupta	CEO	Menstrupedia –Educating millions of women around the society regarding menstrual health as well as hygiene with the help of her website
Shradha Sharma	Founder & CEO	YourStory - India's leading media platform for entrepreneurs & the entrepreneurial ecosystem.
Upasana Taku	Co-Founder	Mobikwik -It is a mobile phone based payment system and digital wallet.
Rashi Menda	Founder & CEO	Zapyle - Ultimate online destination for luxury fashion in India.
Swati Bhargava	Co-Founder& CEO	Cash Karo -India's No. 1 Cash back and Coupons website rewarding customers for visiting online retailers through their site.

MOTIVE FACTORS THAT ENCOURAGES WOMEN TO SET UP DIGITAL STARTUPS

Women have held a very important social, political and economic role in India. Modernizing this role and giving a kind of shape of entrepreneurship have brought lot of structural and transformational reforms in the country. Encouraged by fast emerging group of successful women entrepreneurs, NITI Aayog has launched ‘Women Entrepreneurial and Innovation Cell’ which offers financial support Rs.10,000crore funds under the scheme Fund of Funds ,Mudra micro loan scheme and mentorship to women entrepreneurs. Besides, Government and No-Government bodies are increasing their attention towards women’s contribution to economic development by launching various operated by different department and ministries.

The following are the key points which motivate women entrepreneur to go for startups:

1. **Global Reach:-** The world has turned into small village because of digital revolution. Digital marketing helps women entrepreneurs to get global exposure for their startups and to achieve fastest business growth.
2. **Greater Flexibility:-** The flexibility of digital marketing lets women entrepreneurs conduct their business entirely on internet. Many women entrepreneurs enjoy the flexibility to work from home specifically in the field of – content development, sales, recruitment, lead generation and travel packaging, among others that just require a strong internet connection, a laptop and a mobile phone.
3. **Huge return on investment:-** Digital marketing offers a markable return on small investments. Advertising through social media platforms cost less when

compared to traditional marketing techniques. It is a proven way to reach targeted audience with most cost effective way.

4. **Absence of Middlemen:-** Digital marketing is making the globe come closer by helping the buyers meet the sellers and vice versa. There is no scope for middlemen who increase the transaction costs.
5. **Ease in Communication:-** Business communication under digital marketing is easy. Women e- entrepreneurs can do transactions without stepping out of their home. They are generating business through WhatsApp, Facebook, Instagram and many other social media platforms.
6. **Fastest processing of transactions:-** Executing transactions under digital marketing is easy and nearly instant online. The transactions are effortlessly executed with digital payment services.
7. **Secured platform:-** Digital marketing plays a vital role in removing gender biasness as the online medium places a layer of invisibility on the identity of seller.
8. **Ability to Multitask:-** One of the core benefits of digital marketing is its ability to handle millions of customers at the same time. As long as a website's infrastructure is efficient, numerous transactions can easily take place simultaneously.
9. **24/7 Business:-** Digital marketing runs around the clock. Compared to traditional marketing, digital marketing does not constrain for opening hours for business transactions since business run for 24 hours a day, 7 days a week.
10. **Easy access to funds:-** The Indian government has introduced over 50+ startup funding schemes in the recent years. Each startup scheme of government aims at boosting the Indian startup ecosystem.
11. **Tax holiday for 3 years:-** Eligible startups can now avail three year tax holiday in a block of seven years. This helps them to get more time to reach a stage when they start earning profit before they exercise their option for income tax exemption.
12. **Liberal Compliances:-** The Government of India has simplified legal compliance and made it flexible for Startups as per the 2016 'Startup India Action Plan'. The goal is to enable startups to focus on their core business and keep compliance costs low.

ISSUES AND CHALLENGES FACED BY WOMEN IN DIGITAL MARKET

There are quite a few women who have built up famous brand in the Industry, thanks to digital business ideas. Last year about 1800 startups have come up in the market and it is something that is grabbing the attention of many specially women across the country.

Women have astounding potential to excel in the entrepreneurial environment, but they also have to endure several financial and social hurdles that deprive them of a fair chance to a part of it. Here are some of the challenges that every women entrepreneur needs to overcome:

1. **Finding suitable market:-** Successful new business enjoys longevity because their owners conduct regular market research to understand their target market, identify consumer's problems and pinpoint realistic competitors. So, it's necessary to carry out market research on continuous basis to keep up with market trends and maintain a competitive edge by sizing up business opportunity.
2. **Promotion strategy can be easily copied:-** One of the main challenges in digital marketing is that a particular marketing technique can be easily copied by rival. This will force to frequently come up with new marketing strategies.
3. **Security Issue:-** Digital transactions are entirely carried out on internet. For a customer who queries online for products or services, there is a caution not to reveal the private banking information as it might be misused by unidentified people.
4. **Requires huge initial investments:-** Digital marketing through search engines and social media networking is quite expensive. So, it requires huge capital investments at the early stages.
5. **Good and effective customer service:-** It is a big challenge for women e-entrepreneurs to maintain good reputation through constant good services. There are times when goods delivered to the customer are not satisfactory. Customer satisfaction should be utmost priority in digital marketing.
6. **Training the team:-** As companies scale up and technologies continue to evolve, training the team is a greater challenge.

CONCLUSION

Today, India's Digital Startup ecosystem is in a better position, wherein women's participation in the field of entrepreneurship is increasing at a substantial rate.. In this fast moving economy, there has always been a choice for women to have a successful career with independency or stay aback due to the society's pull. Since multitasking is a trait women are born with, it is helping them to maintain a balance between their career and responsibilities simultaneously. It is has become old beleive that women become entrepreneurs because of push factors like poverty, husband's death and need of additional income etc, but now they are venturing into business because of risk taking ability, innovative thinking and passion for achievement. 'Start-up India' mission by Prime Minister of India has floated several schemes for creating entrepreneurial awareness, orientation and skill development programs for women. As the environment is changing

very fast, investors start investing on woman leadership, and their contribution in economic development is also being recognized and increase at a considerable rate. Start-up schemes initiated by government is promoting the culture of entrepreneurship by educating women about their hidden potentials and strengths through entrepreneurial orientation programmes, spreading awareness and consciousness amongst women to upstage in the field of entrepreneurship by their creative and innovative ideas, making them realize their prominent position in the society and how they can contribute to the economic development of the country. Although, India has a handful of successful women entrepreneurs who are making waves in different fields of business, it has ranked 52, much lower than US and China in the list of 57 countries in MasterCard Index of Women entrepreneurs report which is surveyed to ascertain parity for women entrepreneurs. India's rank remained unchanged from previous year at 52. The report stated that the underlying conditions for women business ownership in India are less favourable, adding that the obstacles are largely caused by perceptions of gender bias, which contribute to poor social and cultural acceptance, lack of self –belief and access to financial funding or venture capital. So, there is need for more initiatives by the government to help women climb the entrepreneurship ladder in India.

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IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

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A STUDY ON MULTIPLE INTELLIGENCE AMONG STUDENT-TEACHERS IN RELATION TO GENDER TYPE OF COLLEGE AND PEDAGOGY SUBJECTS

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Abstract:

Contemporary Educationists and Psychologists emphasises that the present education system stresses not to train children to learning by force and harshness, but direct them to it by what amuses their minds, so that one may be a better able to discover with accuracy, the peculiar bent of the genius of each. Hence this article makes an effort to understand the influence of multiple intelligence of the student-teachers relation to gender, management and pedagogy subjects. Research universe consists of student-teachers in Ballari, Vijayanagara and Koppal districts, Karnataka in India. Sample consists of 980. The stratified random sampling was applied. The investigator onself visited teacher education colleges and collected the data. Outcomes of the research are analysed. The inferential statistical techniques 't' and 'F' (ANOVA) tests were used to test hypothesis. It is concluded that, there is no significant difference between male and female student-teachers with respect to multiple intelligence scores.

Keywords: *Multiple intelligence, student-teachers, aided, unaided, pedagogy subjects*

Introduction:

Multiple intelligence theory makes its greatest contribution to education by suggesting that student-teachers and teachers need to expand their repertoire of techniques, tools and strategies beyond linguistic and logical methods. An awareness of multiple intelligence theory has stimulated student-teachers to find more ways of helping of all students in their classes.

With an understanding of Gardner's theory of multiple intelligence, student-teachers, teachers, school administrators and parents can better understand the learners in their midst. They can allow students to safely explore and learn in many new ways and they can help students to direct their own learning. Student-teachers can help students to understand and appreciate their strengths and identify real world activities that will stimulate more learning.

Multiple Intelligence will essentially encompasses what a good student-teacher have always done in their teaching beyond the text and the blackboard to awaken student's minds.

Need and Importance of the Study:

Multiple intelligence opens the door to a wide variety of teaching strategies that can be easily implemented in the classroom. The multiple intelligence and innovative skills and strategies are relatively new to the educational era.

The student-teachers need to know much about and understand students being taught in the classroom. The abilities, interests and needs of each student must be studied and accepted by the student-teacher. Student-teachers needs to be well versed in different intelligences possessed by students and how many be used to assist each student to optimize instruction in many fields of knowledge and skills.

Awareness of multiple intelligence influences choice of relevant learning strategies for student-teachers.

Scope of the Study:

The main intention of the present study is to find the relation of multiple intelligence of student-teachers with gender, type of college and pedagogy subjects.

Objectives of the Study:

To study the impact of gender, type of college and pedagogy subjects on the multiple intelligence of student-teachers.

Hypothesis of the Study:

1. There is no significant impact of 'Gender' on the multiple intelligence of student-teachers.
2. There is no significant impact of "Type of College" on the multiple intelligence of student-teachers.
3. There is no significant impact of "Pedagogy Subjects" on the multiple intelligence of student-teachers.

Tools for the Study:

1. The Multiple Intelligence Scale (MIS- ASPS) was used from Surbhi Agarwal and Dr. Suraksha Pal. The tool was highly reliable for the investigation.
2. Personal data regarding the student-teacher-
 - a. Gender (Male and Female)
 - b. Type of College (Aided and Unaided Colleges)
 - c. Pedagogy Subjects (Science Stream and Arts Stream)

Data Collection:

The sample for the investigation consisted of 980 student-teachers of Teacher Education Colleges in Ballari, Vijayanagara and Koppal districts, Karnataka in India.

The stratified random sampling was applied in three stages. The first stage type of college/ management i.e., aided and unaided colleges; the second stage is gender i.e., male and female and third stage is pedagogy subject. The investigator onself visited B.Ed colleges/ teacher education colleges with the permission of the Principals of the college. The student-teachers who attended to the college on the day of collection of data are considered for the purpose of the investigation. It was provided to the concerned student-teachers of the college. The student-teachers were read necessary instructions about the instruments and personal motivated to respect genuinely to all the items. The multiple intelligence questionnaire and personal data sheet were administered. The data on each variable in the investigation is properly coded to suit for computer analysis. The analysis was carried out on the basis of objectives of the investigation and hypothesis formulated by appropriate statistical techniques. The inferential statistical techniques 't' and 'F' (ANOVA) tests were employed to test hypothesis.

Hypothesis 1. There is no significant difference between male and female student-teachers with respect to multiple intelligence scores.

To evaluate the aforementioned null hypothesis, an analysis was conducted using two sample independent 't' test and the results are presented in the following table 1.

Table 1. Summery of Independent 't' Test Between Male and Female Student-Teachers with Respect to Multiple Intelligence Scores.

Variables	Male		Female		t-value	p-value	Significance
	Mean	SD	Mean	SD			
Multiple intelligence	309.00	27.10	308.38	31.00	0.2887	0.7729	NS

NS-Not significance

From the results of the above table 1, it can be seen that, when comparing male and female student-teachers with multiple intelligence scores, the calculated value of 't' is 0.2887 with p-value is 0.7729. The critical or tabled value of 't' is 1.9600 with 978 degrees of freedom at 5% level of significance. It clearly seen that, the calculated value of 't' is lesser than the critical or tabled value of 't' i.e. 1.9600.

Findings:

No significant difference was observed between male and female student-teachers with respect to multiple intelligence scores.

Hence, the null hypothesis is accepted. In other words, the male and female student-teachers have similar multiple intelligencescores.

Hypothesis 2.

There is no significant difference between aided and unaided college student-teachers with respect to multiple intelligence scores.

To evaluate the aforementioned null hypothesis, an analysis was conducted using two sample independent 't' test and the results are presented in the following table 2.

Table 2. Summary of Independent 't' Test Between Aided and Unaided College Student Teachers with Respect to Multiple Intelligence Scores.

Variables	Aided		Unaided		t-value	p-value	Significance
	Mean	SD	Mean	SD			
Multiple intelligence	304.95	25.83	309.80	31.16	2.2223	0.0265	S

S- Significance

From the results of the above table 2, it can be seen that, when comparing aided and unaided college student-teachers with multiple intelligence scores, the calculated value of 't' is 2.2223 with p-value is 0.0265. The critical or tabled value of 't' is 1.9600 with 978 degrees of freedom at 5% level of significance. It clearly seen that, the calculated value of t is greater than the critical or tabled value of t i.e. 1.9600.

Findings:

A significant difference was observed between aided and unaided college student-teachers with respect to multiple intelligence scores.

Hence, the null hypothesis is rejected. In other words, the unaided college student-teachers have significant and higher multiple intelligencescores as compared to aided college student-teachers.

Hypothesis 3.

There is no significant difference between Science stream and Arts stream student-teachers with respect to multiple intelligence.

To evaluate the aforementioned null hypothesis, an analysis was conducted using two sample independent 't' test and the results are presented in the following table 3.

Table 3. Summery of Independent't' Test Between Science Stream and Arts Stream Student-Teachers with Respect to Multiple Intelligence Scores

Variables	Science Stream		Science Stream		t-value	p-value	Significance
	Mean	SD	Mean	SD			
Multiple intelligence	312.92	27.48	304.94		4.1860	0.0001	Significances

From the results of the above table 3, it can be seen that, when comparing Science stream and Arts stream student-teachers with multiple intelligence scores, the calculated value of 't' is 4.1860 with p-value is 0.0001. The critical or tabled value of 't' is 1.9600 with 978 degrees of freedom at 5% level of significance. It clearly seen that, the calculated value of 't' is greater than the critical or tabled value of 't' i.e. 1.9600.

Findings:

A significant difference was observed between Science stream and Arts stream student-teachers with respect to multiple intelligence scores.

Hence, the null hypothesis is rejected. In other words, the Science stream student-teachers have significant and higher multiple intelligencescores as compared to Arts stream student-teachers.

Conclusion:

In the light of findings, the following conclusions are drawn. The gender (male and female) will not influence on student-teachers multiple intelligence. But type of college and pedagogy subjects will influence. In this study identifies their teaching skills and being aware of the ways with which they can be more successful in their pedagogy journey, it is hoped that students will be familiar with their strength and weakness, which will help them become more proficient student-teacher and they will probably be more satisfied.

Educational Implications:

The findings of the present research have raised some important questions related to the educational needs of the student-teachers with special reference to their multiple intelligence.

1. The Concept of multiple intelligence suggests that gender will not influence, but all the student-teachers have different strength and learning styles.
2. Student-teachers should recognize and accommodate these individual differences by providing a variety of instructional strategies and activities that cater to diverse intelligences.
3. By understanding the specific intelligence of student-teachers, educators can design training programs that align with their strengths and enhance their pedagogy skills.

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TEACHER'S PERCEPTION TOWARDS NEW EDUCATION POLICY IN HIGHER EDUCATION SYSTEM

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Abstract

The New Education Policy 2023 is a revolutionary approach that promotes learning based on practical skills. It aims to confirm inclusive and quality education to all. It also incorporates modern technology to the education. It transforms existing education system. The teacher plays vital role in the implantation of NEP in our country. The present paper studies the perception of teachers about their role in implementation of new education policy in higher education system. The study helps to understand the benefits teachers will get after the implementation of NEP. It helps to know the challenges they face while implementing NEP. An analytical research design is adopted in the study.

A questionnaire was conveniently administered among the sample size of 120 teachers of professional courses across different institutions in Kerala's Palakkad district. A five-point Rensis Likert scale was used for measuring the qualitative data in the study. A questionnaire was administered to the teachers through email. For statistical analysis and percentage analysis, the chi-square test, one-way ANOVA and mean value analysis have been used. Microsoft Excel is used for analysing data. The study found that in the perception of teachers NEP leads to better quality education and confirms inclusive education. At the same time, it does not give them any monetary benefits, but they opined that it leads to improvement in their professional standards. Lack of infrastructure and funds are the main challenge in effective implementation of NEP.

Keywords: *New Education Policy, perception, teachers, implementation, quality.*

Introduction

The foundation of society, which promotes the growth of the entire country, is education. Education is a powerful tool that has the power to transform the entire planet. It may help someone become independent. The people's quality of life in the society must be raised. Every member of society has a right to an education. Today's world is observing quick changes in the educational systems of many nations. This is a result of globalization, as every nation now demands highly qualified workers. Knowledge from textbooks is insufficient to land a job at a reputable company. For an individual to grow, practical knowledge is crucial. Every nation shall guarantee inclusive and equitable quality education and opportunity for lifelong learning for everyone, according to Sustainable Development Goal 4 of the United Nations.

Our current educational system needs to be transformed, according to the New Education Policy 2023. It's a ground-breaking strategy that seeks to include contemporary teaching techniques, harness the power of technology, and encourage learning based on practical skills. No matter their circumstances or background, everyone should have access to education. Supporting underrepresented communities and fostering an inclusive and equitable educational environment are given specific attention. The New Education Policy places a high emphasis on teaching students how to think critically, be creative, and solve problems. It also suggests the development of novel institutions like digital universities and the application of technology to improve educational outcomes for pupils. The policy has resulted in several significant changes, including the replacement of the conventional 10+2 schooling framework with a more adaptable and comprehensive 5+3+3+4 system. The objective of this new method is to give priority to critical thinking, life skills, and fundamental abilities in the instruction of students at all levels.

The teacher is essential to the adoption of NEP in our nation. Because they truly mold our future generation of citizens, teachers at all levels must be redefined as the most revered and important members of our society under the new education policy. It must take all necessary steps to empower educators and support them as they carry out their duties. The new education strategy must make it easier to attract the best and brightest individuals to the teaching profession at all levels by guaranteeing a living wage, respect, dignity, and autonomy while also introducing fundamental mechanisms of quality assurance and accountability into the system.

The present paper studies the perception of teachers about their role in implementation of new education policy in higher education system. The study helps to understand the benefits teachers will get after the implementation of NEP. It helps to know the challenges they face while implementing NEP.

Review of Literature

Imran Ansari and Ali Haider (2023) did a survey study on institutions that provide teacher preparation. First, the NEP-2020 document's provisions and guidelines for teacher education programs were examined. 30 teacher educators were selected at random by the researchers from several national teacher preparation institutions. Infrastructure, finance, clear guidelines, etc., have all been determined to be significant obstacles for educational institutions. They were also asked for comments on how to make the policy's implementation go more smoothly.

Bhavesh N. Desai and Sachin D. Shah (2023) investigate how Gujarat's public and private universities and colleges feel about NEP 2020 and the country's current higher education system in India. Under it, they try to focus on the political,

pedagogical, economic, and research aspects of higher education. Because the study is centered on obtaining actual data, its methodology is convenient sampling. The report claims that the current higher education system has several weaknesses that can be fixed by effectively implementing NEP, such as a lack of funding, rote and test-oriented learning, political meddling, issues with employability, poor research outcomes, etc.

In his study, Chandrasekaran Siva (2022) focuses on the effects of some of the characteristics of the New Education Policy (NEP), such as Early Childhood Care and Education (ECCE), three language policies, low stacks public exams, work studies for students, Continuous Professional Course (CPC) for Teachers, fees structure in private schools, impacts on unemployment, discontinuation of M.Phil. Program, and the NEP's goals. Data from both primary and secondary sources were gathered using a descriptive research design. Data gathering methods included questionnaires and interviews, and a sample of 127 respondents was selected using simple random selection. According to the study, there is a strong association between the stress that NEP causes for pupils and teachers. The dependent variable on the fee structure is the newly framed policies. The dependent variable on the fee structure is the newly framed policies. While new educational policies are being implemented, many of them are constructive, which will have a significant impact on how future students' careers develop in this cutthroat environment.

Research Gap

The research mentioned above focused more on the theoretical elements of the New Education Policy. They looked at the NEP's characteristics and teachers' opinions of how it was implemented. The current study employs a sample of teachers from higher education institutions to examine how teachers perceive NEP and its implementation. Instead of using a descriptive research design, it uses an analytical one.

Scope and Significance of the Study

Teachers plays inevitable in the implementation of NEP effectively. They need to be aware of its benefits and challenges. They should upgrade themselves to implement it effectively. The current study focuses on their perception about its implementation. It understands what the benefits are they expect to gain from its implementation and the challenges confront while implementing.

Objectives of the Study

- To study the perception of teachers towards New Education Policy in higher education system

Research Methodology

An analytical research design is adopted in the study. A questionnaire was conveniently administered among the sample size of 120 teachers of professional courses across different institutions in Kerala's Palakkad district. A five-point Rensis Likert scale was used for measuring the qualitative data in the study. A questionnaire was administered to the teachers through email. For statistical analysis and percentage analysis, the chi-square test, one-way ANOVA and mean value analysis have been used. Microsoft Excel is used for analysing data.

Data Analysis and Interpretation

Table 1: Demographic Profile

Demographics		Number	Percentage
Gender	Male	41	34
	Female	79	66
Age (in years)	Less than 30	25	21
	31 - 40	46	38
	41 - 50	33	28
	More than 51	16	13
Teaching experience	Less 5 years	35	29
	5 - 10 years	46	38
	More than 10 years	39	33
Marital status	Married	72	60
	Unmarried	48	40

(Source: Author's Calculation)

Total number of respondents =120

Table 1 shows the demographic profile of the respondents. 66 percent of respondents are female while 34 percent are male respondents. 38 percent of the respondents are between the age group of 31 and 40 years, 28 percent of the respondents are between the age group of 41 and 50 years, 21 percent of the respondents are less than 30 years and remaining 13 percent are above the age of 51 years. 38 percent of the respondents have 5 to 10 years of teaching experience, 33 percent of respondents have more than 10 years and 29 percent of the respondents have less than 5 years of teaching experience. 60 percent of the respondents are married, and the remaining 40 percent are unmarried.

Table 2: Perception of Teachers Towards New Education Policy in Higher Education.

Perception	Strongly Agree	Agree	Moderately Agree	Disagree	Strongly Disagree	Total	Mean	Rank
Teachers are required to create innovative environment	30	42	24	12	12	120	3.55	3
Promotes holistic learning	24	18	30	24	24	120	2.95	6
leads to global education	36	30	30	12	12	120	3.55	3
Confirms inclusive education	42	30	24	12	12	120	3.65	2
Better quality education	48	36	18	6	12	120	3.85	1
Promotes research	30	36	24	18	12	120	3.45	5

(Source: Author's Calculation)

The above table shows that many of the respondents opined that NEP leads to better quality education. They opined that it confirms inclusive education. Then they perceive that teachers are required to create an innovative environment and NEP leads to global education. They hardly opined that it promotes research and holistic learning.

Table 3: Chi - Square Results for Hypothesis Testing of Association Between Age and Perception of Teachers Towards New Education Policy in Higher Education.

Perception	Age	SA	A	MA	DA	SDA	P Value	Sig
Teachers are required to create innovative environment	Less than 30	12	4	7	2	0	0.073	NS
	31 - 40	13	16	8	5	4		
	41 - 50	3	16	7	3	4		
	More than 51	2	6	2	2	4		
Promotes Holistic Learning	Less than 30	6	2	5	2	10	0.068	NS
	31 - 40	11	5	14	8	8		
	41 - 50	5	5	9	8	6		
	More than 51	2	6	2	6	0		
Leads to Global education	Less than 30	4	10	4	3	4	0.476	NS
	31 - 40	14	10	11	6	5		
	41 - 50	14	6	9	1	3		
	More than 51	4	4	6	2	0		

Confirms Inclusive education	Less than 30	6	8	2	0	0	0.522	NS
	31 – 40	16	11	8	7	4		
	41 – 50	14	5	7	2	5		
	More than 51	6	6	7	3	3		
Better quality education	Less than 30	12	7	2	4	0	0.015	S
	31 – 40	16	18	7	2	3		
	41 – 50	10	9	5	0	9		
	More than 51	10	2	4	0	0		
Promotes Research	Less than 30	10	1	6	3	5	0.039	S
	31 – 40	13	11	10	7	5		
	41 – 50	5	16	4	6	2		
	More than 51	2	8	4	2	0		

(Source: Author's Calculation)

Null Hypothesis: There is no association between age and perception of teachers towards New Education Policy in higher education.

Alternate Hypothesis: There is association between age and perception of teachers towards New Education Policy in higher education.

If p- value in 5% level of significance and degree of freedom 12 (r-1) (c-1) is greater than α (0.05), null hypothesis is accepted, and alternate hypothesis is rejected.

Therefore, there is association between age and perception of respondents about NEP leads to better quality education and promotes research. There is no association between age and perception of respondents about NEP leads to inclusive education, Global education, teachers are required for innovative learning and NEP promotes holistic learning.

Table 4: Perception of Teachers About Benefits of New Education Policy to Teachers in Higher Education.

Benefits	Strongly Agree	Agree	Moderately Agree	Disagree	Strongly Disagree	Total	Mean	Rank
Continuous professional development	32	36	16	24	12	120	3.43	2
Better career management	28	28	28	24	12	120	3.30	5

Better teacher education policy	32	24	32	20	12	120	3.367	3
Improvement professional standards	36	36	18	12	18	120	3.5	1
Leads to empowerment	30	30	30	12	18	120	3.35	4
Monetary benefits	12	18	24	36	30	120	2.55	6

(Source: Author's Calculation)

Table 4 shows that majority of the respondents opined that NEP improves their professional standards and leads to continuous professional development. Then they opined that it leads to better teacher education policy and empowers them. They do not believe that NEP to career management and gives them monetary benefits.

Table 5: One Way Anova Test Results of Impact of Teaching Experience on Perception of Teachers About Benefits of New Education Policy to Teachers in Higher Education.

Perception		Sum of Squares	df	Mean square	F	Sig	S/NS
Continuous professional development	Between Groups	17.06667	1	17.06667	14.13	0.00021	S
	Within Groups	287.3333	238	1.207283			
	Total	304.4	239				
Better career management	Between Groups	26.66667	1	26.66667	23.07	2.76	NS
	Within Groups	275.0667	238	1.155742			
	Total	301.7333	239				
Better teacher education policy	Between Groups	21.6	1	21.6	18.50	2.47	NS
	Within Groups	277.7333	238	1.166947			
	Total	299.3333	239				
Improvement professional standards	Between Groups	13.06667	1	13.06667	10.10	0.00167	S
	Within Groups	307.8667	238	1.293557			
	Total	320.9333	239				
Leads to Empowermen	Between Groups	22.81667	1	22.81667	18.52	2.45	NS
	Within Groups	293.1667	238	1.231793			
	Total	315.9833	239				

Monetary benefits	Between Groups	120.4167	1	120.4167	105.5	9.95	NS
	Within Groups	271.5667	238	1.141036			
	Total	391.9833	239				

(Source: Author's Calculation)

Null Hypothesis: There is no significant difference between teaching experience and Perception of teachers about benefits of New Education Policy to teachers in higher education.

Alternate Hypothesis: There is significant difference between teaching experience and Perception of teachers about benefits of New Education Policy to teachers in higher education.

The one-way ANOVA test results shows that teaching experience has impact on perception of respondents related to NEP leads to continuous professional development and improvement in professional standards. Teaching experience has no impact on perception of respondents related to NEP leads to better career management, teacher education policy, empowerment and monetary benefits.

Table 6: Challenges in Implementation of New Education Policy

Challenges	Strongly Agree	Agree	Moderately Agree	Disagree	Strongly Disagree	Total	Mean	Rank
Mother tongue as medium of instruction	36	30	30	12	12	120	3.55	2
Lack of infrastructure and funds	36	42	18	12	12	120	3.65	1
Digital divide	30	24	24	24	18	120	3.2	4
Lack of trained teachers	42	24	18	18	18	120	3.45	3

(Source: Author's Calculation)

Table 6 shows that majority of the respondents opined that lack of infrastructure and funds are the main challenge faced while implementing NEP. Then they opined that mother tongue as medium of instruction is also big challenge. Lack of trained teachers and digital divide also opined by the respondents as challenge while implementing NEP.

Table 7: One Way Anova Test Results of Impact of Age on Challenges in Implementation of New Education Policy

Challenges		Sum of Squares	df	Mean square	F	Sig	S/NS
Mother tongue as medium of instruction	Between Groups	37.60417	1	37.60417	39.83	1.34	NS
	Within Groups	224.6917	238	0.944083			
	Total	262.2958	239				
Lack of infrastructure and funds	Between Groups	28.70417	1	28.70417	30.73	7.84	NS
	Within Groups	222.2917	238	0.933999			
	Total	250.9958	239				
Digital divide	Between Groups	78.20417	1	78.20417	70.98	3.44	NS
	Within Groups	262.1917	238	1.101646			
	Total	340.3958	239				
Lack of trained teachers	Between Groups	47.70417	1	47.70417	39.88	1.31	NS
	Within Groups	284.6917	238	1.196183			
	Total	332.3958	239				

(Source: Author's Calculation)

Null Hypothesis: There is no significant difference between age and challenges in implementation of New Education Policy.

Alternate Hypothesis: There is significant difference between age and challenges in implementation of New Education Policy.

The one-way ANOVA test results shows that there is no significant difference between age and challenges in implementation of New Education Policy.

Results and Discussions

The main aim of the study was to understand the perception of teachers towards New Education Policy in higher education system. A questionnaire was conveniently administered among the sample size of 120 teachers of professional courses across different institutions in Kerala's Palakkad district. For statistical analysis and percentage analysis, the chi-square test, one-way ANOVA and mean value analysis have been used. The study found that NEP leads to better quality education and confirms inclusive education. Then they perceive that teachers are required to create an innovative environment and NEP leads to global education.

Only few teachers opined that NEP promotes research and holistic learning. Chi Square test result shows that there is association between age and perception of respondents about NEP leads to better quality education and promotes research. There is no association between age and perception of respondents about NEP leads to inclusive education, Global education, teachers are required for innovative learning and NEP promotes holistic learning. Majority of the respondents opined that NEP improves their professional standards and leads to continuous professional development. They do not believe that NEP to career management and gives them monetary benefits. The one-way ANOVA test results shows that teaching experience has impact on perception of respondents related to NEP leads to continuous professional development and improvement in professional standards. Teaching experience has no impact on perception of respondents related to NEP leads to better career management, teacher education policy, empowerment and monetary benefits. Majority of the respondents opined that lack of infrastructure and funds are the main challenge faced while implementing NEP. Then they opined that mother tongue as medium of instruction is also big challenge. The one-way ANOVA test results shows that there is no significant difference between age and challenges in implementation of New Education Policy

Conclusions

New Education Policy has resulted in several significant changes, including the replacement of the conventional schooling framework with a more adaptable and comprehensive system. The objective of this new method is to give priority to critical thinking, life skills, and fundamental abilities in the instruction of students at all levels. The main aim of the study was to understand the perception of teachers towards New Education Policy in higher education system. The study found that NEP leads to better quality education and confirms inclusive education. NEP improves their professional standards and leads to continuous professional development. Lack of infrastructure and funds are the main challenge faced while implementing NEP. Government need to adopt more awareness campaigns among the teachers of all categories. Sufficient funds and infrastructure facilities are required for its implementation. More teacher training programmes need to be conducted. Creative skills of the teachers need to be improved. Capacity building programmes among teachers can be organized for its effective implementation.

Monetary benefits need to be given to teachers as part of its implementation which motivates them.

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COLLEGE STUDENT'S PERCEPTIONS ON DIGITAL EDUCATION AND CYBER BULLYING PREVENTION STRATEGIES IN NILGIRI DISTRICT

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Abstract

The current paper aims to investigate teenagers' perspectives on the effectiveness of cyberbullying prevention strategies in Coimbatore district. The data was collected through a nationwide online survey among college students, using a structured questionnaire for enhanced simplicity. The survey had 132 respondents from various private and government colleges in Nilgiri District. To analyze the data, the researcher employed 25 questions, which were categorized into five main factors: Social, Economic, Technological, Psychological, and Political. The survey questions were further grouped based on the respondents' roles in cyberbullying, including pure-offender, pure victim, both-offender-and-victim, and neither-offender-nor-victim. The study explores the correlation between a student's role in cyberbullying and their perspective on the effectiveness of prevention strategies. The research identifies the top five most effective cyberbullying prevention strategies for students in each category. Notably, the participants perceived taking away the offender's access to technology as the most effective measure, regardless of their roles in cyberbullying. The findings of this study hold valuable insights for colleges and communities, aiding them in formulating policies and regulations to effectively combat cyberbullying. The conclusion emphasizes the importance of implementing prevention techniques with appropriate policies and procedures.

Keywords: Cyber bullying, Prevention, College students, Perceptions

Introduction

According to Nelson, 2003 cyberbullying is often very serious, including stalking and death threats, I can say anything I want Its impersonal. Face to face is a little intimidating''. Further, it is reported that females prefer this type of bullying.

Bullying most often occurs outside of school hours using home computers. School officials are often reluctant to take action against students making posts to websites while not in school. Temporary e-mail accounts and pay as you go cell phones allow for bullies to remain anonymous. The anonymity of the Internet and knowing that they are less likely to be punished for acts taking place off school grounds makes cyber bullying attractive as kids think they will not be held accountable for their actions. First Amendment free speech rights reinforce that consequences for cyber bullying may not be upheld in a court of law or possibly even rewarded with a monetary settlement if the school is found guilty of violating a

students. First Amendment free speech rights for taking disciplinary action for Internet postings (Associated Press, 2005). Given the vulnerability that school districts face for lawsuits, administrators have found that cyber bullying issues have been resolved informally by contacting the parents. Parental education can be the key to preventing cyber bullying. In a study by Agatston, Kowalski, and Limber (2007) students reported that they would be more likely to report a threatening incident of cyber bullying to their parents than to an adult at school because they do not think the adults at school could help them with the cyber bullying problem.

Parents who know what actions to take rather than overreacting or thinking cyber bullying is just a part of growing up will be better equipped to help their child cope with a cyber bullying incident. It is recommended that parents contact the school when their child tells them he or she is being harassed online.

There is research evidence that ongoing communication about and supervision of online activities can also prevent teens' engaging in risk taking behaviors on the Internet such as disclosing personal information, offline meetings, sharing photos, and exposure to threatening messages. A study by Berson et al. (2002) showed that when teachers, parents, or other caregivers have an ongoing dialogue about cyber activities and monitor adolescent girls Internet use there is a "decreased tendency to engage in cyber activities that lead to potential harm." Adolescent girls who had ongoing discussions and monitoring by parents were less likely to have filled out a form that discloses personal information, agreed to meet in person with someone they met online, told personal information, or sent suggestive e-mail. Having poorer parental monitoring and relationships with parents or other caregivers is associated with increasing frequency of victimization online. Besides parental involvement, several cyber bullying prevention strategies have been suggested in the literature. These strategies include incorporating cyber bullying prevention into anti-bullying programs setting clear rules and consequences raising awareness about cyber bullying Internet filters increased supervision of students acceptable user policies Internet safety programs federal legislation to criminalize cyber bullying showing students how messages can be traced, and anonymous technological reporting of incidents for preventing cyber bullying.

Statement of the Problems

Internet service and mobile technologies such as web pages and discussion groups as well as instant messaging or SMS text messaging with the intention of harming another person. Cyberbullying can be seen as being distinct from other forms of online behavior. Some see cyber-bullying as a form of cyber talking, which involves taking a more strategic approach than in the moment Internet trolling.

Examples of what constitutes cyberbullying include communications that seek to intimidate, control, manipulate, put down, falsely discredit, or humiliate the

recipient. The actions are deliberate, repeated, and hostile behavior intended to harm another. Cyberbullying has been defined by The National Crime Prevention Council: "When the Internet, cell phones or other devices are used to send or post text or images intended to hurt or embarrass another person." A cyberbully may or may not know their target. A cyberbully may be anonymous and may solicit involvement of other people online who do not know the target. It is a problem that exists worldwide among youth today. As a result of this problem some teenagers harassed by cyber bullying are suffering from depression, having their education compromised, and committing suicide. Nearly 1,500 adolescents were found that 33% of the respondents were victims of cyber bullying (Patchin, 2006). In a February 2007 survey of 832 teenagers the National Crime Prevention Council reported that 43% of teens ages 13-17 had experienced cyber bullying. The demographic group with the highest percentage reporting they experienced cyber bullying was 15 to 16 year old girls (Moessner, 2007). A University of New Hampshire study showed an increase in the prevalence of cyber bullying in 2005 from 2000. Two-thirds of the teens surveyed in a May 2009 survey thought cyber bullying was a serious problem. Relationship of Bullying and Cyber bullying Cyber bullying and bullying are often interrelated. A student who is being bullied at school may be bullied online (Beran & Li, 2007; Willard, 2007b). A study by Beran and Li (2007) showed that more than one-third of the participants, ages 12-15, who were bullied online were also bullied in school.

According to research by Juvonen & Gross (2008) there is a significant relationship "between bullying and retaliation online and at school. A student who is being bullied at school may become an online bully to retaliate against the bully at school. Although bullying and cyber bullying can be interrelated cyber bullying can take place as a separate phenomenon. Victims of cyber bullying are not always victims of bullying at school. A study by Leaf, (2007) found that 64% of youth who are bullied online are not being bullied at school. Most harmful cyber bullying incidents occur away from campus because technology use is often not supervised. Off-campus cyber bullying incidents have been shown to have a negative impact on school climate, make it difficult for victims to function, increase the risk for psychosocial problems for victims (Ybarra & Mitchell, 2007) and place students' safety at risk. Online incidents that occur away from school can trigger in school behavior such as school violence. The speed of technology can spread rumors and humiliating pictures faster and to more people (Keith & Martin, 2005) than word of mouth. Everyone receives the same message when technology is used instead of word of mouth. The rumors can stay on the Internet indefinitely (Shariff, 2008).

Objectives of the Study

- To examine the factors associated with college students based on cyber bullying level

- To evaluate the awareness status which state the college students into cyber bullying
- To explore various prevention strategies on cyber bullying among the college students in Nilgiris district.

Review of Literature

In Japan, cell phone pictures of an overweight-boy, which was taken on the sly in the locker room, were distributed to many of his peers (Paulson, 2003). Another incident happened in Calabasas High School in California. "It was a website – www.schoolscandals.com – on which vicious gossip and racist and threatening remarks grew so rampant that most of the school was affected" (Paulson, 2003). In a research study Tanya Beran and Qing Li (2007) aims to determine the relationship between school bullying and cyberbullying, 432 students from grades 7-9 in Canadian schools were surveyed about their experiences of bullying. The results indicated that students who were bullied in cyberspace were also likely to bully their peers in cyberspace ($r = 0.46$, $p < 0.001$) and be bullied at school (56%). In addition, students who were bullied in cyberspace only, and students bullied both in cyberspace and at school, experienced difficulties at school such as low marks, poor concentration, and absenteeism. The final results suggested that bullying that occurs either at or outside school can have an impact on school learning. Tanya .Band Qing .Li (2007). The term 'bystander' suggests that those children who stand on the sidelines and witness incidents of bullying are neutral observers. In most instances, though, bystanders are much more likely to provide encouragement and support to the *bully* than they are to actively intercede to help the victim (Snell, et al., 2002).

Furthermore, in situations in which a group of students is bullying a child, bystanders may actively join in by taunting, teasing, or ostracizing the victim.(Snell, et al., 2002). Martell Teasley (2013)stated thatall are marching towards the aware and impact to which name-calling and other slanderous practices can have on adolescents' self-esteem and behavior. But the effects of name-call, tensing and forms of non-psychical abuse are not new to social and behavioral science researchers. When students' and teachers' perceptions were compared for analysis, two areas were found to have significant difference: their perceptions of the effects of cyber-bullying and their perceptions of ways on how to positively report cyber-bullying. Results indicate the need for more cyber-bullying interventions or curriculum for students in grades 6, 7 and 8 and training for middle school teachers as literature supports cyber-bullying peaks at these grade levels.(Jennifer and Marie (2015). Yet, cyberbullying has gained mass media appeal and coverage, which may be related to numerous horrific behavioral outcomes as demonstrated by a rash of youth suicides by victims of cyber bullying.

Research Methodology

This study uses conjoining both qualitative and quantitative methods. The qualitative methods used were adopted among the college students to explore the cyber bullying prevention strategies. The primary data are collected through two methods using questionnaire and observation. Secondary data was collected from books, journals, periodicals, articles and Past Study records and web-based materials and internet. The total population of the college students, a sample of 132 women, was randomly selected for the present study.

Demographic Profile of the Respondents

Table : 1

	N	Mean	Std. Deviation
Gender	132	1.60	.494
Age group	132	2.02	.718
Educational level	132	2.17	.741
Year of pursuing	132	2.00	.771
Intutional level	132	1.25	.434
Family income	132	1.91	.723
Nature of family	132	1.32	.471
Valid N (list wise)	132		

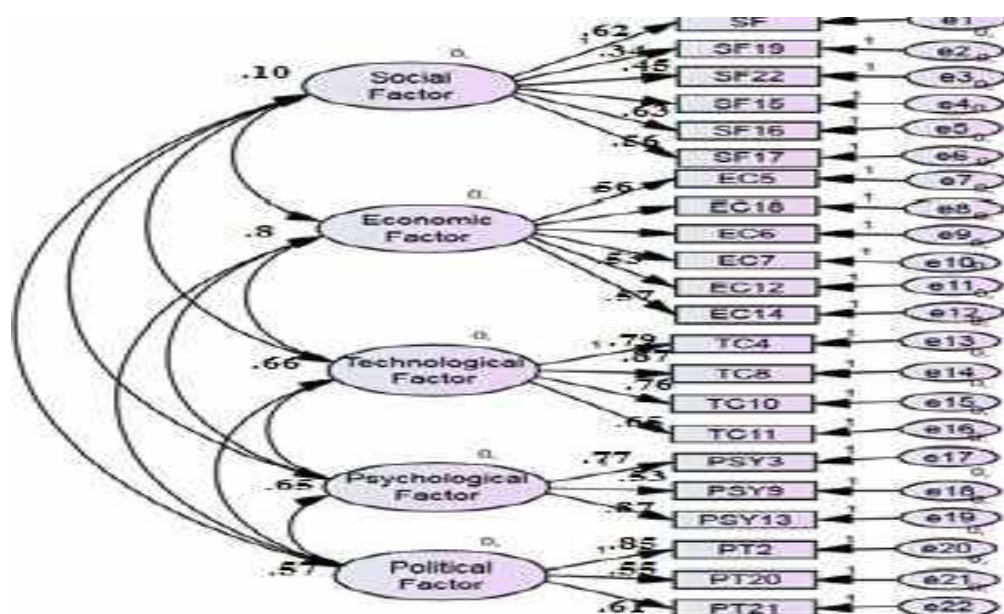
Exploratory Factor Analysis for Three Main Factors

Table :2

		Social Factor	Economic Factor	Technological Factor	Psychological Factor	Political Factor
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.614	.771	.644	.833	.743
Bartlett's Test of Sphericity	Approx. Chi-Square	600.456	501.778	600.456	655.007	565.254
	df	119	119	119	119	119
	Sig.	.000	.000	.000	.000	.000

Confirmatory Factor Analysis for Three Main Factors

Generally, confirmatory factor analysis (CFA) is termed to be a statistical technique and it used to identify the observed variables under the factor loading. It also helps to test the hypothesis in relation with both observed variable and latent variable. On the other part, CFA and EFA are connected to the same procedure based on the result analysis, but in case of exploratory factor analysis, the variables are explored into different factors with various communalities. Correspondingly, confirmatory factor analysis (CFA) is furnished to confirm the factor loading with higher level of significance in related factors.



Interpretation for the Above Analysis:

The above result were displayed as per the report of Amos and Spss states that the current study focus on five main factor such as Social Factor , Economic Factor, Technological Factor, Psychological Factor and Political Factor. The current study clearly utters that all the five factors were loaded with high factor loading and the model is fit with significant values. Based on the social factor it is mainly associated with societal changes and the standard of living of college students in the addressed colleges, secondly the Economic Factor deals with the capability of the rural women to afford for various items with the low income. Technological Factor States that the college students were limited with various restriction and they may not aware of the technological changes prevailed in the society. Psychological Factor deals with college students were highly emotional and sentimental and they get easily influenced by the advertisement without the real situation happen in the society. Finally the political factor deals with the social media advertisement may create some crucial situation makes the college students to take incorrect decision.

Result and Discussion

The result of confirmatory factor analysis using SEM analysis, the regression value of all the variables is positively associated with the main factor (job satisfaction). The researcher also stated that SEM analysis reveals the perfect model fit and it is delivered with high factor loadings. This study compares the perspectives of pure-victims, both-offenders-and-victims, pure-offenders, and neither-offenders-nor-victims, and explains correlations between a student's role in cyber bullying and his or her views of the effectiveness of various cyber bullying prevention strategies. Students are currently experiencing the majority of cyber bullying instances outside of the school day, with the possible exception of text messaging via cellular phone. It is possible that with greater ease of access to Myspace and to the Internet in general with increasingly sophisticated cellular phones, we may see an increase in cyber bullying during the school day through the use of such phones. It is recommended that all districts that allow cellular phones on campus prepare for this potential by ensuring that cellular phone policies are enforced with consistent consequences for students who use their phones during the college day. It is also recommended that parents and students read and sign the school districts' policies regarding acceptable use of technology, and accompany these policies with literature for parents on cyber bullying. The results of the data analyses presented in this section are organized into answers to the inquiries about cyber bullying prevention strategies that school administrators, researchers, and legislators may be concerned about.

Conclusions

Even though cyber bullying research is vigorous and has already achieved a lot, it faces some notable challenges. First, the category of students that prevention strategies must deter is the offenders. The data revealed that the specific strategy that offenders' viewed as effective was the penalty that restricted his or her Internet and technology use. In general, clear rules with enforced penalties and ongoing prevention programs were perceived as effective by the offenders. Secondly, teens perceived the theme of taking away the offender's access to technology as an effective prevention measure, regardless of their roles in cyber bullying. In particular, definitional and measurement issues need to be more fully resolved.

Issues that need to be addressed more clearly include when the incident should be regarded as cyber bullying (with repetition) or cyber-aggression (a one off act); and the notion of power imbalance. A more standardized approach to measurement in this area is now urgently needed. A complication here is that the rapid historical changes in ICTs means that researchers need to continually modify instruments and be aware of new developments. These developments may have an influence on a

variety of aspects such as gender and age differences or distribution processes of the bullying material. There is the potential to make more use of young people themselves, not only as participants in focus groups, but also by involving them as researchers themselves, in the design of the study, and gathering the relevant data. Parents, schools, and social networking sites all are important stakeholders in preventing cyber bullying. Hence their cooperation is needed to for that purpose. Policies need to be in place at school, and the school should involve parents when a cyber-bullying issue arises.

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AN OVERVIEW OF THE IMPLEMENTATION OF NEP IN SELECTED MAJOR COMPONENTS OF SAMAGRA SHIKSHA IN TAMIL NADU

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Abstract

Education is fundamental for achieving full human potential, developing an equitable and just society, and promoting national development. New Education Policy aims to ensure inclusive and equitable quality education. It also promotes lifelong learning opportunities for all. The Samagra Shiksha scheme is an integrated scheme for school education covering the entire gamut from pre-school to class XII. The main objective is to study about Samagra Shiksha for Tamil Nadu aligned with the recommendations of New Education Policy. It also analyse the growth performance and trend of selected major components of Samagra Shiksha for Tamil Nadu. Tools like Percentage Analysis, Trend analysis, Annual Growth Rate (AGR) and Compound Annual Growth Rate (CAGR), were used for the analysis. Effective implementation of Samagra Shiksha in Tamil Nadu can transform the education system to a better standard and lead to the development of a skilled and knowledgeable workforce. The NEP recognizes the importance for school education through Samagra Shiksha which in turn leads to economic growth and development.

Keywords: New Education Policy, Samagra Shiksha, Budget Estimate, Expenditure

Introduction

In India, the Union Cabinet recently approved the National Education Policy, paving way for transformational reforms in the school and higher education sector in the country. With transformation of primary education, NEP would achieve targets that outline an agenda for early childhood development in SDG 2030. NEP aims to transform India into a vibrant knowledge society and global knowledge superpower by making both school and college education more holistic, flexible, multidisciplinary, inclusive and aimed at bringing out the unique capabilities of each student. NEP aims to create a knowledge economy and aspires to combine traditional knowledge with modern thinking. 'Student Readiness' has been prioritized as the foundation of learning.

Samagra Shiksha

The Samagra Shiksha scheme is an integrated scheme for school education covering the entire gamut from pre-school to class XII. The scheme treats school education as a continuum and is in accordance with Sustainable Development Goal

for Education (SDG-4). The scheme not only provides support for the implementation of the RTE Act but has also been aligned with the recommendations of NEP 2020 to ensure that all children have access to quality education with an equitable and inclusive classroom environment which should take care of their diverse background, multilingual needs, different academic abilities and make them active participants in the learning process. The Cabinet Committee on Economic Affairs has approved continuation of the Centrally Sponsored Scheme- Samagra Shiksha Scheme which is an integrated scheme for school education sector from 1st April 2021 to 31st March, 2026 with an estimated outlay of Rs. 294283.04 crore. The Scheme is in accordance with Sustainable Development Goal for Education (SDG-4) and has now been aligned with the National Education Policy (NEP) 2020 to ensure inclusive and equitable, quality and holistic school education. The Samagra Shiksha scheme will play an instrumental role in translating the vision of National Education Policy 2020 at grass root level and building a strong foundation for an equitable and just society. Following are the selected major components of Samagra Shiksha taken for the study.

Monitoring Evaluation and Research (MMER):

Monitoring Evaluation and Research is a continuous management function to assess if progress is made in achieving expected results, to spot bottlenecks in implementation and to highlight whether there are any unintended effects (positive or negative) from an investment plan, programme or project and its activities.

ICT and Digital Initiatives:

The National Mission on Education through ICT (NMEICT) is a major initiative by the Ministry of Education to infuse digital education solutions to improve access to quality content and also improve learning outcomes.

Cluster Resource Center (CRC) / Block Resource Centre (BRC):

CRCs and BRCs are both types of resource centers that support government schools in India, with the following key differences between the two: Size and Scope: CRCs are smaller in size as compared to BRCs. A CRC covers a cluster of five to ten schools, whereas a BRC covers 75 to 100 schools. Block Resource Centres (BRCs) and Cluster Resource Centre (CRC) were established in each block of every district under SSA to provide in-service teacher training and to give regular academic assistance to teachers and schools, as well as to assist in community mobilization initiatives.

Training for in- Service Teachers:

The In-service Training Courses are to be organized by Ministry of Education. The main objective of organizing these In-service Training Courses is to enhance the

levels of competence, commitment and performance of teachers. In-service Training Programme aim at enhancing the effectiveness of the teachers' ability, hence the expected outcomes are achieved.

Financial Support for Teachers:

Government provides offer financial grants for teachers for attending workshop, seminars and conferences. These funds come from the federal government to private companies and charities, and they focus on a wide range of topics. Teaching grants can fund professional development, classroom enrichment, school supplies, field trips and almost anything else that goes into bettering the quality of education.

Statement of the Problem

Children are pillars for the future nation. As per the United Nations Millennium Development Goals (MDG) the country achieved universal primary education which was the 2nd MDG goal. The final MGD report found that the primary school enrollment rate was 91 percent in the developing regions and more girls are in school as compared to 15 years ago. In order to achieve the 4th SDG goal, India takes initiative to introduce Samagra Shiksha for the development of education. Hence the researcher made an attempt to study "An Overview of the Implementation of NEP in Selected Major components of Samagra Shiksha in Tamil Nadu."

Objectives of the Study

1. To study about Samagra Shiksha for Tamil Nadu aligned with the recommendations of New Education Policy.
2. To analyse the growth performance of selected major components of Samagra Shiksha for Tamil Nadu during the study period
3. To analyze the trend of selected major components of Samagra Shiksha for Tamil Nadu.

Scope of the Study

The study intends to find out the effectiveness of selected major components of Samagra Shiksha for Tamil Nadu that contributes towards development of school education which is aligned with the objectives of New Education Policy and the study would be considered as a base for further related research works.

Limitations

The study is confined to the period of 5 years and is based on secondary data and hence has its own limitations.

Literature Review

Nayana S. Ratnaparkhi et.al., (2023) conducted a study on A Comparative Analysis of Existing National Education Policy 1986 with New Education Policy 2020. The study explains the advantages and disadvantages of New Education Policy of 2020. By implementing the New Education Policy 2020, the Education system of India is estimated to match the International standards.

Saroj Kumar Ranjan et.al., (2023) focused on Implementation of New Education Policy on the Higher Education and its Opportunities. The study attempts to state that the students of Engineering degree programme can study Arts and Humanities and vice versa. The study also suggests National Testing Agency (NTA) for common entrance exams. The study hence concludes that all degree programmes will include occupational and soft skill development.

Mitali Gupta et.al., (2022) made a study on New Education Policy-Challenges Opportunities in Higher Education. The study explains how the National Education Policy (NEP) affects Higher education (i.e) three-tiered education system. The researcher also stated that the significance, issues, merits and demerits of New Education Policy (NEP).

N. Rameshkumar et.al., (2022) emphasized on Issues and Challenges of New Education Policy. The study concentrates on lack of integration, spoken English for government school students, difference between knowledge and skill taught, institutional restrictions, large pool of trained teachers and a issue of monitoring and supervision. The challenges considered were the Covid-19 lockdown and even before the government tax collections are dreadfully low and the fiscal deficit were considered to be a major issue.

Ajay Kurien et.al., (2020) studied about the topic Impact of New Education Policy 2020 on Higher Education. The paper emphasized about the New Education Policy announced by Government of India (NEP 2020) which was a change amidst all the negativities surrounding the world due to the challenges posed by Covid-19 pandemic. The study also suggested National Testing Agency (NTA) for conducting common entrance examinations for all Higher education institutions. The study also reveals the salient features of studying undergraduate degree for a duration of three or four years in one or more colleges with or without taking a break.

Research Methodology

The study is both descriptive and analytical in nature as it sketches the selected major components of Samagra Shiksha for Tamil Nadu that contributes towards development of school education which is aligned with the objectives of New Education Policy and also analyzes their growth performance. Data were collected from the published sources of Annual Work Plan & Budget (AWP&B) 2023-24 of

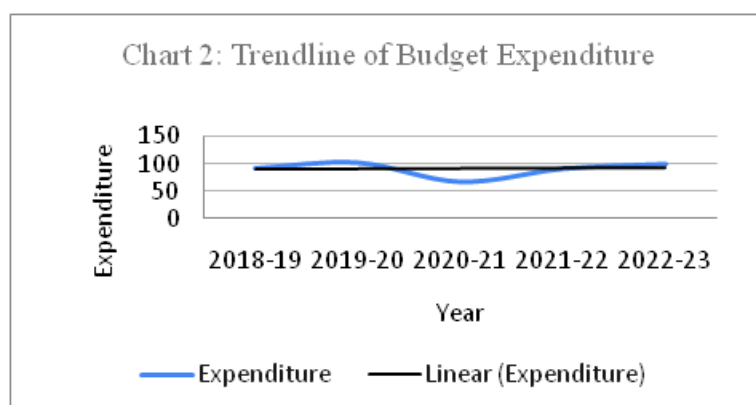
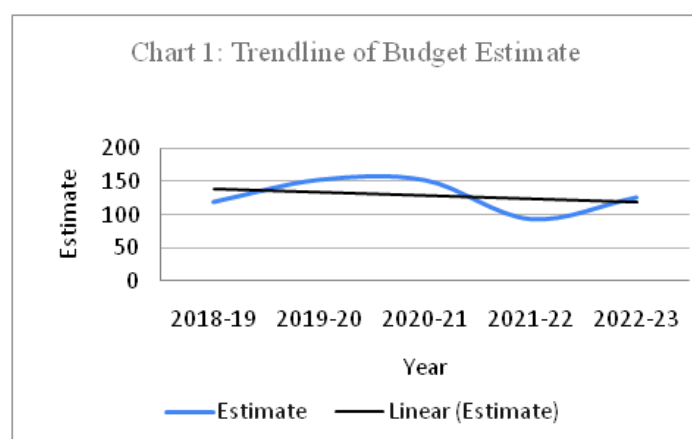
Samagra Shiksha for the State of Tamil Nadu, Government of India and the study covers 5 years from 2018-19 to 2022-23. Tools like Percentage Analysis, Trend analysis, Annual Growth Rate (AGR) and Compound Annual Growth Rate (CAGR), were used for the analysis.

Data Analysis and Interpretation

Table 1 - Monitoring Evaluation and Research (MMER) Budget Estimate and Expenditure (Rupees in Crore)

Year	Estimate	Expenditure	AGR (in %)	Percentage Analysis (in %)
2018-19	119.74	92.86	-	77.55
2019-20	153.48	102.78	10.68	66.97
2020-21	152.99	68.54	-33.31	44.80
2021-22	93.69	91.93	34.13	98.12
2022-23	126.68	100.34	9.15	79.21
		CAGR (in %)	1.56	

Source: Annual Work Plan & Budget (AWP&B) 2023-24 of Samagra Shiksha for the State of Tamil Nadu, Government of India.

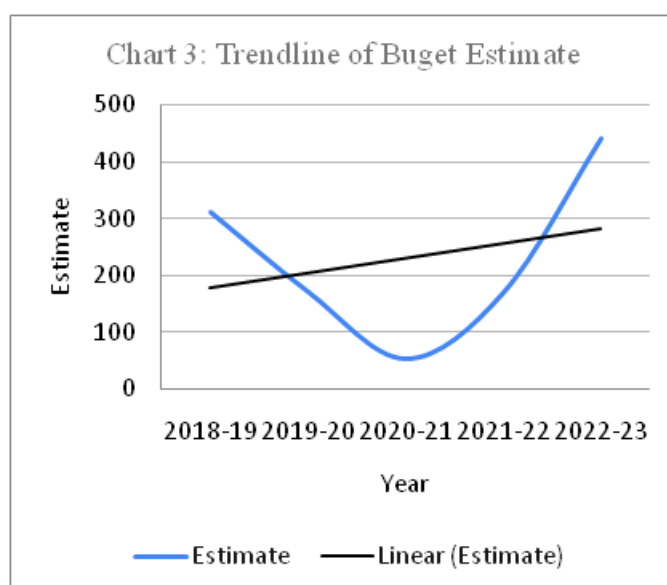


The above table 1 shows the Budget Estimate and Expenditure of Monitoring Evaluation and Research (MMER) in Samagra Shiksha of Tamil Nadu. The budget estimate was high during the 2019-2020 with 153.48 crores and low with 93.69 crores during the 2021-2022. The Expenditure of the allotted funds was high during the period 2019-2020 with 102.78 crores and low during the period 2020-2021 in with 68.54crores. The highest and lowest Annual Growth Rate (AGR) was recorded in the year 2021-2022 and 2020-2021 with 34.13% and -33.31% respectively. The Compound Annual Growth Rate (CAGR) was found to be 1.56%. The percentage analysis shows that the effective usage of the estimated budget has been maximum in the year 2021-2022 with 98.12%. The Trend line of Budget estimate has a negative slope and Budget expenditure has a positive slope.

**Table 2 - ICT and Digital Initiatives Budget Estimate and Expenditure
(Rupees in Crore)**

Year	Estimate	Expenditure	AGR (in %)	Percentage analysis (in %)
2018-19	311.79	244.39	-	78.38
2019-20	171.67	77.82	-68.18	45.33
2020-21	54.29	53.12	-31.74	97.84
2021-22	170.63	28.72	-45.93	16.83
2022-23	440.9	314.37	994.60	71.30
		CAGR (in %)	5.17	

Source: Annual Work Plan & Budget (AWP&B) 2023-24 of Samagra Shiksha for the State of Tamil Nadu, Government of India.



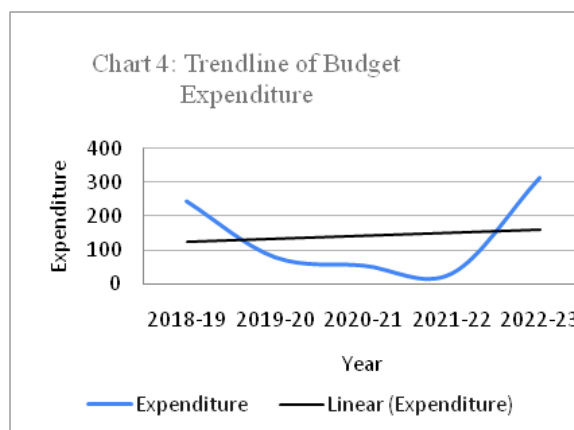
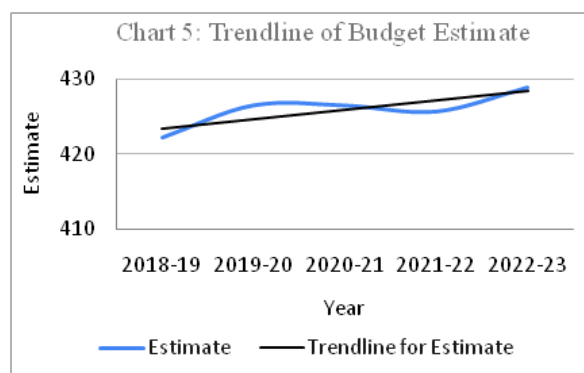


Table 2 depicts the ICT and Digital Initiatives Budget Estimate and Expenditure in Samagra Shiksha of Tamil Nadu. The budget estimate was high during the 2022-2023 with 440.9 crores and low with 54.29 crores during the 2020-2021. The Expenditure of the allotted funds was high during the period 2022-2023 with 314.37 crores and low during the period 2021-2022 with 28.72 crores. The highest and lowest Annual Growth Rate (AGR) was recorded in the year 2022-2023 and 2019-2020 with 994.60% and -68.16% respectively. The Compound Annual Growth Rate (CAGR) was found to be 5.16%. The percentage analysis shows that the effective usage of the estimated budget has been maximum in the year 2020-2021 with 97.84%. The Trend line of Budget estimate and expenditure has a positive slope.

Table 3 - Cluster Resource Center (CRC) / Block Resource Centre (BRC) Budget Estimate and Expenditure (Rupees in Crore)

Year	Estimate	Expenditure	AGR (in %)	Percentage Analysis (in %)
2018-19	422.21	335	-	79.34
2019-20	426.55	359.14	7.21	84.20
2020-21	426.52	366.37	2.01	85.90
2021-22	425.71	415.82	13.50	97.68
2022-23	428.94	424.14	2.00	98.88
		CAGR (in %)	4.83	

Source: Annual Work Plan & Budget (AWP&B) 2023-24 of SamagraShiksha for the State of Tamil Nadu, Government of India.



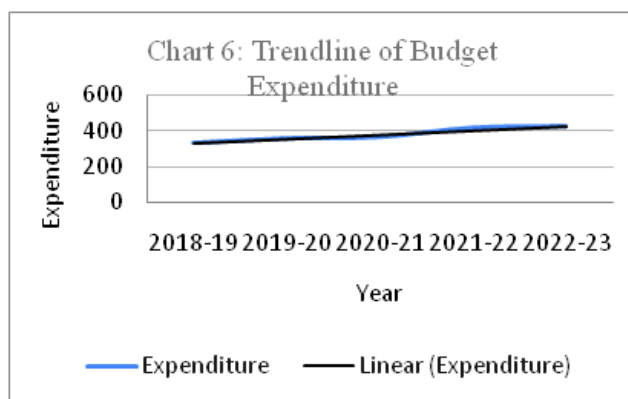
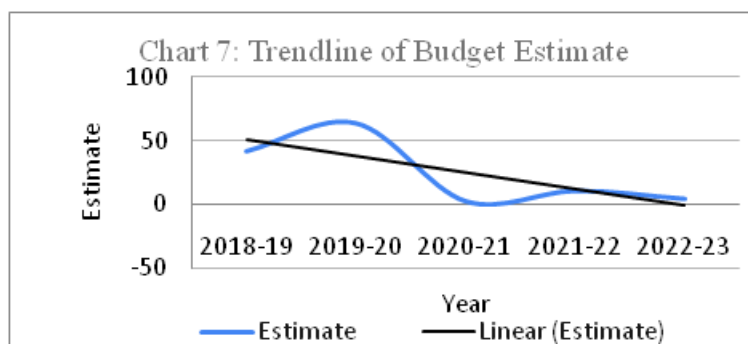


Table 3 displays Budget Estimate and Expenditure of Cluster Resource Center (CRC)/Block Resource Centre (BRC) in Samagra Shiksha of Tamil Nadu. The budget estimate was high during the 2022-2023 with 428.94 crores and low with 422.21 crores during the 2018-2019. The Expenditure of the allotted funds was high during the period 2022-2023 with 424.14 crores and low during the period 2018-2019 with 335 crores. The highest and lowest Annual Growth Rate (AGR) was recorded in the year 2021-2022 and 2022-2023 with 13.50% and -2% respectively. The Compound Annual Growth Rate (CAGR) was found to be 4.83%. The percentage analysis shows that the effective usage of the estimated budget has been maximum in the year 2022-2023 with 98.88%. The Trend line of Budget estimate and the expenditure has a positive trend.

Table 4 - Training for In-Service Teachers Budget Estimate and Expenditure (Rupees in Crore)

Year	Estimate	Expenditure	AGR (in %)	Percentage analysis (in %)
2018-19	41.78	23.82	-	57.01
2019-20	63.71	38.46	61.46	60.37
2020-21	2.69	0	-100	0
2021-22	10.84	10.84	0	100
2022-23	4.53	4.17	-61.53	92.05
		CAGR (in %)	-29.43	

Source: Annual Work Plan & Budget (AWP&B) 2023-24 of Samagra Shiksha for the State of Tamil Nadu, Government of India.



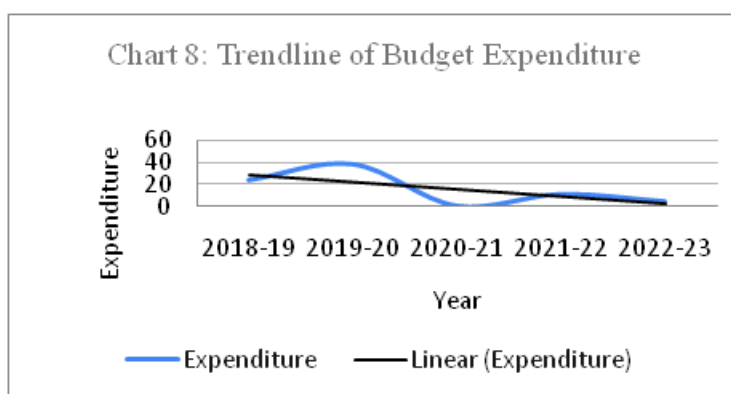
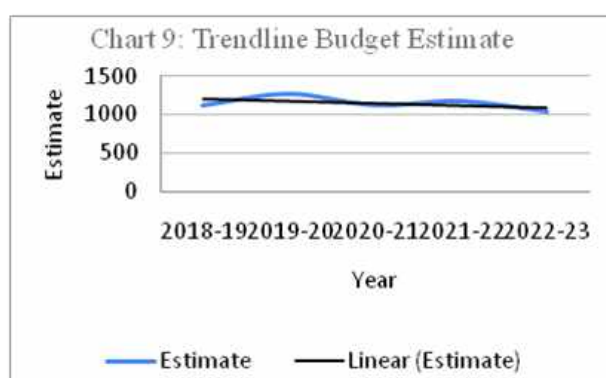


Table 4 displays the Budget Estimate and Expenditure of Training for In-service Teachers in Samagra Shiksha of Tamil Nadu. The budget estimate was high during the 2019-2020 with 63.71 crores and low with 2.69 crores during the 2020-2021. The Expenditure of the allotted funds was high during the period 2019-2020 with 38.46 crores and low during the period 2020-2021 with no expenditure. The highest and lowest Annual Growth Rate (AGR) was recorded in the year 2019-2020 and 2020-2021 with 61.46% and -100% respectively. The Compound Annual Growth Rate (CAGR) was found to be -29.43%. The percentage analysis shows that the effective usage of the estimated budget has been maximum in the year 2022-2023 with 92.05%. The Trend line of Budget estimate and the expenditure has a negative slope.

**Table 5 - Financial Support for Teachers Budget Estimate and Expenditure
(Rupees in Crore)**

Year	Estimate	Expenditure	AGR (in %)	Percentage analysis (in%)
2018-19	1119.22	1014.67		90.66
2019-20	1276.94	1259.74	24.15	98.65
2020-21	1121.03	1030.07	-18.23	91.89
2021-22	1178.21	1178.21	14.38	100
2022-23	1033.04	1015.21	-13.83	98.27
		CAGR (in %)	0.01	

Source: Annual Work Plan & Budget (AWP&B) 2023-24 of Samagra Shiksha for the State of Tamil Nadu, Government of India.



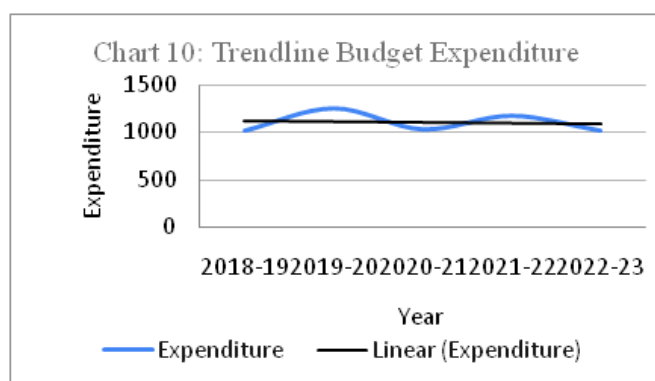


Table 5 displays the Budget Estimate and Expenditure of Financial Support for Teachers in Samagra Shiksha of Tamil Nadu. The budget estimate was high during the 2019-2020 with 1276.94 crores and low with 1119.22 crores during the 2018-2019.

The Expenditure of the allotted funds was high during the period 2019-2020 with 1259.74 crores and low during the period 2018-2019 with 1014.67 crores. The highest and lowest Annual Growth Rate (AGR) was recorded in the year 2019-2020 and 2020-2021 with 24.15% and -18.23% respectively. The Compound Annual Growth Rate (CAGR) was found to be 0.011%. The percentage analysis shows that the effective usage of the estimated budget has been maximum in the year 2021-2022 with 100%. The Trend line of Budget estimate shows a negative trend whereas Budget Expenditure shows a slight positive trend.

Findings

- The computation from AGR shows that all the selected major components of Samagra Shiksha of Tamil Nadu have shown both increasing and decreasing rate of expenditure of budget estimated during the study period.
- From the CAGR calculation, all the components show the positive rate except Training for In-service Teachers.
- The study shows that the budget estimated has been mostly increasing in selected major components whereas it is decreasing in Training for In-service Teachers during the study period which shows the decline in the concentration of giving quality education.
- The study also states that the effective utilization of budget estimated has been maximized during the recent years which show there is importance given to the all the components of the scheme.
- The Trend line has been positive for most of the selected major components whereas Training for In-service Teachers Budget Estimate and Expenditure and Financial Support for Teachers and MMER Budget Estimate shows a negative trend.

Conclusion

Recognizing the importance of education as the most effective way of social justice, NEP calls for an investment of about 6% of GDP by the Centre and the States. In this way, NEP marks a monumental development in the country's human resource transformation that aims to disrupt the existing Indian education system with ambitious and generational reforms to meet 21st century skill agenda. The NEP 2020 recognizes the importance for school education through Samagra Shiksha and has outlined strategies to integrate effectively into the education system in India. Effective implementation of Samagra Shikshain Tamil Nadu can transform the education system to a better standard and lead to the development of a skilled and knowledgeable workforce that can contribute India towards economic growth and development.

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THE IMPACT OF NEW EDUCATION POLICY 2020 ON HIGHER EDUCATION

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Abstract

The New Education Policy announced by Government of India (NEP 2020) was a drinking change and fresh news amidst all the negativities girding the world due to the challenges posed by Covid- 19 epidemic. The announcement of NEP 2020 was purely unexpected by multitudinous. The changes that NEP 2020 has recommended were something that multitudinous educationists no way saw coming. Though the education policy has impacted school and college education equally, this composition mainly focuses on NEP 2020 and its impact on Advanced Education. This paper also outlines the salient features of NEP and analyses how they affect the being education system.

Keywords: *New Education Policy, Higher Education, Covid- 19*

Introduction

The National Policy on Education (NPE) is a policy formulated by the Government of India to promote education amongst India's people. The policy covers abecedarian education to sodalities in both pastoral and collaborative India. The first NPE was blazoned by the Government of India by Prime Minister Indira Gandhi in 1968, the alternate by Prime Minister Rajiv Gandhi in 1986, and the third by Prime Minister Narendra Modi in 2020. The National Education Policy 2020(NEP 2020), which was approved by the Union Cabinet of India on 29 July 2020, outlines the vision of India's new education system. The new policy replaces the former National Policy on Education, 1986. The NEP 2020 enacts multitudinous changes in India's education policy. It aims to increase state expenditure on education from around 4 to 6 of the GDP as soon as possible.

Objectives of the Study

The primary ideal of this research is to study the impact of New Education Policy 2020 on advanced education. The study also outlines the salient features of NEP and analyses how they affect the being education system.

Research Methodology

This exploration is a descriptive study. The necessary secondary data was collected from varied websites including those of Government of India, magazines, journals, other publications, etc. This data was also anatomized and reviewed to arrive at the consequences and conclusions.

II. Salient Features of NEP Related to Advanced Education

The new NEP has been introduced with intent to formalize changes in the system from academe position to council/ university position. Some of the salient features are

- **Single Nonsupervisory Body for Advanced Education**

The NEP aims to establish Advanced Education Commission of India which will be the single nonsupervisory body except for legal and medical education.

- **Multiple Entry and Exit Programme**

There will be multiple entry and exit options for those who wish to leave the course in the middle. Their credits will be transferred through Academic Bank of Credits.

- **Tech- Rested Option for Adult Knowledge Through Apps, Television Channels**

Quality technology- rested options for adult knowledge similar as apps, online courses modules, satellite- rested television channels, online books, and ICT- equipped libraries and Adult Education Canters,etc. will be developed.

III. Detailed Analysis of Impact of NEP on Advanced Education

- **Regulatory System of Higher Education**

A significant change in NEP 2020 is the proffer to set up the Advanced Education Commission of India (HECI), as an marquee body for advanced education, banning medical and legal education. This will generally bring out a question that what will be to the present UGC and AICTE? HECI is aiming at reforming the advanced education sector; the Bill will separate the Academic and Funding aspects of the sector. According to the new Bill, HECI not have any fiscal powers.

- **Graded Accreditation and Graded Autonomy**

The generality of “commission and autonomy to introduce ” is one of the vital features in NEP 2020 which supports a “ phasing out ” strategy from Affiliated Colleges to Autonomous Institutions. The increased harshness offered to independent institutions also gives advisable in class enrichment. The high quality, range, and harshness of the NTA testing services will enable utmost universities to use these common entrance examinations rather than having hundreds of universities each contriving their own entrance examinations thereby drastically reducing the burden on scholars, universities and sodalities, and the entire education system.

- **Internationalisation At Home**

NEP 2020 also allows foreign universities and sodalities to come to India and this brings out a challenge for the native institutions to ameliorate the quality of education handed by them. India has one of the largest networks of advanced education systems in the world, with further than 900 universities and 40,000

sodalities. But GER(Gross Registration rate) of India in advanced education is 26.3, which is significantly low when compared to other BRICS countries like Brazil(50) or China(51), and truly much lower when compared with European and North American nations which would be further than 80.

- **Holistic and Multidisciplinary Education**

The NEP 2020 claims that, a holistic and multidisciplinary education would aim to develop all capacities of mortal beings intellectual, aesthetic, social, physical, emotional, and moral in an intertwined manner. Such an education will help develop well- rounded individualities that retain critical 21st century capacities in fields across the trades, humanities, languages, lore's, social lore's, and professional, specialized, and vocational fields; an heritage of social engagement; soft chops, similar as communication, discussion and debate; and rigorous specialization in a chosen field or fields.

- **The Structure and Lengths of Degree Programmers**

In the terrain of the National Education Policy 2020 scheme, any undergraduate degree in any institution will be of duration of three or four times. This will be helpful for those individualities that might have to leave the course mid- way. They can start the course latterly on from where they left off and not start from the morning formerly again. Indeed still NEP 2020 says that Advanced education institutions will be given the freedom to start PG courses there may be some difficulty in designing One Time PG Degree for scholars who have completed 4 Year UG Degree and a Two Time PG Degree for scholars who have completed 3 Year UG Degree.

Conclusion

The main problems faced by the Indian advanced education system includes enforced separation of qualifications, early specialization and pupil streaming into defined exploration areas, lower focus on exploration at most universities and seminaries, and lack of competitive peer- reviewed academic exploration backing and large related universities leading to low situations of undergraduate education. Holistic and multidisciplinary education should strive in an intertwined way to meliorate all mortal capacities-internal, artistic, social, physical, emotional, and moral. Overall, the NEP 2020 addresses the need to develop professionals in a variety of fields ranging from Agriculture to Artificial Intelligence. India needs to be ready for the future. And the NEP 2020 paves the way ahead for numerous immature pushing scholars to be equipped with the right skill set.

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IMPACT ON NEP AMONG SCHOOL AND COLLEGE STUDENTS

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Abstract

In the middle of all the unfavourable news that the Covid-19 pandemic challenges have brought about, the Government of India's newly announced education policy was a welcome change and breath of fresh air. Many people were utterly shocked when NEP 2020 was revealed. Numerous educators were surprised by the modifications that NEP 2020 has suggested. Even while the education policy has had an equal impact on K-12 and postsecondary education, this article primarily focuses on NEP 2020 and its effects on higher education. In addition, the key NEP components are described, along with an analysis of how they impact the current educational system.

Introduction

A just and equal society, the advancement of national progress, and the realization of all human potential all depend on education. In terms of economic progress, social fairness and equality, scientific advancement, national integration, and cultural preservation, ensuring that everyone has access to high-quality education is essential to India's sustained rise and leadership on the international arena. The best strategy for advancing our nation's tremendous potential and resources for the benefit of the person, the society, the nation, and the world is to provide universal access to high-quality education. Over the following ten years, India will have the greatest percentage of young people in the entire world.

The Following Categories Can be used to Study the Effects of New National Education Policy:

Consolidation on a Large Scale will Benefit Reputable Schools and Universities:

By cutting the number of higher education institutions in the country by about one third, institutional restructuring and consolidation will have a substantial impact on their value volume. Although the policy seeks to establish higher education institutions with enrollments of 3000+, it is important to keep in mind that the average college enrollment in India now stands at 693 (AISHE 18-19, Ministry of Human Resource Development, KPMG in India Analysis). To encourage excellence, this new policy places a greater emphasis on autonomous colleges. Out of the almost 40000 colleges in India, less than 1000 are autonomous. This exhibits numerous mergers and partnerships.

Focus on Transdisciplinary Education:

The Indian higher education system is distinguished by single-disciplinary islands of excellence such as IIT, IIM, and AIIM. The new national education policy emphasises interdisciplinary education by aiming to establish big multidisciplinary universities known as multidisciplinary education and research universities (MERUs) similar to those found in the United States of America and the United Kingdom. MERUs will give access to quality education in a variety of fields for all segments of society, including all districts and rural areas across the country. Students will be able to choose from a variety of areas of interest as a result of this

Faculty Shortages and the Need for Faculty Quality Improvement:

The present faculty student ratio in our country after the Right to Education Act is 1:30, which should be improved to 1:20, which is considered a healthy ratio. This revision will result in the appointment of at least 500000 new academic members for the system. In addition to addressing faculty shortages, the quality of faculty must also be addressed. By 2022, a set of national professional standards for teachers (NPST) will be developed that will govern all areas of teacher career management, including tenure, continual professional development efforts, pay, promotions, and other recognitions. The strategy also mentions setting performance standards for instructors that clearly define the job of the teacher at various levels of experience and skills.

Activating Research

The National Research Foundation (NRF) proposed by the NEP is likely to create a dedicated focus on quality research, including lightening research funding by making it competitive and improving funding process efficiency to have a more targeted approach to funding research initiatives. Students will be introduced to research activities at a young age.

Improving Access and Equity with Odl and Online Programmes:

ODL enrolls approximately 40 lakh students, or 11% of all students enrolled in higher education in India. The pandemic issue also contributes to the improvement of the ODL system, which is expected to witness a large increase in the next years, allowing India's Gross Enrollment to double.

Impact on Students:

The NEP 2020 will provide students with additional learning options. Its greatest impact would be a shift in the learning environment and the learning process for

pupils. The new education policy will:

- Increase the emphasis on students' skill development and competency growth.

- Prepare pupils for the future by developing 21st-century skills.
- Encourage pupils to pursue both academic and nonacademic interests.
- Provide a variety of learning options for pre-primary, open, and distance-learning students.
- Make counselling and other services available to students.

As a result, this new national education strategy will provide several exit options for mid-term dropout students with 1 year of training or 2 years of Diploma. Students' curiosity and perplexity will develop as there are so many expanding opportunities. As a result, individuals are advised to seek the advice of experts and professionals when making career decisions.

The Teacher is the first expert the students encounter. As a result, the Indian government has something to give teachers as well.

Conclusion

Practical learning takes precedence over theoretical learning. There is no restriction on choosing any subjects/streams. Education for a new generation of learners must essentially deal with the increasing dematerialisation and digitization of economies, which necessitates an entirely new set of competences in order to keep up.. India must be prepared for the future. And the NEP 2020 provides the road for many young aspiring students to gain the necessary abilities. The new education policy has a commendable objective, but its strength will be determined by its ability to properly integrate with other government policy initiatives such as Digital India, Skill India, and the New Industrial Policy, to name a few structural transformation. As a result, policy links can ensure that education policy confronts and learns from Skill India's experience in interacting more dynamically with the corporate sector to build vocational education curriculum in order for it to be successful.

MODERN TRENDS IN EDUCATION: NEED OF NEW EDUCATION POLICY

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Abstract

Education is a word derived from the Latin word educere, educatum, and educare which expresses the meaning of something to learn, to know, and to lead out. In today's world, education is seen from this point of view. The educational system has brought about a dramatic change in the world of modernization to technological advancement despite the modern education trends' pros and cons. This trend has influenced the educational community a lot in many ways both positively and negatively. The article below will discuss some thoughts on technologically improved modern education trends pros and cons.

Modern Trends in Education

Modern education is aimed at educating an individual academically and professionally with an overall personality development to cope with the global digital world. Next, the learning is focused on STEAM education which means science, technology, engineering, art, and mathematics are the key areas and are taught using different types of learning strategies. As digitalization has taken the lead role in education among the stakeholders like students, teachers, parents, and school managements some schools and universities have started formal digital curricula. Learning has become dependent on technology and on line, virtual learning are the trend of today's learning system. The modern education trends pros and cons are categorized in terms of their use in two ways, in the first part the advantages of using it are discussed below.

The world's education has been renovated to adapt to an ever-changing society. As a result of the Covid-19 pandemic, the educational scenario has changed unpredictably. To remain and adapt to the crisis, there are new things that take place in the world of educational trends. While some global trends keep their value, some are new trends and future trends. So, today's post will give you an overview of popular educational trends from 2023 to 2025, based on reliable resources. Understanding them benefits both teachers and learners. Since they can create suitable learning environments to convey and absorb knowledge along with skills in the most effective way.

Advantages of Modern Education

There has been a reformation in the field of teaching and learning for many decades and at present, style of learning has become completely student-oriented rather than a teacher-oriented and memorizing method of learning. Further accessibility and availability of education is seen to reach anyone living even in the remote corner of the world. This is a positive development and educators and education providers make the utmost use of this booming trend to benefit the educational community. Though the modern education trends pros and cons come with its own arguments, the following paragraphs in this article discuss the benefits of innovative trends in education in terms of teaching and learning.

Preparing Students with Practical Skills for Future

Firstly, the main advantage is that the educational curriculum is designed in a way to prepare the students to face any challenges and problems that they encounter in their day-to-day lives which means students are prepared to handle 21st century skills intelligently. In education more than theoretical, practical skills development are given more weightage. Students are trained to develop analytical, logical and problem solving skills. The skills and knowledge are developed right from the school in modern education due to the advancement of science and technology.

Easy Accessibility of Learning:

Learning is accessible to all due to the advancement of technology through virtual and online platforms. The other accessibility is about availability of information regarding the classes in the form of videos, ebooks, enotes, recorded classes, offline materials and so on. In the past it was not the situation because the learners were left with only option of attending class -room led classes and only people who were convenient and comfortable could enjoy the benefits of learning easily by attending live classes available in their nearest location. Today the accessibility of learning to all regardless of time and place has been made possible in spite of the modern education trends pros and cons.

Easy Availability of Information:

Students and teachers get access to a huge amount of information from the internet through particular websites, youtube channels and social media. There are wide platforms to share information through virtual/online classes from experts and to get one to one lessons for free there is a free online courses in MOOC - the massive open online courses. Information for learning is not confined within the particular place or teachers instead teachers, students from different institutions/universities/schools share their ideas all over the world.

Developing Global Skills

Modern education emphasizes over developing global skills technically and socially in an interconnected world of globalization. The whole world has shrunk to a global village where the people depend each other for study, work, business, life and so on. In the present scenario it is common that the people have to live and work using world technologies in the society of diverse culture and among multi nationalities. Therefore thinking, socialising, learning and working are the vital global key skills to be learned by the young learners.

Focus on Steam Education

The focus on STEAM education is to prepare for the global education workforce. The subjects in the STEAM educational ideas are not taught separately, instead they are taught through integrated lessons accompanied by the technology and coding is also a vital part of it. These subjects in real life are interlinked and so students after learning them from school can use them in their real life at a basic or fundamental level. The aim of STEAM education is to create the interest at an early age among the young learners to learn the focus subjects of STEAM education. To enhance it more they can choose the specified learning through higher studies options.

The most important benefits of STEAM education on learners are

- It develops critical thinking
- Fosters independent thinking
- Improves power of observation
- Hands on experience with real projects and collaborative learning approach

Learn to Solve Problems with their Knowledge of Learning

Adoption of Different Modern Methods of Teaching and Learning:

Compared to the past where teaching was based on teacher's interest and style, today the education sector is seen focusing the interest and curiosity of students. Education specialists plan and adopt more and more new methods of teaching and learning and customize them according to the convenient of learners. As evolution in education takes place, the education providers look forward to most trending and attractive way of teaching. To cope with the advancing technology it is important to blend the methods of teaching and learning with digital technical tools and services.

The following are the different student- centered modern methods used in teaching and learning;

E - Learning

Elearning has become the most popular trend in modern day education. This is the modern day's distance learning where students are left with many options to

learn variety of lessons, get information and select courses to learn according to their own pace. For education providers as well for learners, this has become the cheap and best option to connect to each other to deliver the classes and this trend seem developing day by day.

Hybrid Learning

This is about students learning half of their class at physical classroom and rest online classroom. Even Though it requires students' presence during a pandemic, the online classes provided were very helpful to reach out to the students living in any remote corner of the world.

Gamification

It is the method used in education with the help of gaming elements in a non-game context. To make learning more interesting and to get the desired output from students, gamification is used with the help of digital tools. This helps in increasing the interest of the subject and skills like social interaction/problem solving skills are developed. This has a positive impact on engagement and collaboration of students by making learning more efficient.

Disadvantages of Modern Education Trends

The modern education trends pros and cons are like both sides of the coin, the other side of it is about a few disadvantages of modern education.

Digital Learning is Expensive

The latest digital education trend is expensive to use for learning but it will be a great opportunity if it is provided free of cost. It becomes expensive when there is a need to set up the connection facilities and own devices to use it. And sometimes only paid versions of it to come with ample benefits in terms of information and certificates. Further, to do courses and access information outside of one's home country also seem to be expensive. There are many modern education trends pros and cons in terms of its expense because the cost of connectivity is high but it should be made affordable for maximum learners to get its benefit to the fullest.

Influence of Foreign Languages:

The new trends in education have a negative impact on regional languages. Schools/universities/institutions use the most commonly used foreign language English as the medium of instruction. Even the technologies come on the basis of English so it becomes necessary to use the English language in the teaching and learning process. Therefore, the students are not able to use their regional language effectively in speaking, reading, writing, and listening. They lack the proficiency to use it even at the basic level.

Lack of Social Interaction:

Modern education which is technology based has affected social interaction among students a lot. They feel less motivated and lack peer interaction and motivation. Sometimes they feel bored as there is not much communication between teachers and peers. Studies proved that overuse of mobiles, tabs, and laptops have reduced the span of attention of students.

In Equality in Education:

There are controversies in modern education trends pros and cons with regard to inequality in providing quality education in the present scenario. Education is a universal need and its transformation and benefits should be impartial but there arises an inequality among the high-income organizations of learning and low-income group. This can be tackled only with the help of funding from the government and sponsors. Since the infrastructure, upgradation, and maintenance require an estimation for long-term cost some education providers seem to discontinue their services so there comes a gap where students studying the same course have different updated and outdated information.

Over-Dependent on Technology Reduces Intellectual Skills:

Students if more dependent on technology will ruin their intellectual skills like cognitive, problem-solving, and critical thinking skills. For example, instead of using mathematical skill for calculation, they tend to use calculators from tabs, and mobiles and instead of recalling or using general knowledge about any topic they immediately use internet services like google, youtube, and other sources of information. This attitude of using technology will not have any positive impact on learning instead it will negatively affect the general capable skills so there should be restrictions on using the devices. The over-dependent on technology is viewed as both modern education trends pros and cons so sticking on to pros is the wise use of this blessing of science.

The Distraction of Students in and out of the Classroom:

After the prolonged use of online sources for learning, students will have a tendency to use social media and video games for entertainment and relaxation. When they spent more time on the device they get distracted from the environment they are and they do not feel to pay attention to anything around them. They do not feel anything so much interesting like spending time with dear ones, or doing physical activity and doing any active hobbies. This affects them physically and mentally so this should be controlled as screening modern education trends pros and cons is the most vital part before we adopt any new innovation.

Lack of Computer Literacy:

One of the arguments for modern education trends pros and cons is about the current trend in education which demands teachers to be efficient users of computers so as to teach their students which experts tend to feel as having merits and demerits. There are situations where teachers find it difficult to manage technical issues during course delivery. Regardless of computer teachers, all subject teachers are expected to be excelled in computers and keep updating with the new versions of their technological tools used for teaching. This means all teachers need to be IT experts otherwise it may affect the smooth flow of the class due to technical difficulties. It is beneficial to teachers to develop their updated knowledge but it is challenging for some teachers.

Difference Between Modern Education and Traditional Education

Modern education is based on science and technology and is student-centered while traditional education was rote learning and learning to just survive which is teacher-centered.

Importance of Modern Education

Modern education prepares students for real-life situations and is able to cope with the changing advanced world.

Modern Education More Effective

Learning all the subjects with inter connected lessons and using technology as the core for all learning makes it more effective.

Conclusion:

As any situation should be discussed from two points of view, the modern education trends' pros and cons both should be debated to know the weightage of each. This emerging trend is moving at a faster pace all over the world and it is time to realize the practical approach and feasibility and make learning more productive. To put it in a nutshell, after discussing the modern education trends' pros and cons, it is understood that the advantages outweigh the disadvantages because the shortcomings can be easily overcome with some restrictions and planning by understanding the effective use and importance of the innovations in academic development.

SIGNORA'S KNOWLEDGE ON GOVERNMENT SCHEMES FOR SCHOOL CHILDREN WITH SPECIAL REFERENCE TO GIRLS

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Abstract

The National Education Policy-2020 (NEP 2020) is a significant initiative that aims to improve women's literacy and curb gender-based illiteracy. This study examines the awareness level of married women regarding government schemes for school children, specifically those benefiting girls. The analysis reveals a significant knowledge gap among married women, hindering their utilization of these schemes for their children's education. Factors such as social discrimination, gender inequality, domestic responsibilities, and limited facilities contribute to challenges in women's education in India. The National Education Policy-2020 addresses these issues, and the government has implemented schemes like Pradhan Mantri Awas Yojana and Samagra Shiksha. The study emphasizes the need for targeted outreach, information dissemination, and collaboration to improve awareness among married women. Enhanced awareness can lead to improved educational outcomes, gender equality, and overall societal development.

Keywords: Married-women, Gender, Government Scheme, discrimination, Development

Introduction:

Education is instrumental in bolstering the spirit of women to carry out their continual fight against exploitation and withstand social evils. The Indian nation is exasperated utterly to witness the appalling state of women education even after 75 years of Independence. For engaging women at all levels of public life and utilizing their talent for the nation and to protect them from all forms of injustice, the nation must first and foremost ensure hundred per cent quality education for women. Social discrimination, gender inequality, occupation of girl child in domestic chores, economic exploitation, and early-age marriage are some of the factors which have greatly affected women education in India. Other reasons that are commonly mentioned for girls' drop-out rates in the primary and middle school level are: lack of motivation, engagement in the family business or farm, engagement in household work. Apart from the above reasons, non-availability of educational centers in close proximity, unsafe means of travel, and lack of proper toilets are additional reasons for girls' drop-outs. In low income families the presence of younger siblings affects a

girl's education negatively, in terms of gross attendance, time spent on learning activities, learning performance, etc.

For addressing the issue we need a comprehensive, well-concerted and very pragmatic approach nationwide. Against such a backdrop the National Education Policy-2020 (NEP 2020) was approved by the Union Cabinet of India on 29 July 2020, which outlines the vision of new education system of India. The National Education Policy -2020 has been designed by the K Kasturirangan Committee to deal with various issues aggravating educational scenario across India and to curb the menace of women illiteracy. The policy envisions equitable and inclusive education for all, with special focus on children and youth, especially girls, from socially and economically disadvantaged groups. The policy, which has come to the fore recently, is expected to usher in a new era in women education. The policy is a comprehensive framework for elementary education to higher education as well as vocational training in both rural and urban India. It is pointed out that the policy does not pronounce much on the gender issues, yet certain proposals made in the policy may be expected to bring about remarkable changes into the bleak scenario.

The Government of India has taken various steps to ensure empowerment of women through their social, educational, economic and political uplifting through various schematic interventions. While the schemes implemented by the Government like Pradhan Mantri Awas Yojana (Urban & Rural), the National Social Assistance Programme (NSAP), the initiatives like Samagra Shiksha, Scheme of National Overseas Scholarship, Babu Jagjivan Ram Chhatrawas Yojna, Swacch Vidyalaya Mission, etc. ensure that schools are girl-friendly especially for vulnerable sections of society and have adequate facilities in place to fulfil their special requirements. Hence, the researcher is made an attempt to study the awareness of married women towards the various schemes provided by government schemes for girl children at their schools.

Statement of Problem

The level of knowledge among married women regarding government schemes for school children, with a particular emphasis on schemes benefiting girls, is not well understood. There is a lack of information regarding the extent to which married women are aware of these schemes and their ability to access and utilize the available benefits for their children, specifically daughters. This knowledge gap hinders the effective implementation and impact of government initiatives aimed at empowering girls in education. Therefore, there is a need to assess the awareness, understanding, and utilization of government schemes among married women, specifically focusing on their knowledge and engagement with schemes related to school children, particularly girls, in order to identify potential barriers, improve outreach efforts, and enhance the effectiveness of these initiatives.

Objectives of the Study

1. To study the socio demographic factors of the respondents
2. To identify the awareness level of the respondents on various schemes given by government.

Research Methodology

Sample Size: 50 Signora's (Married Women) were selected from the specified region

Sampling Technique: Snowball Sampling Technique has been used to select the samples.

Limitations:

- The geographical area is restricted to Coimbatore, hence the opinions may vary
- The number of the respondents are limited to 50

Review of Literature

Eknath-Mundhe(2021), in his study "The study on issues and Challenges of women empowerment in India", This paper aimed to analyze the state of women empowerment in India and shed light on its problems and challenges. Women's empowerment had become one of the most important concerns of the 21st century. Since the beginning of the twentieth century, their position had gradually and slowly changed. The study found that women in India were relatively underdeveloped and, despite many government efforts, were somewhat inferior to men. Gender gaps existed regarding access to education and employment. The power of decision-making at home and the freedom of movement of women varied greatly based on their age, education, and employment status. It was found that the acceptance of unequal gender norms by women still prevailed in society. Rural women were more likely to experience domestic violence compared to urban women. The gender gap was also significant in political participation. The study concluded that access to education and employment were the primary enabling factors, although the focus on goal attainment largely depended on people's attitudes towards gender equality.

Dillip Kumar Mallik (2021), in his research articles, "Women Empowerment and Gender Equality: A Study of Indian Constitution", The concept of women's empowerment was broadly understood as a process that increased women's "options, choices, control, and power" through their own agency. Women's empowerment was recognized as both a fundamental right and a transformative tool with far-reaching effects in achieving progress across social and economic development. It was well-established that women's empowerment played a pivotal role in realizing gender equality, reducing poverty, and attaining other

internationally agreed-upon development goals. Through women's empowerment, the underlying structural factors, social determinants, and unequal power relations that perpetuated widespread gender inequalities were transformed, leading to improved access to opportunities and resources for women in political, economic, social, and cultural spheres. Given that women's empowerment was a dynamic and context-specific process influenced by various intersecting variables, it remained a latent and unobservable phenomenon. The central focus of this paper was to examine how women were empowered within the framework of the Indian Constitution. Additionally, the paper highlighted the existence of gender equality in India. However, it also discussed several obstacles and challenges that hindered women's empowerment and the achievement of gender equality.

Table No : 1 Demographic Factors of Signora's of Coimbatore

Source	Factors	No. of Respondents	Percentage
Gender	Female	50	100
	Total	50	100
Age	15 yrs – 20 Yrs	15	30
	21 Yrs – 25 Yrs	15	30
	31 yrs -35 yrs	20	40
	Total	50	100
Marital Status	Married	50	100
	Unmarried	-	-
	Total	50	100
Qualification	No formal Education	5	10
	SSLC	10	20
	Higher Secondary	10	20
	Under Graduates	25	50
	Total	50	100
Annual Income	1 lakh- 2.5 lakh	25	50
	2.5 lakh- 5 lakh	15	30
	5 lakh & more	10	20
	Total	50	100

Source Primary Data

From the analysis the above table shows that 100% of the respondents are female, 40% of the respondents are between 31 years - 35 years, 100% respondents are married women, 50% of the respondents are under graduates, 50% of the respondents are earning between 1 – 2.5 lakh as the annual income.

Table No: 2 Awareness Level of Signora's Knowledge Towards the Following Ministry of Women and Child Development (MWCD) for Empowerment of Women and Girls

MWCD Schemes Available		Aware	Not Aware	Total	Average Score	Average Rank
POSHAN Abhiyaan	No	23	27	50	2.84	5
	Score	115	27	142		
One Stop Centre(OSC)	No	18	32	50	2.44	8
	Score	90	32	122		
Pradhan Mantri Matru Vandana Yojana (PMMVY)	No	24	26	50	2.92	4
	Score	120	26	146		
Anganwadi Services Scheme	No	29	21	50	3.32	2
	Score	145	21	166		
Beti Bachao Beti Padhao (BBBP) Scheme	No	34	16	50	3.72	1
	Score	170	16	186		
Universalisation of Women Helpline	No	26	24	50	3.08	3
	Score	130	24	154		
Child Protection Services Scheme	No	15	35	50	2.2	9
	Score	75	35	110		
Schemes for Adolescent Girls(SAG)	No	21	29	50	2.68	6
	Score	105	29	134		
Swadhar Greh Scheme	No	19	31	50	2.52	7
	Score	95	31	126		
Ujjawala Scheme	No	13	37	50	2.1	10
	Score	65	37	102		

Source: Primary Data

It is found from the above table that, the young respondents have higher rank on “Beti Bachao Beti Padhao (BBBP) Scheme” Scheme followed by “Anganwadi Services Scheme” when compared to “Ujjawala Scheme” and “Child Protection Services Scheme”.

Conclusion

In conclusion, the awareness and understanding of government schemes for school children, with a specific emphasis on married women's knowledge, is a crucial area that requires attention. The analysis indicates that there is a significant gap in the knowledge and awareness of these schemes among married women, particularly regarding schemes targeted at girls' education and empowerment. This lack of awareness hinders the effective implementation and utilization of the available benefits for their children, specifically daughters.

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DIGITAL IMPLICATIONS OF THE NATIONAL EDUCATION POLICY (NEP) IN THE CONTEXT OF HIGHER EDUCATIONAL INSTITUTIONS IN KERALA

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Abstract:

The Indian government's New Education Policy (NEP) 2020 aspires to transform the current educational system by integrating technology. This strategy promotes innovation in higher education institutions in Kerala, a state noted for being at the forefront of digitization, by emphasizing personalized and interactive learning experiences, virtual classrooms, and e-learning resources. However, overcoming obstacles like infrastructure, digital literacy, and cyber-security worries is crucial for digitalization to succeed, especially in rural areas. The study examines the digital implications of NEP in Kerala's higher education using a qualitative technique, theoretical insights, and existing literature. It makes use of four important theoretical frameworks: the Digital Divide and Digital Inclusion Framework, the Community of Inquiry Framework, the Diffusion of Innovations Theory, and Technological Pedagogical Content Knowledge (TPACK). In conclusion, the digital integration in NEP offers Kerala's higher education system hope for positive changes. To establish an effective digital learning experience, infrastructure issues, the digital divide, and issues with digital literacy must be addressed. The study's findings provide insightful information that will help educators and politicians create a successful digital learning experience.

Keywords: *Digital Integration, TPCAK Framework, COI Framework, Digital Divide and Digital Inclusion, Diffusion of Innovation theory*

Introduction:

The New Education Policy (NEP) 2020 is an approach by the Government of India in transforming the entire face of the traditional educational system in the country. The new policy highly emphasizes on the use and utilization of digital platforms with a view to make necessary reforms in the educational sector and also to overcome the challenges in the traditional educational system. The benefit will be high worth for the higher educational institutions in the state of Kerala, which is in forefront of digitalization in the country.

The digital integration in the policy is based on two key principles- personalized learning and interactive learning. It is expected that this integration would bring revolutionary changes in the form of virtual classrooms, e-learning materials and online learning platforms in the higher educational sector in the state of Kerala.

Incorporation of such changes help the higher educational institutions of the state in switching towards an innovative approach of learning.

The convergence of the New Educational Policy and digitalization nurture the thinking ability, problem-solving skills and creativity among the students as well as teachers. Ahead of imbibing these changes, it is important to consider the limitations in the digital facets in the higher institutions of the state. Key consideration should be addressed to the concerns like well developed infrastructure, equitable access to technology, digital literacy, cyber security and other related concerns in the state.

The current study entails on the digital implications of National Education Policy in the context of higher educational institutions in Kerala. The qualitative approach of the study, theoretical insights and existing literatures provide a clear-cut picture of the impact of digitalization in the state's higher education sector.

Review of Related Literature:

As discussed earlier, the integration of digitalization in NEP emphasizes on personalized learning and interactivity. The role of digital learning and online platforms in student engagement and self-directed learning is well highlighted (Rajan, 2020 & Kumar, 2021)^{1, 2}. However, it is important to note that the success of digitalization depends on the extent to which barriers to infrastructure and digital literacy are overcome, especially in rural Kerala (Gupta, 2020)³. Technological potential in transforming the educational system is highly considerable. Adoption of Learning Management System, virtual classrooms and multimedia resources pioneer towards 'Any Time Any Where Learning', which bridge the gap between traditional methods of teaching and modern methods of teaching (Menon et.al., 2019 & Nair and Pillai, 2021)^{4, 5}. Accessibility and Equity are the two key components in molding digitalized learning experience. The importance of equal opportunities for students from different socioeconomic backgrounds and equipment of digital literacy are crucial in digital equity (George et.al, 2020 & Thomas, 2021)^{6, 7}. On the other side, Change resistance and reluctance towards digital technology are considered obstacles for successful digital integration. While considering the evaluation aspect of digital learning experience, assessment methods and use of artificial intelligence ensure the valid implication of digitalized learning (Pillai and Kumar, 2020 & Menon and Nair, 2022)^{8, 9}. Innovative practices like gamification, virtual reality and augmented reality develop creativity, critical thinking and problem solving skills among students through better learning experiences (Abraham et.al., 2021 & Joseph and Thomas, 2022)^{10, 11}.

Theoretical Framework:

Technological Pedagogical Content Knowledge:

The dynamic interaction of technical knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK) in the context of teaching and learning is

highlighted by the TPACK concept put forth by Mishra and Koehler (2006). This approach evaluates how educators effectively incorporate digital technology to improve pedagogy, modify content delivery, and meet the needs of various learners by applying TPACK to the digital implications of the NEP in higher education. This theoretical lens aids in identifying best practices and potential difficulties in using technology for educational aims by investigating the junction of several knowledge domains.

Diffusion of Innovations Theory:

The adoption and dissemination of novel concepts or technologies within a social system are examined by Rogers' (1962) Diffusion of Innovations hypothesis. This theory aids in comprehending the variables impacting the acceptance and spread of digital education practices in higher educational institutions in Kerala within the context of the NEP. It takes into account how important stakeholders, including educators, administrators, students, and lawmakers, can affect how digital technologies are embraced and integrated into society. This theory's analysis of the spread of digital education projects reveals information on adoption rates and potential implementation challenges.

Community of Inquiry (COI) Framework:

The Garrison, Anderson, and Archer (2000) framework for communities of inquiry looks at the factors that go into building a successful and relevant online learning community. This approach helps in evaluating the quality of digital learning experiences in higher educational institutions in Kerala in the light of the digital implications of the NEP. This theoretical lens assesses the level of engagement, cooperation, and learning outcomes in digital learning environments by examining the existence of cognitive presence, social presence, and teaching presence.

Digital Divide and Digital Inclusion:

The notion of the "Digital Divide" looks at how different socioeconomic and geographic groups access digital technologies and the internet differently. In addition to this idea, the idea of "digital inclusion" concentrates on measures and laws meant to lessen these discrepancies and provide fair access to online resources. Understanding the digital divide and digital inclusion within the context of the NEP aids in addressing issues with accessibility and digital equity in Kerala's higher education institutions.

Methodology of the Study:

The current research has adopted a qualitative research design. The implication of digitalization in the NEP in higher educational institutions of Kerala was studied qualitatively through direct interviews and case studies. Heads of Departments, faculties and students from university departments and affiliated colleges in Kerala were selected according to the convenience of the researcher. The study combines qualitative research design, theoretical insights and existing literatures thereby using a mixed methodology in drawing conclusion for the digital implication in the New Educational Policy.

Discussion:

This section comprises of the theoretical insights, existing literatures and qualitative analysis of the study. The theoretical insights of the study discussed about four important theoretical frameworks related to the digitalization in the higher education system. The key findings extracted from these frameworks in the context of NEP in higher educational institutions of Kerala are as follows:

- Application of Technological Pedagogical Content Knowledge (TPCAK) framework assesses the integration of digital technology in enhanced pedagogy, content delivery and ability to cater diverse learner needs.
- Diffusion of Innovations theory discusses about the factors influencing adoption and diffusion of digitalization in the academic institutions.
- Community of Inquiry Framework aids in assessment of quality of digital learning experiences in the academic institutions.
- Digital Divide and Digital Inclusion helps in overcoming the challenges like accessibility and digital equity in the academic institutions.

The existing researches based on this study give comprehensive information about the significance of digitalization for the educational policy in higher educational institutions. The key findings derived from the previous related studies emphasizes on the following aspects:

- Role of digital learning tools and online platforms in student engagement and self supported learning
- Overcoming infrastructure and digital literacy barriers for successful digitalization
- Technological integration in higher education institutions for educational transformation
- Necessity of digital inclusiveness and digital equity
- Change resistance and reluctance towards digital technologies as key obstacles for digital learning
- Relevance of digital assessment

Some of the key findings derived from the interview conducted among heads of departments, faculties and students are summarized as follows:

- The participants expect that the digital integration in the NEP will positively influence the teaching pedagogy in higher education system.
- They strongly believe that the new policy will bring effectiveness in all grounds of academic field especially in the higher education
- The implementation of this policy along with digital integration can bring more transparency in the educational facets in higher institution
- Digital integration with NEP requires the need for training and awareness programs from the side of government
- The participants are in the opinion that the digital integration in the policy eliminates discrepancies in the academic efficiencies of the students to a great extent
- The possibility of ample flexibility and customization are expected in the digitalized mode of learning
- Digital integration with this policy can solve all the complexities in the traditional educational system
- The participants have strong belief on improved academic performance upon implementation of this policy

Conclusion:

The current research outlines the digital implication of New Educational Policy in the context of higher educational institutions in Kerala. A mixed methodology research design was adopted to gather information about the digital implication in the policy. The digital focus of the policy guarantees significant transformation in the higher education system in Kerala. Digital integration in the policy highlights the fruitful effects of personalized and interactive learning experiences, innovative approaches of learning and simplified teaching methodology.

In addition to this, the research addresses on various challenges and obstacles, which are prone to unsuccessful implementation of digital education. Concerns related to infrastructure constraints, digital divide and digital literacy should be well addressed for creating better digital learning experience.

The findings of the research help the policy makers and educators for shaping a better higher education system in Kerala for long term future. Since the state is highly concerned with the acceptance of digitalization in its all aspects, it is important for the higher education system in the state to give more attention on digital integration for better learning experience.

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STUDY OF NEP ISSUES, APPROACHES AND CHALLENGES

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Abstract

A well-defined education policy and the future are important for the country at school and college levels because of the fact that education leads to economic and social development. Different countries use different education systems with due regard to culture and traditions and take different stages during their life cycle at school and college education levels to make it work. The National Education Policy 2020 (NEP 2020), approved by the Indian Union Cabinet on July 29, 2020, sets out the vision for India's new education system. The new policy replaces the previous National Education Policy, 1986. This policy is a comprehensive framework for primary education towards higher education and vocational training in rural and urban areas of India.

Keywords: *Traditions, Primary Education, Higher Education, Vocational Training, diverted*

Introduction

India, as a fast-growing free country of change in education, currently has about 845 universities and about 40,000 higher education institutions (HIEs), reflecting the total diversity and the many small HEIs in the country connected to these universities. It has been found that more than 40% of these small institutions use a single system for me against the expected transformation of the multi-sectoral higher education system which is an important need for educational change in the 21st century. It was also noted that more than 20% of colleges are enrolled annually with less than 100 students making it impossible to improve the quality of education and only 4% of colleges enroll more than 3,000 students per year due to regional inequality and level of education. They give. Some of the reasons found for the collapse of the higher education system (HE) in India are: It is predicted that India will be the third largest in the world in 2030-2032 with a GDP of about ten billion dollars. It is clear that the ten billion economies will be driven by sources of information and not natural resources. To boost India's education sector growth, the current government has decided to revive it by introducing the National Education Policy 2020.

Issues of NEP

- Initial distribution of students in various subjects.
- Lack of access to HE, especially in the most economically disadvantaged areas has resulted in a current gross enrollment ratio (GER) of only 25%.

- Lack of teachers and institutional independence to do new things in HE attracts more students.
- Inadequate job management practices and the advancement of intelligence with institutional leaders.
- Lack of research and innovation at many universities and colleges.
- Low levels of governance and leadership in institutions of higher learning.
- A corrupt control system that allows fake colleges to thrive while pressing for better, innovative institutions.

Approaches of NEP

1. Curriculum and Content

NEP aims to introduce a transition from 10 + 2 building to 5 + 3 + 3 + 4, where early childhood education will be part of formal education. In addition, NEP 2020 focuses on reducing the content of the curriculum to create a space for critical thinking and, in turn, develop the 21st century skills incorporated into them. Therefore, all aspects of curriculum and teaching need to be restructured to achieve these goals.

2. Teacher Availability and Training

The policy aims to redesign the school curriculum. However, for the curriculum to be effective, schools and the relevant authorities need to train teachers and understand the needs of teaching in order for there to be a smooth transition to the new education system. In addition, they need to shift from teacher-centered reading to student-centered reading in order to develop interpersonal, critical thinking, problem-solving and decision-making skills among young people. The study suggests that more than 250 million students are estimated to enroll in K-12 schools in India by 2030.

3. Technology

NEP 2020 emphasizes the use of technology benefits to prepare young people for the future. However, developing digital infrastructure such as digital classrooms, remote professional-based teaching models, AR / VR tools to fill gaps in physical education and laboratory infrastructure is a major challenge because most schools do not have the right setup. Support these tools. Also, the costs associated with building a digital infrastructure may be less expensive for all schools across the country. In addition, in rural areas of the country where the Internet is virtually nonexistent, using digital learning tools is out of the question. Therefore, government must work to develop the basic infrastructure that will support digital infrastructure in all areas.

4. Test Building

NEP focuses on constructive assessment for learning rather than abbreviated assessment. The primary purpose of modifying the assessment program is to promote continuous tracking of learning outcomes. However, further testing requires schools and teachers to adopt new assessment methods and assignments. These approaches require technical intervention and active participation of teachers and students. According to a survey, out of 1.5 million Indian schools, 75 percent are state-run. Of the remaining 400,000 private schools, about 80 percent are 'private schools'. Therefore, sending a continuous assessment framework is a challenging task for these schools.

Challenges of NEP

1. Opening Weekly Universities is a Herculean Activity

India today has about 1,000 universities across the country. Doubling the Gross Ratio Enrollment in Higher Education by 2035 which is one of the stated goals of the policy will mean that we must open one new university every week, for the next 15 years. Opening one University each week on an ongoing basis is undoubtedly the biggest challenge.

2. Prices are Also Very Alarming in the Transformation Plans of our School System

The National Education Policy 2020 aims to bring back 2 million children who are currently out of school, into the school system. Whichever way you look at it, achieving this in 15 years requires the suspension of about 50 schools each week.

3. Funding is a Major Challenge in the Covid Era

From a supportive perspective, this is not a challenge for the weak. The National Education Policy 2020 anticipates an increase in spending on education from 4.6% to 6% of GDP, reaching approximately INR 2.5 lakh crores per year. The money will be well spent on building schools and colleges across the country, appointing teachers and professors, and operating expenses such as providing free breakfast for school children. What makes things even more difficult is that this policy came at a time when the economy is overwhelmed by Covid-19-related closures, government tax cuts were very low, and funding shortfalls were high even before Covid.

4. The Current Focus is on Health care and Economic Sustainability to Reduce Homicide Rates

Economists have been looking for large renewable energy packages of up to 2 percent of GDP, despite the difficulties in the exchequer.

5. The Need to Create a Large Number of Qualified Teachers

In school education, the policy aims to redesign the curriculum structure as a very acceptable step. But in order to make this curriculum successful, we need teachers who are trained and who understand the teaching needs. Many curriculum changes require major changes in the thinking of teachers, as well as parents.

6. Higher Education Requirements that Include Disciplines for Cultural Change

In higher education, the focus of the 2020 National Education Policy on disciplinary education is a very welcome step. Universities, especially in India, have for decades been siloed and run by departments. The 2020 National Education Policy contains a number of initiatives to improve the quality and scope of the education system in India.

Conclusion

Higher education, with its emphasis on academic study, often produces graduates who have few or no income. Developing GER to include all citizens of the country in higher education is the responsibility of the national government education department. India's National Education Policy 2020 is marching towards achieving that goal by creating new policies to improve quality, attractiveness, accessibility, and expand the provision of higher education in the private sector and at the same time with strict quality control controls in all institutions of higher learning. By promoting eligibility based on free shipping and scholarships, advanced and progressive research artists as members of intelligence, as well as certified leaders based on regulatory approaches, and strict quality monitoring through annual authorization based on self-proclaimed advances through technology-based technologies. Monitoring, NEP-2020 is expected to achieve its goals by 2030.

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EDUCATION POLICIES AND WOMEN EMPOWERMENT IN INDIA

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Introduction

Education is fundamental for achieving full human potential, developing an equitable and just society, and promoting national development. Empowerment through education can also be dealt with by following a capabilities approach. Education is one of the most creative means of empowerment. It helps a person and realizes his or her potential; a social group to achieve a higher social mobility and the state maintain good order. Being an important component of developing capabilities education has an intrinsic role to play in developing freedom and leaving the rest to be attained through institutional and legal means. Universal high-quality education is the best way forward for developing and maximizing our country's rich talents and resources for the good of the individual, the society, the country, and the world.. Providing universal access to quality education is the key to India's continued ascent, and leadership on the global stage in terms of economic growth, social justice and equality, scientific advancement, national integration, and cultural preservation. India will have the highest population of young people in the world over the next decade, and our ability to provide high-quality educational opportunities to them will determine the future of our country. India has a rich social cultural and philosophical heritage. It is an ancient country.

Educational Status of Women in India

As per the 2011 Census, the total literacy rate in India stands at 74.00 per cent and the rate of literacy among women is 65.46 per cent. The percentage of female literacy in the country was 54.16 per cent in 2001. The literacy rate in the country has increased from 18.33 per cent in 1951 to 74.00 per cent as per 2011 census. The female literacy rate has also increased from 8.86 per cent in 1951 to 65.46 per cent in 2011. Female literacy rate during the period 1991-2001 increased by 14.87 per cent whereas male literacy rate rose by 11.72 per cent. The increase in female literacy rate was 3.15 per cent more compared to male literacy rate. In Table 1 contains statistics regarding general rate of literacy in all the states in India along with a break up of rate of

literacy among males and females. Table 2 gives State-wise Literacy rate figures as per 2011 Census.

India is multicultural multilingual society with undercurrent of essential unity. Some of the important national goals as enshrined in the constitution are secularism, equality liberty fraternity. The education is always played a important role in shaping in the destines of the societies through development of the whole individual and linking education to the task of upliftment of and national development within highly competitive global scenario Empowerment literally means making someone powerful felicitating the weak attain strength to increase one- esteem to help someone assertive/ and self confident to enable someone to confront injustice and oppression and support and someone to fight for her rights.

The principle of gender equality is enshrined in the Indian Constitution in its Preamble, Fundamental Rights, Fundamental Duties and Directive Principles. The Constitution not only grants equality to women, but also empowers the State to adopt measures of positive discrimination in favour of women.

Within the framework of a democratic polity, our laws, development policies, Plans and programmes have aimed at women's advancement in different spheres. From the Fifth Five Year Plan (1974-78) onwards has been a marked shift in the approach to women's issues from welfare to development. In recent years, the empowerment of women has been recognized as the central issue in determining the status of women. The National Commission for Women was set up by an Act of Parliament in 1990 to safeguard the rights and legal entitlements of women. The 73rd and 74th Amendments (1993) to the Constitution of India have provided for reservation of seats in the local bodies of Panchayats and Municipalities for women, laying a strong foundation for their participation in decision making at the local levels.

1.3 India has also ratified various international conventions and human rights instruments committing to secure equal rights of women. Key among them is the ratification of the Convention on Elimination of All Forms of Discrimination Against Women (CEDAW) in 1993.

1.4 The Mexico Plan of Action (1975), the Nairobi Forward Looking Strategies (1985), the Beijing Declaration as well as the Platform for Action (1995) and the Outcome Document adopted by the UNGA Session on Gender Equality and Development & Peace for the 21st century, titled "Further actions and initiatives to implement the Beijing Declaration and the Platform for Action" have been unreservedly endorsed by India for appropriate follow up.

1.5 The Policy also takes note of the commitments of the Ninth Five Year Plan and the other Sectoral Policies relating to empowerment of Women.

1.6 The women's movement and a wide-spread network of non-Government Organisations which have strong grass-roots presence and deep insight into women's concerns have contributed in inspiring initiatives for the empowerment of women.

1.7 However, there still exists a wide gap between the goals enunciated in the Constitution, legislation, policies, plans, programmes, and related mechanisms on the one hand and the situational reality of the status of women in India, on the other. This has been analyzed extensively in the Report of the Committee on the Status of Women in India, "Towards Equality", 1974 and highlighted in the National Perspective Plan for Women, 1988-2000, the Shramshakti Report, 1988 and the Platform for Action, Five Years After- An assessment"

1.8 Gender disparity manifests itself in various forms, the most obvious being the trend of continuously declining female ratio in the population in the last few decades. Social stereotyping and violence at the domestic and societal levels are some of the other manifestations. Discrimination against girl children, adolescent girls and women persists in parts of the country.

1.9 The underlying causes of gender inequality are related to social and economic structure, which is based on informal and formal norms, and practices.

1.10 Consequently, the access of women particularly those belonging to weaker sections including Scheduled Castes/Scheduled Tribes/ Other backward Classes and minorities, majority of whom are in the rural areas and in the informal, unorganized sector – to education, health and productive resources, among others, is inadequate. Therefore, they remain largely marginalized, poor and socially excluded.

Conclusion

Girl's educational access and expansion demands not only increase enrolment but also remove to a large extent barriers to girls' equal educational opportunity. Along with this, the need to reach UEE 's goal for all children requires proper implementation of laws and policies from the central to the grass root level with the right direction and efficiency to make them worthy of enjoyment. In this context, more research and deeper analysis of the root causes of the problems are equally significant in their implementation. Unless and until the mindsets of parents, teachers, school authorities and administrators are directed towards a gender responsive environment, the problem of girls' qualitative educational development will persist. Empowerment of girls and women is essential for achieving sustainable development. The new strategies and initiatives must include various tools of social empowerment of women such as right and access to education, health care, adequate nutrition, right to property and access to equal opportunities, legal

and institutional mechanism to help women in need, access to media and finally a redressal mechanism. Socio-cultural practices that work as barriers to empowerment of women and girls need to be removed at the earliest.

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CHALLENGES AND OPPORTUNITIES OF NEP IN HIGHER EDUCATIONAL INSTITUTION

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Abstract

“Education is the most powerful weapon to be used to change the world. “Nelson Mandela Education is important for the economic and social development of nation. The weapon may proved to be harmful if it is misused. Due to proper interpretation and implementation of policies, the generations may be benefitted. It will result in strong economic and social development. The national policy in education ,1986 was replaced by New National Education Policy.[NEP 2020] National Education Policy is the holistic reform in the education across all levels stages of education in India. It made reforms in primary,secondary and higher education in single policy document .It is the evolution in the field of education in India. This study is based on secondary data, the available literature on the topic is referred. This paper aims at discussing challenges and opportunities in National Education policy 2020 with respect to higher education in India.

Keywords: *He is [higher educational institutes],NEP [National Education Policy],*

Introduction

Kothari Commission [1964-66] had recommended a 6 % allocation of GDP, National Education Policy,2020 is an evolution in the education field. It tried to increase access, equity, and inclusion as one of thekey changes. Internationalization of higher education is one of the aims in the NEP. NEP promoted more and more philanthropic activity in the education sector. NEP tries to imbibe that education is a concurrent subject. NEP suggested a „light but tight“ regulatory framework to ensure integrity, transparency, and resource efficiency of the educational system through audit and public disclosure while encouraging innovation and out-of-the-box ideas through autonomy, good governance, and empowerment.

National Education Policy 2020 : Major Principles

- Sensitizing teachers as well as parents to promote each student’s holistic development in both academic and non-academic spheres Multidisciplinary and a holistic education to ensure the unity and integrity of all knowledge disciplines
- Emphasis on conceptual understanding rather than rote learning and learning-for-exams

- Creativity and critical thinking to encourage logical decision-making and innovation
- Promoting ethics, human & Constitutional values like empathy, respect for others, cleanliness, courtesy, democratic spirit, etc.
- Promoting multilingualism and the power of language in teaching and learning
- Life skills such as communication, cooperation, teamwork, and resilience
- Extensive use of technology in teaching and learning
- Respect for diversity and respect for the local context in all curriculum, pedagogy, and policy
- Full equity and inclusion as the cornerstone of all educational decisions to ensure that all students are able to thrive in the education system
- Teachers and faculty as the heart of the learning process – their recruitment, continuous professional development, positive working environments and service conditions
- Outstanding research as a co-requisite for outstanding education and development
- Continuous review of progress based on sustained research and regular assessment by educational experts.

Opportunities to He is in Implementing NEP 2020

The NEP 2020 paves the way towards less regulation and more autonomy for institutions through an effective self-regulatory framework. New Education Policy is not just about the degree. It is all about focus on life skills and vocational courses. [Sheth 2020]

1. **Education Hub** : India is having great opportunity to attract foreign students and foreign universities as India has become education hub .As compared to many countries ,the India has lesser cost on education .Education tourism is the new and emerging field today.
2. **Promoting Students for Progression** : Institutions and universities try to motivate students to pursue graduation ,post-graduation education or professional courses.
3. **Handling Lesser Number of Students** : The teacher- student ratio should be kept minimum forthe purpose of close supervision on student's progress. The teacher's efficiency will definitely increase for lesser teacher -student ratio.
Encouraging students in classroom participation: Due to multiple entry and exit, student will find the NEP flexible and convenient for education. Students will be more equipped with KSA-knowledge, skills and attitude in classroom with peer learning and experiential learning etc.

- 4. Hard Internship not Only for the Sake of Completion Certificate:** The internship should be strictly observed, so that students can get practical knowledge. It will also help to create strong linkages between institution and the organizations offering the internships.

Five Challenges that Would Shape the Outcome of NEP 2020

In July last year, India unveiled its first and most comprehensive education policy of the 21st century. As the first omnibus policy since 1986, the New Education Policy (NEP) 2020 has the onerous task of addressing multiple crises facing India's education system. Addressing the completion of one year of the NEP, Prime Minister Narendra Modi remarked, "We are entering the 75th year of Independence. In a way, implementation of NEP has become a vital part of this occasion. This will play a key role in creating a new India and future-ready youth".

The Education Minister, Dharmendra Pradhan, called NEP 2020 a visionary education policy for the 21st century through which India is harnessing the capabilities of each student, universalising education, building capacities, and transforming the learning landscape in the country. He stressed that the NEP would make education holistic, affordable, accessible, and equitable. What has been the progress so far? Is the NEP roll-out on track? What are the major challenges facing this mega education policy in the coming decades?

Major Milestones

In the last 16 months since its eventful launch, the NEP has moved some ground in terms of meeting key milestones, notwithstanding the challenges from the global health pandemic. To begin with, the government has done well in terms of building awareness and interests amongst diverse stakeholders on the mission and vision of the NEP. This was marked in a 10-day long Shikshak Parv that saw a series of national-level events featuring the Prime Minister and other key officials.

Further, to make the intent more pronounced, the government has renamed the Ministry of Human Resources Development (MHRD) to Ministry of Education. Significantly, this key ministry has been infused with doses of energy and dynamisms by bringing in Dharmendra Pradhan, the man who brought major transformations in the critical energy ministry. Mr Pradhan's proven implementation ability and his diplomatic negotiating skills will come in handy in pushing the mega initiatives that would likely face opposition in Opposition-ruled states.

The Education Minister, Dharmendra Pradhan, called NEP 2020 a Visionary Education Policy for the 21st Century Through which India is Harnessing the Capabilities of each Student, Universalising Education, Building Capacities, and Transforming the Learning Landscape in the Country.

In terms of roll-out of key NEP activities, the school curriculum has been changed to include artificial intelligence (AI) and financial literacy. Given that the mother tongue or regional language received primacy in the NEP, the same has been introduced in several states, albeit on a pilot basis. Further, the ministry has launched the much-talked-about Academic Bank of Credit – a programme that will provide multiple entry and exit options for students in higher education. These apart, a number of key initiatives, such as NIPUN Bharat Mission – improving children’s learning competencies in reading, writing, and numeracy by the end of Grade III; Vidya Pravesh – a three-month school preparation module for Grade I children; DIKSHA – a teaching-learning repository of e-content; and NISHTHA – teachers training programme for the secondary-level teachers. As far as roll-out amongst the states are concerned, only a handful of states, mainly under the ruling party have launched the programme. Karnataka became the first state to implement NEP on 24 August. Recently, Madhya Pradesh and Himachal Pradesh launched a series of NEP initiatives giving a much needed push to this mega policy. On the whole, NEP has started gathering pace.

Five Major Challenges

While the NEP has begun gathering a fair degree of momentum, the road to its realisation is filled with endless potholes. First, the sheer size and diversity of India’s education sector makes implementation an uphill task. For example, sample the size of the school education system alone. With more than 15 lakh schools, 25 crore students, and 89 lakh teachers, India remains the second largest education system in the world. The size of the higher education system is massive too. As per the AISHE 2019 report, India’s higher education sector consists of 3.74 crore students in nearly 1,000 universities, 39,931 colleges, and 10,725 stand-alone institutions. Thus, a countrywide implementation of this mega education policy is going to be a mammoth exercise involving multiple stakeholders at the state, district, sub-district, and block levels. Creating a shared responsibility and ownership amongst key stakeholders, including the private sector, at the state and district levels that have extraordinary diversity is going to be a major challenge for the education leadership.

Second, the NEP’s eventual realisation is critically linked to state capacity. As rightly pointed out by the NEP Drafting Committee led by K. Kasturi Rangan, India’s education system is underfunded, heavily bureaucratised, and lacks capacity for innovation and scale up. The interval within the education ministries (centre and states) and other regulatory bodies are grossly inadequate to steer the magnitude of transformations envisaged in the NEP. For instance, moving away from a rigid content-driven rote learning system to experiential learning and

critical thinking would require nothing short of a revolutionary change in the attitudes of the people running the education system, let alone the attitudinal changes amongst the teachers, students, and parents.

Creating a Shared Responsibility and Ownership Amongst Key Stakeholders, Including the Private Sector, at the State and District Levels that have Extraordinary Diversity is Going to be a Major Challenge for the Education Leadership.

This means that thousands of schools and colleges would need capacity building and reorientation with regards to the operational aspects of implementing a mega programme with many experiential goals. In short, the existing organisational structure of the ministry and its ecosystems will have to undergo a massive overhaul. While it is heartening is that the NEP document has laid out a comprehensive roadmap for overhauling the existing regulatory system, and the education ministry is in the process of bringing out a legislation that would facilitate the setting up of a Higher Education Commission of India (in the place of existing regulatory bodies, mainly the UGC, AICTE, and National Council for Teachers Education), one has to wait for the new institutional architecture emerging out of legislative initiatives.

Third, the NEP would largely hinge on the extent of cooperation between the Centre and states. While the NEP has been drafted by the Union government (with inputs from multiple stakeholders including the state governments), its implementation largely depends on the active cooperation of the states. This is because most services-related education are performed by the state governments. In short, the Centre has to skilfully navigate the principles of cooperative federalism and decentralisation while rolling out key initiatives. And this is not an easy act to perform given the sharpening of political polarisation in the recent years and visible breakdown of trust between the Centre and states. A number of Opposition-ruled states have been raising strong objections to several key provisions of the NEP and the manner in which they are being rolled out. The more worrying development is that the Tamil Nadu government's recent decision to not implement the NEP can encourage other Opposition-ruled states to follow a similar path. Thus, managing federal math is critical to the realisation of the NEP.

A Number of Opposition-ruled States have been Raising Strong Objections to Several Key Provisions of the NEP and the Manner in Which they are being Rolled out.

Fourth, the role of the private sector, particularly in dealing with the higher education system, is extremely critical for translating the inclusionary vision of the

NEP. It may be noted that as much as 70 percent of higher education institutions (colleges and universities) are run by the private sector. Significantly, roughly 65-70 percent students are currently enrolled in private higher education institutions. This apart, the private sector brings much needed financial resources and innovation. Therefore, it is imperative for the government and regulatory bodies to create workable institutional mechanisms that would harness the contribution of the private sector and recognise them as equal partner in the NEP process.

Finally, the successful execution of key initiatives requires availability of adequate financial resources for decades. In this regard, the NEP has stated that to realise the goals of the new policy, the country has to raise public spending on education to 6 percent of GDP. This is a daunting task if one considers the past promises and their actual realisation. For instance, the 1968 National Education policy had recommended 6 percent of GDP be allocated towards education. However, in all these decades, the public spending on education has not gone beyond 3 percent. Ironically, the union budget allocation for education in the NEP launching year has taken a dip. The education budget was reduced by 6 percent from INR 99,311 crore in 2020-21 to INR 93,224 crore in 2021-22. While this is understandable given the government's priorities are divided in the face of the COVID-19 pandemic and economic distress that large sections of populations are facing, there is no clear roadmap yet how such enormous sums of financial resources can be augmented.

The NEP has Stated that to Realise the Goals of the New Policy, the Country has to Raise Public Spending on Education to 6 Percent of GDP.

To sum up, the NEP 2020 is truly a pathbreaking document in every sense. The policy, amongst others, aims to address pedagogical issues, structural inequities, broadening of access apart from making the learners future ready while meeting the demands of a 21st century India. Simultaneously, the NEP has the most challenging task of addressing multiple crises in the education system. Its effective implementation is critical if India wants to reap the demographic dividends and capitalise the opportunities from a rapidly growing knowledge economy. Given its transformative potentials, the Centre has shown urgency and a sense of purpose by launching a series of initiatives in the recent months notwithstanding the challenges of the pandemic. A number of states have officially launched the policy and many others are in the process to do the same. Yet, there is a long road ahead of the NEP. Given its scale and the kind of complexity involved in its execution, particularly securing coordination and cooperation amongst diverse stakeholders at state, district, private sector amongst others, makes it a daunting exercise. Apart from this, one has to deal with weak state capacity, availability of financial

resources and, most importantly, the education ecosystem that acts as a drag on new ideas and innovation. Yet, the most critical challenge before NEP is building consensus and getting states to own the first omnibus programme after 1986. In short, the success of the NEP largely hinges on cooperative federalism and states taking ownership of the reforms.

Conclusion

In conclusion, the National Education Policy (NEP) presents both significant challenges and exciting opportunities for higher educational institutions. On one hand, the implementation of the NEP requires a comprehensive transformation of the existing educational framework, which poses several obstacles. These challenges include the need for substantial infrastructural upgrades, faculty development and training, curriculum revisions, and aligning administrative processes with the policy's objectives. Additionally, ensuring equal access to quality education for all sections of society, especially marginalized and economically disadvantaged communities, remains a critical challenge.

However, the NEP also brings forth numerous opportunities that can shape the future of higher education in India. The policy encourages multidisciplinary learning, promotes flexibility and choice in education, and emphasizes the development of critical thinking and problem-solving skills. These aspects have the potential to create a more holistic and inclusive learning environment, nurturing well-rounded individuals who are better prepared for the demands of the evolving job market.

Furthermore, the NEP emphasizes the integration of technology in education, fostering digital literacy and enabling access to quality education beyond traditional boundaries. This presents an opportunity for institutions to leverage digital platforms, open educational resources, and online collaborations to enhance the learning experience and reach a wider audience.

Collaboration and partnerships between educational institutions, industry, and the government are also crucial for the successful implementation of the NEP. These partnerships can facilitate the exchange of knowledge, resources, and expertise, leading to the development of innovative programs, research opportunities, and industry-relevant curriculum. They can also support the creation of robust mentorship and internship programs, bridging the gap between academia and industry requirements.

In conclusion, while the NEP presents challenges that need to be overcome, it also offers significant opportunities for higher educational institutions to create a more inclusive, dynamic, and relevant learning ecosystem. With careful planning, effective implementation strategies, and collective efforts from all stakeholders.

The NEP has the potential to transform higher education in India and equip students with the necessary skills and knowledge to thrive in a rapidly changing world.

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A STUDY ON THE HISTORY OF EDUCATION POLICIES IN INDIA

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Abstract:

India has a long and varied history of implementing educational policies at the local, state, and national levels. Over the centuries, the country has seen many changes and developments in its educational system, with the aim of providing access to quality education for all its citizens. The National Policy on Education (NPE) is a policy formulated by the Government of India to promote and regulate education in India. The policy covers elementary education to higher education in both rural and urban India. The first NPE was promulgated by the Government of India by Prime Minister Indira Gandhi in 1968, the second by Prime Minister Rajiv Gandhi in 1986, and the third by Prime Minister Narendra Modi in 2020.

Keywords: Education, Policy, NPE, NEP.

Introduction:

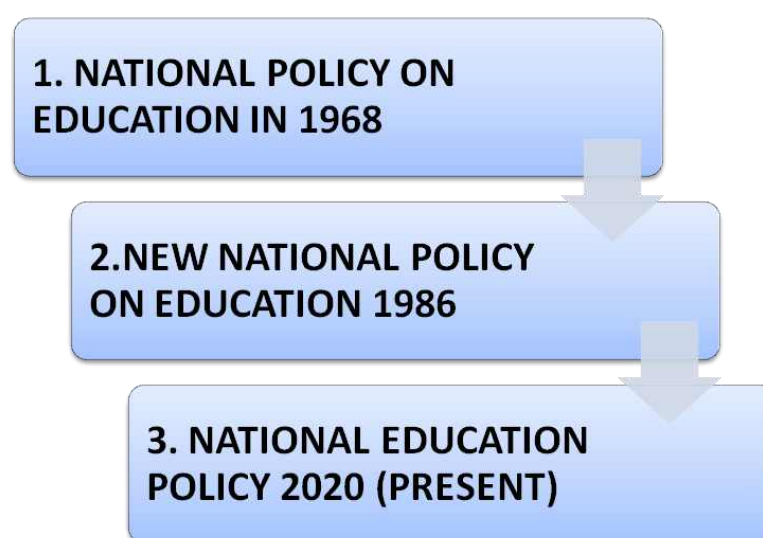
India has a long and varied history of implementing educational policies at the local, state, and national levels. Over the centuries, the country has seen many changes and developments in its educational system, with the aim of providing access to quality education for all its citizens. Education is one of the fundamental rights of any individual; it helps individuals to become responsible and productive members of the society. It fosters critical thinking, develops skills and knowledge, and makes a person more responsible towards the society as they contribute to the economy of the nation and participate fully in civic life. It plays a very crucial role in promoting personal and social development. It helps to build strong communities and a strong democracy, and it is essential for the ongoing and development of our world.

History of Education Policies in India:

The National Policy on Education (NPE) is a policy formulated by the Government of India to promote and regulate education in India. The policy covers elementary education to higher education in both rural and urban India. The first NPE was promulgated by the Government of India by Prime Minister Indira Gandhi in 1968, the second by Prime Minister Rajiv Gandhi in 1986, and the third by Prime Minister Narendra Modi in 2020.

Since the country's independence in 1947, the Indian government sponsored a variety of programmes to address the problems of illiteracy in both rural and urban

India. Maulana Abul Kalam Azad, India's first Minister of Education, envisaged strong central government control over education throughout the country, with a uniform educational system. The Union government established the University Education Commission (1948–1949), the Secondary Education Commission (1952–1953), University Grants Commission and the Kothari Commission (1964–66) to develop proposals to modernise India's education system. The Resolution on Scientific Policy was adopted by the government of Jawaharlal Nehru, India's first Prime Minister. The Nehru government sponsored the development of high-quality scientific education institutions such as the Indian Institutes of Technology. In 1961, the Union government formed the National Council of Educational Research and Training (NCERT) as an autonomous organisation that would advise both the Union and state governments on formulating and implementing education policies.



1. National Policy on Education in 1968

Based on the report and recommendations of the Kothari Commission (1964–1966), the government headed by Prime Minister Indira Gandhi announced the first National Policy on Education in 1968, which called for a "radical restructuring" and proposed equal educational opportunities in order to achieve national integration and greater cultural and economic development. The policy called for fulfilling compulsory education for all children up to the age of 14, as stipulated by the Constitution of India and specialized training and qualification of teachers. The policy called for a focus on the learning of regional languages, outlining the "three language formula" to be implemented in secondary education - the instruction of the English language, the official language of the state where the school was based, and Hindi. Language education was seen as essential to reduce the gulf between the intelligentsia and the masses. Although the decision to adopt Hindi as the national

language had proven controversial, the policy called for the use and learning of Hindi to be encouraged uniformly to promote a common language for all Indians. The policy also encouraged the teaching of the ancient Sanskrit language, which was considered an essential part of India's culture and heritage. The NPE of 1968 called for education spending to increase to six percent of the national income. As of 2013, the NPE 1968 has moved location on the national website.

2. New National Policy on Education 1986

In 1986, the government led by Rajiv Gandhi introduced a new National Policy on Education. The new policy called for "special emphasis on the removal of disparities and to equalise educational opportunity," especially for Indian women, Scheduled Tribes (ST) and the Scheduled Caste (SC) communities. To achieve such a social integration, the policy called for expanding scholarships, adult education, recruiting more teachers from the SCs, incentives for poor families to send their children to school regularly, development of new institutions and providing housing and services. The NPE called for a "child-centred approach" in primary education, and launched "Operation Blackboard" to improve primary schools nationwide. The policy expanded the open university system with the Indira Gandhi National Open University, which had been created in 1985. The policy also called for the creation of the "rural university" model, based on the philosophy of Mahatma Gandhi, to promote economic and social development at the grassroots level in rural India.^[7] 1986 education policy expected to spent 6% of GDP on education.

3. National Policy on Education (Modification) 1992

The 1986 National Policy on Education was modified in 1992 by the P. V. Narasimha Rao government. In 2005, Former Prime Minister Manmohan Singh adopted a new policy based on the "Common Minimum Programme" of his United Progressive Alliance (UPA) government. Programme of Action (PoA) 1992, under the National Policy on Education (NPE), 1986 envisaged to conduct of a common entrance examination on all India basis for admission to professional and technical programmes in the country. For admission to Engineering and Architecture/Planning programmes, Government of India vide Resolution dated 18 October 2001 has laid down a Three – Exam Scheme (JEE and AIEEE at the National Level and the State Level Engineering Entrance Examinations (SLEEE) for State Level Institutions – with an option to join AIEEE). This takes care of varying admission standards in these programmes and helps in maintenance of professional standards. This also solves problems of overlaps and reduces physical, mental and financial burden on students and their parents due to multiplicity of entrance examinations.

4. National Education Policy 2020 (Present)

In 2019, the then Ministry of Human Resource Development and now the Ministry of Education released a Draft New Education Policy 2019, which was followed by a number of public consultations. It discusses reducing curriculum content to enhance essential learning, critical thinking and more holistic experiential, discussion-based and analysis-based learning. It also talks about a revision of the curriculum and pedagogical structure from a 10+2 system to a 5+3+3+4 system design in an effort to optimise learning for students based on cognitive development of children. Research Methodology has been added in the last year of graduation course and student will have the choice to leave the course and receive the certificate/ degree according to that. On 29 July 2020, the cabinet approved a new National Education Policy with an aim to introduce several changes to the existing Indian education system, which will be introduced in India till 2026.

Conclusion:

The National Education Policy is a comprehensive set of guidelines and recommendations for the Indian education system. It aims to make education more inclusive, relevant, and engaging for all students, and to foster the development of critical thinking and problem-solving skills. By implementing these recommendations, the NEP aims to ensure that all students have the opportunity to receive a high-quality education and reach their full potential. In conclusion, the New Education Policy represents a major shift in the way education is delivered in India, and it has the potential to bring significant benefits to the education system. Though it has faced a lot of criticism from students as well as educators and learners who are in the mid of the course which will no longer be considered a degree (like an M.Phil). However, its success will depend on effective implementation and adequate resources, and it will require continued effort and commitment from the government, educators, and the wider community.

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OVERVIEW ON NEW EDUCATION POLICY 2020 ON MODERN EDUCATION DIGITAL INNOVATION

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Abstract:

A nation's formation depends heavily on education. The nation's destiny and the well-being of its citizens are determined by education. Regarding the extension and expansion of the nation and its cosmopolitan, the effect will be long-lasting on one. In the modern society, education plays a crucial role and is extremely important. India's higher education is already being impacted by international trends and conditions. Over the past few years, India has drawn many international students, including NRIs, who enroll in a variety of academic, tutoring, and professional programmes. Additionally, a lot of overseas universities give students the option to complete their degrees without leaving India. One of the key factors influencing public space travel in India has always been the question of higher education. of course, a decent education paves the way for a fulfilling profession. Future students would be most likely to choose degrees that lead to work prospects. Concerns regarding the standard and accessibility of higher education are shared by all of us. In India, there has been a lot of interest in the use of digital technologies in all areas of higher education. This in turn aids in upskilling instructors across the nation and improving the quality and accessibility of higher education for a large number of students. In this common situation, NEP 2020 is introduced to give the Indian educational system a boost and advance it.

Keywords: Indian higher Education, NEP 2020, Digital technologies

Introduction

The National Policy on Education (NPE) is a policy developed by the Government of India to promote education among Indians. The new education policy is making significant changes to the current system, most notably: universities and colleges mixed in different sectors, with or without one district; revision of student curriculum, pedagogy, assessment, and support for advanced student knowledge; establishing a National Research Institute to support peer-reviewed work by peers; and successful investment courses at universities and colleges. The main issues confronting the Indian higher education system are enforced qualification separation, early specialisation and student streaming into restricted research areas, a lack of focus on research at most universities and schools, and a lack of competitive peer-reviewed academic research funding and large affiliated

universities, all of which lead to low levels of undergraduate education. Holistic and multidisciplinary education should try to strengthen all human capacities - mental, cultural, social, physical, emotional, and moral. In the long run, such a comprehensive education should be the standard for all undergraduate programmes, including those in medical, technical, and vocational fields. Optimal learning environments and student assistance provide a comprehensive strategy that includes a sufficient curriculum, engaged pedagogy, consistent formative assessment, and enough student support

1. Objective of the Study

The main purpose of this study was to examine the “Digital inventiveness of new education policy 2020 on higher education”.

2. Research Methodology

This research is a descriptive study. The required secondary data was collected from various sources like websites including Government of India, magazines, journals, other publications, etc. To get at the inferences and conclusions, this data was analyzed and examined.

2.1 Higher Education Changes in NEP 2020

When emphasis is placed on the foundation or roots, it leads to enhanced growth, but at the same time, a higher structure plays an important role because it leads one to a certain understanding. As a result, when it comes to pursuing higher education, one is frequently tormented by different elements such as social and peer pressure, perplexity about subject choices, and a desire for higher-paying employment and admission to reputable universities. Students are often lagging behind in terms of percentage and knowledge. So here, NEP comes up with a few changes that break these ideas and allow students to grow

1. Creating a Multi-Disciplinary Universities and Colleges System

It is critical to break down stereotypes and prevent unpleasant behaviours such as ragging in universities and colleges. Because these are educational shrines where all students must be treated fairly with an equal distribution of possibilities.

2. Heading Towards a Liberal Undergraduate Education

It is past time to take a broader look at education. It does not have to be limited to a specific subject such as science, commerce, or the like.

3. Encouraging

Faculty and Institutional Autonomy: The NEP would like to make institutions and staff independent so that they can develop a sense of responsibility, creativity, and regulation in their work.

4. Formation of a National Research Foundation (NRF)

The NRF's major goal is to give financing for research proposals to all institutions in India.

5. Reformed Regulatory System

Some measures are the same as in past policies, but this time more emphasis will be placed on execution, and anyone who does not follow the standards established under the NEP may face severe consequences

Digital Education:

Digital education is the introduction of the use of modern technology and digital tools to assist in the development of teaching and learning. TEL, digital reading, and elearning are other terms for Technology-Enhanced Learning (TEL). Digital education is the future of education through digital technology and gadgets.

Digital Strategies

The digital revolution is causing significant changes in the higher education sector. To promote digital education, each institution takes a different approach. The MHRD has undertaken unique programmes such as SWAYAM (India's own MOOCs), SwayamPrabha, the National Digital Library (6.5 million volumes), and the National Academic Depository. New Online Education Regulations have been introduced by UGC and regulations have also been adopted for the same. Online education technology and all digital projects are, in the near future, capable of revolutionising the higher education situation. In order to raise the GRE from 24.5 to 30 by 2020, and in order for the quality of education to be enhanced, high-quality education opportunities would have to be expanded to an extensive extent. The use of technology in higher education through online education is also essential because of the following factors.

1. Study Webs of Active Learning for Young Aspiring Minds (SWAYAM)

Swayam is an indigenous IT Massive Open Online Courses (MOOCs) platform to provide the highest quality education that can be obtained by anyone who is using the IT scheme at anytime and anywhere. SWAYAM would allow learners in any portion of the country to attend courses provided by the country's finest educators, thus making it possible for everyone to have access to a first-class education.

2. Swayam Prabha:

The 32 Educational DTH Channels: SWAYAM PRABHA developed 32 DTH channels on 24x7 platforms as a stepping stone for quality teaching programs.

There will be new features for at least four hours a day that will be updated six times a day, allowing the participant to choose his or her leisure time.

3. National Digital Library (NDL)

MHRD has approved an IIT project in Kharagpur under NMEICT entitled “Development of India’s National Digital Library, Towards National Assets.” The National Digital Library in India aims to collect, preserve, and disseminate our country’s complete educational production and to provide internet connectivity from college to graduate level, including technical education. More than 72 digital lakh jokes are accessible through the NDL. The content covers almost all of the key educational disciplines as well as all of the student’s critical focus, from the academic phase to the largest educational phase, including full-time students.

4. National Academic Depository

The National Academic Depository (NAD) is the Department of Human Resource Development (MHRD) that assists in the digitalization, retention, access, and monitoring of academic awards by educational institutions. NAD is a unique, innovative, and ongoing programme under the theme “Digital India” to achieve the digital potential of educational records. This affects the lives of Indian youth and empowers them with digital, online, trusted, and certified certificates that are always securely accessible. NAD pledges to eliminate difficulties and inefficiencies in the collection, storage, and presentation of visual documents.

5. Campus Connectivity

NMEICT provided the establishment of 1 GBPS university access and 20 512 Kbps broadband access to schools. A maximum of 600 universities have been linked via 1 Gbps of optical fiber; 22026 universities have been linked at 10 Mbps of bandwidth so far. Wi-Fi facilities have been set up by all IITs, IIMs and NITs. At central universities, the method of building the optical fibre and providing Wi-Fi is presently ongoing.

6. Talk to a Teacher

Talk to a Teacher created by IIT Bombay, is an effort of the National Education Mission through ICT, financed by MHRD to provide unlimited entry to a few chosen graduate and postgraduate classes conducted by renowned professor representatives and researchers at IIT Bombay. It utilizes Amrita University’s A-View cooperation tool to provide the professors with virtual classrooms across the nation. These classes are completely accessible at low bandwidth on a personal computer or laptop with a headphone jack and an internet connection. It is not necessary to register because it has no evaluation or certification method. To date, under this initiative, more than 80,000 professors have been trained, comprising a synchronous distribution of IIT Mumbai and IIT Kharagpur classes

7. The Free and Open Source Software for Education (FOSSEE)

It encourages the use of Floss instruments to enhance educational performance. The IIT-sanctioned FOSSEE scheme promotes the use of open source software in academic organisations (<http://fossee.in>). To guarantee that commercial software is substituted by similar FLOSS instruments, the FLOSS instruments are used in multiple operations.

8. Spoken Tutorial

The Spoken Tutorial Project is the “Talk to Teacher” initiative of the National ICT Education Mission launched by MHRD, India. Spoken Tutorial is a multiaward-winning educational content portal. Here you can learn about a variety of Free and Open Source software on your own. This project is being developed at IIT Bombay. (K., 2021)

Conclusion

The NEP provides comforting provisions for participatory monitoring and review frameworks and real-time evaluation tools. This would enable the educational system to continuously develop itself rather than expecting a new education strategy every ten years to reflect changes in the curriculum. This in and of itself will be a major accomplishment. The New Education Policy 2020 shows that school is much more than just cramming for exams, keeping up with deadlines, and obtaining good grades; the real goal of education is to gain information, skills, and values while advancing in a profession where one finds their own passions. There is little doubt that if the entire strategy is implemented effectively, it can advance Indian education. Even though some of their goals are unclear, we can't properly evaluate them until their documented plans are put into practise. We can only anticipate the finest outcomes. It was constructed in honour of the pupils' complete development and pleasure.

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WOMEN EMPOWERMENT THROUGH THE NATIONAL EDUCATION POLICY

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Abstract

National Education Policy (NEP) in promoting women's empowerment through education. The NEP, as a comprehensive framework for educational reform, holds significant potential for advancing gender equality and inclusivity. By emphasizing equitable education access, multidisciplinary curricula, vocational training, safe learning environments, higher education opportunities, and digital literacy, the NEP addresses key barriers to women's empowerment. Through these provisions, it facilitates women's participation in various fields and leadership roles, fostering a more balanced and progressive society. The NEP's impact on women's empowerment underscores its importance as a catalyst for social change and gender parity.

Keywords: *National Education Policy, empowerment, Women.*

Introduction

Women empowerment is a crucial aspect of societal development, and education plays a pivotal role in achieving this goal. The National Education Policy (NEP) of a country serves as a roadmap for its educational landscape, aiming to bring about comprehensive reforms. In the context of women empowerment, the NEP becomes a powerful tool to address gender disparities, promote equality, and enhance opportunities for women's education and participation in various fields. This article explores how the National Education Policy can contribute to women's empowerment.

Inclusive and Equitable Education

The NEP emphasizes the importance of providing equitable and inclusive education for all, regardless of gender. This shift ensures that girls and women have equal access to educational opportunities. By eliminating gender-based barriers to education, the policy creates an environment that fosters women's empowerment from an early age. It encourages girls to pursue education and higher studies, thus breaking the cycle of gender inequality.

Curricular Reforms

The NEP emphasizes a multidisciplinary and holistic approach to education. This approach encourages students to explore various subjects and fields, irrespective of

traditional gender roles. With a diverse and inclusive curriculum, girls are exposed to a broader range of career options beyond the stereotypical choices. This can lead to more women venturing into fields such as science, technology, engineering, and mathematics (STEM), which have traditionally been male-dominated.

Skill Development and Vocational Education

The NEP underscores the significance of skill development and vocational education. By integrating vocational courses into the mainstream curriculum, the policy equips women with practical skills that enhance their employability. This enables women to enter the workforce with confidence, contributing to their economic independence and empowerment.

Gender-Sensitive Environment

The NEP promotes the creation of a gender-sensitive and safe learning environment. This involves addressing issues like sexual harassment, bullying, and discrimination that can hinder girls' education. By ensuring a conducive atmosphere, the policy encourages girls to stay in school and pursue their studies without fear, thus bolstering their overall empowerment.

Higher Education and Leadership Opportunities

The NEP recognizes the need for increasing women's participation in higher education and leadership roles. The policy encourages the establishment of women's hostels, scholarship programs, and mentoring initiatives to support women pursuing advanced studies. By providing them with these resources, the policy paves the way for women to excel in various fields, from academia to governance.

Digital Literacy

In the digital age, digital literacy is paramount. The NEP acknowledges this by promoting digital literacy and technology integration in education. By ensuring that girls and women are adept at using technology, the policy enables them to access information, acquire skills, and engage in online platforms, opening up new avenues for empowerment.

Nep Can Contribute to Women's Empowerment in India: Equitable Access to Education:

The NEP emphasizes providing equal access to quality education for all, regardless of gender or socioeconomic background. By ensuring that girls have the same opportunities as boys to attend school, the NEP aims to eliminate barriers that have historically hindered girls' education.

Gender-Sensitive Curriculum:

The NEP encourages the development of a gender-sensitive curriculum that challenges traditional stereotypes and promotes gender equality. This can help in breaking down societal norms that limit girls' aspirations and broaden their perspectives.

Vocational Training and Skill Development:

The NEP recognizes the importance of vocational education and skill development. This can empower women by equipping them with practical skills that enhance their employability and enable them to contribute effectively to the workforce.

Higher Education and Research:

The NEP emphasizes promoting research and innovation in higher education. This can create opportunities for women to excel in various fields, from science and technology to social sciences and humanities, thereby breaking barriers and shattering the glass ceiling.

Digital Literacy:

The NEP acknowledges the role of digital literacy in modern education. By ensuring that girls and women are digitally literate, the policy enables them to access information, communicate, and participate in the digital economy on an equal footing.

Safe and Inclusive Learning Environments:

The NEP aims to create safe and inclusive learning environments that are free from discrimination and harassment. This can encourage more girls to attend and remain in school, thus promoting their educational and overall empowerment.

Teacher Training:

The NEP emphasizes the training of teachers to create gender-sensitive classrooms and to address unconscious biases. Teachers play a crucial role in shaping students' perceptions and attitudes, and gender-sensitive teaching practices can contribute to changing mindsets.

Flexible Learning Pathways:

The NEP recognizes the need for flexible learning pathways, which can be particularly beneficial for women who might have familial responsibilities. Flexible education options can enable women to balance their education with other commitments.

Empowerment Through Role Models:

The NEP's emphasis on diversity and representation in curricula and educational materials can introduce girls to a range of successful women role models, inspiring them to aim high and pursue their dreams.

Parent and Community Engagement:

The NEP encourages active engagement of parents and communities in the education process. This can help in shifting societal attitudes towards girls' education and encouraging families to invest equally in their daughters' education.

Conclusion

The National Education Policy serves as a catalyst for women empowerment by advocating for gender equality in education. Through inclusive and equitable practices, curriculum reforms, skill development, gender-sensitive environments, higher education opportunities, and digital literacy, the NEP contributes to breaking down gender barriers and fostering women's empowerment at all levels. As countries implement and adapt the NEP, they move closer to achieving a society where women are educated, empowered, and able to contribute significantly to various sectors. However, successful implementation will require concerted efforts, collaboration, and sustained commitment from all stakeholders.

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IMPLEMENTATION OF NEW EDUCATION POLICY ON THE HIGHER EDUCATION AND ITS OPPORTUNITIES

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Abstract

A holistic and multidisciplinary education would attempt to integrate the development of all human capacities - intellectual, aesthetic, social, physical, emotional, and moral. In the long run, such a comprehensive education will be the approach of all undergraduate programmes, including those in professional, technical, and vocational fields. Even engineering schools, such as IITs, will shift toward more holistic and multidisciplinary education that includes more arts and humanities. Students of the arts and humanities will strive to learn more science, and all will strive to include more vocational topics and soft skills. This paper will cover all the opportunities that can be achieved through the New Education Policy 2020. This paper also contains the highlights of the policy. Curricular structures that are imaginative and adaptable will allow for creative combinations of subjects to be studied, as well as many entry and departure points. The aim is to comprise all the good aspects of the policy which will be very beneficial for the upcoming generation education practices. The paper also holds the educational preparation of the teaching fraternity to look beyond the ancient method of teaching and need to be prepared for the forthcoming generation teaching methods.

Keywords: *New Education Policy, Holistic development, Multidisciplinary education, Higher education, Opportunities in NEP.*

Introduction:

The National Policy on Education (NPE) is a policy formulated by the Government of India to promote education amongst India's people. The policy covers elementary education to colleges in both rural and urban India. The first NPE was promulgated by the Government of India by Prime Minister Indira Gandhi in 1968, the second by Prime Minister Rajiv Gandhi in 1986, and the third by Prime Minister Narendra Modi in 2020.

The National Education Policy 2020 (NEP 2020), which was approved by the Union Cabinet of India on 29 July 2020, outlines the vision of India's new education system. The new policy replaces the previous National Policy on Education, 1986.

The policy is a comprehensive framework for elementary education to higher education as well as vocational training in both rural and urban India.

The policy aims to transform India's education system by 2021. The language policy in NEP is a broad guideline and advisory in nature; and it is up to the states, institutions, and schools to decide on the implementation. The NEP 2020 enacts numerous changes in India's education policy. It aims to increase state expenditure on education from around 4% to 6% of the GDP as soon as possible.

Holistic and multidisciplinary education should strive in an integrated way to improve all human capacities-mental, cultural, social, physical, emotional, and moral. In the long term, such a comprehensive education shall be the method for all undergraduate programs, including those in medical, technical, and vocational disciplines. Optimal learning environments and support for students offer a holistic approach including adequate curriculum, interactive pedagogy, consistent formative assessment, and adequate support for students.

Objectives of the Study:-

- The primary objective of this research is to study the impact of New Education Policy 2020 on higher education.
- The study also outlines the salient features of NEP and analyses how they affect the existing education system.

Research Methodology

Research methodology this research is a descriptive study .The necessary secondary

Data was collected from various websites including those of Government of India, magazines, journals, other publications, etc. This data was then analyzed and reviewed to arrive at the inferences and conclusions.

Scope of the Study

The study will be beneficial for the institution's curriculum and pedagogy must foster a strong feeling of respect for fundamental duties and Constitutional principles, a sense of belonging to one's country, and a conscious understanding of one's tasks and responsibilities in a changing world. The scope is to make available advance knowledge, skills, beliefs, and dispositions that enable responsible commitment to human rights, sustainable development and living, and global well-being, reflecting a genuinely global citizen.

Future Pathway and Implementation Challenges

A successful example of accreditation is the Dubai Schools Inspection Bureau (DISB). The DISB engages school assessors from all over the globe to evaluate their schools. As a result, Dubai's schools have a culture of transparency and

accountability, which has helped improve the overall quality of education in the country.

In India the process of accreditation is being operationalised in accordance with the NEP 2020. The formation of SSSA bodies should help guarantee the maintenance of minimum quality standards based on predetermined parameters. Furthermore, the policy emphasizes transparency by making all fundamental regulatory information available on a public platform.

None the less, it is important for us to keep a few potential challenges in mind:

- **Resources:** While accreditation will shed light on the areas where schools need support, will each state be able to provide its schools the resources (both monetary and otherwise) that they need to improve their infrastructure, curriculum, teacher quality, teacher recruitment, etc.?
- **Accessibility:** While the NEP 2020 asks for all accreditation information to be made publicly available, we need to ensure that this is done in a way that will allow community members (especially parents) to understand and engage with it.
- **Potential for Uptake:** Schools themselves need to be coached to understand the importance of the accreditation process, what data they need to collect and the importance of data transparency, and how they communicate their gaps to their communities.

Today, states are gearing up for the process of accreditation. And while they are faced with real concerns, the expectation is that each state will embrace the process and use it to improve the overall quality of its schools.

Salient Features of Nep Related to Higher Education

The new NEP has been introduced with an aim to formalize changes in the system from school level to college/university level. Keeping in mind the developing scenario, education content henceforth, will focus on key-concepts, ideas, applications and problem-solving angles. The National Education Policy is expected to bring positive and long-lasting impact on the higher education system of the country. The fact that foreign universities will be allowed to open campuses in India is a commendable initiative by the government. This will help the students experience the global quality of education in their very own country. The policy of introducing multi-disciplinary institutes will lead to a renewed focus on every field such as arts, humanities and this form of education will help students to learn and grow holistically. Thus, students will be equipped with stronger knowledge base.

The introduction of single common entrance test is another positive step which will reduce the stress of multiple competitive exams and ease off the pressure of preparing for so many of them. It will also ensure a level playing ground for all

student applicants going forward. Establishing Academic Bank of Credit (ABC) is definitely a robust idea to store the academic credits that students earn by taking courses from various recognized higher education institutions. A student can earn scores by completing a course and these will be credited to the ABC account. One can then transfer these credits if he/she decides to switch colleges. If a student ever drops out for some reasons, these credits will remain intact which means he/she can come back years later and pick up from where the student had left.

The new higher education regulatory structure will ensure that distinct administrative, accreditation, financing, and academic standard-setting roles are performed by separate, autonomous, and empowered bodies. These four structures will be established as four independent verticals within a single umbrella institution, India's Higher Education Commission (HECI). There are a lot of reforms and new developments which have been introduced by NEP in the higher education sector. Some of the salient features are:

- **Single Regulatory Body for Higher Education:** The NEP aims to establish Higher Education Commission of India which will be the single regulatory body except for legal and medical education.
- **Multiple Entry and Exit Programme:** There will be multiple entry and exit options for those who wish to leave the course in the middle. Their credits will be transferred through Academic Bank of Credits.
- **Tech- Based Option for Adult Learning Through Apps, TV Channels:** Quality technology-based options for adult learning such as apps, online courses/modules, satellite-based TV channels, online books, and ICT-equipped libraries and Adult Education Centres, etc. will be developed.
- **E-courses to be Available in Regional Languages:** Technology will be part of education planning, teaching, learning, assessment, teacher, school, and student training. The e-content to be available in regional languages, starting with 8 major languages – Kannada, Odia, Bengali among others to join the e-courses available in Hindi and English.
- **Foreign Universities to Set-up Campuses in India:**
World's top 100 foreign universities will be facilitated to operate in India through a new law. According to the HRD Ministry document, "such (foreign) universities will be given special dispensation regarding regulatory, governance, and content norms on par with other

The Structure and Lengths of Degree Programmes:

In the context of the National Education Policy 2020 scheme, any undergraduate degree in any institution will be of duration of three or four years. One can leave the degree within this period. Any educational institution will have to give to the

student a diploma degree after the student completes two years of study, a degree after the student completes three years of study and a certificate to those students who complete one year of study in any professional or vocational course of their choice. The Government of India will also help in establishing an Academic Bank of Credit for storing the academic scores digitally. This will enable the institutions to count the credit at the end and put it in the degree of the student. This will be helpful for those individuals who might have to leave the course mid-way. They can start the course later on from where they left off and not start from the beginning once again. Even though NEP 2020 says that Higher education institutions will be given the freedom to start PG courses there may be some difficulty in designing One Year PG Degree for students who have completed 4 Year UG Degree and a Two Year PG Degree for students who have completed 3 Year UG Degree.

Conclusion:

The policy introduces a whole gamut of changes and reads largely as a very progressive document, with a firm grasp on the current socio-economic landscape and the prospect of future uncertainty. Education for a new generation of learners has to essentially engage with the increasing dematerialization and digitalization of economies, which requires a completely new set of capabilities in order to be able to keep up. This seems to be an even more vital perquisite now, with the trend towards digitalization and disruptive automation being quickened by the pandemic. Overall, the NEP 2020 addresses the need to develop professionals in a variety of fields ranging from Agriculture to Artificial Intelligence. India needs to be ready for the future. And the NEP 2020 paves the way ahead for many young aspiring students to be equipped with the right skill set.

The new education policy has a laudable vision, but its strength will depend on whether it is able to effectively integrate with the other policy initiatives of government like Digital India, Skill India and the New Industrial Policy to name a few, in order to effect a coherent structural transformation. Hence, policy linkages can ensure that education policy addresses to and learns from Skill India's experience in engaging more dynamically with the corporate sector to shape vocational education curriculum in order to make it a success. There is also a necessity for more evidence-based decision-making, to adapt to rapidly evolving transmutations and disruptions. NEP has reassuringly provisioned for real-time evaluation systems and a consultative monitoring and review framework. This shall empower the education system to constantly reform itself, instead of expecting for a new education policy every decade for a shift in curriculum. This, in itself, will be a remarkable achievement. The NEP 2020 is a defining moment for higher education. Effective and time-bound implementation is what will make it truly path-breaking.

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ROLE OF NEP 2020 IN TRANSFORMING HIGHER EDUCATION IN INDIA

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Abstract:

Well defined and futuristic education policy is essential for a country at school and college levels due to the reason that education leads to economic and social progress. India with the leadership of its current prime minister and an expert team with members of varied backgrounds has developed and planned to implement a new education policy during the next decade of the 21st century called Indian National Education Policy (NEP-2020). The aim, objectives, and details are well known to practitioners and the public. NEP-2020 is an innovative and futuristic proposal with both positive and negative aspects, framed with the objective to provide a quality school education and higher education to everyone with an expectation of holistic & research-oriented progress. This paper initially depicts an overview of NEP-2020, distinguish the strengths & weakness of the policy at higher education & research part, evaluation of the implementation suggestions given in the policy, identifying and analyzing possible generic strategies for implementation of NEP-2020 to fulfill its objectives based on focus group discussions. The paper also includes many predictive proposals on issues like developing quality universities & colleges, institutional restructuring & consolidation, more holistic & multidisciplinary education, optimal learning environment & student support, transforming the regulatory system of higher education, technology usage & integration, and online & digital education. Finally, some recommendations are made to implement the NEP2020 effectively irrespective of various constraints. This article can be considered as a reference to the policy implementation teams of Government of India.

Keywords: NEP 2020, , features of NEP, vision of NEP Indian Higher Education Policy, Implementation Strategies, Indian Higher Education System,

Introduction

Education is fundamental for achieving full human potential, developing an equitable and just society, and promoting national development. It is becoming increasingly critical that children not only learn, but more importantly learn how to learn. The curriculum must include basic arts, crafts, humanities, games, sports and fitness, languages, literature, culture, and values, in addition to science and mathematics, to develop all aspects and capabilities of learners; and make education more well-rounded, useful, and fulfilling to the learner. The gap between the current state of learning outcomes and what is required must be bridged through undertaking major reforms that bring the highest quality, equity, and integrity into the system, from early childhood care and education through higher education. This

National Education Policy 2020 is the first education policy of the 21st century and aims to address the many growing developmental imperatives of our country.

To implement the educational policy successfully, the stakeholders must know it. If the stakeholders have complete knowledge of it, then only there is enhance in quality education. The world is undergoing rapid changes in the knowledge landscape. With various dramatic scientific and technological advances, such as the rise of big data, machine learning, and artificial intelligence, many unskilled jobs worldwide may be taken over by machines, while the need for a skilled workforce, particularly involving mathematics, computer science, and data science, in conjunction with multidisciplinary abilities across the sciences, social sciences, and humanities, will be increasingly in greater demand

Further, the New Education Policy introduces the mandatory years of schooling of children from age 6-14 years, and three years of pre-schooling of age group 3-6 years. In simple words, the new system has introduced 12 years of mandatory schooling for children with three years of pre-schooling/ Anganwadi.

The world is undergoing rapid changes in the knowledge landscape. With various dramatic scientific and technological advances, such as the rise of big data, machine learning, and artificial intelligence, many unskilled jobs worldwide may be taken over by machines, while the need for a skilled workforce, particularly involving mathematics, computer science, and data science, in conjunction with multidisciplinary abilities across the sciences, social sciences, and humanities, will be increasingly in greater demand. With climate change, increasing pollution, and depleting natural resources, there will be a sizeable shift in how we meet the world's energy, water, food, and sanitation needs, again resulting in the need for new skilled labour, particularly in bio...

The teacher must be at the centre of the fundamental reforms in the education system. The new education policy must help re-establish teachers, at all levels, as the most respected and essential members of our society, because they truly shape our next generation of citizens. It must do everything to empower teachers and help them to do their job as effectively as possible. The new education policy must help recruit the very best and brightest to enter the teaching profession at all levels, by ensuring livelihood, respect, dignity, and autonomy, while also instilling in the system basic methods of quality control and accountability.

Objective

- To understand the opinion about New Education Policy (NEP) for teaching fraternity.
- To know the features of new Education Policy
- To study the vision of new educational policy.

Principles of This Policy (NEP 2020)

The purpose of the education system is to develop good human beings capable of rational thought and action, possessing compassion and empathy, courage and resilience, scientific temper and creative imagination, with sound ethical moorings and values. It aims at producing engaged, productive, and contributing citizens for building an equitable, inclusive, and plural society as envisaged by our Constitution.

A good education institution is one in which every student feels welcomed and cared for, where a safe and stimulating learning environment exists, where a wide range of learning experiences are offered, and where good physical infrastructure and appropriate resources conducive to learning are available to all students. ...

The Vision of this Policy (NEP 2020)

This National Education Policy (NEP 2020) envisions an education system rooted in Indian ethos that contributes directly to transforming India, that is Bharat, sustainably into an equitable and vibrant knowledge society, by providing high-quality education to all, and thereby making India a global knowledge superpower. The Policy envisages that the curriculum and pedagogy of our institutions must develop among the students a deep sense of respect towards the Fundamental Duties and Constitutional values, bonding with one's country, and a conscious awareness of one's roles and responsibilities in a changing world. The vision of the Policy is to instill among the learners a deep-rooted pride in being Indian, not only in thou...

Features:

- **Technology in Education**

An autonomous body, the National Educational Technology Forum (NETF), will be created to provide a platform for the free exchange of ideas on the use of technology to enhance learning, assessment, planning, administration. Appropriate integration of technology into all levels of education will be done to improve classroom processes, support teacher professional development, enhance educational access for disadvantaged groups and streamline educational planning, administration and management

- **Mentoring Mission**

A National Mission for Mentoring will be established, with a large pool of senior/retired faculty – including those with the ability to teach in Indian languages – which would be willing to provide short and long-term mentoring/professional support to university/college teachers.

- **Teacher Education**

A new and comprehensive National Curriculum Framework for Teacher Education, NCFTE 2021, will be formulated by the NCTE in consultation with NCERT. By 2030, the minimum degree qualification for teaching will be a 4-year integrated B.Ed. degree. Stringent action will be taken against substandard stand-alone Teacher Education Institutions (TEIs).

- **Online Education and Digital Education**

A comprehensive set of recommendations for promoting online education consequent to the recent rise in epidemics and pandemics in order to ensure preparedness with alternative modes of quality education whenever and wherever traditional and in-person modes of education are not possible, has been covered. A dedicated unit for the purpose of orchestrating the building of digital infrastructure, digital content and capacity building will be created in the MHRD to look after the e-education needs of both school and higher education.

- **Professional Education**

All professional education will be an integral part of the higher education system. Stand-alone technical universities, health science universities, legal and agricultural universities etc will aim to become multi-disciplinary institutions.

- **Rationalized Institutional Architecture**

Higher education institutions will be transformed into large, well resourced, vibrant multidisciplinary institutions providing high quality teaching, research, and community engagement. The definition of university will allow a spectrum of institutions that range from Research-intensive Universities to Teaching-intensive Universities and Autonomous degree-granting Colleges.

Affiliation of colleges is to be phased out in 15 years and a stage-wise mechanism is to be established for granting graded autonomy to colleges. Over a period of time, it is envisaged that every college would develop into either an Autonomous degree-granting College, or a constituent college of a university.

- **Motivated, Energized, and Capable Faculty**

NEP makes recommendations for motivating, energizing, and building capacity of faculty through clearly defined, independent, transparent recruitment, freedom to design curricula/pedagogy, incentivizing excellence, movement into institutional leadership. Faculty not delivering on basic norms will be held accountable

- **Equitable and Inclusive Education**

NEP 2020 aims to ensure that no child loses any opportunity to learn and excel because of the circumstances of birth or background. Special emphasis will be given on socially and Economically Disadvantaged Groups (SEDGs) which include gender, socio-cultural, and geographical identities and disabilities

Conclusion

India is geared up to implement the guidelines of National Education Policy 2020 throughout the country to reform and make radical changes in school education and higher education with an objective of creating a new education system which should empower the youngsters and boost their confidence to create new knowledge, new skills, along with human values to solve current and future problems and challenges of the civilized society by means of their enhanced innovative ability and tech-savviness. It is known that technology which is an application of scientific thinking has the capabilities to improve the quality of life of everyone in this universe and quality education is the foundation for it. With the objective of providing value based, knowledge based, and skill based higher education for everyone in the country, the new education policy has many intrinsic propositions to improve the quality of school and higher education to creating interest in their chosen area to find challenges and converting them into opportunities by discovering innovative solutions to make life comfortable and successful with expected happiness. The quality higher education has the objective of developing human beings who are responsible for creating better society by means of improved human value-based discipline, and respecting each other for growth and prosperity. Quality higher education also makes everyone to contribute to discovering new technology, adopting new technology, or promoting new technology which can contribute to the progress of society. It is expected that the new education policy which is research focused, will accelerate the attainment of the above objectives and makes every stakeholder as innovator.

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THEORETICAL ANALYSIS ON NEW EDUCATION POLICY OF INDIA 2020

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Abstract

In this contingency plan, education is essential and crucial. As a result, the National Education Policy 2020 has been changed into the foundation of this reform, which might aid in the development of a new educational system in the nation as well as the improvement of those economic and social indices. That still requires improvement. Transforming our current educational system is the main goal of the New Education Policy 2023. It's a ground-breaking strategy that attempts to integrate contemporary instructional techniques, harness the power of technology, and encourage learning based on competencies that are beneficial. Through independent colleges and interdisciplinary universities, NEP 2020 offers top-notch higher education. In this research, we have critically analyzed the policy and suggested modifications to facilitate a smooth transition between it and its predecessor as well as to increase its significance. The examination of the NEP 2020 regulations and management practices at the university level is included in the current article. For the development and implementation of NEPs at the national and HEI (Higher Education) levels, recommendations are provided.

Keywords: *National Education Policy, Indian Education, Teacher Training, HEIs*

1. Introduction

The enduring and unchanging law of the cosmos is change. In this case, it changes constantly. The process of change affects every civilization equally. The nature of society is social change. This also applies to Indian society. Numerous social, economic, political, and other changes have occurred between the prehistoric age and the present, according to research into the history of Indian society. Two primary forms of change exist. One category includes changes brought about by nature, while the others are brought about by people. We have no influence over a change in the natural world. However, one seeks to innovate through bringing about improvements in daily life and society via human transformation. Currently, the education policy should be addressed first if there is to be any change in the growth of a society. The state of education in any nation demonstrates the importance of education to that nation's government and the extent of its involvement.

It was anticipated that the government and the entire system would take some decisive action to rectify the issue after India lagged behind in the rankings of higher quality institutions across the world in recent years. After 34 years, the Indian

government decided to reform the country's education policy while keeping in mind the overall goal of national development. A committee headed by Dr. K.K. Kasturirangan was established by the Central Government in 2017 to develop a new education policy. The group produced the 2019 National Education Policy. The National Education Policy 2020 was adopted by the Central Government of India in July 2020. The Prime Minister Shri Narendra Modi tweeted about this permission, and the Human Resource Development Minister "Shri Ramesh Pokhriyal Nishak" briefed the public in a news conference. It was also made clear that "Ministry of Education" has replaced "Ministry of Human Resource Development." The Ministry of Human Resource Development was renamed earlier in 1985 from Ministry of Education. After the implementation of a new education strategy in 2020, the Ministry of Human Resource Development's name was once more changed to the Ministry of Education.

The first education policy was implemented in 1968 by the administration of Mrs. Indira Gandhi, a former prime minister. The Rajiv Gandhi administration created the second education policy in 1986, while the Narasimha Rao administration made a few minor adjustments in 1992. The National Education Policy 2020 is the third education policy that independent India has established. As a result, a 34-year-old education policy that is now in place is losing effectiveness due to the shifting circumstances. For this reason, the Ministry of Human Resource Development created a new education policy in 2019 and solicited feedback from the general population.

Why Do Pre-Education Policies Need to Change?

- In light of the shifting global environment, adjustments to the present educational system were required to meet the demands of a knowledge-based economy.
- New education to improve instruction quality and foster research and innovation.
- In order to guarantee worldwide access to the Indian educational system, in education policy.

2. What Comprises New Education Policy in India?

By 2030, the educational system must be modified in accordance with the new education strategy of 2020. In place of the present 10 + 2 model, the curriculum will be split according to the educational system of 5 + 3 + 3 + 4. According to the new Education Policy 2020, Central and State Governments must spend in the education sector at a rate that is equivalent to 6% of the nation's GDP to foster collaboration in the field of education.

"We have tried to build a plan that will change the educational environment as we presently see it in order to better prepare the youth for the challenges of the present and the future. Every participant in the voyage has adopted a personal approach, and collectively, we have sought to address many facets of the larger educational landscape of our nation. The fundamental principles of this strategy include accessibility, capability, quality, affordability, and accountability. We have taken this subject from early childhood through higher education, embracing other sectors that are tied to the larger environment as well. (K. Kasturiranjana, committee chairman).

New Education Policy 2020 Phase

Four distinct phases make up the new education policy. It is totally no longer allowed under the new rules. The new education policy is based on the 5 + 3 + 3 + 4 formula as opposed to the prior education policy, which was structured using a 10 + 2 formula. Three years of schooling and twelve years are now part of the routine. The new policy must be followed by all institutions, both government and non-government.

Four Steps of New Education Policy

- **Foundation Stage**-Children aged 3 to 8 are enrolled in the Foundation Stage of the New Education Policy. The Foundation Stage has remained unchanged for five years. The children's linguistic abilities and skill levels will be assessed over the three years of pre-school instruction at Anganwadi, as well as during the first and second grades of school, with an emphasis on their growth.
- **Preparatory Stage** -This stage's duration is preserved for three years. Children between the ages of 8 and 11 are included in this period. where he will have kids up to class 5. Strengthening the pupils' numerical skills will get particular priority at this stage of the new educational agenda. All kids will also learn the local tongue at the same time. Children will also learn science, art, math, and other subjects via experiments.
- **Middle Stage** -- This stage will last for a set three years. Children in this stage, who will get subject-based instruction and begin learning to code in the sixth grade, range in age from 6 to 8 years old. All of the kids will have the chance to take part in vocational tests and internships at the same time, with the intention of limiting their eligibility for work to the time they spend in school.
- **Secondary Stage**-This stage lasts for four years. 9th grade in this stage Included are students in the 12th grade. In this, the themes will be studied in depth. The alternate educational course has also begun at this point, along with the educational curriculum for the eighth through twelfth grades. Instead than being

limited to a certain stream, students can pick the courses they want to study. Students now have the opportunity to select their own studies under the new educational strategy. Science, art, and kormas can all be studied concurrently by students. There was no pre-schooling in government schools because of the previous 10 + 2 system. In general, classes 1 through 10 were for education, while classes 6 and 7 offered students the flexibility to pick any topics they wanted from those classes. Previously, education began in the first six years, but it will now begin in the first three. Board tests for 10th and 12th grade students will be altered in structure to lessen the workload while keeping in mind the students' overall growth. There will be enhancements, like a semester or multiple-choice questions. Two times a year will be designated for the examination. Once a year, tests that are both objective and subjective will be given. In order to combat students' propensity for rote learning, the knowledge test will get the majority of attention during the board exam. This viewpoint welcomes the government's way of thinking. A new national assessment center will be set up to serve as the standard-setting body for evaluating students' progress. Software based on "artificial intelligence" will be used to assess student progress and assist students in making future-related decisions.

Provisions Related to Higher Education

Under National Education Policy 2020, the gross enrollment ratio in higher education institutions is expected to rise from 26.3 percent (the year 2018) to 50 percent, and 3.5 crore additional seats will be added.

The percentage of the total eligible population who have enrolled in educational institutions is known as the gross enrollment ratio. For instance, if there are 100 students in the age group eligible for entrance to higher education, but only 60 are accepted, the ratio is 60 percent.

A Higher Education Commission of India will be established in place of the UGC for all higher education programs, with the exception of medical and legal education. We'll create a multidisciplinary research and education institution comparable to the IITs and IIMs. These institutions are going to be top-notch. The National Testing Agency will administer a general entrance exam for admission to these programs. All students will be able to take it as an option; under this system, no subject will be required. The humanities and arts will also be taught at technical schools. No separation like that between the arts, sciences, and commerce will exist. Any subject is available for students to pick from. The country's educational institutions, including the IITs, would take a comprehensive stance.

Four Bodies of Higher Education of Commission (HECI)

1. **National Higher Education Regulatory Council (NHERC):** It will serve as a regulator for the field of higher learning, including teacher preparation.
2. **General Education Council (GEC):** This will establish the foundation for desired learning outcomes for programs in higher education, i.e., their standardization process.
3. **National Accreditation Council (NAC):** These institutions are accredited and will operate largely in accordance with the following fundamental standards: open self-disclosure, effective governance, and outcomes.
4. **Higher Education Grants Council (HGFC):** This provides funding for colleges and universities.

Currently, organizations like the National Council for Teacher Education (NCTE), All India Council for Technical Education (AICTE), and University Grants Commission (UGC) govern higher education institutions.

The National Education Policy 2020's undergraduate curriculum allows for several entrances and exits. According to the method established, students can exit a three- or four-year undergraduate program at various levels, and they will be given degrees or certificates in accordance with their exit level. similar to a certificate after a year, an advanced diploma after two years, a bachelor's degree after three years, a graduate certificate with research after four years. Students who are pursuing a four-year degree can finish an MA and a PhD in one calendar year. The new education policy has eliminated the MPhil program. By means of this policy, the Academic Bank of Credit will be established. The pupils' digitally saved digit or credit will be used in this.

Provisions Related to Online and Digital Education

To advance digital education, the National Educational Technological Farm will be established. It will coordinate the development of digital content, infrastructure, and capability. This will result in the formation of study and assessment technologies as well as instructional training.

- The Ministry of Education will transform into a specialized organization for digital infrastructure, digital content, and capacity building to meet the e-education demands of both school and higher education in order to secure the preparation of alternative methods of quality education.
- Regional language versions of the e-content will be made accessible for study.

Related to Advanced Education

By 2030, the goal of complete youth and adult literacy has been reached.

Protection of Linguistic Diversity

Numerous language alternatives are still available under the current education policy. The study of mother tongues or regional languages has been recommended for classes 5 and 8 as a priority. From the secondary level, or ninth grade, students will be able to enroll in a foreign language course.

In the trilingual formula, at least two Indian languages must be present. State, region, and student preferences will be given priority in this. For instance, Mumbai students who study Marathi and English will also need to learn a third language. There is an opportunity to read Sanskrit and other traditional and ancient languages in the educational curriculum, thus the language choice will not have an impact on any students.

Physical Education

In accordance with the new education strategy 2020, students will also enhance their abilities in addition to their academic knowledge. In which instruction in disciplines including horticulture, yoga, music, dance, sports, and sculpture will be provided to all pupils starting with the lowest grade. Therefore, the newborn is proficient in both physical and other types of talents.

Recommendations Related to the Educational System

- The new education policy will occasionally set up teacher promotions based on performance.
- By 2022, the National Council for Teacher Education will have created a professional standard for educators.
- National level education for teachers, in accordance with NCERT recommendations The course's curriculum will be created.
- A four-year B.Ed. degree will be required for teachers under the new educational strategy by 2030.

Provision for Differently-abled Children

Through the implementation of a new education policy, changes have been made to the educational curriculum for PWD. These people will be able to fully engage in the educational process through normal schooling from the primary level on up.

Funding Education

The focus is on allocating up to 6% of GDP to the education sector. Its current share of GDP is 4.43 percent.

Financial Aid to Students

- The qualification of students who fall under the SC, ST, OBC, and other distinct groups shall be encouraged.
- To assist and advance the academic advancement of students receiving stipends The tracker for the national scholarship webpage will be enhanced.

Other Announcements

- In higher education, a single regulator will now oversee institutions in place of UGC, AICTE, and NCTE.
- By granting colleges autonomy, the procedure of affiliation with universities will be abolished after 15 years. They will be given complete autonomy. They will either be transformed into independent colleges that provide degrees or will be joined to a university.
- To give education an international flavor, the top-ranked university in the world will be permitted to establish a branch in India. This would save Indian students the trouble of traveling overseas to apply for admission to the best schools and universities in the world.
- In order to undertake research, foster a strong research culture, and maximize the potential for research in higher education, the National Research Foundation will be established.
- The creation of education centers for underprivileged communities and the gender inclusion fund will be emphasized in the new education strategy.
- A 360-degree evaluation will be used to evaluate the student's report card, taking into account his behavioral and mental capabilities. This assessment will be done by the student's instructor and classmate.

3. Challenges Related to Education Policy

- **Cooperation** -State education is a concurrent topic. The majority of states have school boards for this reason. To ensure that this decision is really carried out, the State Governments must step up. States may also object to the notion of establishing a National Higher Education Regulatory Campus as the principal governing body.
- **Expensive Education** - The new educational strategy makes it easier to be accepted to institutions abroad. Many scholars think that the Indian educational system would likely have to pay a high price for admittance to overseas colleges. As a result, it may be difficult for students from lower socioeconomic classes to seek higher education.

- **Sanskritisation of Education** -South Indian states claim that the trilingual formula is an attempt by the government to Sanskritize education. Even if students are taught in their native tongue or a regional language, many issues might still confront states. For instance, residents of Delhi, a union territory, come from many states. There would be students at such a school who speak various mother tongues. Whether or not English-medium schools support the vernacular idea depends on the language in which all of these youngsters will receive their education. If the state changes, the children will be able to receive an education in elementary school in which media.
- **Feeding-Related Inadequate Investigation**- Some states still charge fees. Regulation is in place, but it cannot stop profiting through unrestricted donations.
- **Financing**-The ability to commit the required 6 percent of GDP as public investment on education will determine whether money can be secured.
- **Lack of Human Resources** -Presently, primary education needs qualified instructors. In this case, the National Education Policy 2020 will be implemented, which is a framework designed for primary education.

4. Suggestions for the New Education Policy 2020 of India

- The early childhood care and education program covers the first five years. It will be put into practice via Anganwadi. To begin with, Anganwadi should be transformed into Kids Zone so that the kid may receive a sports education. Additionally, to ensure that education and health go hand in hand, one of the two Anganwadi employees should be replaced with an ASHA employee and a physiotherapist. According to some estimates, 85% of brain growth happens during this time. Therefore, it will be necessary to provide the youngsters at this time with competent instruction in order to develop a strong and capable generation in this.
- Will obtain elementary schooling from third to fifth grades. Children between the ages of 8 and 11 attend. The youngster must lessen his or her reading load in this class. Children should be educated through moral tales throughout this stage in order to facilitate the child's overall growth. At this point, bagless education should be provided.
- The youngster gains environmental information throughout the secondary period. The government provides children with midday meals, bicycles, and de-warding services like Navodaya in addition to other things. many are unable to complete their education while working in agriculture because of the economic issues in India's rural areas, therefore many stop in the middle.

- Additionally, the notion of employment education will only be realized if 50% of textbook review and 50% of evaluation are based on local arts promotion, culture, and small cottage enterprises.
- In the presence of the parents, refrain from receiving customary instruction in the upper secondary level as well as sexual education.
- Children should be provided internships through vocational training and entrepreneurship in a variety of regions of the nation so that they are aware of their surroundings geographically.
- To put all the declarations into action, there must be a strong political will and enough infrastructure.
- Universities must be given more autonomy in order to improve education.
- To diversify the revised curriculum and foster global innovation, 200 top-ranked colleges should be granted complete academic, administrative, and financial autonomy.
- In India, less money is spent on research. In 2017–18, research consumed 0.7 percent of the GDP. Spending by the US in China and Israel was 2.1% and 2.8% respectively. The National Research Foundation has to be established up on fast track messages to boost research in the new strategy.
- The best universities in India should graduate more than 50,000 PhDs annually to boost innovation and specialized expertise.
- The Central and State Governments should similarly provide institutions special packages in order to raise the Gross Enrolment Ratio.
- The environment, sports, culture, research, and development are highlighted in the new policy. The fundamental infrastructure needed to address all of these demands is lacking.
- For this, the government should make arrangements to loan the universities a sizable sum of money over a 20–30-year period.

Conclusion

If effectively implemented, the New National Education Policy, 2020, which has been authorized by the federal government to improve the Indian educational system to match the demands of the 21st century India, would make India one of the top nations in the world. Equivalent Children from three years old to eighteen years old have been subject to the Right to Education Act of 2009 under the new education strategy, 2020. This new education strategy, which was introduced after 34 years, intends to universalize pre-primary education (for children between the ages of 3-6) by 2025 and to give higher education to all students.

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OPPORTUNITIES AND CHALLENGES IN NEP AND HEI

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Introduction:

India, with its massive and diverse population, recognizes the pivotal role of education in shaping the nation's future. In response to the evolving global landscape and the need for a comprehensive educational overhaul, the Indian government introduced a new education policy. This policy extends its scope beyond primary and secondary education to encompass reforms in higher education institutions (HEIs) as well. This article explores the opportunities and challenges presented by the new education policy in India and its impact on HEIs, analysing how it can shape the future of higher education in the country.

Opportunities:

Holistic Development and Interdisciplinary Approach

The new education policy emphasises holistic development, focusing on nurturing well-rounded individuals rather than encouraging rote learning. This approach creates an opportunity for HEIs to design interdisciplinary programs that allow students to explore diverse subjects and develop critical thinking, problem-solving, and creativity.

Flexibility and Choice-Based Credit System:

The policy advocates a flexible approach to higher education, promoting choice-based credit systems (CBCS). This system enables students to select courses based on their interests and career aspirations, providing a personalised learning experience.



Emphasis on Research and Innovation:

The new policy encourages HEIs to prioritise research and innovation. This presents an opportunity for institutions to strengthen their research infrastructure, foster a culture of innovation, and collaborate with industries and research organisations to address real-world challenges.

Technology Integration and Digital Learning:

With an increasing emphasis on technology, the policy encourages HEIs to integrate digital tools and online platforms into their teaching methodologies. This facilitates remote learning, provides access to a vast repository of knowledge, and prepares students for the digital age.

Skill Development and Industry-Academia Collaboration:

HEIs can seize the opportunity to align their curricula with industry needs, fostering closer collaboration with businesses and industries. By incorporating skill development programs and offering internships, HEIs can enhance students' employability and bridge the gap between academia and the job market.

Challenges:

- **Implementation and Regulatory Framework:**

Translating the new education policy into action in the higher education sector requires clear guidelines and a streamlined regulatory framework. Effective implementation necessitates the collaboration of various stakeholders, including central and state governments, universities, and accrediting bodies.

- **Faculty Development and Training:**

Ensuring quality education in HEIs demands well-trained and competent faculty. Institutions must invest in faculty development programs to equip educators with the skills necessary for innovative teaching and research.

- **Infrastructure and Resource Constraints:**

Many HEIs in India face infrastructure and resource constraints, including inadequate funding, outdated facilities, and limited access to technology. Addressing these challenges is crucial to create a conducive learning environment.

- **Maintaining a Balance Between Access and Quality:**

With increased focus on expanding access to higher education, maintaining quality standards becomes a challenge. HEIs must strike a balance between access and quality to produce skilled graduates who can compete globally.

- **Assessing Holistic Development and Skill Acquisition:**

Measuring holistic development and skill acquisition is a complex task, as traditional assessment methods may not adequately capture all aspects of a student's growth. Developing effective evaluation mechanisms is essential to gauge the policy's success.

Conclusion:

India's new education policy presents a unique opportunity to transform higher education and shape a skilled and well-rounded generation of graduates. By emphasising holistic development, promoting interdisciplinary studies, and integrating technology, HEIs can enhance the quality of education and prepare students for a rapidly changing world. However, the successful implementation of the policy hinges on addressing challenges such as regulatory frameworks, faculty development, resource constraints, and maintaining a balance between access and quality. With collaborative efforts from the government, HEIs, educators, and industry stakeholders, India can realise the full potential of its new education policy and establish a thriving higher education landscape that contributes significantly to the nation's progress and development.

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NEW EDUCATION POLICY STRATEGIES IN HIGHER EDUCATION

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Abstract

National Education Policy is the guiding element for the education system. Providing universal access to quality education is the key to success and it is the need of the hour. The National Education Policy directly aids in the long-term transformation of our country into a fair and thriving knowledge society. The new National Education Policy, which provides a complete framework for primary education through higher education as well as vocational training in both rural and urban India, was adopted by the Union Cabinet of India on July 29, 2020. The new strategy intends to expand higher education enrollment to 50% by 2025 and to universalize education from pre-school through secondary level at 100% of total school enrollment by 2030. The sustainable development goal four implies about the quality education for all. It can only be achieved by skilling the people through National Education Policy. This article focuses on about the objectives, features, strategies and challenges of implementing the National Education Policy. Hence, there comes the need to throw a light on knowing all these in the present scenario.

Keywords: *Objectives, Strategies, Challenges and future of NEP*

Introduction

The Ministry of Human Resource Development (MHRD), working under Prime Minister Narendra Modi's guidance, unveiled the New Education Policy. On July 29, 2020, the National Education Policy 2020 was made public following approval by the Union Cabinet. In order to become a major global player, India is currently changing its education system significantly. The 34-year-old educational policies were replaced with the most recent changes. The new system, which is currently being put into place, emphasizes online learning, longer school days, and a departure from the conventional approach of rote learning.

New Education Policy 2023

Our current educational system needs to be transformed, according to the New Education Policy 2023. It's a ground-breaking strategy that seeks to include contemporary teaching techniques, harness the power of technology, and encourage learning based on practical skills. The ultimate objective is to provide access to

education for all people, regardless of their circumstances or history. Supporting marginalized communities and fostering an inclusive and just educational environment are given particular attention.

The policy has resulted in a number of significant changes, including the replacement of the conventional 10+2 schooling framework with a more adaptable and comprehensive 5+3+3+4 system. The objective of this new method is to give priority to critical thinking, life skills, and fundamental abilities in the instruction of students at all levels.

Objectives of New Education Policy 2023

The main goal of the National Education Policy is to bring India's educational standards up to par with those across the world so that it may become a leader in knowledge-based industries. The National Education Policy's universalization of education makes this objective possible. The purpose of the policy is to provide quality education to the students and enhance the children to have good education.

Principles of New Education Policy

1. Determine and nurture each child's potential.
2. Increase children's reading and numeracy knowledge
3. Providing flexible learning opportunities.
4. Spend money on public education.
5. Improve education quality
6. Introduce children to Indian culture.
7. Do excellent research, teach good governance, and empower children
8. Transparency in education policy
9. Emphasize the usage of technology and evaluate
10. Teach many languages
11. Improve your child's creativity and logical thinking.

New Education Policy : Digital Inclusions

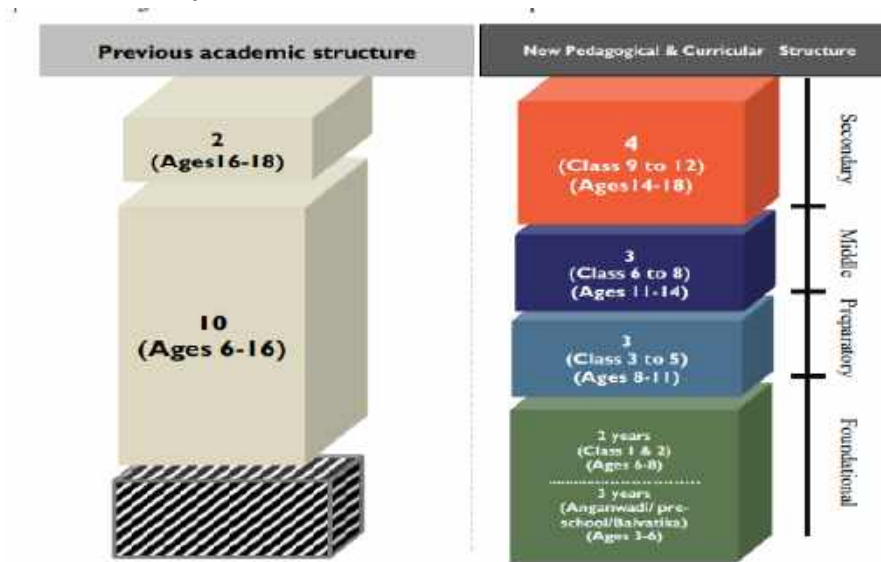
Due to technology improvements, digital teaching methods have recently become a part of the educational system. The digital strategies the government will use through NEP 2023 to enhance education.

- The National Educational Technology Forum (NETF) will be established by the government. The goal is to showcase fresh, cutting-edge ideas that will enhance digital teaching methodologies in diverse institutions.
- To provide more resources for digital education, the government will create a new agency that will operate throughout the nation.

New Education Policy 2020 Schools System: 5+3+3+4 Education Structure

A new educational framework called 5+3+3+4 has been introduced under the New Education Policy 2020 to replace the current 10+2 system. The first five years of education in this new structure are devoted to foundational learning, after which there are three years of preparatory schooling, three years of middle stage schooling, and four years of secondary education.

The New Education System



The NEP 2020's most eye-catching change is the substitution of the 10+2 structure with the 5+3+3+4 structure. Our educational system has used the 10+2 for a very long period. Therefore, a whole overhaul of that system can be a little confusing for the kids.

Importance of 5+3+3+4 Structure

Through the 5+3+3+4 structure, the government hopes to place more emphasis on the kids' stage of cognitive development. The government will clarify the kids' educational stages through this framework for their advantage. The 5+3+3+4 framework, as opposed to the 10+2 structure, will improve students' bases from the foundational stage to the secondary stage. The students' use of their right to an education will be aided by the new framework. As opposed to 6 to 14, the age range covered by the structure is 3 to 18. As a result, the start of the pupils' school lives will help them.

Parakh to Evaluate Under HECI Acting as a Single Umbrella

As a body that establishes standards, a new national assessment centre called PAREKH (Performance Assessment, Review, and Analysis of Knowledge for

Holistic Development) will be established. The organisation will establish guidelines for how institutions should operate and will analyse and evaluate the nation builders' performance. The establishment of Special Education Zones for underprivileged regions and groups, as well as a Gender Inclusion Fund, have been highlighted in the NEP.

The NEP 2023 will also have an impact on students who study UG and higher education. The policy stipulates that an undergraduate degree would last four years and be multi-disciplinary, holistic, and adaptable. Additionally, the students will have several opportunities to choose to leave the degree programme. For instance, the completion of a one-year vocational or professional field course will result in a certificate for the students. They will, however, receive a diploma after two years and a bachelor's degree after three.

Implementation Strategies and Regional Disparities

- Priority in establishing quality higher education facilities in under-served districts will be essential to reduce regional disparities.
- Improving availability of high quality HEIs in aspirational districts and Special Education Zones (SEZs), envisaged to be created through a contiguous geographical and/or socio-cultural area dominated by SEDGs.
- Designing a catchment area policy measure for students from SEDGs residing in the SEZs. The catchment area policy could include a percentage of HEIs seats reserved for candidates residing in the SEZs. This form of affirmative action would be most beneficial for improving HE access for population groups within the SEDGs, such as the scheduled tribes and minority groups.
- Increasing the availability of higher education institutions offering professional and technical courses in rural, underserved regions, Aspirational Districts and in SEZs dominated by the SEDGs.
- Expanding government public and private aided institutions, particularly in professional and technical courses will be important to improve access of SEDGs to STEM and management subjects.

Challenges and Opportunities

Attracting Top Universities

Few of the "top 100" universities have IBCs because they find it challenging to uphold the same standard of excellence throughout all of their branch campuses. Additionally, these institutions don't have a significant resource shortage, and their courses are still in great demand within the contexts in which they operate. Because of this, restricting the invitation to only "top 100" universities may provide issues.

Universities in the top 200 of the World University Rankings and those with the highest "subject-wise global rankings" may both be relevant considerations.

Partnership Model

The government should encourage the 'partnership model' which allows existing Indian higher education institutions to collaborate with 'top 100' universities to establish branch campuses. Financial risks could be reduced to a great extent as existing infrastructural facilities could also be utilised.

Scope for Regional Education Hub

India is in an advantageous position vis-à-vis tuition fee and cost of living, and this could help the IBCs in India to attract a large number of foreign students. This would help the country to become a regional education hub.

Healthy Competition and Internationalization of Curriculum

The curriculum offered by IBCs would encourage Indian institutions to creatively re-conceptualize their existing curriculum to reach international standards. An internationally compatible curriculum, in terms of learning outcomes and concepts would facilitate the inbound mobility of foreign students.

Conclusion:

The goal of developing a new educational system is to give children the confidence and empowerment to develop new knowledge, skills, and human values in order to solve problems and challenges facing a civilized society now and in the future using their improved innovative skills and technological know-how. Everyone in this universe can live better and thanks to technology, which is an application of scientific thinking, and the foundation for that is high-quality education. The new education policy has several inherent proposals to improve the quality of school and higher education, to create interest in their chosen field, and to provide value-based, knowledge-based, and skill-based higher education for everyone in the country.

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INNOVATION AND BEST EMERGING TRENDS IN HIGHER EDUCATION-2023

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Introduction

The importance of higher education has been clearly expressed by our first Prime Minister Mr. Jawaharlal Nehru in the following words: "A university stands for humanism, for tolerance, for reason, for the adventure of the ideas and for the search of truth. It stands for onward march of human race towards even higher objectives. If the universities discharge their duties adequately, then it well with the nation and the people". It indicates that higher education occupies a crucial position in education system of a nation as it affects the overall development of a country

A multidimensional effort for the transformation of Indian life starts 1947, after the achievement of independence, which has been for a long period under colonial rule. After making of the constitution of Indian democratic efforts were promoted and available resources find very little scope within the inflexible 'steel frame'. A critical evaluation of the education system in India began, with the appointment of the University Education Commission in 1948. Several Educational Committees and Commission of Indian Education. And in spite of innumerable limitations educational innovations have been emerging in India under the impact of unrelenting expectations of the masses, the urgency for rapid economic growth and the necessity to strengthen and protect democratic values as a way of life.

Major Needs for Educational Development

The major needs for educational development in India are – (1) universal elementary education for the age group 6 to 14 years, (2) improvements of standards, (3) Curricula changes which would meet the national values and goals and improves productivity, (4) improvement in educational planning and administration.

Resource Mobilization:

Mobilization of resources of schools is an important concern for poor rural India.

This aspects may be described through following dimension.

School Improvement Movement

The school improvement were first started in TamilNadu. Rural India is economically under developed. There fore children in rural India are hungry.They are poor. Therefore, arranging formid day mealsin schools has been emphasized as a major method for including childrena the primary stage to enrollina school. InTamil Nadua public movement be organised in 1956 by Education Department to supply free mid-day meals and a pilot project was initiated in 1958 in the National Extension Srulee Block of Kadambattur which include selementary school buildings, painting of black board,a small library and provisions of pure drinking water.

Structural Changes :

Some structural changes have made which may also considered as a trend in Indian Education.

- **National Council of Educational Research and Training:** (NCERT) is an example of structural innovation within the education system which was established in 1961 for promoting a large scale programme for the improvement of school education. The NCERT has prepared several publications,contributed significantly inthefield of curriculum development particularlyin science and socialstudies.The international contact sof the NCERThaveincreasedwithbeneficial effects on its beneficial standard of work.
- **State Institute of Education (STE)**– In 1963 the ministry of education offered the states the scheme of the State Institutes of Education with full financial assistance from the central government. This was considered an improvement of education which were expected to be lunched during the fourth five year plan.It was concerned with the fieldof planning and implementation of programmes of qualitative improvement.
- **State Board of Teacher Education (SBTE)**–State Boardof Teacher Education was first established on Maharastra districton 1967 and for the first time it brought together educational expertsand teacher educators from pre-primary,primary and secondary stage. The Board of Constructs fairly modernized curricula and examinations for pre-primary, primary and secondary teachers.
- **Central Institute of Indian Languages**–Establishment of Mysore Central Instituteof Indian Languages isone of the important innovations supported by Govt.of India. The instituteis expected to undertake innovative measures and to conduct training courses for developing methods, materials and aid forteaching Indian languages scientifically. It also gave emphasise on research domain of different aspects of Indian languages.Itisastriking example if the need to create non-traditional structural arrangements forthe implementation of innovative policies like India's National Policy on Education and policy on languages.

- **Indian Council of Social Science Research**–In India, the Council for Scientific and Industrial Research was established as early as 1944 for promoting research in the natural sciences but there was no similar agency to promote research in the social sciences. The Indian Council of Social Science Research was established by the Government of India as an autonomous body in 1969 to meet up this gap. May innovative work has been done by this Council.
- **Inclusion of work experience in the secondary school curriculum**–The Indian Education Commission stressed the need for changing the bookish character of school education by introducing into the curriculum a programme of work experience. Because we belong to a third world country and face problems like poverty and unemployment. Therefore, it is necessary to implement work based curriculum to overcome this situation. This programme was two fold. On the one hand elementary activities related to technology and agriculture for in-school youngsters. On the other hand a new curriculum combining general education with occupational training for immediate use for out-of-school was proposed to meet the need of hours.
- **Industrial Instruction**–The present traditional system of instruction is highly group-oriented. It is really very painful to see the plight of the traditional instructional process by which students of widely different abilities are grouped together for classroom instruction. The effort to individualized instruction have recently appeared in many form on our educational scene. NCERT has developed suitable materials for various subjects at different levels. Individualisation of instruction can mean that the teacher works on a personal, one to one, basis with each student. This essentially means a tutorial system which is normally followed in teacher-pupil relationship.

Change in Traditional Teaching Learning

The process of Teaching-Learning has now been changed to meet up the need of the learner. New methods and techniques have been developed on the basis of research findings. Modern Teaching- Learning Techniques are followed by psychological principles of teaching or psychology of teaching and learning. The important principles are – proceed from simple to complex, from concrete to abstract, general to complex, known to unknown, from induction to deduction and arrange for frequent reinforcement. Different innovative techniques, instructional media, strategies and instructional technology has been developed. Computer-Assisted Instruction, Personalised System of Instruction and Learner-Controlled Instruction has now been developed as current trends in Teaching-Learning.

The Emerging Trends of Educations are Discussed as Follows :

ICT will become the Backbone for Education modernisation in India Digitisation and adoption of ICT is increasingly modernising the traditional way of classroom learning. Use of ICT is increasingly enabling the standardisation of learning in rural areas and has helped bridge the gap of teacher shortage and student drop out.

Emerging Technologies

The popularity of ICT in education is supported by increasing level of penetration of PCs, internet, telecom network etc. in the country. India's first education tablet by iProf Learning Solutions exemplifies the increasingly affordable access to the students. Various technology-enabled education projects are aiming at the rural masses. HP's Lab-in-Box, a technology-equipped classroom housed in a shipping container with 15 HP PCs aims at reaching out to the remote regions. Chaitanya Gurukul Public School exemplifies the potential of technology-enabled education where teachers connect via Skype with the students. The Child Tracking System adopted by Jharkhand Government is an attempt to identify the dropped out children and increase the retention. In the Ecosystem Development Government is getting the network infrastructure to the grassroots levels with projects like SWAN, SDC, and CSC. Educational institutes are looking at connectivity and networking across their branches. UNESCO New Delhi and Intel India jointly are planning to help interested states to develop ICT in Education policies as well as provide training for more teachers. Majority of the state governments like UP, Kerala, Haryana are undergoing deployment of computer labs in government schools. IT education solutions providers are being engaged by governments. For example, Educomp Solutions would work with governments of Gujarat and Assam for projects worth USD 1.6 million to develop multimedia content for the state level schools and for a USD 15 million project for Maharashtra government to implement ICT in 540 secondary schools. Other initiatives like Hole-in-The-Wall Education Limited (HiWEL), a joint venture between NIIT Ltd. and the International Finance Corporation (2009) are reducing the digital divide by reaching the schools with easy access to internet.

Enhanced Content Availability

The government is digitising content to create online libraries under National Mission on Education through Information and Communication Technology (NME-ICT). Companies like TCS and others are being roped in to develop software and facilitate education through online media. The Government is giving a strong push in the direction of developing, supporting and promoting Free and Open Source Software (FOSS) to make IT accessible and affordable to more and more people. State government portals like The State Education Portal of Madhya Pradesh are facilitating a single source of authentic, live information for all stakeholders.

Multimedia in Schools

Multimedia in private schools generated around USD 309 million as revenue in FY11. Multimedia devices are deployed in college campuses where content is accessible not only through computers but also through TVs and smartphones along with BBC, MTV, NBC, ABC etc. integrating broadcast media with education. Private content provider years to come Sundaram will provide equivalent education with its product named E-class for K-10 segment through TV leveraging the wider reach of TV in India. Technologies like Digital classrooms, Interactive White Boards (IWB) are shaping the young minds not only in the private schools like The British School, Delhi but also in few of the government schools like Kendriya Vidyalas. Other systems like Learner Response System, Interactive Tools, Classrooms Sound Systems and newer ICT enabled assessment tools etc. would witness rapid adoption.

Virtual Classrooms

Traditional classrooms are changing with emerging concepts like virtual classroom by Khan's Academy. The academy has a video library of over 2,200 micro lecture videos and over 42 million visits, allowing students to learn at their own pace. The teacher plays a role of a coach/mentor, with more peer tutoring, project-based learning and one-on-one coaching. TutorVista, a provider of various coaching courses uses VOIP to connect instructors in India with school and college students in North America. It also reaches 3,300 classrooms by supplying digital content and technology platforms to private and government schools in India combining the orthodox system of learning with digitised content and state-of-the-art teaching tools. Everonn's i-school initiative offers digitised content as per CBSE syllabus, live and interactive satellite sessions, virtual labs, VSAT methodology enhancing peer learning across the country etc. Virtual reality websites such as Second Life has provided higher-education institutions with new venues for class gatherings and learning, new channels for content delivery, online video expansion and podcasting.

Education sector is expected to continue to attract significant private equity investments. Gaja Capital India, an education-centric fund, has completed the funding of three education services companies. Sequoia Capital invested USD 5.5 million in K-12 Techno Service to deploy computer and language labs across states in 2011. In 2009, PE players invested around USD 123.28 million in eight companies, including TutorVista, Career Point, FIITJEE, ITM Group and Edutech. Learning service provider giant Pearson acquired 76% stake in TutorVista, a provider of online tutoring to develop vocational and professional training services.

Everyone is already planning acquisition of small-sized companies (USD 2.2-3.3 million of annual revenue) in the near future and has also tied-up with Microsoft for an IT Academy. Companies such as ICICI are partnering with Manipal University

and NIIT to train its employees. Other players like Microsoft have been working towards improving the reach of education in India through projects like Shiksha. Various Corporate Social Responsibility initiatives by the players like Intel with 'World Ahead', Wipro with 'Azim Premji Foundation', Akshaya Patra Foundation, Procter and Gamble, Tata's, Infosys and many others are also helping in reaching out to the less-privileged in India.

Conclusion

As India's consumer class is expected to become tenfold by 2025, the entire ecosystem in the country is enthused to reform the education sector. Revolutionary initiatives of government and proactive participation of the private sector are largely working towards the development of education infrastructure in the country.

The focus remains on consistent learning and formative assessment process leading to de-stressed learning and evaluation. With investments pouring in from private players, international agencies and the government to ensure successful implementation, India is set to become a preferred destination for quality education in the years to come.

IMPACT OF NEP 2020 AMONG SCHOOL AND COLLEGE STUDENTS

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Abstract

The New Schooling Strategy 2020 plans to upset the instructive scene by giving a thorough system that takes special care of the different necessities of students and sets them up for the difficulties of the 21st hundred years. This theoretical gives an outline of the key targets, procedures, and anticipated results of the approach. The essential goal of the New Instruction Strategy 2020 is to guarantee comprehensive and impartial quality training for all, no matter what their financial foundation or geological area. It underscores the need to connect the current holes in access, value, and quality by advancing general youth care and training, patching up school framework, and carrying out creative educating learning rehearses. The policy acknowledges the significance of a comprehensive and multidisciplinary educational strategy. It encourages the mainstream curriculum to incorporate co-curricular activities, arts, sports, and vocational education, fostering the development of well-rounded individuals. Moreover, it advocates for the combination of innovation in schooling, establishing a carefully engaged learning climate that improves decisive reasoning, critical thinking, and imagination. The policy's recognition of the significance of education innovation and research is another crucial aspect. It intends to lay out a hearty examination biological system, encouraging cooperation between the scholarly community, industry, and different partners. This would empower the advancement of proof based rehearses, instructive innovations, and strategies that can address the developing requirements of students and society.

In conclusion, the New Education Policy 2020 is a radical vision for education that aims to establish a system that is inclusive, equitable, and empowering, preparing students for the opportunities and challenges of the 21st century. By zeroing in on all encompassing turn of events, coordination of innovation, limit building, exploration, and development, this strategy makes way for a more promising time to come for training.

Keywords: Education, Policy, vision, strategy, framework.

Introduction

The Indian government's New Training Strategy is alluded to as NEP. It was last altered in 1992 subsequent to being drafted in 1986. The Modi-drove BJP government promised in its political race proclamation to make another training strategy, or NEP, to achieve changes in the schooling area. The National Education Policy of India 2020 (NEP 2020), which was started by the Union Cabinet of India on 29 July 2020, outlines the vision of new education system of India. The new policy replaces the previous National Policy on Education, 1986. The policy is a

comprehensive framework for elementary education to higher as well as vocational training in both rural and urban India. The policy aims to transform India's education system by 2030. The strategy accommodates changes at all degrees of training from school to advanced education. NEP means to expand the emphasis on reinforcing educator preparing, transforming the current test framework, youth care and rebuilding the administrative system of instruction.

Objective of the Study

- To find the main aim of the policy
- To list out features of the policy
- To sort out the impact of policy among the school and college students

Main Aim of New Education Policy

There have been three education policies after India got its independence, the NEP 2020 being the newest addition to bring reform in the education sector. Therefore it becomes necessary to understand the aims of NEP 2020 from the exam's perspective.

The basic aim and objective of NEP 2020 are to make education universally accessible from primary to secondary level by the year 2030. It helps in building a relationship between the learner and society at large. Every child is special and has the right to get basic education, for which the government should make better provisions.

- **Early Childhood Care and Education:** The early child developmental stage encompasses physical, socio-emotional, and cognitive development between 0-8 years of age. As early education lays the foundation for education to be undertaken later in our lives and also plays a major part in the development of the cognitive capacity of an individual, so there has to be the provision of high-quality education Early Childhood Care Education (ECCE). Here attention needs to be laid on socially backward regions.
- **Foundation Literacy and Numeracy:** NEP 2020 envisions the attainment of Foundational Literacy and Numeracy by all learners up to 3rd grade.
- **Curtailling Drop-Outs Rates and Ensuring Universal Access to Education at All Levels:** This new education policy of 2020 has focused on two things:
 1. To lessen the drop-outs by ensuring proper infrastructure facilities.
 2. By providing appropriate training to the teachers.Also, to encourage students to continue their studies. The students are also monitored and facilitated with the proper educational environment. Also, the ones who had dropped out of school earlier are given adequate guidance to be on par with their peers.

- **Curriculum and Pedagogy in Schools:** Learning of any sort should be holistic, integrated, enjoyable, and engaging to hold the attention of any learners towards the subject matter. NEP 2020 is a policy that emphasizes understanding the topic rather than an evaluation of rote learning, and for that, experiential learning is promoted at all stages.
- **Equitable and Inclusive Education:** NEP 2020 policy stresses education accessibility to one and all and that all should be similarly looked upon. Students with special needs are also benefitted from this policy as several schemes are running under this policy that enables specially-abled students to be part of the education system. This aspect coincides with the SDG.
- **Efficient Resourcing and Effective Governance Through School Complexes:** The policy focuses on using teaching aids to make education in India pally with world-class standards. It also emphasizes proper governance of the educational institutions for which the teacher are provided with proper information and training time and again.
- **Standard Setting and Accreditation for School Education:** The policy envisions setting up the standard to be followed at all stages of education, including preschool to higher levels. This caters to the quality of infrastructure, the educational level of teachers, and the knowledge level of the students as well. This also helps in lesson assistance with adequate usage of teaching aids.
- **Technology in Education:** There has been a lot of development in the space of technology where the teaching aids are also getting developed along with the digitalization of classrooms where lectures are taken virtually, and attendance is also taken virtually.
- **Reimagining Vocational Education and Skill Building:** For holistic development, every student needs to work on his skills constantly, like-communication skills, presentation skills, etc. Vocational Training is also encouraged so that there is a better employment opportunities for people who do specific skill-based jobs.

Features of Nep 2020

The policy has a clear focus on offering quality and affordable education to all in the age group of 3 to 18 years.

- It marks a major shift from rote learning to multi-disciplinary, holistic education. The focus, therefore, will not be on how much information students can memorize & reproduce, but on how they can use the information to solve real-world problems.

- Importantly the NEP has a great focus on the development of critical 21st-century skills that would stand in good stead to the soon-to-be citizens of the world and will prepare them for the challenges & opportunities of the 21st century.
- It marks a transition from the 10+2 education structure to a 5+3+3+4 system.
- A new curriculum for early childhood care and education, referred to as ECCE, aims at providing high-quality education to children between the age of 3-6 that brings about their physical, social, emotional as well as cognitive development.
- The policy provides for an interdisciplinary college education that has flexible study plans.
- Enough & more reports have highlighted the employability gap in India where graduates lack the necessary skills to make them valuable to employers. The new policy, therefore, lays emphasis on vocational & technical education right from the school level so as to bridge the gap

Impact of Nep 2020 Among Students

- **Single Regulatory Body for Higher Education:** The NEP aims to establish Higher Education Commission of India which will be the single regulatory body except for legal and medical education.
- **Multiple Entry and Exit Programme:** There will be multiple entry and exit options for those who wish to leave the course in the middle. Their credits will be transferred through Academic Bank of Credits.
- **Tech- Based Option for Adult Learning Through Apps, TV Channels:** Quality technology-based options for adult learning such as apps, online courses/modules, satellite-based TV channels, online books, and ICT-equipped libraries and Adult Education Centres, etc. will be developed.
- **E-courses to be Available in Regional Languages:** Technology will be part of education planning, teaching, learning, assessment, teacher, school, and student training. The e-content to be available in regional languages, starting with 8 major languages – Kannada, Odia, Bengali among others to join the e-courses available in Hindi and English.
- **Foreign Universities to set-up Campuses in India:** World's top 100 foreign universities will be facilitated to operate in India through a new law. According to the HRD Ministry document, "such (foreign) universities will be given special dispensation regarding regulatory, governance, and content norms on par with other autonomous institutions of India." Whether you aspire to study at these universities in your home country or study abroad, please remember that an education loan in India can help finance your higher studies independently.

Conclusion

The new Public Schooling Strategy (NEP) 2020, is a decent strategy as it targets making the school system all encompassing, adaptable, multidisciplinary, adjusted to the requirements of the 21st hundred years and the 2030 Economical Improvement Objectives.

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ROLE OF TEACHERS AND PROFESSORS AFTER IMPLEMENTING NEP

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Abstract :

Teachers play a pivotal role in driving educational reforms, as they are responsible for implementing interventions, innovations, and policies. As they shape the minds of the next generation, the transformation of our education system depends on the skills and qualities of our educators. In order to improve the quality of teaching and learning, it is essential to create a focused action plan for teachers at every level. Teachers actually shape the future of students, so they also build the future of our nation. Is there Because of this good contribution of them, teachers in India are now the most respected members of society and only the most gifted and knowledgeable persons are teachers. In order to provide students with the prescribed knowledge, skills and moral values, society provided all they needed by teachers or gurus. The spirit of higher status for teachers and respect for them and respect for teachers must be revived so that teachers are encouraged to include better people in their profession.

Keywords : Teacher's Role, Student, School Education, NEP 2020.

Introduction:

The National Education Policy (NEP), 2020, of India aims to transform the nation by improving its previous education policy. The NEP seeks to inculcate 21st-century skills in children and make the country's education more inclusive and flexible. It recognizes that teachers play a crucial role in achieving these goals and emphasizes the need to improve the quality of education in India. Here are a few tips on how teachers' role is key to the success of India's National Education Policy.

Teachers will be responsible for inculcating 21st-century skills, knowledge, and learning outcomes in students according to their grade level, as per NEP 2020.

1. Contribution to Curriculum Development:

According to The Sentinel, the role of teachers is no longer limited to teaching inside the four walls of the classroom. As facilitators of policy, they will act as contributors to making policies. This will help every educator to reduce the burden of their daily job challenges and will help them in the process of creating better individuals for society.

2. Implementing the New Curriculum:

Teachers play a crucial role in implementing any education-related policy or act on the ground level. The NEP 2020 focuses on a holistic approach to the development needs of students. It entirely depends on teachers what strategies they adopt in classrooms to ensure these developmental goals are met according to policy.

3. Creating an Environment of Innovation and Creativity:

The best outcome of teaching can be measured only if it is not limited to bookish knowledge and grades. Instead, it should promote pupils to think about the practical aspects of a concept and connect bookish knowledge to real-world problems. The role of teachers in the classroom according to NEP 2020 will be to promote and create an environment where students can think with a creative, critical, logical, and innovative mindset. This way, teachers can prepare students for their future life obstacles and challenges.

4. Identity Individual Interests and Treat them Accordingly:

Every student has their own unique potential and individual differences. Teachers must identify these differences in their abilities, interests, and needs to provide a personalized learning environment that can help them reach their goals. According to the new policy, teachers will receive training to identify the development needs of each individual and train them accordingly. By providing personalized learning, teachers can leverage the individual potential of their students.

5. Inculcate Lifelong Skills and Knowledge:

The ultimate goal of education in terms of a country's economic and social development is to teach students skills and knowledge that will benefit them throughout their lives. They must be able to solve problems and issues from personal to societal levels. This can be achieved only if teachers encourage self-directed learning attitudes in their students, helping them keep growing and learning throughout their lives.

6. Implement Vocational Education:

Not only in the NEP 2020, but previous policies have also emphasized the vocational aspects of education. It helps students create employment opportunities for themselves by inculcating skills obtained from local art, craft, cultural, and geographical resources, enhancing entrepreneurial skills among them. Teachers need to focus on the vocational aspect to achieve this.

Teachers' role is critical in helping students achieve their goals and in the transformation of the nation. The chances of success in reforms in policies and the nation are only possible because of the people facilitating it at the grassroots level. Therefore, teachers play an essential role in executing it properly at the grassroots level and creating the impact that's required to be created.

7. New Education Policy and Teachers Development:

Stand-alone Teacher Education institutions will be converted into multi-disciplinary institutions by 2030 offering 4-year integrated teacher preparation programme.

All fresh Ph.D. entrants, irrespective of discipline, will be required to take credit based courses in teaching/education/pedagogy/writing related to their chosen Ph.D. subject during their doctoral training period.

Ph.D. students will also have a minimum number of hours of actual teaching experience gathered through assistantships and other means. Ph.D. programmes at universities around the country will be re-oriented for this purpose

Important Views for Teachers:**Environment and Work Efficiency During Service Time :**

The primary goal of making good changes in the work environment and cultures in schools is to raise the abilities of teachers to the maximum level so that they can do their job effectively and ensure that teachers become a part of an inclusive community of students, parents, principal teachers and other supporting staff, with the only goal of being a learner.

Placement and Recruitment Policy :

In order to ensure adequate number of teachers in subjects, particularly in arts, physical education, vocational education and languages, teachers can be admitted to a school or school complex, the participation of teachers in schools can be done in accordance with the grouping of school system adopted by the state or ut governments.

Progress and Career Management :

Vertical mobility of teachers based on competency would also be the best, including outstanding teachers who have demonstrated the skills of leadership and management and trained them over time so that they can lead academic leadership in the school, school complex, D.I.E.T., B.I.T.E., as well as the concerned government departments and ministries for schooling. Teachers performing well should be identified and given step up and pay hike to encourage all teachers to do their best. The policy should have a fair career in terms of which is intended to result in permanent employment after assessment for performance and contribution and build up wage arrangements on the basis of strong merit of teachers.

Sustainable Professional Development

Continuous opportunity for teachers to improve themselves and to learn modern thought and innovation related to profession and to offer them in a variety of ways as online teacher development modules along with local, regional, state, national workshops. Teachers should develop online platforms, especially so that teachers can share their ideas and best things from time to time. Every teacher should be expected to perform timely orientation programs or faculty development programmes, as these programmes promote the latest pedagogy and competency based learning.

Professional Standards for Teachers :

A general guide set of NPST for teachers has already been prepared by the national council of teacher education, SCERT, in consultation with teachers of all levels and regions, institutions for teacher preparation and development, and institutions of higher learning as set up in its new form as a committee for professional standards setting under the general standards council in consultation with general standards setting up and institutions of higher learning.

Approach of Teacher Education :

Recognising this that teachers will need to undergo training in pedagogy, as well as teaching materials, which will have to be gradually integrated into multi – disciplinary colleges and universities. As all colleges and universities begin to move towards becoming multi – disciplinary, they aim at establishing a department of quality education that will provide a B.Ed., M.Ed. and Ph. D degree in education. The recently – introduced training in most new techniques with the prospectively tested techniques of teaching in all bod programmes can be a reform process involving the knowledge of basic literacy and numeration of education, multi – level education and assessment, teaching disabled children, teaching children with special interest, talents, using educational technology and teaching child centric and collaborative learning.

Conclusion:

NCTE by 2021, in consultation with NCERT, the new education policy 2020 should be prepared by NCFTE 2021 for a new and comprehensive teacher education framework based on the principles of the new and comprehensive teacher education. The requirements of the teacher education curriculum for vocational education should also be taken into account in NCFTE 2021. Thereafter, it is advisable to revise the NCF every year, reflecting the change in the revised NCFTE and the emerging requirements of teacher education. Finally, in order to fully maintain the authenticity

of the teacher's education system, strong action must be taken against standards institutions such as stand alone teachers education institutions in the country, including closure, if necessary. NEP teacher training program will go a long way in balancing the scale between teaching quality provided and returning rewards to the candidates in the picture. Teaching professionals can take heart in the fact that the learning experience under the NEP 2020 is a continuous process and is here to stay. Stay tuned to this space for further updates in the NEP teacher training section.

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NEP & STRATEGY IN NEW EDUCATION POLICY

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Abstract

The approach of the new education policy is concentrated on the transformation and enhancement of the education system to suit the changing requirements of learners and the demands of a fast changing world, according to the abstract. It lays forth a comprehensive strategy that includes curricular reform, pedagogical innovation, and fair access to education. The concept focuses on implementing a flexible and diverse curriculum that encourages critical thinking, creativity, and practical skills. It encourages experiential and project-based learning, which allows students to apply theoretical information in real-world circumstances. The policy stresses technology integration, allowing for tailored and self-paced learning experiences. Furthermore, the policy seeks to close educational gaps by providing inclusivity and accessibility for all students. It promotes the construction of welcoming learning environments for all students.

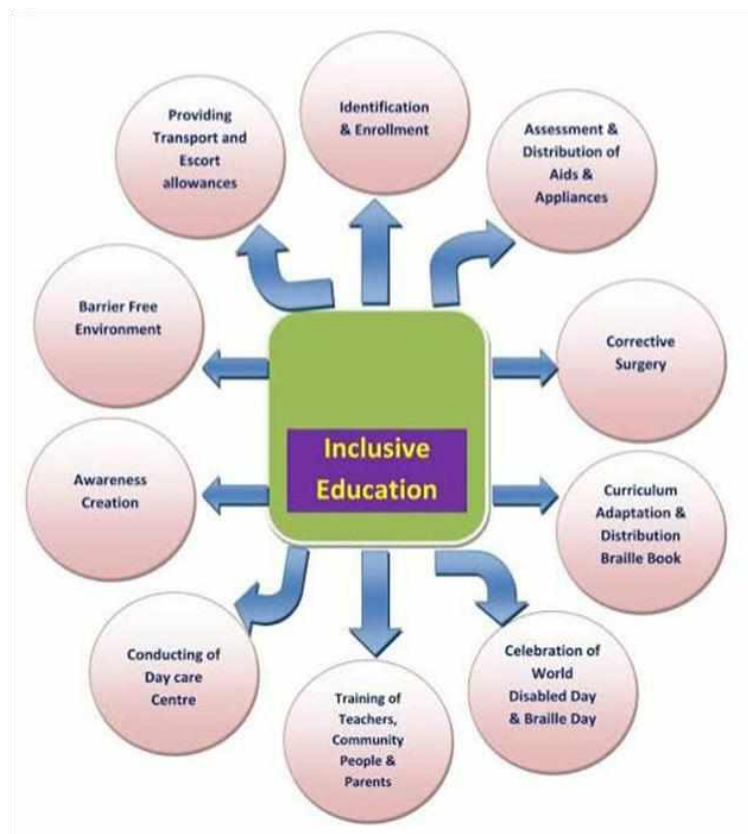
Keywords : *Holistic, Skill-oriented, Multilingual, Flexible, Technology-integrated*

Introduction

The new education policy provides a revolutionary strategy aimed at altering the educational landscape. This strategy aims to provide students with the skills and knowledge they need to flourish in a fast changing environment by encouraging holistic development, adopting innovative pedagogies, and promoting diversity. The policy seeks to create the groundwork for a brighter and more progressive future by emphasizing critical thinking and a learner-centered approach.

Inclusive Education:

Inclusive education is a vital strategy in many education policies, including the establishment of new ones. It strives to deliver an egalitarian and high-quality education to all pupils, regardless of their various backgrounds, abilities, or requirements. This strategy include modifying teaching techniques, curricula, and surroundings to fit a diverse range of pupils, fostering diversity, and ensuring that everyone has the opportunity to learn and thrive. Schools frequently emphasize on teacher training, accessible infrastructure, individualized support, and stakeholder collaboration when adopting inclusive education.



Technology Integration:



Through online resources, interactive learning platforms, virtual classrooms, and individualized learning apps, the new education policy can improve learning experiences. It can also help with data analysis for more effective educational planning and evaluation. A balanced approach, on the other hand, is required to ensure that technology enhances successful teaching rather than replacing critical human connection in education. Technology integration is emphasized as a strategic imperative in the new education policy. It attempts to improve learning experiences

and provide students with critical digital skills by incorporating technology across curriculum. Virtual classrooms, interactive simulations, and online resources provide personalized learning while accommodating different learning styles. Real-time evaluations and analytics offer educators with information that allows them to adjust education. Technology promotes cultural understanding by facilitating worldwide collaboration. Equitable access, on the other hand, is critical; closing the digital divide ensures inclusivity. Blended learning methods mix traditional classroom instruction with digital resources to promote self-directed learning. Professional development for teachers is critical for optimizing technology adoption. Adopting AI-powered systems simplifies administrative duties and streamlines operations. Gamification and immersive technology encourage participation and innovation. The emphasis on cybersecurity protects student data. In conclusion, incorporating technology into educational policies improves learning.



Teacher Empowerment: Teacher empowerment is emphasized as a cornerstone of the new education policy. It acknowledges the importance of well-trained and motivated teachers in influencing kids' futures. To do this, the strategy emphasizes professional development, giving instructors with opportunity for continual training to improve their skills and keep current with modern teaching methods and technologies. Furthermore, the strategy strives to improve teachers' standing by fostering educational research and innovation, encouraging teachers to actively participate in curriculum design, and providing them with greater autonomy in the classroom. Recognizing the significance of teacher well-being, the policy covers their working conditions as well, offering a favorable setting that stimulates creativity and enthusiasm. The new education strategy aspires to promote a vibrant and inclusive learning environment by promoting teacher empowerment.

Skill Development

The new education policy prioritizes the development of all skills, especially strategic thinking. Students are encouraged to develop critical thinking, problem-solving, and decision-making skills. A multidisciplinary approach brings subjects together, providing a broader perspective and strategic thinking. Collaboration projects and case studies give students hands-on experience applying ideas to real-world scenarios. Adaptive learning strategies personalize education by allowing students to advance at their own speed and thoroughly investigate strategic themes. Digital literacy is integrated into the curriculum, providing students with the tools they need to navigate the information age wisely. Regular exams measure not only rote memorization but also strategic thinking. Faculty development is centered on new pedagogies that foster strategic thinking. Extracurricular activities such as debates, simulations, and entrepreneurship programs help students refine their strategic skills even further.



Conclusion:

The new education policy is the result of a comprehensive and forward-thinking approach aimed at revolutionizing the educational landscape. The policy highlights the importance of adaptable and relevant education, with a focus on holistic development, adaptability, and diversity. It emphasizes the value of multidisciplinary education in developing critical thinking, problem-solving skills, and creativity. Using technology as an enabler, the strategy promotes digital literacy

and the incorporation of e-learning technologies, making education more accessible to a broader demographic. The emphasis on teacher training and professional development promotes a qualified and motivated teaching workforce, which is essential for successful implementation. The flexible approach of the policy allows students to choose their areas of interest and pace of learning, lowering stress and cultivating a real love of learning. The implementation of vocational education and internships provides a bridge.

NEW NATIONAL EDUCATION POLICY: TRANSFORMING LEARNING FOR THE FUTURE

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Abstract

The New National Education Policy (NEP) marks a groundbreaking milestone in the educational landscape of our nation. With a vision to revolutionize learning and cater to the needs of the 21st-century world, the NEP aims to transform the education system to empower learners, enhance critical thinking, foster creativity, and promote holistic development. This paper presents a concise overview of the New National Education Policy, its key objectives, and the potential impact it holds for the future of education in India.

Introduction

Education plays a pivotal role in shaping the future of any nation. Recognizing the need for a comprehensive and forward-looking educational framework, the Indian government unveiled the New National Education Policy in 2020. This policy has emerged after extensive consultations, research, and deliberations, with an emphasis on inclusivity, innovation, and relevance to the rapidly evolving global landscape.

Emphasis on Holistic Learning

The recently introduced New National Education Policy places a significant emphasis on holistic learning, recognizing the importance of a well-rounded education that goes beyond academic achievements. This policy aims to transform the education system to foster the overall development of students, nurturing their cognitive, emotional, physical, and social well-being. The focus on holistic learning encompasses several key elements:

- **Multidisciplinary Education:** The policy encourages an integrated and multidisciplinary approach to learning. It emphasizes the breaking down of traditional subject boundaries to promote cross-disciplinary understanding and application of knowledge. Students are encouraged to explore various subjects and engage in real-world problem-solving, enabling a more comprehensive understanding of complex issues.
- **Skill Development:** Holistic learning places a strong emphasis on developing practical and life skills alongside academic knowledge. The policy recognizes the

importance of nurturing skills such as critical thinking, problem-solving, creativity, communication, collaboration, and adaptability. These skills are considered essential for success in both personal and professional life.

- **Co-curricular and Extracurricular Activities:** The New National Education Policy encourages schools and educational institutions to provide ample opportunities for students to participate in co-curricular and extracurricular activities. These activities can include sports, arts, music, drama, community service, and more. Engaging in such activities helps students discover their interests, talents, and passions beyond academics.
- **Emotional and Mental Well-being:** The policy addresses the importance of emotional and mental well-being in the learning process. It advocates for the incorporation of mindfulness practices, counseling services, and stress-reduction techniques in the education system. By creating a supportive and nurturing environment, students' emotional and mental health can be better cared for, leading to improved overall learning outcomes.
- **Inclusive Education:** The policy promotes inclusivity and aims to cater to the diverse learning needs of all students. It recognizes that each student has unique strengths, challenges, and learning styles. By adopting inclusive teaching methods and providing necessary support, educators can help every student thrive and reach their full potential.
- **Character and Value Education:** Holistic learning integrates character and value education into the curriculum. Emphasis is placed on fostering ethical values, empathy, social responsibility, and a sense of citizenship. Students are encouraged to become responsible and compassionate individuals who can contribute positively to society.
- **Continuous Assessment:** The New National Education Policy encourages continuous assessment of students' progress rather than relying solely on high-stakes examinations. This allows educators to gain a deeper understanding of students' strengths and areas of improvement, enabling personalized and effective learning interventions.

By prioritizing holistic learning, the New National Education Policy seeks to create a generation of well-rounded individuals who are not just academically competent but also emotionally resilient, socially responsible, and equipped with the skills and values necessary to thrive in an ever-changing world. The policy aims to transform education into a transformative and empowering experience, preparing students to tackle future challenges with confidence and a broader perspective.

Early Childhood Education and Care

Early Childhood Education and Care (ECEC) is a critical phase of a child's development, laying the foundation for their future learning, social skills, and overall well-being. Research has consistently shown that high-quality ECEC programs positively impact a child's cognitive, emotional, and social development, setting the stage for academic success and lifelong learning.

Educational policies play a vital role in defining the structure and quality of early childhood education and care services provided within a country. These policies can encompass various aspects, such as curriculum development, teacher training, funding allocations, and the integration of technology in ECEC settings.

The objectives of a New National Education Policy specific to early childhood education may include:

- **Universal Access:** Ensuring that all children, regardless of their socio-economic background, have access to high-quality early childhood education and care programs.
- **Quality Standards:** Defining clear and comprehensive quality standards for ECEC institutions to ensure that children receive the best possible education and care during their early years.
- **Professional Development:** Focusing on the training and professional development of teachers and caregivers to enhance their skills and understanding of child development, pedagogy, and effective teaching methods.
- **Parental Involvement:** Encouraging and facilitating active parental involvement in a child's early education journey to create a supportive learning environment both at home and in the educational setting.
- **Play-Based Learning:** Emphasizing play-based learning approaches, as play is a natural and effective way for young children to learn and explore the world around them.
- **Inclusivity:** Ensuring that early childhood education and care policies promote inclusivity and cater to the diverse needs of children, including those with disabilities or from marginalized backgrounds.
- **Research and Monitoring:** Incorporating evidence-based research and regular monitoring and evaluation mechanisms to assess the effectiveness of ECEC policies and make necessary improvements.

Re Imagining School Education

NEP envisages a radical transformation of the school education system. It advocates for a 5+3+3+4 curriculum structure, replacing the existing 10+2 model

The new structure comprises five years of foundational education, three years of preparatory education, three years of middle education, and four years of secondary

education. This flexible framework aims to provide age-appropriate and skill-oriented education to students.

- **Holistic Development:** The re-imagined education policy would emphasize holistic development, nurturing not only academic skills but also social, emotional, and physical growth. The curriculum would be designed to include arts, sports, and extracurricular activities to foster well-rounded individuals.
- **Personalized Learning:** Recognizing that every student learns differently, the education policy would promote personalized learning approaches. Teachers would leverage technology and data analytics to tailor lessons based on individual student needs and learning styles.
- **Project-Based Learning:** The focus would shift from rote memorization to project-based learning, where students actively engage in real-world problem-solving. This approach fosters critical thinking, creativity, and collaboration.
- **Skill-Centric Curriculum:** The curriculum would be aligned with the demands of the 21st-century job market, emphasizing skills such as critical thinking, problem-solving, communication, and digital literacy.
- **Emphasis on Steam:** There would be a significant emphasis on STEAM (Science, Technology, Engineering, Arts, and Mathematics) education, encouraging students to explore these fields from an early age.
- **Inclusion and Diversity:** The re-imagined education policy would prioritize inclusivity, accommodating students with diverse backgrounds, abilities, and learning needs. Special attention would be given to ensuring access to quality education for all.
- **Teacher Empowerment:** Teachers would be given more autonomy and support in designing and delivering innovative lessons. Professional development programs would be offered to enhance teaching skills and techniques.
- **Assessment Reform:** The assessment system would move away from traditional exams and focus on continuous evaluation, including formative assessments, project assessments, and skill-based evaluations.
- **Integrated Technology:** Technology would be seamlessly integrated into the learning process, using smart classrooms, digital resources, and e-learning platforms to enhance educational experiences.
- **Community Involvement:** The education policy would encourage partnerships between schools, parents, and local communities to create a conducive learning environment and address various educational challenges collectively.
- **Environmental Awareness:** Environmental education would be woven into the curriculum to instill a sense of responsibility and sustainability in students.

- **Global Perspective:** The reimagined education policy would foster a global outlook, promoting cultural exchange programs and international collaborations to prepare students for a connected world.

Skill Development and Vocational Education

The policy recognizes the importance of equipping students with relevant skills for the modern job market. It emphasizes integrating skill development and vocational education into the curriculum, ensuring that students have practical expertise alongside theoretical knowledge. This integration seeks to reduce the gap between education and employability, fostering a workforce that meets the demands of a rapidly evolving economy.

- **Emphasis on Skill Development:** Skill development is increasingly being recognized as a vital aspect of education. The new policy may likely emphasize the need to bridge the gap between education and employability by integrating skill development into the curriculum. This could involve promoting practical learning experiences, hands-on training, and internships to equip students with relevant skills for the job market.
- **Integrating Vocational Education:** The NEP may seek to promote vocational education as a mainstream component of the education system. This integration aims to provide students with diverse career options and pathways beyond traditional academic routes. Vocational courses may cover a wide range of fields, including technology, hospitality, healthcare, agriculture, and more.
- **Industry-Academia Collaboration:** The policy may advocate stronger collaboration between educational institutions and industries. By involving employers and industry experts in the curriculum design and training process, students can gain exposure to real-world challenges and acquire industry-relevant skills.
- **Recognition and Accreditation of Prior Learning:** NEP might also recognize the value of prior learning and experiential knowledge. It may encourage the recognition and accreditation of skills acquired through informal means, work experience, or non-formal education, allowing individuals to build on existing competencies.
- **Entrepreneurship Education:** The policy might emphasize fostering an entrepreneurial mindset among students. By providing entrepreneurship education and support, the aim is to encourage students to become job creators rather than job seekers, promoting innovation and economic growth.
- **Flexible Education Pathways:** The new policy may introduce flexible pathways in education, allowing students to switch between academic and vocational

streams, based on their interests and aptitude. This approach acknowledges that students have diverse talents and learning preferences.

- **Technology Integration:** NEP could emphasize the integration of technology in skill development and vocational education. This may involve using online learning platforms, virtual simulations, and digital resources to enhance accessibility and effectiveness.
- **Continuous Learning and Upskilling:** The policy might recognize the importance of lifelong learning and upskilling. It may encourage professionals to engage in continuous learning to adapt to changing job requirements and technological advancements.

Multilingualism and Language Learning

NEP encourages multilingualism and recognizes the significance of regional languages in preserving cultural diversity. The policy emphasizes the benefits of learning multiple languages and advocates for promoting the mother tongue or regional language as the medium of instruction up to at least Grade 5. This approach aims to strengthen students' linguistic abilities and foster a deeper connection with their cultural heritage.

The New National Education Policy incorporates a strong emphasis on multilingualism and language learning, recognizing the significance of linguistic diversity in fostering a holistic and inclusive educational experience. The policy aims to promote linguistic pluralism and enhance language proficiency among students, thereby enabling them to effectively communicate and engage with the diverse cultural fabric of the nation and the global community. Several key features of the policy with regard to multilingualism and language learning are as follows:

- **Three-Language Formula:** The New National Education Policy advocates the implementation of a three-language formula, wherein students will be encouraged to learn and become proficient in three languages. These languages will include the mother tongue or regional language, the official language of the state, and one other modern Indian or foreign language. This approach fosters a deeper understanding of diverse cultures and enables students to connect with people from various linguistic backgrounds.
- **Early Language Learning:** The policy places emphasis on early language learning, recognizing that young minds have a remarkable capacity to acquire languages. Integrating language learning from the foundational stages of education helps in nurturing linguistic skills and cultural appreciation from an early age.
- **Indigenous and Tribal Languages:** To preserve and promote the linguistic heritage of India's indigenous and tribal communities, the New Education Policy

encourages the inclusion of indigenous languages in the curriculum. Efforts will be made to document and revitalize endangered languages, thereby fostering a sense of identity and cultural pride among these communities.

- **Language as a Medium of Instruction:** The policy recognizes the importance of using a student's mother tongue or regional language as the medium of instruction during the initial years of schooling. Research has shown that children learn better and grasp complex concepts more effectively when they are taught in a language they are familiar with.
- **Technology-Enabled Language Learning:** The New National Education Policy promotes the use of technology to facilitate language learning. Online platforms, educational apps, and digital resources will be leveraged to make language learning more interactive, accessible, and engaging for students.
- **Foreign Language Learning:** The policy places importance on the learning of foreign languages, which can enhance global communication, cultural exchange, and international cooperation. Schools and higher education institutions will be encouraged to offer a wide range of foreign language options to students.
- **Skill Development:** Language learning will not only focus on linguistic abilities but also on developing practical language skills that are relevant in the professional world. This includes communication skills, translation, interpretation, and cross-cultural understanding. By integrating multilingualism and language learning into the education system, the New National Education Policy seeks to empower students with the ability to navigate an increasingly interconnected world, appreciate diverse cultures, and contribute effectively to the global community while preserving India's rich linguistic heritage. The policy envisions a well-rounded educational experience that equips students with the linguistic skills and cultural competence necessary to thrive in a dynamic and multicultural society.

Technology Integration in Education

In line with the digital age, NEP emphasizes the integration of technology in education. It envisions the creation of digital infrastructure and the adoption of modern teaching tools to enhance learning experiences. The policy aims to leverage Artificial Intelligence (AI), Virtual Reality (VR), and Augmented Reality (AR) to create immersive and engaging learning environments.

Here are some key aspects related to technology integration in education:

- **Digital Infrastructure:** The policy emphasized the establishment of digital infrastructure in schools and educational institutions to facilitate seamless technology integration. This included providing access to high-speed internet,

ensuring availability of digital devices, and creating digital content and platforms for learning.

- **Blended Learning:** The NEP encouraged a blended learning approach, combining traditional classroom teaching with online and digital resources. This approach allowed for personalized and self-paced learning, enabling students to access educational content anytime and anywhere.
- **Online Education:** The policy recognized the potential of online education to reach a wider audience and provide quality education beyond geographical constraints. It aimed to create a regulatory framework for online education and promote the use of Massive Open Online Courses (MOOCs) and other digital platforms.
- **Teacher Training:** To ensure effective technology integration in the classroom, the NEP emphasized the importance of teacher training and professional development. Teachers were encouraged to develop digital literacy and skills to effectively use technology for teaching and learning.
- **Artificial Intelligence (AI) and Data Analytics:** The NEP acknowledged the significance of AI and data analytics in education. It aimed to leverage AI for adaptive learning, intelligent tutoring systems, and data-driven decision-making to enhance the overall learning experience.
- **Educational Apps and Resources:** The policy encouraged the development of educational apps, digital resources, and e-books to supplement classroom teaching. These resources were intended to be available in multiple languages to cater to diverse learners.
- **Assessment and Evaluation:** The NEP proposed the adoption of technology-based assessment and evaluation methods to measure learning outcomes accurately. This could include online examinations, automated grading systems, and data-driven feedback mechanisms.

Teacher Training and Professional Development

Recognizing the pivotal role of teachers in shaping the future of education, NEP emphasizes the need for robust teacher training and professional development programs. The policy aims to improve the quality of teaching by equipping educators with contemporary pedagogical techniques, promoting a learner-centric approach, and nurturing their own lifelong learning skills.

The New National Education Policy is a comprehensive framework aimed at transforming the education system in India. It addresses various aspects of education, including early childhood education, school education, higher education, and teacher training.

Teacher Training and Professional Development are critical components of the NEP. The policy emphasizes the need for continuous and comprehensive training for teachers to equip them with the necessary knowledge, skills, and pedagogical techniques to deliver high-quality education. Some key highlights of the Teacher Training and Professional Development aspect of NEP are as follows:

- **Continuous Professional Development (CPD):** NEP focuses on providing teachers with continuous opportunities for professional development. It encourages teachers to participate in workshops, seminars, training programs, and online courses to enhance their teaching abilities and keep up with the latest developments in education.
- **Digital Technology Integration:** The policy acknowledges the importance of digital technology in education and aims to integrate technology into teacher training programs. This includes training teachers on using educational technology tools and platforms effectively to enhance teaching and learning outcomes.
- **Multidisciplinary Approach:** NEP promotes a multidisciplinary approach to teacher training. It aims to break down traditional subject-specific barriers and encourage teachers to adopt a holistic approach to education, fostering critical thinking and creativity among students.
- **Teacher Educator Preparation:** The policy emphasizes the need for high-quality teacher educator preparation programs. It calls for the establishment of dedicated institutions for teacher educator training and professional development.
- **Emphasis on Pedagogy and Assessment:** NEP highlights the significance of innovative and effective pedagogical practices in teacher training. It also stresses the importance of fair and comprehensive assessment methods for evaluating teacher performance.
- **In-Service Training:** The policy recognizes the significance of in-service training for teachers who are already in the profession. It aims to provide ongoing support and training opportunities for experienced teachers to upgrade their skills and knowledge.
- **Collaborations and Partnerships:** NEP encourages collaborations and partnerships between educational institutions, teacher training centers, and other stakeholders to enhance the quality and reach of teacher training programs. The Teacher Training and Professional Development aspect of the New National Education Policy aims to elevate the status of teachers, improve the overall quality of education, and equip educators with the necessary tools to prepare students for the challenges of the 21st century. It is essential to keep in mind that the implementation of the policy may vary across different states and regions in India.

Conclusion

The New National Education Policy is a transformative step towards creating a future-ready education system in the country. By emphasizing holistic learning, skill development, technology integration, and teacher empowerment, the policy strives to equip students with the tools they need to thrive in a rapidly changing world. As stakeholders work together to implement the policy effectively, there is hope for a brighter future where education becomes a driving force for inclusive growth and societal progress.

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NEW NATIONAL EDUCATION POLICY 2023

ADULT EDUCATION AND LIFELONG LEARNING

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Abstract

The adult stage of the German National Educational Panel Study (NEPS) focuses on the adult working age population in Germany and serves, in many respects, as a capstone for the NEPS structure. Its main purpose is to collect data from Starting Cohort 6 (SC6, adults) on adult education, specifically on formal, non-formal, and informal further training; on competence endowment and its development over the life course; and on monetary and nonmonetary returns to initial and adult education in a life-course perspective. The data include a large number of theoretically derived determinants of adult education and competencies, as well as information on returns within and outside of the labor market. Detailed information on the learning environments at a workplace or in a household makes it possible to contextualize the returns to education. On the one hand, the SC6 data contain detailed retrospective information on education, labor market participation, and households; on the other hand, they provide yearly panel information from currently ten waves (as of May 2018). These rich data allow numerous analyses from a life-course perspective pertaining to sociological, economic, psychological, and developmental theories.

Keywords: Lifelong learning, adult education, neoliberal educational reforms, marketcentric educational reforms, fall of adult education, decline of welfare policies, literacy in India, Indian adult education.

Introduction:

The term 'education' usually refers more to (mean) 'formal education' based on organized and structured systems of curriculum-based classroom teaching and periodic evaluation at different levels. However, more broadly it also refers to all kinds of 'experiences' which help an individual grow wisely and become enlightened and empowered members of a society. In this latter sense, education is a 'lifelong process'. Here, lifelong learning embodies self-directed growth. From early times, self-education has been the main device of people of all nations and civilizations to cope with the world around them. During ancient times, education was part of the natural learning process in response to the struggle for survival.

Older generations of mature adults trained the younger members of their community or a group of them about the knowledge and skills, which they needed and were deemed, fit to learn. In pre-literate societies much of the knowledge and skills were transmitted by 'oral' means and through imitation. Later, written scripts were developed and preservation and transmission of knowledge became highly

structured and organized. This process of transmission of knowledge and skills gave rise to special institutions for imparting knowledge. Schooling as a formal and organized institution for transmission of knowledge came into existence during 3000 to 500 B.C. in Egypt and India.

However, modern schooling and education, which is more dominant today, is largely of European origin and can be dated back to 1770 A.D. Adult education and lifelong learning is all around us in our Endeavour to make a living, whether individually or collectively. Whenever we are engaged with each other in doing one thing or the other, one can see many examples of the ways in which people teach and learn mutually. Learning is an act or a process of gaining experience, knowledge and skills. In contrast, memory consists of an individual's capacity to store, retrieve, and act further on that knowledge. We become novices to experts based on our capacity to learn and gain new skills and knowledge. Our brain makes new pathways and connections based on reliability and predictability of our experiences (see Conner, 1995).

Development of Adult Education in India:

It is difficult to trace the roots of AE in Indian history, as most of it was oral and there were substantial levels of variations and regional diversities. The following paragraphs are an effort to briefly present the development of AE in the context of India, based on the available scholarly works. The broad classification of timeframes is also depicted in the diagram (Figure 1), which is based on the studies of Dutta (1986) and Shah (1999) on the history of Indian education. The diagram is divided into four major parts. The first part is LLL in ancient India and the second part extends up to the time when the British colonized India (LLL in the medieval period). The third part, LLL in the pre-Independence period, shows that the meaning of LLL was narrowed to adult learning. Importance was given to initiatives of AE and learning along with other associated issues. The fourth part (LLL post-Independence) represents the development of AE until recent times. It ends by showing that the concept of AE has started to change once again, with LLL on the rise. LLL has been an integral part of Indian culture since the ancient scripts (from 2000 bc to ad 1200) accorded prime importance to the virtues of learning (Shah, 2009, 2010; Mandal, 2013b). 'Learn as long as you live' to gain 'moksha' or emancipation (Shah, 1999) was rooted in a spiritual context, whereas learning exclusively for adults, or AE as we call it today, came much later.

During the Buddhist and Jain period, universities of international reputation were established in India. With the beginning of the medieval period, the Muslim system of education also paved its way to the subcontinent. Large numbers of maktabas and madrasas (Islamic schools) were established along with the existing

pathsalas (schools) in almost every village (Acharya, 1989). This continued for a long time with the tradition of oral transmission of knowledge, values and culture. Most rulers extended considerable patronage to the scholars, and towards different forms of art and culture. The local temples became the places where the 3Rs were imparted to adults through informal folk learning and interactions. However, a large section remained outside any organized education, as the temples were not accessible to many who belonged to the lower social strata (Mandal, 1993).

The Rise of LLL and the Fall of Ae in India:

While AE experienced budget cuts and lost its foothold in India from the 1990s, LLL appeared as a new policy area in the post-2000 period. This change may be clearly observed in the Tenth (2002–7) and Eleventh (2007–12) Five Year Plans of the Government of India (2002, 2007), which supported the marketcentric principles of learning and skills development above other objectives of formal and non-formal education. The National Knowledge Commission (2009) and the Yash Pal Committee Report to Rejuvenate Higher Education in India (2009), two major policy initiatives to revamp education, focused on the human resource development, using the contemporary and predominantly economistic principles of LLL. The Twelfth Five Year Plan (2012–17) does not mention LLL that often, but uses its principles in the document, indicating that LLL as a guiding principle is now rooted in the Indian national policy discourse. The fund cuts and reduced importance of AE, on the one hand, and the increased importance of LLL, on the other, apparently seem to indicate the old making way for the new. However, as we shall discuss in the following subsections, AE and LLL in the Indian context have taken two different routes. Here it seems important to question why LLL is not an evolved form of AE in the Indian context.

Welfare to market centric education reforms and adult education in India In an effort to understand the complexities of the contemporary dimensions of LLL, from international to national levels, it is important to understand how the network between market and politico-economic powers have reshaped education in recent times (Appadurai, 2001; Jarvis, 2008; Field, 2006). It can be found that the dominant power in the global economy stems from those who control the economic and technological institutions (Jarvis, 2008: 20). Contrary to the Marxist theory that power lies within each society, Jarvis says that with globalization the formation of individual power structure has become a more complex and interconnected one. This mainly refers to the economic power spread across countries, consisting of private capital and multinational corporations, and often the political power of powerful nations, which puts substantial pressure on individual societies to conform to the dominating trend set by them. This 'sub-structure' (Jarvis, 2008) practices its

power in each society through market mechanisms, opens up the possibility of exploring other markets, encourages big to grow bigger, helps to increase production and fosters innovation in order to meet the increasing demand of the global market. This also means that it encourages new learning, which can constantly invent, innovate and produce new commodities for the market.

However, it mostly encourages certain kinds of scientific and other knowledge that are required for the growth of markets. India, since its economic restructuring, has gradually entered into the new era of market economy. As a result, the education and allied policies of India have taken a path where the focus is not only on formal education, but also on all kinds of learning activities to make them compatible with the demands of globalization and the market. This clear shift from an earlier welfare centric model demands technologically skilled people, managers, people who are self motivated to learn for their professional growth and not necessarily those with any knowledge (for example, a knowledge of poetry, unless this has a market value) that will allow them to administer businesses and invent new solutions to keep them thriving.

The renewed focus of the national education policies is, in fact, not merely limited to business growth, and induces pressure from the substructure to produce more equipped and competent human resource for the domestic and global markets. The work of Rizvi and Lingard (2010) shows that this is not a unique phenomenon and can be witnessed worldwide; India is no exception. In the midst of these changes, LLL has evolved as a powerful policy discourse, championed by transnational policy organizations such as the European Commission, UNESCO, the World Bank and the Organization for Economic Cooperation and Development. It is important to note that there are various and sometimes contradictory interpretations of LLL among these organizations and/or in the countries or regions they represent. However, analyzing the new trends of LLL, it seems that unlike in the past, when LLL was considered as a path to achieve the zenith of knowledge and wisdom, the new form of LLL in major international policies is predominantly understood as a utilitarian way in which to promote human capital development.

This egalitarian conceptualization of LLL has helped to redefine educational priorities by supporting what is defined as legitimate or useful, and reduced support to those forms of learning that are of less or no immediate economic value (Biesta, 2006). With the change of terminology from e educationally, socially and economically marginalized. Instead of all-out support for the substructure (full market control), national policies try to balance the situation, and these balancing acts create a kind of 'cushioning' effect (Habermas, 2006: 81 in Jarvis, 2008: 30), which claims to protect the deprived from the harsh competition promoted by the market. It also provides a buffer space to allow the gradual introduction of new

dimensions of market control, which has the potential of gradually subsuming welfarecentric initiatives, including AE in its traditional guise.

Welfare to Marketcentric Education Reforms and Adult Education in India:

In an effort to understand the complexities of the contemporary dimensions of LLL, from international to national levels, it is important to understand how the network between market and politico-economic powers have reshaped education in recent times (Appadurai, 2001; Jarvis, 2008; Field, 2006). It can be found that the dominant power in the global economy stems from those who control the economic and technological institutions (Jarvis, 2008: 20). Contrary to the Marxist theory that power lies within each society, Jarvis says that with globalization the formation of individual power structure has become a more complex and interconnected one. This mainly refers to the economic power spread across countries, consisting of private capital and multinational corporations, and often the political power of powerful nations, which puts substantial pressure on individual societies to conform to the dominating trend set by them. This 'sub-structure' (Jarvis, 2008) practises its power in each society through market mechanisms, opens up the possibility of exploring other markets, encourages big to grow bigger, helps to increase production and fosters innovation in order to meet the increasing demand of the global market.

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Acceptance of LLL in Academia and as a Policy Initiative

This section explains why accepting LLL non-critically and believing in its face value helped LLL to establish itself firmly in India, and to some extent defeat the

original purposes of AE in the process. While AE since the 1990s and especially in the early 2000s was losing its ground owing to decreasing funding, the internationally popular LLL appeared as a savior, promoting the concept of 'learning from cradle to grave', similar to the ancient Indian philosophy of 'learn as long as you live'. However, the form of LLL that was championed by the West was more complex than the humble Indian philosophy of learning for enlightenment. During the late 1990s and early 2000s international policy organizations, especially UNESCO and the European Commission, started to influence Indian policies with the evolving notion of LLL. The UNESCO (1996) report, 'Learning the Treasure Within', and the 'Memorandum of LLL' (2000) by the European Commission were the most influential documents in promoting the new notion of LLL. The guiding principles of lifelong education in order to form a learning society that had been promoted by the Faure document (Faure et al., 1972) created the ground for LLL to percolate swiftly through society by romanticizing (Jarvis, 1999) the virtues of learning. Later LLL mutated into a more agile tool to support the learning economy with modish repackaging of 'learning society'. Eventually, the social purpose and tradition in which AE thrived and supported the idea of a learning society was virtually replaced by the new concept of a 'learning economy' championed under LLL and allied policies. Over time, the UNESCO policies also started to support a more economically orientated dimension of LLL and became somewhat ambiguous (Jarvis, 2008) in nature.

Fragmented Initiatives to Revive Adult Education in India:

This marginalization of Indian AE happened gradually, but was aggravated with the introduction of LLL. It happened partly because LLL was welcomed without a critical review or an analysis of its hidden nuances and nexuses; and partly because AE embraced LLL as a means of its own revival, a strategy that backfired. As a consequence, there are not one but multiple dimensions of LLL in India, each with its own specific and somewhat overlapping agendas, making the situation even more complex. The study of Mandal (2013a, 2013b, 2015) shows that the first dimension of LLL is related to the welfare centric collective reforms, which, in its present guise, is mostly confined to the eradication of illiteracy. The second one is neoliberal in nature, where LLL is seen as a means which promotes the open market economy, privatization and individualized learning pathways. Here, LLL for economic growth is much in line with the internationally predominant perspective.

There also exists a third type, termed the fragmented perspective, which tries to balance these two extreme perspectives (welfare and neoliberal). The efforts made by Indian academia to understand and promote LLL largely fall into the third category. This fragmented perspective allows LLL to be justified to all. The political angle

clearly indicates that the benefit of economic globalization is being brought to India, and at the same time the traditional perspective of LLL is being maintained in the form of AE, continuing education and so on. However, trying to be everywhere could also lead to a confused state where a lack of focus becomes evident.

Towards a New Beginning, or the End of an Era?

The trajectory of LLL in India is revolutionary in many ways, especially in the contemporary Indian context. However, the metamorphosis of LLL from AE to an overarching policy framework is not immune from criticisms. The dilemma of whether to keep the welfare perspective or the neoliberal one brings new challenges for Indian education policies and to their understanding of AE and LLL. After spending 40 years with a socialist pattern and a mixed economy (since Independence in 1947), there are new terms coming into play. These are liberalization, privatization, globalization and market friendliness (Kumar, 1998: 1391). LLL has become popular and powerful under the umbrella of neoliberalism, encompassing the above terms. In India, LLL has succeeded as a result of policy forethought, followed by a political afterthought that has been translated through academic support, which has made it almost immune from any strong resistance.

AE in India was initiated by an effort to improve the educational and life conditions of adults, mostly outside formal schooling; thus, it is essentially a 'social transformation' plan, based on humanist ideology' (Barros, 2012: 130). But with the new notion of LLL, political mandates are pursued so that they are assimilated into all forms of education and learning, infused with neoliberal ideologies and backed by a powerful and extremely volatile market. The perception of LLL promoted by AE and by neoliberal policies thus stands at two extremes, with some apparent similarities on the surface. Moreover, these two LLLs are no longer contiguous and have taken two very different developmental routes.

Conclusion:

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IMPACT OF DIGITAL TECHNOLOGY ON BLENDED LEARNING

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Abstract

In the age of rapid technological advancements, the significance of Digital technology has gained prominence all over the world. Digital technology has become such an integral part of our lives, from computers, laptops to tablets and smart phones. we live in era where information is easily accessible at our fingertips. The digitalization of learning resources had undoubtedly made education more accessible and convenient. It allows students to learn at their own pace and explore a variety of educational materials beyond the traditional classroom setting. One way to strike this purposeful balance is Blended learning..This paper makes an attempt to understand the concept of Blended learning and how this blended learning provides an opportunity to differentiate instructions and cater to the diverse needs of the students.

Keywords: Digital technology, education, classroom, blended learning, students..

Introduction

Technology has definitely revolutionized the way we approach education.It's incredible how digital technology has become such an integral part of our lives,from computers and laptops to tablets and smart Android phones.We live in an era where information is easily accessible at our fingertips .The digitalization of learning resources has undoubtedly made education more accessible and convenient.It allows students to learn at their own pace and explore a variety of educational materials beyond the traditional classroom setting with online resources like e-books, interactive tutorials, virtual simulations,and educational apps,students have the opportunity to engage with the content in innovative and exciting ways.

Use of Technology in Education

Digital technology enhances the learning experience by providing media resources that cater to different learning styles.Visual learners can benefit from videos and graphics,while auditory learners can engage with podcasts and audio lectures.Digital Technology also offers personalized learning experiences,as students can choose the pace and depth of their studies.

Definition of Blended Learning

The simplest definition of the term blended learning is the use of traditional classroom teaching methods together with the use of online learning for the same

students studying the same content in the same course. It is a “thoughtful fusion of face-to-face and online learning experiences” (Garrison & Vaughan, 2008).

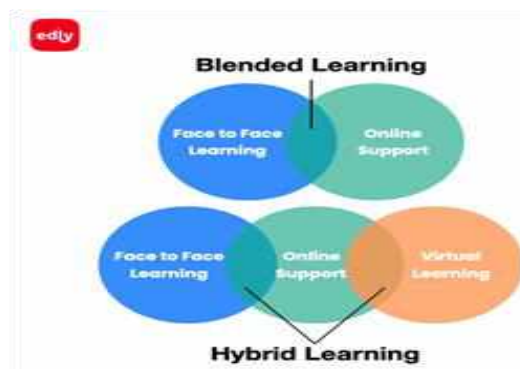
What is Blended Learning



The online learning environments in terms of providing a human to human interaction as well as diminishing the isolation from other learners forces distant learning scholars to find out a solution for the instruction delivery modalities that they offer to their students. It is clear that some practical features of face-to-face Instruction need to be put into practice in distant learning environments as well. The need for collaboration between the face-to-face and online learning leads the educators towards a new approach to Teaching and learning which is “called as hybrid or blended learning” (Rogers, 2001, p.11).

This new blended learning approach principally provides a blend of both face-to-face and online or distant learning and teaching experiences. The primary interest is creating more effective learning experiences or increasing access and flexibility, it is likely that the forthcoming learning systems will provide a blend of both face-to-face and online teaching experiences. Therefore, there is growing trend in academic and business circles to combine face-to-face education with Web-based education (Askun, 2007). Therefore Blended learning is an educational approach that combines traditional face-to-face instruction with online learning activities. It is a hybrid learning mode that integrates best aspects of both in- person and online learning.

Difference Between Hybrid and Blended Learning?



Along with blended learning, there is hybrid learning. These two learning approaches are often mistakenly considered synonymous. Although they both signify a type of mixture, there is a significant difference between them.

In hybrid learning, a teacher or instructor delivers materials to learners, some of whom attend class in person, while others join the class virtually from home. In this case, the educator will teach remote and physically present students at the same time using tools like video conferencing hardware and software.

Blended learning, on the other hand, combines in-person teaching with online learning methods. So, learners can listen to a lecture in a classroom and then take an online quiz right there or at home.

<https://edly.io/blog/hybrid-versus-blended-learning-whats-the-difference/>

The Growth of Blended Learning

However the 21st century progressed, there has been a greater recognition of the importance of technology in education. Schools and districts have invested in infrastructure, providing students with access to computers and the Internet. Furthermore, many Educational Institutions have shifted towards a more student-centered approach, utilizing technology to enhance personalized learning.

Today, Digital Technology is an Integral part of Education. It is used not only as a supplement to traditional teaching methods but also as a tool for collaboration, creativity, and critical thinking. Online learning platforms, interactive multimedia resources, and virtual reality simulations are just a few examples of how Digital Technology is transforming education.

The COVID-19 pandemic further accelerated the integration of technology in education. With schools closing and the shift to remote learning, technology became the primary means of instruction. This unprecedented situation highlighted both the potential and the challenges of technology use in education. It exposed the disparities in access to technology and the need for professional development for teachers to effectively utilize online platforms.

According to the U.S. Department of Education (Means, Toyama, Murphy, Bakia, & Jones, 2009), a blend of classroom and web-based teaching and learning offers access to the widest range of learning modes and methods for developing student skills and expertise as learners (Cleveland-Innes, 2017).

Modern blended learning is delivered online, although CD-ROMs could feasibly still be used if a learning management system meets an institution's standards. Some examples of channels through which online blending learning can be delivered include webcasting (synchronous and asynchronous) and online video (live and recorded).

Review of Literature:

According to Higgins, Xiao, & Katsipataki, (2012). Technology can be made use of by the individuals in groups and pairs and this is considered as more effective than single usage.

Digital technology can be competent and valuable with the main purpose of making improvements within the learning areas (Higgins, Xiao, & Katsipataki, 2012).

According to Graham ,(2013) Blended learning and research issues Blended learning (BL), or the integration of face-to-face and online instruction is widely adopted across higher education with some scholars referring to it as the "new traditional model.

The 2017 New Media Consortium Horizon Report found that blended learning designs were one of the short term forces driving technology adoption in higher education in the next 1-2 years (Adams Becker et al. 2017)

According to Jayme Linton. Blended learning acknowledges the indispensable role of the teacher in facilitating student learning while acknowledging the advantages of technology applications on student learning."

Methodology

The methodology used under this study is secondary data. Most of the information is derived from the Internet, blogs, relevant websites, journals, magazines..

Some of the Key Impacts of Digital Technology on Blended Learning Include :

1. **Increased access to resources:** Digital technology has made it easier for students and teachers to access a wide range of learning resources online, such as e-books, videos, and interactive learning materials. This has expanded the learning possibilities beyond the limitations of traditional textbooks and classroom materials.
2. **Personalized Learning:** Digital technology has enabled the use of personalized learning platforms and software that adapt to each student's individual needs, preferences, and pace of learning. This allows students to learn at their own pace and focus on areas that they need to improve while receiving immediate feedback and support from digital tools.
3. **Collaboration and Communication:** Digital technology enables students and teachers to collaborate and communicate with each other more easily through online forums, video conferencing, and instant messaging. This fosters a more interactive and collaborative learning environment where students can discuss ideas, share resources, and work on projects together.
4. **Flexibility and Convenience:** Digital technology has made blended learning more flexible and convenient, as students can access learning materials and

participate in online discussions anytime and from anywhere. This benefits students who may have other commitments such as work or family responsibilities, as they can learn at their own convenience.

5. **Enhanced Engagement and Motivation:** Digital technology offers various interactive and gamified learning tools that can make the learning process more engaging and motivating for students. For example, online quizzes, simulations, and educational games can help increase student engagement and motivation by adding an element of fun and interaction to the learning experience.

Need for Blended Learning in the Indian Education System

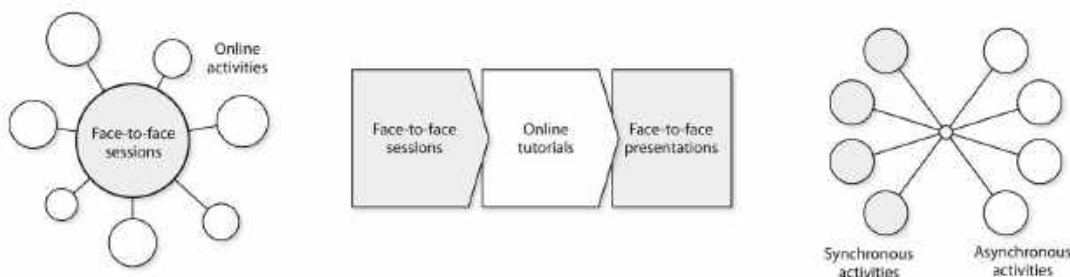
The impact of union budget 2017 over the education sector has made the higher education to be multi dimensional. Every one is willing to have modernized education along with the personality development which gives an open way for employment.

Government's Vision for Education system Digitalization is one of the trendy norms of the government and it has released the following measures to support online education.

1. SWAYAM-Online portal
2. NEP-National Education policy
3. HEERA-Higher Education Empowerment Regulation Agency
4. UGC- University Grants Commission
5. The Ultimate aim of all the above schemes is to groom the students to face the challenges of digital India.

Blended Learning Models

Blended learning can be divided into three main models.



Models of Blended Learning

The first model, blended presentation and interaction, has classroom engagement as its primary component, with support from out-of-class, online exercises. The flipped classroom or flipped curriculum approach is a common example of this model, with students viewing podcasts or other online resources independently,

followed by classroom-based tutorials or seminars for group learning based upon these resources.

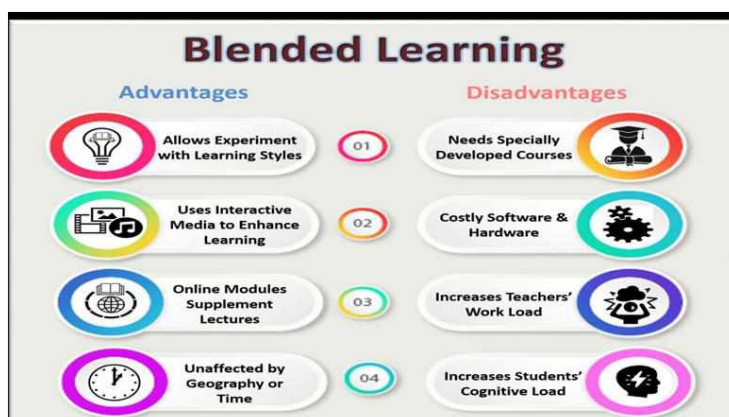
The second is the blended block model (sometimes called a program flow model), in which a sequence of activities, or “blocks,” is structured to incorporate both face-to-face learning and online study, usually with consideration for both pedagogical goals and practical constraints.

The third model is fully online but may still be considered blended if it incorporates both synchronous learning

Three Models of Blended Learning.

MODEL 1	MODEL 2	MODEL 3
Blended Presentation and Interaction	Blended Block	Fully Online
Activity-focused face-to-face sessions blended with online resources. For example, the flipped curriculum model combines: short lecture podcasts, online resources with face-to-face tutorial/seminars for interaction and presentation of group work.	Combination of: intensive face-to-face sessions as one day or half days weekly online tutorial /seminars for activities and interaction online content and resources	Combination of: short lecture podcasts with online resources and learning activities online tutorials (synchronous) interaction via online collaboration, discussion forums and/or group work

Source: Hannon & Macken (2014)



Conclusion

It has been understood that the Increased availability of Digital Technology and Network access has made Blended learning a viable and effective approach in education. By combining face-to-face teaching with online resources, blended learning offers flexibility, increased engagement, and personalized instruction, enhancing the learning experience for students. One of the key benefits of blended learning is its ability to cater to different learning styles and paces. By incorporating online resources, such as videos, interactive quizzes, and discussion forums, students can access and review content at their own pace. This allows for differentiated instruction and provides opportunities for students to explore concepts in a way that suits their individual learning preferences.

Blended learning also promotes active learning and student engagement. Online components, such as virtual simulations, gamified learning activities, and multimedia presentations, can make the learning experience more interactive and engaging. This can help to capture students' attention and maintain their interest in the subject matter. Despite these there are few drawbacks of Blended Learning...difficult to find the right blend of online learning and face-to-face teaching. Time constraints. It can be difficult to find time to work on learning activities during class times. The use of Technology in a way that works for you. We may have to learn how to use the technology for yourself. There are more logistics to be managed in teaching online classes. It is concluded that blended learning is some extent is the solution to problems prevailing in today's education system.

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OVERVIEW OF NEW NATIONAL EDUCATION POLICY- 2020

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Abstract:

The New National Education Policy 2020 is a comprehensive and transformative policy introduced by the Government of India with the aim of revolutionizing the education system. It marks a significant step towards transforming the education landscape, empowering learners and fostering a knowledge driven society that can effectively tackle the challenges of 21st century. This paper provides a History of New Education Policy, Objectives of NEP, Highlights of NEP, Benefits and Challenges of NEP.

Keywords: *Benefits, New National Education Policy, Objectives, Highlights.*

Introduction:

Getting proper basic education is the birthright of each and every individual as per the Indian Constitution. Education is the key element in the development of a child for getting ready to lead a happy life. The change in the National education policy, after 1986 in the 21st century took place in July 2020 and emerges out to be the new education policy 2020. New education policy is formulated by the government of India aiming towards achieving the policy initiatives by 2030. It is a complete change in the existing education policy which was last implemented in 1986. It is focusing on the self-capabilities of child and concept-based learning, instead of rote learning procedures. Getting proper basic education is the birthright of each and every individual as per the Indian Constitution. Education is the key element in the development of a child for getting ready to lead a happy life. The change in the National education policy, after 1986 in the 21st century took place in July 2020 and emerges out to be the new education policy 2020.

History of New Education Policy:

The need for a new education policy was felt in the country for a long time. Three National Education Policies have been introduced in India till now. These three policies are National Education Policy 1968, National Education Policy 1986 and National Education Policy 2020. The National Education Policy 1986 was revised in the year 1992. The emphasis of previous policies on education was mainly on issues of access to education. The New Education Policy has been brought in keeping with the shortcomings of the previous education policy and the current and future needs,

which can lead to large scale transformative reforms in both the school and higher education sectors.

In June 2017, a committee was formed under the chairmanship of former ISRO chief Dr.K.KasturiRangan to formulate a new education policy. The draft of the National Education Policy was presented by this committee in May 2019. The National Education Policy, 2020 was approved by the Government of India on July 29, 2020 and the Ministry of Human Resource Development was also renamed as the Ministry of Education. The New Education Policy will replace the 34 year old National Education Policy 1986.

Objectives of New National Education Policy 2020:

- The New National Education Policy 2020 aims at the universalization of education from preschool to secondary level with a 100% Gross Enrollment Ratio (GER) in schooling by 2030.
- The New National Education Policy 2020 proposes some changes, including the opening of Indian Higher Education in foreign universities and the introduction of a four year multidisciplinary undergraduate program with several exit options. The objective of the New Education Policy 2020 is to make India a global knowledge superpower.
- The NEP 2020 policy also proposes that all universities and colleges aims to be multi-disciplinary by 2040. This policy will boost employment in the country and fundamentally change our educational system.

Structural Transformations in New Education Policy

School Education

The 10+2 module is replaced by 5+3+3+4 model. The execution will be carried out as:

- **Foundational Stage** - It will include three years of pre-schooling period.
- **Preparatory Stage** - It constitutes of classes 3-5, with ages 8-11 years.
- **Middle Stage** - It will constitute of class 6-8, with age 11-14 years.
- **Secondary Stage** - It will constitute class 9-12, with ages 14- 19 years. These four years will be linked with choice for multi-disciplinary study. It will not be necessary to study in only one discipline.
- The students have to give exams only thrice i.e. in 3, 5, and 8th class.
- “PARAKH”, an assessment body has to be established for assessing student’s performance.

Higher Education

- The bachelor's programme would be a 4-year programme with a flexible exit. Obtaining a year course will provide with certification, 2-year with a diploma degree, 3-year with a bachelor's degree, and 4-year will be integrated with the research work and finding related to the subject studied.
- Higher Education Grants Council (HEGC) for providing funds and finances to universities and colleges. This will replace AICTE and UGC.
- The responsibility of the national testing agency to hold common entrance for universities and colleges along with conducting NEET and JEE.
- Master of Philosophy courses to discontinue, as it was an intermediate course between Masters and Ph.D.
- National Research Foundation (NRA) to be developed to foster research and innovations.
- The foreign universities to set their campuses in our country and vice versa.

Teacher's Education and Recruitment

- The 4-year integrated B.Ed programme made it essential for teaching.
- There must be workshops organized for the training of the teachers regarding various teaching aids.
- Transparency in recruiting processes of teachers as teachers are at a centralized role for the development of students.

Beneficial Impacts of the New Education Policy

- It lays stress on the self-capability, cognitive skills of the learner. It will help a child to develop their talents if they are having inborn talents.
- Earlier the students had the option of opting for only one discipline for studying but now different subjects can opt, for example – one can opt for art and craft along with mathematics.
- Emphasis on every subject to be treated equally.
- The main motive is to develop the power of interaction, critical thinking, and the ability to reasoning with the inculcation of innovative ideas among the students.
- The multiple exit option in bachelor's courses will provide an opportunity for the students to benefit from the experience and attain skills by working somewhere in meantime and then continue later.
- The new education policy focuses on the practical aspect of learning any subject, as it is considered a better way of understanding the concept.
- All the institutions and higher education institutes to become multidisciplinary by 2040.

Disadvantages:

- The implementation of the language i.e. the teaching up to 5th grade to be continued in the regional languages is the utmost problem. The child will be taught in regional language and therefore will have less approach towards the English language, which is required after completing 5th grade.
- Kids have been subject to structural learning, which might increase the burden on their small minds.

Challenges of New National Education Policy 2020

- **Expensive Education:** Under the New National Education Policy 2020, admission to foreign universities is expected to make the education system expensive.
- **Lack of Human Resources:** There is a shortage of skilled teachers in current elementary education. In such a situation, practical problems are being seen in the implementation of the system made for elementary education under the National Education Policy 2020.
- **The Exodus of teachers:** Admission to foreign universities will lead to the migration of skilled Indian teachers.
- **Resource Allocation:** Adequate funding and resource allocation are crucial for implementing the policy's ambitious reforms. Ensuring sufficient financial support and effectively utilizing the allocated resources at all levels of education can be challenge.
- **Monitoring and Evaluation:** Establishing a robust monitoring and evaluation system to track the progress and impact of the policy is essential. Regular assessments and feedback mechanisms are required to identify shortcomings and make necessary adjustments to ensure the policy's effectiveness.
- **Curriculum Overhaul:** Revising and redeveloping the entire curriculum to align with the new policy's principles can be a complex task.

Highlights of New National Education Policy

- The policy seeks to restructure school curricula and pedagogy in a new '5+3+3+4' design, so that school education can be made relevant to the needs and interests of learners at different developmental stages – a 'Foundational Stage' (five years), a 'Preparatory Stage' (three years), a 'Middle Stage' (three years) and the 'High Stage' (four years, covering grades nine, 10, 11 and 12).
- It aims to achieve 'universal foundational literacy and numeracy' in primary schools by 2025. For this, the Ministry of Human Resource Development shall set up a National Mission on Foundational Literacy and Numeracy.

- Public and private schools – except the schools that are managed, aided or controlled, by the central government – will be assessed and accredited on the same criteria, benchmarks, and processes.
- The Gross Enrolment Ratio from preschool to secondary education should be 100 per cent by 2030. (GER is defined as the ratio of the total enrolment in education – regardless of age – to the official population in a given school year, expressed as percentage.) The policy states that universal participation in schools shall be achieved by tracking students and their learning levels to ensure they are enrolled and attending school, and have suitable opportunities to re-join or catch up at school in case they have dropped out or fallen behind.
- The medium of expression until at least grade five – but preferably till grade eight or beyond – shall be the student’s mother tongue, or the local or regional language. The ‘three-language formula’ will continue to be implemented in schools, where two of the three languages shall be native to India.
- The policy seeks to standardise the school curriculum for Indian Sign Language across the country.
- The government of India shall constitute a ‘Gender-Inclusion Fund’ to provide equitable and quality education to all girls and transgender students. States shall use this fund to implement the central government’s policies for assisting female and transgender students, such as provisions for toilets and sanitation, conditional cash transfers and bicycles. The fund will enable states to support ‘community-based’ interventions.
- The policy suggests establishing ‘school complexes’ consisting of a secondary school and other schools offering lower grades of education – including *anganwadi* centres – in a radius of 5 to 10 kilometers. Such a complex will have “greater resource efficiency and more effective functioning, coordination, leadership, governance, and management of schools in a cluster.”
- All education institutions shall be held to similar standards of audit and disclosure as a ‘not-for-profit’ entity, says this policy. If the institution generates a surplus, it shall be reinvested in the educational sector.
- The policy says that all ‘higher education institutions’ (HEIs) shall aim to be multidisciplinary by 2040. By 2030, there shall be at least one multidisciplinary HEI in or near every district. The policy aims for the Gross Enrolment Ratio in higher education to increase to 50 per cent by 2035 from 26.3 per cent in 2018.
- HEIs shall have the flexibility to offer Master’s programmes of two years for those who have completed a three-year undergraduate programme, of one year for students who have completed a four-year undergraduate programme, or five-year integrated Bachelor’s and Master’s programmes.

- M.Phil. programmes shall be discontinued.
- The policy says that ‘high performing’ Indian universities shall be encouraged to set up campuses in other countries. Similarly, selected universities – such as those from among the top 100 universities in the world – shall be encouraged to operate in India.
- A National Research Foundation shall be established to facilitate “merit-based but equitable” peer-reviewed research funding.
- The policy says that the centre and states shall work together to increase public investment in education to 6 per cent of the gross domestic product, from the current 4.43 per cent.

Conclusion :

The new education policy is laid down with several initiatives that are really the need of the present scenario. The policy is concerned with attention on skill development along with the study curriculum. Merely dreaming of anything will not make it work, as proper planning and working according to that will only help in fulfilling the objective. No sooner the objectives of NEP are achieved, will propel our nation towards progress.

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NEW EDUCATION POLICY-CHALLENGES OPPORTUNITIES IN HIGHER EDUCATION

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Abstract :

The foundation of any country's growth and development is its educational system, the National Education Policy 2020 has been repurposed as the foundation for this reform, which might aid in the development of a new educational system in the nation as well as the improvement of those economic and social indices. Due to the fact that education promotes social and economic advancement, a nation's school and college levels require a well-defined and futuristic education strategy. Taking into account tradition and culture, different nations implement various educational systems. Many education professionals never anticipated the adjustments that NEP 2020 has suggested. Although both high school and college education have been touched by the education policy, this article primarily concentrates on NEP 2020 and its effects on higher education.

Introduction:

"Education is a Key to Success and this Success can be Attained by the Appropriate Implementation of the Policy,"

NEP is essentially a thorough framework for directing the growth of education in the nation. Since then, there have been significant changes in both the sector as a whole and the entire world.. The new NEP was introduced with the intention of formalising systemic improvements from the K-12 to the college/university levels. Education content moving forward will concentrate on key concepts, ideas, applications, and problem-solving stances in light of the evolving situation.. The government's decision to permit international colleges to establish campuses in India is an admirable one. The introduction of multidisciplinary institutions will result in a renewed emphasis on all academic disciplines, including the arts and humanities, and this method of instruction will support students' holistic learning and development. Students will therefore possess a stronger knowledge base.

Objective

- To study the impact of New Education Policy 2020 on higher education.
- To outlines the salient features of NEP
- To analyses how NEP, affect the existing education system.

The Oretical Framework New Education Policy 2020 Highlights

- The 10+2 board format is eliminated.
- The new school will have a 5+3+3+4 configuration.
- There are up to 5 preschools, 6–8 middle schools, 8–11 high schools, and 12 and up.
- Graduation Any degree will be four years long.
- Vocational classes are offered from the sixth grade forward.
- Subject options are available to students in grades 8 through 11.
- All courses leading to graduation will have a major and a minor.
- A single authority will oversee all forms of higher education.
- The UGC and AICTE will merge.
- All universities, whether public or private, open or deemed, vocational or otherwise, New Teacher

NEP 2020 in Higher Education

- The policy envisages broad based, multi-disciplinary, holistic Under Graduate education with flexible curricula, creative combinations of subjects, integration of vocational education and multiple entry and exit points with appropriate certification. UG education can be of 3 or 4 years with multiple exit options and appropriate certification within this period. Academic Bank of Credits to be established to facilitate Transfer of Credits
- Multidisciplinary Education and Research Universities (MERUs), at par with IITs, IIMs, to be set up as models of best multidisciplinary education of global standards in the country.
- National Research Foundation will be created as an apex body for fostering a strong research culture and building research capacity across higher education.

How NEP Affects Higher Education

The NEP 2020 has set an ambitious goal of enhancing the quality of Higher Education Institutions (HEI), placing India as a hub of global education, and virtually doubling the GER in higher education from 26.3 percent (2018) to 50 percent by 2035. The main goals are to facilitate research, enhance faculty support, promote internationalisation, and provide a flexible curriculum through an interdisciplinary approach with numerous departure points throughout a four-year undergraduate degree.. These organisations will eventually take the place of previous regulatory authorities like the All India Council for Technical Education and the University Grants Commission (UGC) (AICTE).

- Integration of vocational education within higher education. At least 50 per cent learners to have exposure to vocational education by 2025.

- Enhanced equity and inclusion – Establishing high-quality HEIs in aspirational districts and Special Education Zones. At least one large multidisciplinary HEI in or near every district by 2030 .
- Reputed international universities to be encouraged to set up Indian campuses.

Issues Related to NEP 2020

- **Knowledge-Jobs Mismatch:** The knowledge and skills taught and the jobs offered consistently don't match up. One of the biggest issues the Indian educational system has faced since Independence is this. Since NEP 2020 makes no mention of education in rapidly developing technological areas like artificial intelligence, cyberspace, nanotechnology, etc., it was unable to verify this.
- **The Requirement of Enormous Resources.** A lofty goal of 6% of GDP for public spending has been established. Given the low tax-to-GDP ratio and conflicting demands on the national exchequer from the national defence, healthcare, and other important sectors, mobilising financial resources will be very difficult.

Drawbacks of NEP

- The new education policy aims to prioritise mother tongue or regional language instruction in schools (until 5th standard, but preferably till 8th).
- This policy might be ineffective, though, as it undermines the use of English in many private schools. One of the most frequently used and widely spoken languages in the world is English.
- India has traditionally stood out by promoting the use of English in educational settings, providing us an advantage over other Asian nations.
- As many states in Southern India have multiple regional languages, this strategy will also have a negative impact on parents whose occupations require frequent relocations. Therefore, a move would interfere with the child's schooling.
- NEP 2020, in conclusion, seems admirable on paper but would be a difficult undertaking in practise. I therefore anticipate seeing things work as intended.

Conclusion :

Right now, the new national education policy is picture-perfect. But the implementation of it before the deadline is the key to its success. To reap the enormous benefits that will be introduced into the system with its proper execution, we must now patiently wait and see how things develop in the future. The country's higher education system is anticipated to have good and long-lasting effects as a result of the National Education Policy. The government's decision to permit international colleges to establish campuses in India is an admirable one. This will enable the children to benefit from a local education that is of a high international standard.

OPPORTUNITIES AND CHALLENGES OF NATIONAL EDUCATIONAL POLICY 2023 IN HIGHER EDUCATIONAL INSTITUTES: A CASE STUDY OF ANDHRA PRADESH INDIA

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Abstract:

The National Educational Policy (NEP) 2023 is an essential initiative aimed at transforming the landscape of higher education in India. This abstract explores the potential opportunities and challenges that the NEP 2023 presents for higher educational institutes in state of Andhra Pradesh. In Andhra Pradesh there are 3 central universities, 20 central autonomous Institutions, 25 state universities, 4 deemed universities, 5 private universities, and 345+ Private Engineering Colleges. The policy's opportunities include a renewed focus on research and innovation, enhanced employability through skill development, flexibility in curriculum design, integration of digital infrastructure, and the promotion of international collaborations. However, realizing these opportunities comes with its set of challenges, such as effective policy implementation at the institutional level, upgrading infrastructure and resources, faculty development to meet new objectives, addressing inclusivity and regional disparities, designing robust assessment mechanisms, and garnering public awareness and participation. This abstract highlights the significance of carefully navigating these opportunities and challenges to ensure successful and meaningful implementation of NEP 2023 in higher educational institutes, ultimately contributing to the advancement of India's education system and fostering well-rounded graduates ready to tackle global challenges.

Keywords: NEP, Higher Education Institutes, Regional Disparities

I. Introduction:

The National Educational Policy (NEP) 2023 is a transformative framework that seeks to revamp the educational landscape of India, with a specific focus on higher education. As one of the leading states in the country with a rich history of education, Andhra Pradesh is poised to play a crucial role in implementing the NEP 2023 in its higher educational institutions. Higher Education Commission of India (HECI) will be set up as a single overarching umbrella body for entire higher education, excluding medical and legal education. HECI to have four independent verticals - National Higher Education Regulatory Council (NHERC) for regulation, General Education Council (GEC) for standard setting, Higher Education Grants Council (HEGC) for funding, and National Accreditation Council (NAC) for

accreditation. Public and private higher education institutions will be governed by the same set of norms for regulation, accreditation and academic standards.

Affiliation of Colleges is to be phased out in 15 years and a stage-wise mechanism is to be established for granting graded autonomy to colleges. Over a period of time, it is envisaged that every college would develop into either an Autonomous degree-granting College, or a constituent college of a university.

New Education Policy 2023 : Major Reforms

The Major Reforms in Education Policy according to the NEP 2023 are listed below.

- There will be no discernible divide between the arts, sciences, academic, vocational, curricular, and extracurricular disciplines.
- Foundational Reading and Numeracy will be prioritised.
- The 10+2 structure is replaced by a 5+3+3+4 model.
- No state language is imposed on students studying in any state.
- Students are permitted to take the Board Examinations twice.
- Instead of 1.7%, the government will spend 6% of the country's GDP on education.
- The fund for gender inclusion will be completely established.
- The government would go above and above to ensure that gifted youngsters receive a suitable education.
- The undergraduate courses will last four years.
- A 4-year integrated B.Ed Course will be required to apply for the position of teacher.
- A Common Admission Examination for admission to HEIs will be implemented.
- The Master of Philosophy programme will be phased out of the educational system.
- In Secondary School, pupils will be able to choose from a variety of disciplines such as arts and crafts, vocational courses, and physical education.
- The PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development) organisation will define the standards for Board Examinations. The government will make Indian literature and other classical languages part of the educational curriculum.
- Instead of every academic year, students' exams will be held only in classes 2nd, 5th, and 8th.

II. Background Study:

In Andhra Pradesh, a general background study of implementation of higher education policies, including NEP 2020, might provide some context for NEP 2023.

1. **National Educational Policy 2020:** The NEP 2020 was a landmark policy that aimed to transform the entire education system in India, from school education to higher education. It sought to promote a more holistic and flexible approach to learning, emphasizing critical thinking, creativity, and skill development among students.
2. **Focus on Higher Education:** The NEP 2020 laid special emphasis on higher education, envisioning it as a vehicle for research, innovation, and the holistic development of students. It proposed various reforms in curriculum design, faculty development, research, and governance structures in higher educational institutions.
3. **Flexibility and Multidisciplinary:** The policy encouraged higher education institutes to adopt a multidisciplinary approach, enabling students to choose courses across different disciplines and promoting research that transcends traditional boundaries.
4. **Research and Innovation:** NEP 2020 emphasized transforming higher education institutions into vibrant hubs for research and innovation, with a focus on creating a conducive environment for cutting-edge research and collaboration with industries.
5. **Global Exposure:** The policy encouraged internationalization of higher education by promoting partnerships with foreign universities and facilitating student and faculty exchange programs to enhance global exposure.
6. **Challenges in Implementation:** Implementing a comprehensive policy like NEP 2020 involves challenges such as aligning state-level policies with the national framework, mobilizing financial resources, overcoming resistance to change, and ensuring equitable access to quality education across different regions.
7. **State-Specific Adaptations:** The implementation of NEP 2020 in individual states like Andhra Pradesh required making region-specific adaptations, considering the state's unique socio-cultural, economic, and educational context.

Moving forward to NEP 2023, it can be anticipated that its implementation in Andhra-Pradesh's higher education system may follow a similar pattern, building on the foundation laid by NEP 2020 while addressing its shortcomings and introducing new reforms tailored to the state's specific needs and aspirations.

III. Research Methodology:

This study is descriptive in nature. The required secondary data was gathered from a number of websites, including those run by the Indian government, magazines, journals, and other publications. To draw the inferences and draw the findings, the data was then examined and processed.

IV. The Opportunities of NEP in Higher Education in Andhra Pradesh

Opportunities of National Educational Policy (NEP) 2023 in Higher Educational Institutions in Andhra Pradesh, India:

1. **Research and Innovation Hub:** NEP 2023 envisions higher education institutions as vibrant centers for research and innovation. This presents an opportunity for universities and colleges in Andhra Pradesh to focus on research-oriented programs, establish research centers, and collaborate with industries and international institutions to drive innovation.
2. **Multidisciplinary Approach:** The policy promotes a multidisciplinary approach to education, allowing students to choose courses across various disciplines. This opportunity enables higher education institutes in Andhra Pradesh to design flexible and diverse curricula, catering to students' diverse interests and career aspirations.
3. **Skill Development and Employability:** NEP 2023 emphasizes integrating skill development programs into the curriculum to enhance students' employability. In Andhra Pradesh, this presents an opportunity for institutions to offer practical training, internships, and industry-oriented courses to prepare students for the job market.
4. **Digital Transformation:** The policy recognizes the importance of technology in education. Embracing digital transformation, higher educational institutions in Andhra Pradesh can leverage e-learning platforms, digital resources, and virtual classrooms to provide high-quality education and widen access to knowledge.
5. **Quality Improvement and Accreditation:** NEP 2023 emphasizes the establishment of a robust accreditation system to ensure quality education. This opportunity encourages institutions in Andhra Pradesh to focus on continuous improvement and meet the required standards, boosting their reputation and attracting students and faculty.
6. **International Collaboration and Global Exposure:** The policy encourages international partnerships and student exchange programs, promoting global exposure for students. This opportunity allows higher educational institutes in Andhra Pradesh to foster collaborations with foreign universities, exchange knowledge, and promote cultural diversity on campuses.
7. **Focus on Teacher Training:** NEP 2023 emphasizes enhancing the quality of teacher training programs. In Andhra Pradesh, this presents an opportunity to invest in faculty development initiatives, ensuring that educators are equipped with the latest teaching methodologies and pedagogical approaches.
8. **Recognition of Regional Languages:** NEP 2023 recognizes the importance of regional languages and encourages their use in education. This opportunity can promote the preservation of local cultures and languages in higher education

institutions in Andhra Pradesh, making education more inclusive and relatable to students.

9. **Focus on Vocational Education:** The policy promotes vocational education and skill-based courses. This opportunity allows institutions in Andhra Pradesh to offer a diverse range of vocational programs, addressing the growing demand for skilled professionals in various industries.
10. **Entrepreneurship and Start-up Culture:** NEP 2023 emphasizes promoting an entrepreneurial mindset among students. In Andhra Pradesh, this presents an opportunity to nurture an ecosystem that fosters innovation, start-ups, and entrepreneurship, encouraging students to become job creators rather than job seekers.

By capitalizing on these opportunities, higher educational institutions in Andhra Pradesh can play a crucial role in shaping a progressive, inclusive, and future-ready education system in alignment with the vision of NEP 2023.

V. The Challenges of NEP in Higher Education in Andhra Pradesh

Challenges of National Educational Policy (NEP) 2023 in Higher Educational Institutions in Andhra Pradesh, India:

1. **Effective Policy Implementation:** One of the primary challenges lies in effectively implementing the NEP 2023 at the state level. Coordinating efforts between the central government and the state government of Andhra Pradesh to ensure seamless integration of the policy's objectives in higher educational institutes may require careful planning and execution.
2. **Infrastructure and Resources:** Upgrading infrastructure and providing the necessary resources to meet the requirements of the new policy can be a significant challenge, especially for institutions with limited financial capacities.
3. **Faculty Development and Training:** Preparing faculty members to adapt to the new curriculum, teaching methodologies, and research-oriented approach may require substantial investment in faculty development programs and training.
4. **Addressing Regional Disparities:** Andhra Pradesh is a diverse state with varying levels of educational development across regions. Addressing regional disparities and ensuring equitable access to quality education under NEP 2023 may pose challenges.
5. **Curriculum Design and Implementation:** Redesigning and implementing a flexible, multidisciplinary curriculum that aligns with the policy's objectives while maintaining academic rigor and relevance can be complex.
6. **Assessment and Evaluation Mechanisms:** Designing fair and effective assessment and evaluation mechanisms that align with the new policy's objectives and ensure the quality of education may require careful planning and calibration.

7. **Inclusivity and Diversity:** Ensuring inclusivity for students from diverse backgrounds, including those from marginalized communities and rural areas, demands special attention and targeted support.
8. **Student-Centric Approach:** Adapting to a more student-centric approach, catering to individual learning needs, and providing personalized learning experiences may require significant changes in institutional practices.
9. **Regulatory Compliance:** Compliance with the regulatory framework and adapting to changes in accreditation and quality assurance mechanisms as per NEP 2023 may pose challenges for higher educational institutions in Andhra Pradesh.
10. **Resistance to Change:** Introducing new reforms and approaches may face resistance from various stakeholders, including administrators, faculty, students, and parents, requiring effective communication and engagement strategies.
11. **Funding and Budgetary Constraints:** Implementing NEP 2023 initiatives may require additional funding, and institutions might face budgetary constraints, necessitating efficient resource allocation and utilization.
12. **Balancing Tradition and Innovation:** Striking a balance between preserving the rich educational traditions of Andhra Pradesh and embracing innovative approaches proposed in NEP 2023 can be a delicate task. Navigating these challenges effectively is vital for the successful implementation of NEP 2023 in higher educational institutions in Andhra Pradesh. It requires collaboration between stakeholders, careful planning, and a commitment to transforming the education system to create a dynamic and inclusive learning environment for students in the state.

VI. Conclusion:

The cooperation of the centre and states is essential to the NEP's success. It is urgently necessary to enhance money in order to reorganize the educational system and bring it up to par with international standards in order to accomplish the NEP's overall objectives. This NEP has made it possible to implement the necessary adjustments in the educational system and has given opportunities for systemic change. When trying to change the entire system, there are some difficulties. These difficulties must be overcome in order to create opportunities.

Acceptance the opportunities presented by the NEP 2023 while effectively addressing the associated challenges is essential for Andhra Pradesh's higher educational institutions to create a dynamic and progressive learning environment. By carefully navigating these opportunities and challenges, Andhra Pradesh can emerge as a trailblazer in implementing the NEP 2023 and significantly contribute to the advancement of higher education in India.

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SALIENT FEATURES OF NEW EDUCATION POLICY IN HIGHER EDUCATION INSTITUTIONS

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Abstract

Education plays an enlightening role in the overall development of the country, it works with fundamental framework in order to transmission of knowledge, creative thinking and development of individualities. The foundational pillars of NEP are built with Access, Equity, Quality, Affordability, and Accountability. This is the plan for India's 2030 Sustainable Development, which intends to make the nation into a thriving knowledge society and a global knowledge superpower by enhancing both primary and secondary education to be more comprehensive, adaptable, and multidisciplinary in order to better serve students' individual learning styles. Considering that the third education policy will take the place of the New Education Policy of 1986. This study based on secondary data, focused to pointing out some salient features of NEP 2020 especially in higher education which is interesting and important to the community.

Keywords: *New education policy 2020, Higher education, Salient features, Sustainable Development*

Introduction

The policy was developed via an unusual in scope and depth collaborative process. Over 2 lakh recommendations were received during consultation from over 2.5 lakh Gram Panchayats, 6600 Blocks, 6000 ULBs, and 676 districts. Since January 2015, the MHRD has been conducting a collaborative, inclusive, and highly participative consultation process. The "Committee for Evolution of the New Education Policy," led by the late Shri T.S.R. Subramanian, a former cabinet secretary, submitted its report in May 2016. The Ministry created "Some Inputs for the Draft National Education Policy, 2016" based on this. A "Committee for the Draft National Education Policy" was established in June 2017 under the leadership of renowned scientist Dr. K. Kasturi Rangan, who was awarded the Padma Vibhushan. This committee submitted the Draft National Education Policy, 2019 to the Honorable Human Resource. Education policy is in a state of change across the industrialized countries. Governments everywhere are re-examining many aspects of the provision of schooling (Tiwari and Anjum 2018) The availability of online education has the potential to improve gross enrolment ratio, and provide opportunity for any time anywhere learning (Rajesh and Bimal 2021)

Objective

The objective of present paper is to study the salient features of NEP 2020 recently announced by Government of India. The study reviewed secondary data such various literature, journals, official websites so on.

Methodology and Limitations

This study can serve as a basis for future research-based empirical investigations and determine the impact of the NEP 2020 after its implementation. However, this research can be used as a basis for further studies on various aspects of the NEP 2020 and the results are highlighted based on the researcher's suggestions and recommendations.

Literature Review

Education acts as major role in the development of the country, it will take the citizen to reach their destiny so this is most acceptable factor in case of growth of the country. Education plays a powerful role in building nation, education decides the future of the nation, the destiny of its people. The impact will be a long-lasting one in terms of growth and development of the nation and citizen. The role of education and its importance cannot be ignored in today's scenario. The growth and development can be seen if we compare the pre independence and post - independence era. After 34 years Indian Govt. is going to change the way we study, this is the third amendment in the education policy. There are many changes proposed in new National Education Policy 2020 that would certainly affect all the stakeholders (Kalyani Pawan 2020) New education policy 2020 acknowledges the need for motivated faculty but fails to provide roadmap forenhancing motivation of faculties. New education policy missed an opportunity to address the core issue facing Indian higher education. The largest democracy in the world is looking for a vibrant higher education system to fulfil the aspirations of youth. National education policy 2020 is the most recent attempt to reform higher education. The country has witnessed transformation of education from Gurukul system to Macaulaysystem. Poor outcomes in Indian higher education have manifested in poor employability and outflow of students to universities abroad. Performance driven growth opportunities, motivation to march skill and hierarchy, and focussed approach for faculty empowerment, autonomy and decentralisation is needed to make Indian higher education globally competitive. (Rakesh Pathak 2021) National Mission on Education through ICT (NMICT) is a step in the right direction. But the scale of the services and courses is a cause of concern. The ministry of HRD has also initiated project Aakash in collaboration with IIT. (Rajesh and Bimal 2013) The largest democracy in the world is looking for a vibrant higher education system to fulfil the aspirations of youth.

National education policy 2020 is the most recent attempt to reform higher education.

Salient Features of the NEP 2020 in Higher Education

In Higher Education, Increase GER to at least 50% by 2035

India, with the world's second largest higher education system and a rapidly growing economy as one of the BRIC nations, faces significant challenges in building both capacity and excellence in higher education. India's higher education system is characterized by "islands of excellence in a sea of mediocrity." The mainstream universities are recognized as lacking in quality. Only the Indian Institutes of Technology and related institutions garner international recognition (Altbach 2014). It will be desired to increase the Gross Enrollment Ratio from 27.1% to 50% (as per survey of Ministry of Education 2023) in higher education, including vocational education by 2035.

The Policy Calls for a Holistic Multidisciplinary

Holistic undergraduate level education offering a comprehensive introduction to science, arts, humanities, mathematics, and careers. As well as it is important of creative, well manner and flexible curriculum structures, imaginative study combinations, the incorporation of professional education, and multiple start and end point. This will help students develop overall in all areas such as arts, science, social studies, languages, engineering, career, profession, soft skills, communication etc.

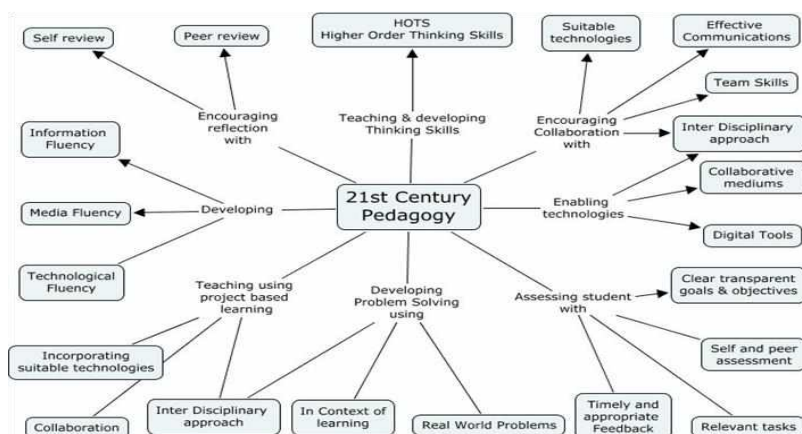


Figure 1: A Diagram Of 21st Century Pedagogy

Source: <https://www.teachthought.com/wp-content/uploads/2013/06/21st-century-pedagogies.jpg>

The under Graduate Degree will be of Either 3 or 4-Year Duration

As mentioned in the NEP official material it provides that the UG degree for either 3 or 4 years, with more than one degree during the that study period, after completion a year get a certificate in a multiple discipline or subject including vocational and career as a diploma of 2 years, or UG degree after 3-year period.

Teacher Education

The 4-year integrated level-specific, subject-specific Bachelor of Education offered at multidisciplinary institutions would be the way forward. A new and comprehensive National curriculum framework for teacher education, NCFTE 2021, is formulated by NCTE in consultation with NCERT. By 2030, the minimum qualification for teaching will be a four-year integrated B.Ed. degree that provides a range of knowledge and pedagogy and includes extensive practical training in the form of student local schools. Strict action will be taken against inferior stand-alone teacher education institutions (TEIs).

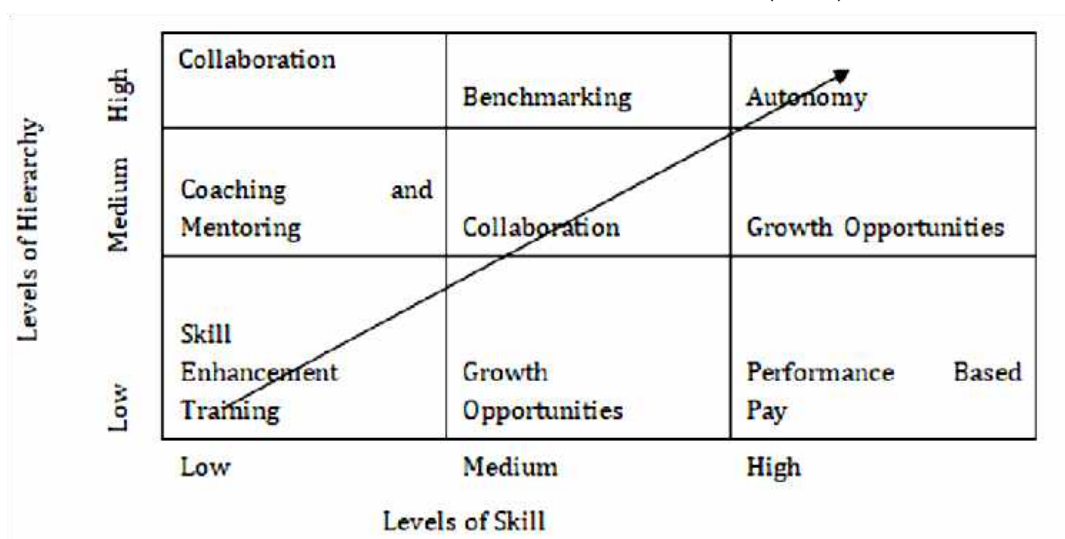


Figure 2: Skill Hierarchy Motivation Model for Teachers in Indian Higher Education

Source: Tiwari and Anjum, (2018)

Professional Academic, Career Counselling and Support

As per NEP regulations universities and colleges will establish quality support training centres and provide adequate funding and academic resources to encourage and help students from backward socio-economic backgrounds. It is necessary for each and every student must access to career and professional counselling to gain physical, expressive and emotional well-being.

Inclusion in Higher Education

There are many steps taken by Government in higher education:

Mitigate opportunity costs and fees for pursuing higher education to provide more financial assistance and scholarships, conduct outreach on higher education opportunities and scholarships, make admissions processes more inclusive, make curriculum more inclusive, increase employability potential of higher education programmes, develop more degree courses taught in Indian languages and bilingually, ensure all buildings and facilities are wheelchair-accessible and disabled

friendly, develop bridge courses for students that come from disadvantaged educational backgrounds, Provide socio-emotional and academic support and mentoring, ensure sensitization of faculty, counsellor, and students on gender-identity issue and its inclusion in all aspects of the HEl, including curricula, strictly enforce all no-discrimination and anti-harassment rules, develop Institutional Development Plans that contain specific plans for action on increasing participation from SEDGs etc.

ICT in Higher Education

In the current scenario adopting technology in education is very important, according the study of Alok Kumar (2021) NEP 2020 is aimed to revamp higher education in India. It will utilize the co-operation of international communities and their experiences will be utilized. Moreover, higher education provided in Indian universities and colleges under NEP 2020 will incorporate ICT to suit the need of the education in new normal post -COVID era. It has become meaningless to continue with outdated education system. On the part of the Indian government a lot of changes would be required to be brought to the curriculum of higher education absorbing the global demand for receiving skilled manpower. Thus, implementation NEP 2020 would be a great challenge. The policy is bound to introduce revolutionary and innovative changes.

Conclusion

The government's used to transform the education system is quite exceptional. The New Education Policy was deliberative with the promise of forward-looking ideas. According to numerous researchers it was noticed that the government to desire to restructure the education system, notably drastic deviations in the higher education system. It works with fundamental framework in mandate to transmission of knowledge, imaginative thinking and development of individualities as well as the change is required in changes of curriculum hence the Govt. brought the NEP 2020 in order solve the issues. Since its extremely difficult for the government and it can be amended after successful adopt in the country. It is a great idea that given and encourage for foreign universities to open their campuses to pursue higher education in India and there will be no holdup for Indian universities to establish their campuses abroad. We firmly believe that the implementation of New Education Policy 2020 will have a great impact on future generation to celebrate Azadi Ka Amrit Mahotsav.

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NEW NATIONAL EDUCATION POLICY 2023: CURRICULUM AND PEDAGOGY IN SCHOOLS

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Introduction

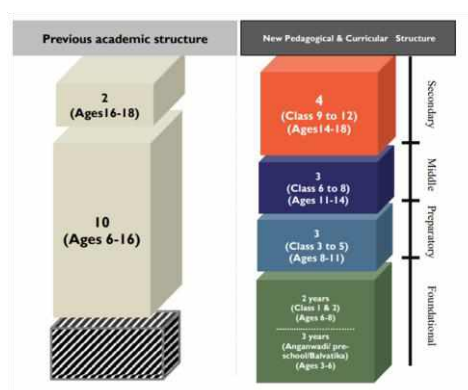
When the NEP was launched in 2023, its motto was **Educate, Encourage and Enlighten**. The government's purpose to launch this policy was to develop 21st century skills in the students of India. The amendments in NEP from the previous education policy strive for Research, Innovation, and Quality. For the seamless implementation of this education policy, the government is willing to give big funds. In 2021, Nirmala Sitaraman said that funds of Rs. 50,000 crores will be given to the National Research Foundation, and Rs. 40 crore to Ekalavya Schools. More details of NEP 2023 are in the rest of the article.

Curriculum and Pedagogy in Schools: Learning Should be Holistic, Integrated, Enjoyable, and Engaging:

Restructuring School Curriculum and Pedagogy in a New 5+3+3+4 Design

The most attention-grabbing amendment in the NEP 2023 is the replacement of the 10+2 structure with the 5+3+3+4 structure. The 10+2 has been prevalent in our education system for a very long time. So, a complete change in that system can be a bit perplexing for the students. Below we will try to explain the meaning of the 5+3+3+4 structure and how it is completely distinctive from the old 10+2 structure.

In the new Pedagogical and Circular Structure, the government has subdivided the schooling of students into four parts. These four parts are Secondary, Middle, Preparatory, and Foundational. These four stages of schooling will be crucial parts of educational development in students' school lives. The subdivision of these four stages in the schooling of students will be done as follows.



- The first stage of schooling for students is the Foundation Stage. In this, the early grooming of students will be done for 5 years. These 5 years will be 3 years of Anganwadi/ Pre-Primary/ Balvatika and first and second grade.
- The second stage will be the preparatory stage. This schooling stage will last for 3 years as well. Class 3rd, 4th, and 5th will lay the foundation for the middle and secondary stages.
- The third stage of schooling will be the middle school stage. In this from Class 6th to 8th. These three years will prepare the students for the final stage of their school life i.e. Secondary Stage.
- The final stage of schooling life for students will be the secondary stage, in this instead of 2 years, the students will have a complete four years from Class 9th to 12th to complete their secondary education.

Reduce Curriculum Content to Enhance Essential Learning and Critical Thinking

Curriculum content will be reduced in each subject to its core essentials, to make space for critical thinking and more holistic, inquiry-based, discovery-based, discussion-based, and analysis based learning. The mandated content will focus on key concepts, ideas, applications, and problem solving. Teaching and learning will be conducted in a more interactive manner; questions will be encouraged, and classroom sessions will regularly contain more fun, creative, collaborative, and exploratory activities for students for deeper and more experiential learning.

Experiential Learning

In all stages, experiential learning will be adopted, including hands-on learning, arts-integrated and sports-integrated education, story-telling-based pedagogy, among others, as standard pedagogy within each subject, and with explorations of relations among different subjects. To close the gap in achievement of learning outcomes, classroom transactions will shift, towards competency-based learning and education. The assessment tools (including assessment “as”, “of”, and “for” learning) will also be aligned with the learning outcomes, capabilities, and dispositions as specified for each subject of a given class.

Art-integration is a cross-curricular pedagogical approach that utilizes various aspects and forms of art and culture as the basis for learning of concepts across subjects. As a part of the thrust on experiential learning, art-integrated education will be embedded in classroom transactions not only for creating joyful classrooms, but also for imbibing the Indian ethos through integration of Indian art and culture in the teaching and learning process at every level. This art-integrated approach will strengthen the linkages between education and culture.

Sports-integration is another cross-curricular pedagogical approach that utilizes physical activities including indigenous sports, in pedagogical practices to help in developing skills such as collaboration, self-initiative, self-direction, self-discipline, teamwork, responsibility, citizenship, etc. Sports-integrated learning will be undertaken in classroom transactions to help students adopt fitness as a lifelong attitude and to achieve the related life skills along with the levels of fitness as envisaged in the Fit India Movement. The need to integrate sports in education is well recognized as it serves to foster holistic development by promoting physical and psychological well-being while also enhancing cognitive abilities. Empower students through flexibility in course choices.

Empower Students Through Flexibility in Course Choices

Students will be given increased flexibility and choice of subjects to study, particularly in secondary school - including subjects in physical education, the arts and crafts, and vocational skills - so that they can design their own paths of study and life plans. Holistic development and a wide choice of subjects and courses year to year will be the new distinguishing feature of secondary school education. There will be no hard separation among 'curricular', 'extracurricular', or 'co-curricular', among 'arts', 'humanities', and 'sciences', or between 'vocational' or 'academic' streams. Subjects such as physical education, the arts and crafts, and vocational skills, in addition to science, humanities, and mathematics, will be incorporated throughout the school curriculum, with a consideration for what is interesting and safe at each age.

Each of the four stages of school education, in accordance with what may be possible in different regions, may consider moving towards a semester or any other system that allows the inclusion of shorter modules, or courses that are taught on alternate days, in order to allow an exposure to more subjects and enable greater flexibility. States may look into innovative methods to achieve these aims of greater flexibility and exposure to and enjoyment of a wider range of subjects, including across the arts, sciences, humanities, languages, sports, and vocational subjects.

Multilingualism and the Power of Language

It is well understood that young children learn and grasp nontrivial concepts more quickly in their home language/mother tongue. Home language is usually the same language as the mother tongue or that which is spoken by local communities.

However, at times in multi-lingual families, there can be a home language spoken by other family members which may sometimes be different from mother tongue or local language. Wherever possible, the medium of instruction until at least Grade 5, but preferably till Grade 8 and beyond, will be the home language/mother tongue/local language/regional language. Thereafter, the home/local language shall continue to be

taught as a language wherever possible. This will be followed by both public and private schools. High-quality textbooks, including in science, will be made available in home languages/mother tongue. All efforts will be made early on to ensure that any gaps that exist between the language spoken by the child and the medium of teaching are bridged. In cases where home language/mother tongue textbook material is not available, the language of transaction between teachers and students will still remain the home language/mother tongue wherever possible. Teachers will be encouraged to use a bilingual approach, including bilingual teaching-learning materials, with those students whose home language may be different from the medium of instruction. All languages will be taught with high quality to all students; a language does not need to be the medium of instruction for it to be taught and learned well.

As research clearly shows that children pick up languages extremely quickly between the ages of 2 and 8 and that multilingualism has great cognitive benefits to young students, children will be exposed to different languages early on (but with a particular emphasis on the mother tongue), starting from the Foundational Stage onwards. All languages will be taught in an enjoyable and interactive style, with plenty of interactive conversation, and with early reading and subsequently writing in the mother tongue in the early years, and with skills developed for reading and writing in other languages in Grade 3 and beyond. There will be a major effort from both the Central and State governments to invest in large numbers of language teachers in all regional languages around the country, and, in particular, for all languages mentioned in the Eighth Schedule of the Constitution of India. States, especially States from different regions of India, may enter into bilateral agreements to hire teachers in large numbers from each other, to satisfy the three-language formula in their respective States, and also to encourage the study of Indian languages across the country. Extensive use of technology will be made for teaching and learning of different languages and to popularize language learning.

The three-language formula will continue to be implemented while keeping in mind the Constitutional provisions, aspirations of the people, regions, and the Union, and the need to promote multilingualism as well as promote national unity. However, there will be a greater flexibility in the three-language formula, and no language will be imposed on any State. The three languages learned by children will be the choices of States, regions, and of course the students themselves, so long as at least two of the three languages are native to India. In particular, students who wish to change one or more of the three languages they are studying may do so in Grade 6 or 7, as long as they are able to demonstrate basic proficiency in three languages (including one language of India at the literature level) by the end of secondary school. 4.14. All efforts will be made in preparing high-quality bilingual textbooks and teaching-learning materials for science

and mathematics, so that students are enabled to think and speak about the two subjects both in their home language/mother tongue and in English.

As so many developed countries around the world have amply demonstrated, being well educated in one's language, culture, and traditions is not a detriment but indeed a huge benefit to educational, social, and technological advancement. India's languages are among the richest, most scientific, most beautiful, and most expressive in the world, with a huge body of ancient as well as modern literature (both prose and poetry), film, and music written in these languages that help form India's national identity and wealth. For purposes of cultural enrichment as well as national integration, all young Indians should be aware of the rich and vast array of languages of their country, and the treasures that they and their literatures contain.

Thus, every student in the country will participate in a fun project/activity on 'The Languages of India', sometime in Grades 6-8, such as, under the 'Ek Bharat Shrestha Bharat' initiative. In this project/activity, students will learn about the remarkable unity of most of the major Indian languages, starting with their common phonetic and scientifically-arranged alphabets and scripts, their common grammatical structures, their origins and sources of vocabularies from Sanskrit and other classical languages, as well as their rich inter-influences and differences. They will also learn what geographical areas speak which languages, get a sense of the nature and structure of tribal languages, and learn to say commonly spoken phrases and sentences in every major language of India and also learn a bit about the rich and uplifting literature of each (through suitable translations as necessary). Such an activity would give them both a sense of the unity and the beautiful cultural heritage and diversity of India and would be a wonderful icebreaker their whole lives as they meet people from other parts of India. This project/activity would be a joyful activity and would not involve any form of assessment.

The importance, relevance, and beauty of the classical languages and literature of India also cannot be overlooked. Sanskrit, while also an important modern language mentioned in the Eighth Schedule of the Constitution of India, possesses a classical literature that is greater in volume than that of Latin and Greek put together, containing vast treasures of mathematics, philosophy, grammar, music, politics, medicine, architecture, metallurgy, drama, poetry, storytelling, and more (known as 'Sanskrit Knowledge Systems'), written by people of various religions as well as non-religious people, and by people from all walks of life and a wide range of socio-economic backgrounds over thousands of years. Sanskrit will thus be offered at all levels of school and higher education as an important, enriching option for students, including as an option in the three-language formula. It will be taught in ways that are interesting and experiential as well as contemporarily relevant, including through the use of Sanskrit Knowledge Systems, and in particular through phonetics and pronunciation. Sanskrit

textbooks at the foundational and middle school level may be written in Simple Standard Sanskrit (SSS) to teach Sanskrit through Sanskrit (STS) and make its study truly enjoyable.

India also has an extremely rich literature in other classical languages, including classical Tamil, Telugu, Kannada, Malayalam, Odia. In addition to these classical languages Pali, Persian, and Prakrit; and their works of literature too must be preserved for their richness and for the pleasure and enrichment of posterity. As India becomes a fully developed country, the next generation will want to partake in and be enriched by India's extensive and beautiful classical literature. In addition to Sanskrit, other classical languages and literatures of India, including Tamil, Telugu, Kannada, Malayalam, Odia, Pali, Persian, and Prakrit, will also be widely available in schools as options for students, possibly as online modules, through experiential and innovative approaches, to ensure that these languages and literature stay alive and vibrant. Similar efforts will be made for all Indian languages having rich oral and written literatures, cultural traditions, and knowledge.

For the enrichment of the children, and for the preservation of these rich languages and their artistic treasures, all students in all schools, public or private, will have the option of learning at least two years of a classical language of India and its associated literature, through experiential and innovative approaches, including the integration of technology, in Grades 6-12, with the option to continue from the middle stage through the secondary stage and beyond. 4.20. In addition to high quality offerings in Indian languages and English, foreign languages, such as Korean, Japanese, Thai, French, German, Spanish, Portuguese, and Russian, will also be offered at the secondary level, for students to learn about the cultures of the world and to enrich their global knowledge and mobility according to their own interests and aspirations.

The teaching of all languages will be enhanced through innovative and experiential methods, including through gamification and apps, by weaving in the cultural aspects of the languages - such as films, theatre, storytelling, poetry, and music - and by drawing connections with various relevant subjects and with real-life experiences. Thus, the teaching of languages will also be based on experiential-learning pedagogy.

Indian Sign Language (ISL) will be standardized across the country and National and State curriculum materials developed, for use by students with hearing impairment. Local sign languages will be respected and taught as well, where possible and relevant.

Conclusion

The key overall thrust of curriculum and pedagogy reform across all stages will be to move the education system towards real understanding and towards learning how to learn - and away from the culture of rote learning as is largely present today.

The aim of education will not only be cognitive development, but also building character and creating holistic and well-rounded individuals equipped with the key 21st century skills. Ultimately, knowledge is a deep-seated treasure and education helps in its manifestation as the perfection which is already within an individual. All aspects of curriculum and pedagogy will be reoriented and revamped to attain these critical goals. Specific sets of skills and values across domains will be identified for integration and incorporation at each stage of learning, from pre-school to higher education. Curriculum frameworks and transaction mechanisms will be developed for ensuring that these skills and values are imbibed through engaging processes of teaching and learning. NCERT will identify these required skill sets and include mechanisms for their transaction in the National Curriculum Framework for early childhood and school education.

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IMPACT OF NATIONAL EDUCATION POLICY (NEP2020) IN HIGHER EDUCATION INSTITUTIONS IN INDIA

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Abstract

NEP is the first education policy of 21st century. During the COVID-19, the only positive that happened in the field of education in India was this policy which promises to transform the education system of India. As they say, change in the law of nature but this change was overdue for more than 35 years. The last time we saw a similar change in the field of education was back in the year 1986. For anything to survive in this dynamic world it is important to adapt to the changing scenario. Same goes for education, with changing information and communication technology (ICT), industrial requirement, there is need for change in the way we learn. And as the global scenario in education has been changing rapidly witnessing a paradigm shift in the overall system. It was important for India also to catch up with that change, an effort in this direction has been made through NEP 2020 to reform the education system in India. The study is purely qualitative in nature as it relies solely on secondary data sources. And the secondary data sources used are books, journals, research articles, websites, newspaper, and different government publications. An effort is made to study the provisions of the policy and how these will contribute towards improving the education at school level and in the higher education. The study will also look into the challenges in implementing those provisions in place of the existing system of education in India.

Keywords: NEP 2020, School Education, Information and Communication Technology (ICT), Higher Education, Reforms.

Introduction:

India being one of the largest countries in the World when it comes to population. Keeping in view this fact it becomes really important that the focus should be on better education and skill development which has to do with the human resource development. Education is a basic necessity which sets the base for so many things. It is a prerequisite for developing human potential, creating equality in society and promoting National Development. Many efforts were made in this direction from time to time with constitution of various committees and commission and incorporation their recommendations into the education system. After independence, India has come up with three policies at the National level. The first was national education policy in India in the year 1968 and the second in 1986 which was revised in the year 1992. The third being the recent one which came in the year 2020 (Pankaj Thakur). With such a large population it is

challenge for India to ensure education for all and make sure that dropout rate is at the lowest as it is not only about bringing a child to the school, retaining that child is also a bigger task. According to 4th goal of United Nations Sustainable Development Goals (SDGs), which aims to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” by 2030. There is a belief that through this new national education policy 2020, India can achieve the goals established under the policy at least by 2040. The policy goals stress upon the fact that there should be equitable access to high-quality education to everyone individual irrespective of their social, economic background. Thus, a lot is expected out of NEP 2020 as it focuses more on skill, innovation, problem solving. NEP has diminished the walls of separation between the discipline and advocated the importance of interdisciplinarity and creativity. The policy expects a new set of regulations to make the education pedagogy more experimental, inquiry-driven, discovery-oriented learner centered, analysis-based, flexible, enjoyable, and futuristic so that the educated output can support countries economic growth, social justice and equality, scientific advancement, cultural preservation, and national integration (G.). The National Education Policy 2020 (NEP 2020), which was approved by the Union Cabinet of India on 29 July 2020, outlines the vision of India's new education system. The new policy replaces the previous National Policy on Education, 1986.

The policy is a comprehensive framework for elementary education, higher education as well as vocational studies in India. The policy aims at changing the education scenario in India. (B. Venkateshwarlu). The idea behind introduction of such policy is bridging the gap in the existing system of education and learning in India. And this gap can be bridged only if new reforms are incorporated into the system of education in India. This has been done through NEP 2020 where focus areas are innovation, skill, equity, quality in learning. India as a country is hoping that it will have a leading education system by the year 2040. Globalization and the market trends have already given a sense of adaptive changes which are required. Now it is not only about knowledge and education, the focus on skill, innovation, market demand is equally important when it comes to shaping up students for future roles. Therefore, there is a need to move towards the concept of less content, and more learning. The students should be taught to be active learners and their critical thinking ability should be developed. Education must build character, enable learners to be ethical, rational, compassionate, and caring, while at the same time prepare them for gainful, fulfilling employment. (National Education Policy 2020).

Objectives of the Study:

- To analyze the provisions of the policy for school and Higher education in India in terms of their contribution to the existing system of education.
- To study the challenges which will be there in the implementation of this policy.

- To provide suggestions that can contribute towards the better implementation of NEP 2020.

Some Targets in NEP:

- All the provisions of the policy will be implemented by 2040.
- 100% Gross Enrolment Ratio from Pre-School to Secondary level will be achieved by 2030.
- Teachers to be prepared for assessment reforms by 2030.
- There will be common standard for learning in private and government school
- Foundational numeracy and basic literacy to be achieved by Grade 3.
- Universalizing early childhood care and education by 2030.
- Vocational training for at least 50% learners by 2025 (B.Venkateshwarlu, A Critical Study Of NEP 2020: Issues, Approaches, Challenges, Opportunities and Criticism).

Challenges in Implementation of NEP 2020

National Education Policy (2020) is reformatory step toward changing the education system of India for the better. A lot of effort has been put in framing the policy, it is the result of in-depth research, deliberations and discussion that we have arrived at something as comprehensive as NEP. But, there exist few challenges in the successful implementation of these reforms which are as follows:

There is a lack of infrastructure and funding to incorporate such massive changes into the system. The national education policy 2020 focuses on making India a global destination for education by stressing upon quality and dynamism. The policy focuses on raising expenditure in the education sector to reach 6% of GDP at the earliest. But figures give a very contrasting picture. It is not for the first time that there are talks about increasing the investment in education. The economic survey 2019-20 says India spends only 3.1 % of its GDP on education sector even after continuous talks on spending patterns. So the first thing is to prioritize education as a top priority and channelize the investment towards this goal (Soni).

- From the policy documents it seems quite obvious that there will be more stress on privatization of education. In a country like India where affordability of education is still the biggest issue, privatization seems like a major hurdle in implementation of the policy. Although NEP does mention about the need of transparency in fee structure but there is no mention about how they will curtail the growing fees of private institutions and make them function in a manner where utilitarianism will be the focus not profit maximization.

- There is no mention in the NEP 2020 about how it will be ensured that the benefits of education reaches the marginalized section of society. The explicitness about the inclusion of every section of the society is missing in the policy document. The roadmap for any such action is missing.
- Ensuring the accountability of each stakeholder is a huge task. The comprehensiveness of the policy requires many stakeholders working together in a close knitted and well-coordinated relationship. The kind of change the implementation of this policy will bring to the system is massive in terms of impact and outreach. Thereby expecting cooperation and acceptability of each stakeholder is a tedious task in such a large setup.
- The policy document talks about top foreign colleges setting up their institutions in India. However, to what extent it will solve the problem for India is debatable as setting up institutions in India will cost them a hefty amount of money which they will be recovering from the fees and related charges which will ultimately increase the burden on the student making it difficult to enroll themselves in such institutions.
- NEP advocated that mother tongue will also be a medium of instruction till class 5 preferably till class 8 and beyond it wherever possible. But it has a negative side attached to it also as it will further intensify the gaps between students who know English or Hindi and who doesn't know these. Secondly, it will be difficult to standardize the reading material in absence of any script making it a tedious task. It will require large investments and positives coming out of this investment seems less likely and there are chances that it might create a bigger gap in the education system.
- NEP 2020 talks about experimentation in the pedagogy since the foundational year of study has brought about a Paradigm shift in the way of learning which is a welcome change. But this will require well-trained teachers to ensure that this experimentation, flexibly goes well with the students, only then the strategic advancements in the curriculum can be achieved for the betterment of students. So, the training of teachers to adapt to such flexible ways is a must which is lacking at the moment (Soni).
- Interdisciplinarity in higher education demands a paradigm shift, many have appreciated the step towards portioning inter-disciplinary learning. As it will create amongst learners a wide range of experience and perspectives about all the different things that exist around. But to bring such things into action is a task which requires drastic changes. Indian system of education has been compartmentalized for decades now and to adapt to this idea of multi-disciplinarity there will be a need for cultural and behavioral shift. The professors and the learners both should develop respect and curiosity to learn new things from multiple disciplines not keeping themselves in an air bubble. This will require 20-30 good years to create a positive atmosphere for such change (Viswanathan).

Conclusion:

NEP 2020 is a document that has been perceived with a lot of hope and optimism in bringing about a paradigm change in the overall education system of the country. Change is the law of nature and it is important to adapt with the changing environment. The old education system and practices are no longer holding any relevance in the modern times. For example, we have seen during the COVID-19 that how important it is to make ICT an active part of the teaching learning process, and how we as a country need to train our students and teachers to learn this skill to make the overall process of learning more enriching and satisfying. It has become meaningless to continue with an outdated education system. On the part of the Indian government, a lot of changes would be required to be brought to the curriculum of higher education absorbing the global demand for receiving skilled manpower.

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MULTIDISCIPLINARY EDUCATION APPROACH FOR CAREER: NEP 2020

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Abstract

A nation is advanced in proportion to education and intelligence spread among the masses. There's no limit to learning and the multidisciplinary educational approach mentioned in the NEP 2020 is the correct step taken towards promoting the same. This study is made to bring out the opportunities in career development for higher education students towards the Multidisciplinary education in NEP 2020. To analyze this objective secondary data were taken from various Magazines, articles, Internet website, newspapers, social media. The study concludes with a point that the stand-alone institutions can join hands with the nearby institutions clustering to transform into a university. A student has also been given the flexibility to complete one degree at the host institution.

Keywords: Multidisciplinary, education, approach, NEP, Institutions.

Introduction

"The NEP spells a long-term vision with far-reaching impact. It will strengthen the culture of 'inclusion', 'innovation' and 'institution' in the sphere of education. Imparting education in the mother tongue has been given emphasis in order to help young minds grow spontaneously. This will strengthen Indian languages as well as the unity of the country. Youth empowerment is essential for building a strong nation. The National Education Policy is a right step in this direction.

- The National Education Policy 2020 (NEP 2020), which was approved by the Union Cabinet of India on 29 July 2020, outlines the vision of India's new education system. The new policy replaces the previous National Policy on Education, 1986. The policy is a comprehensive framework for elementary education to higher education as well as vocational training in both rural and urban India. The policy aims to transform India's education system by 2021. The language policy in NEP is a broad guideline and advisory in nature; and it is up to the states, institutions, and schools to decide on the implementation. The NEP 2020 enacts numerous changes in India's education policy. It aims to increase state expenditure on education from around 4% to 6% of the GDP as soon as possible.
- The National Policy on Education (NPE) is a policy formulated by the Government of India to promote education amongst India's people. The policy

covers elementary education to colleges in both rural and urban India. The first NPE was promulgated by the Government of India by Prime Minister Indira Gandhi in 1968, the second by Prime Minister Rajiv Gandhi in 1986, and the third by Prime Minister Narendra Modi in 2020.

- The National Education Policy (NEP) 2020 is an ambitious policy document aiming to revolutionize the education system in India. One of the key aspects of the policy is the emphasis on a multidisciplinary approach in education.

Multidisciplinary Education

Multidisciplinary education is a form of educational strategy that brings together multiple disciplines to create a holistic learning experience. It is designed to foster an understanding of the interconnectedness of various fields and how they can be integrated for better problem-solving. Multidisciplinary education, if implemented in schools and colleges, allows students to gain a deeper understanding of the subject matter through the lens of different disciplines. This approach encourages creative thinking, critical analysis, collaboration, and communication skills. The NEP 2020 emphasizes the need to incorporate this educational approach into the curriculum from an early age. By giving students exposure to multiple disciplines, we can help them understand their chosen field better and also develop an appreciation for diverse knowledge systems. This will enable them to become more well-rounded citizens and prepare them for the future. It is an approach to learning that takes into account different disciplines, subjects, and perspectives. It encourages students to broaden their learning beyond traditional boundaries, explore multiple perspectives, and cultivate new skills. This type of learning allows students to develop a more comprehensive understanding of any given topic and to integrate knowledge from different fields better. By providing a wider range of learning opportunities, we can provide students with greater flexibility and choice in their studies. For example, a student studying history can choose to pursue a minor in economics or political science, or a student studying math can choose to focus on coding or data analysis. This approach can help them gain new skills and knowledge that they may not have encountered otherwise. In addition, a multidisciplinary approach in education enables students to explore topics from different angles, allowing them to form their own opinions and views. The NEP 2020 aims to make multidisciplinary education the norm across all levels of education in India. By making it part of the mainstream curriculum, this approach to learning will be accessible to more students and can help create a new generation of thinkers and innovators.

Multidisciplinary and Nep

The New Educational Policy 2020 insists on a Multidisciplinary approach in Higher Education to broaden the scope of Higher Education through diversified fields of study and ensure flexibility and autonomy to the learner in the selection of the field of study. For instance, to have a clear understanding of the Mullaperiyar issue between the states of Kerala and Tamil Nadu one must analyze it in various perspectives historical, political, sociological, technological, and geographical to have a complete understanding of the situation. Another instance is if we need to study a river, we could approach it with a geographical perspective regarding its origin and various minerals deposited in its bank; we can learn about it with a historical perspective by studying the various civilizations that flourished on its bank. We can learn it from a biological perspective considering aquatic life and its possibilities. We can approach it through literature by citing the poems and plays where this river is a character. Hence, multidisciplinary approaches broaden the thought process of the scholars and bring clarity to all issues and events.

- However, multiple disciplinary approaches can be implemented at an institutional level in many ways providing open courses from varied disciplines under institutions CBCS system, providing vocational programs in various fields of study, offering courses of a program can by faculty from various disciplines, including multidisciplinary courses as electives, promoting students to select electives provided by other departments, teaching a subject in multidisciplinary perspectives, and fostering community engagement in various activities, to name a few.



- The close association between the various disciplines in a multidisciplinary scenario will lead to the integration of information, perspectives, and concepts from two or more disciplines of specialized knowledge for an advanced understanding of a scenario or solve problems whose solutions are beyond the

scope of a single discipline. Hence this type of association will lead to an interdisciplinary approach to education.

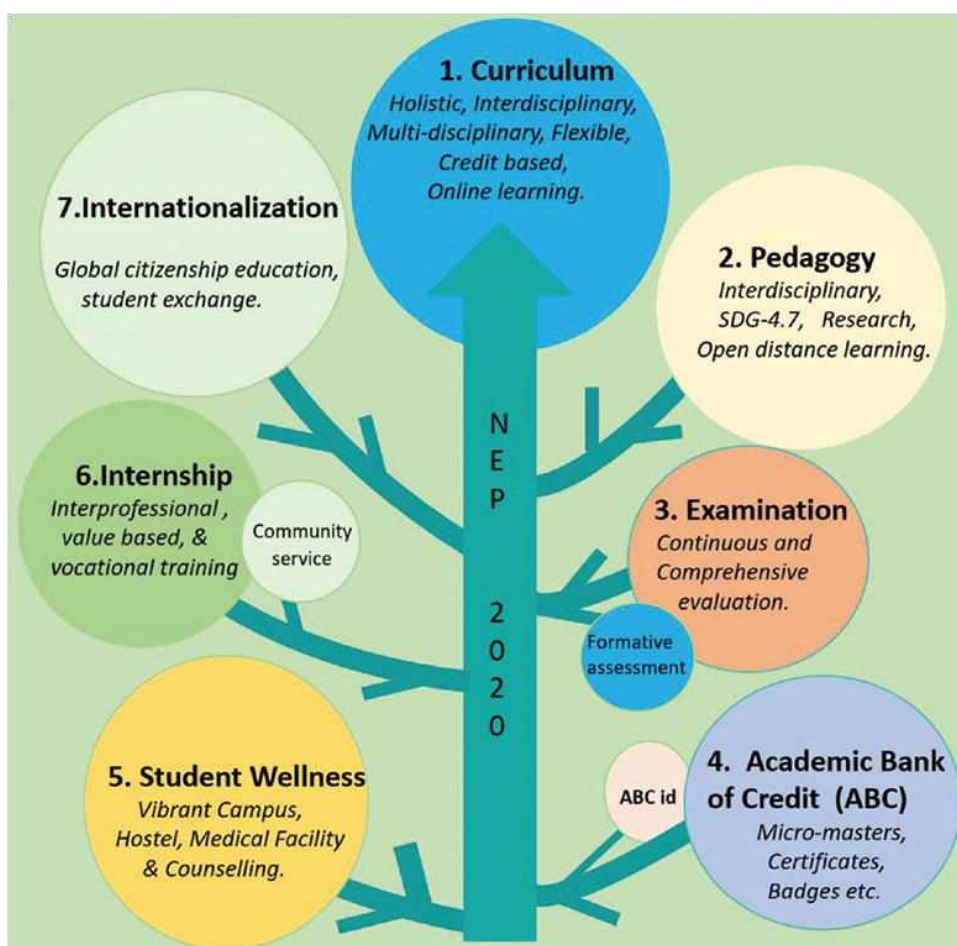
- The common problem in the Indian context is accessibility, Most of the schools strive to provide quality education by adopting holistic approach where children are prompted to opt a basket of choice, the choice of subjects to study across arts, humanities, science and other vocal subjects. This flexibility in choice of subjects has given exposure to classical languages of India, English or regional language as an optional subject. The conscious inclusion of mother tongue in early grades using bilingual format which assists in acquisition of regional language. There are scores of child centred activities which promote the desired objectives to create interest to learn and incorporate the core values from the usage of mother tongue. Songs to teach community values, norms and customs accompanied by dance forms in mother tongue, proverbs to impart indigenous knowledge to promote cultural, moral and social values. The values wrapped in sayings easily sink into the minds of children in mother tongue.

Multidisciplinary Studies / Course:

In addition to the general education requirements, many multidisciplinary studies programs offer concentrations in a specific area of study. Concentrations allow a student to Focus on a particular topic or career option while still retaining the diverse education of a multidisciplinary curriculum. A multidisciplinary program with a variety of subjects influence their primary interest. Some concentrations for multidisciplinary major s include: 1) Human resource management 2) Criminal justice 3) Health systems management4) Accounting 5) Business administration and management6) Computer science. The lack of a multidisciplinary approach to teaching was one of the most significant obstacles that modern higher education in India faced. After matriculation, the student was asked to choose a subject or stream, which was typically not her first choice and which she could rarely change later. For a long time, the Indian System of Education deserved to be renovated on several fronts. The National Education Policy (NEP-2020) has identified these serious difficulties that require immediate action, and a window has been opened to address issues through multidisciplinary, interdisciplinary, and transdisciplinary educational approaches.

NEP-2020 has proposed inter-disciplinary education as a holistic approach across all sciences in order to ensure knowledge harmony and integrity. Education is of paramount importance in human life since it has the ability to improve the world. The National Education Policy 2020 is a comprehensive policy with the intention of improving education by making it more accessible, holistic, multidisciplinary, and fruitful. Multidisciplinary education is undeniably important in the post-modern world of the twenty-first century. The new NEP 2020 places great emphasis on integrated and Transdisciplinary education. The Union Cabinet of

India approved the National Education Policy (NEP) on July 28th, 2020. Over the course of more than 50 months of consultations and workshops, the Indian government collected feedback from 2.5 lakh village-level stakeholders to two national legislative level committees, after a 34-year break. The extent to which the policy has taken into account recommendations, however, is unknown. Liberal (“holistic and interdisciplinary”) education, which sensitizes pupils to the essentially linked nature of all human knowledge and inquiry, is a crucial pillar of the National Education Policy (NEP 2020).



- Students can acquire sciences, technology, mathematics, liberal arts, humanities, languages, social sciences, professional skills, vocational skills, ethics, morals, and human values all at the same time through multidisciplinary and holistic learning. It aspires for general development, which means that students now have access to infrastructure, skilled teachers, and other facilities at higher education institutes and newly introduced MERUs, allowing them to gain knowledge or competence in a variety of subjects (Multi-disciplinary Education and Research Universities).
- Multi-disciplinary and integrated knowledge is an ancient strategy utilized in Indian and other areas of the world education systems. This is why philosophers such as Kantilla, Banabhatta, Plato, and Aristotle, among others, argued for such a

system of instruction. Evidence of such an education system can be found in ancient Indian literature and customs. It can be observed in the Indian Gurukul system, where students were required to master Science, Mathematics, and Geometry, as well as vocational skills, specialized qualifications, communication skills, ethics, decency, and human values, among other subjects.

Conclusion

Higher education institutions can take different routes for adopting multidisciplinary nature. The stand-alone institutions can join hands with the nearby institutions clustering to transform into a university. A student has also been given the flexibility to complete one degree at the host institution. Simultaneously, students can earn a second degree at the partnering institution without going through the new admission process if the two institutions have collaborated. This process will regain the status of higher education at the international level, which is poor due to the single-stream nature. On the one side, this is a step towards discouraging dropout & virtual exclusion and, on the other, grabbing the opportunities to experiment with students' aptitude at different levels that will help them be successful in their career life. To conclude, multidisciplinary education aims to develop hybrid thinking that is imperative in solving many of today's complex problems and all HEIs of the country should step up to start multidisciplinary education.

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A GLIMPSE ON NEW EDUCATION POLICY 2020

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Abstract

The New Education Policy was approved by the Indian Union Cabinet on July 29, 2020, replacing the previous policy. The Access, Equity, Quality, Affordability, and Accountability aspects form the basis of the NEP 2020. This paper aims to understand the features of the New Education Policy 2020. This is a descriptive study. The necessary secondary data was gathered from various websites, journals, and other publications. This study concluded that the previous educational system has flaws, including rote learning, a lack of practical knowledge, a heavy emphasis on exams and tests and study material that isn't applicable to real-world situations. These flaws were addressed by the introduction of the new educational system. This can be the cause of "Unemployed educated youth." As a result, the Indian government announced a new policy that makes several changes to the existing framework. The country and the lives of young people will drastically change if these policies are put into practice and the goals are met.

Keywords: NEP, Education structure, Curriculum, Digital Learning

Introduction to New Education Policy

The New Education Policy (NEP) has taken the place of the National Education Policy (NEP), which was established in 1986 and was in force for 34 years. The National Education Policy (NEP), which was first created in 1986, was later modified in 1992 and 1998. The government finally introduced the National Education Policy 2020 after 34 years. A committee was established to create a new education policy, and in 2019, the National Education Policy was written under the direction of Dr. K.K. Kasturirangan. In July 2020, the Central Government approved the National Education Policy 2020.

The NEP 2020 aims to raise the standard of education in India to a global level, enabling the nation to emerge as a leader in knowledge-based industries. It also focuses on the holistic development of students and the inclusion of all types of students regardless of their caste, creed, and religion. It opens the door for fundamental changes to the nation's higher education and educational systems. It is accomplished through implementing the National Education Policy's recommendation to make education universal. It is achieved through the universalization of education outlined in the National Education Policy By incorporating creativity, learning, experiments, visualisation, and art into the

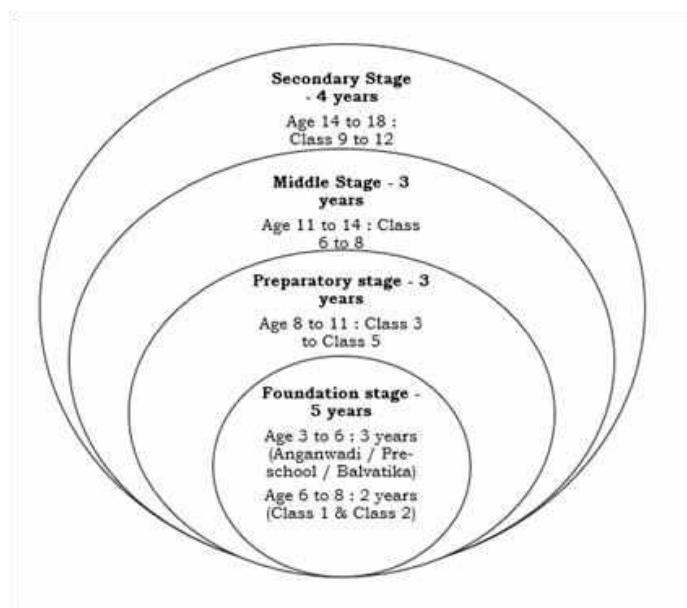
educational space, it drastically transforms the lives of many high school and college students. NEP 2020 kept on changing with the changing period of time.

Objective of the Paper

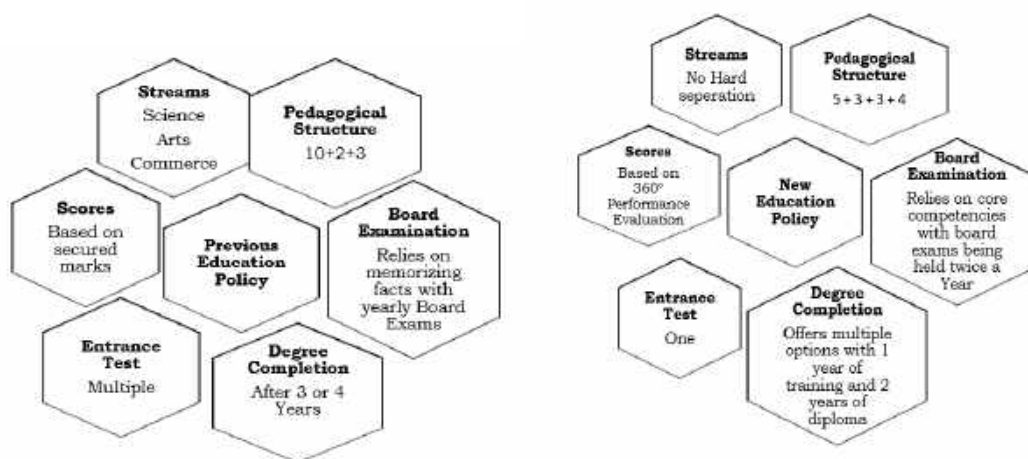
To understand the features of the new education policy 2020.

Education Structure

With the implementation of NEP 2020 (New Education Policy 2020), the current 10+2 school system will be replaced by a new 5+3+3+4 school system. Additionally, the age range for the Right to Education (RTE) is now 3 to 18 years (formerly 14 years). Access, affordability, equity, quality, accountability, and universalization of Early Childhood Care Education (ECCE) are other themes that are highlighted in the New Education Policy 2020 (NEP 2020). It is based on the cognitive-developmental stages of the children



Once implemented, the NEP states that every child from ages 3 to 18 will have access to education, through either public or private schooling options. By offering options for entry and exit into the educational system, more than 3.22 billion out-of-school children will be enrolled in the formal education system. There will be fewer dropouts among students from socioeconomically disadvantaged groups. A decrease in dropout rates will be achieved because to the more options available to students from Socially and Economically Disadvantaged Groups (SEDGs), such as the establishment of Special Education Zones, the Gender Inclusion Fund, and improved access to open and distance learning (ODL) options.



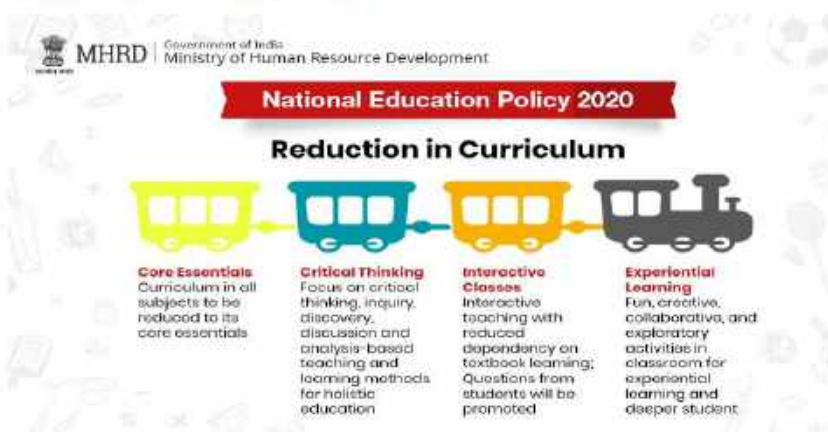
Vocational Education

The NEP states every child will acquire at least one vocational skill in middle and secondary school. Thus, vocational education will now be integrated across the value chain. In addition, while determining the GER targets, the number of students enrolled in vocational education will also be taken into account. By 2025, it would be hoped that 50% of students in higher education and in schools will have had exposure to occupational skills.

Reduction in Curriculum

Curriculum content will be reduced in each subject to its core essentials, to make space for critical thinking and more holistic, inquiry-based, discovery-based, discussion-based, and analysis based learning. The mandated content will focus on key concepts, ideas, applications, and problem solving. Teaching and learning will be conducted in a more interactive manner; questions will be encouraged, and classroom sessions will regularly contain more fun, creative, collaborative, and exploratory activities for students for deeper and more experiential learning.

Reduction in Curriculum



Regional Language as a Means of Instructions

Incorporating the mother tongue into the New Educational System is a really polite gesture. The educational system hopes to achieve this idea by promoting not only the mother tongue but also the many regional languages. Concepts can now be taught to students up through fifth grade in a variety of languages. Students can also learn about the value and origins of their mother tongue.

Experiential Learning

The new educational guidelines would encourage "discovery-based, discussion-based, and analysis-based learning" as well as learning that involves critical thought. In addition to visiting local artisans and having "bagless days," Class 6 students may also be able to enrol in vocational training. The NEP 2020 initiative, which uses competency-based learning, has given students, especially in secondary school, more flexibility and a wider range of topic options. According to their preferences, students will be able to select occupational skills, physical education, and arts and crafts.

Enhanced Digital Infrastructure

The NEP focuses on expanding and improving an already-existing national-level collection of online learning materials as well as open e-learning platforms like DIKSHA and SWAYAM. The article discusses how the improvement of online assessment and examination systems would open up a number of brand-new possibilities, including the creation of digital question banks. To increase socially and economically disadvantaged groups' access to digital learning, creative "Virtual Labs" will be used.

Foreign University Campus will be set up in India

India has one of the largest networks of higher education systems in the world, with nearly 990 universities and 40,000 colleges, but its Gross Enrolment Ratio (GER) in higher education is only 26.3%, which is significantly lower than that of other BRICS nations like China (51%) and Brazil (50%), as well as significantly lower than that of European and North American countries (80% or more). India's gross domestic product (GER) has to increase dramatically, driven by intellectual resources, for sustainable long-term economic growth. In reality, the NEP has a lofty goal of achieving 50% GER by 2030. Indian universities that are affiliated with foreign universities can only help the process.

Changes in Teachers Recruitment

- **Emphasis on Holistic Development:** The NEP 2020 places a strong emphasis on the value of holistic development as well as the contribution that instructors make to fostering students' entire development. Finding intelligent candidates with abilities like communication, critical thinking, creativity, and emotional intelligence will therefore be a priority in the hiring process for instructors.
- **National Professional Standards for Teachers (NPST):** The NPST was introduced as part of the NEP 2020, and it establishes the minimum requirements for educators nationwide. At several educational levels, the NPST outlines the roles, duties, and skills of teachers. When choosing teachers for the recruitment process, these standards will be taken into account.
- **Greater use of Technology:** The NEP 2020 supports utilising technology to streamline and make transparent the hiring process. This might entail using job posting sites to post job openings and accept applications as well as utilising technology to evaluate applicants' abilities and competencies.
- **Changes to Teacher Training:** The NEP 2020 also suggests considerable modifications to the preparation and training of teachers for the classroom. This can entail the introduction of more demanding and pertinent teacher preparation courses as well as chances for continued professional growth.
- **Greater Accountability and Evaluation:** The NEP 2020 places a strong emphasis on the value of teacher accountability and performance reviews. Examining candidates' skills, aptitudes, and capacity to satisfy the needs of students may receive more attention during the hiring process.

Conclusion

The flaws in the education system vary from generation to generation and person to person. The previous educational system has flaws, including rote learning and a lack of practical knowledge, a heavy emphasis on exams and tests, and a heavy emphasis on study material that isn't applicable to real-world situations. These flaws were addressed by the introduction of the new educational system. This can be the cause of "Educated youth with unemployment." As a result, the Indian government announced a new policy that makes several changes to the existing framework. The country and the lives of young people will drastically change if these policies are put into practise and the goals are met.

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SCENERY OF NEW EDUCATION POLICY

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Abstract

The National Education Policy (NEP) 2020 is a comprehensive reformulation of India's education policy that aims to transform the country's education system to meet the needs of the 21st century. The policy is based on the principles of accessibility, equity, quality, affordability, and accountability, and it seeks to provide a holistic and multidisciplinary education to all students. The salient features of the NEP include emphasis on early childhood care and education, the introduction of curricular structure, the promotion of multilingualism, the incorporation of vocational education, and the establishment of a National Educational Technology Forum. The need for adequate funding, the development of a robust monitoring and evaluation mechanism, and the involvement of all stakeholders in the implementation process. Overall, the NEP 2020 presents a unique opportunity for India to transform its education system and to prepare its students for the challenges and opportunities of the future.

Introduction

"Education imparted by heart can bring revolution in the society"

Education is fundamental for achieving full human potential, developing an equitable and just society, and promoting national development. Providing universal access to quality education is the key to India's continued ascent, and leadership on the global stage in terms of economic growth, social justice and equality, scientific advancement, national integration, and cultural preservation. One major change brought about by the policy is the shift from the traditional 10+2 education structure to a more flexible and comprehensive 5+3+3+4 system. The aim behind this new system is to prioritize essential skills, critical thinking, and life skills in education for students at all levels. The New Education Policy brings a strong focus on developing 21st-century skills like creativity, critical thinking, and problem-solving. It also suggests the creation of innovative institutions like digital universities and the use of technology to enhance student learning.

Highlights of New Education Policy

- The new policy aims for universalisation of education from pre-school to secondary level with 100 per cent Gross Enrolment Ratio (GER) in school education by 2030 and aims to raise GER in higher education to 50 per cent by 2025.

- NEP 2020 will bring two crore out of school children back into the main stream.
- The 10+2 structure of school curricula is to be replaced by a 5+3+3+4 curricular structure corresponding to ages 3-8, 8-11, 11-14, and 14-18 years respectively. It will include 12 years of schooling and three years of Anganwadi and pre-schooling.
- A National Book Promotion Policy is to be formulated.
- Every state/district will be encouraged to establish 'Bal Bhavans' as a special daytime boarding school, to participate in art-related, career-related, and play-related activities.
- NEP 2020 aims to increase the Gross Enrolment Ratio in higher education including vocational education from 26.3 per cent in 2018 to 50 per cent by 2035 and aims to add 3.5 crore new seats to higher education institutions.
- The policy envisages broad-based, multi-disciplinary, holistic Under Graduate education with flexible curricula, creative combinations of subjects, integration of vocational education and multiple entry and exit points with appropriate certification.
- Higher Education Commission of India (HECI) will be set up as a single overarching umbrella body for entire higher education, excluding medical and legal education.
- Measures such as online courses and digital repositories, funding for research, improved student services, credit-based recognition of MOOCs, etc., will be taken to ensure distance learning is at par with the highest quality in-class programmes.
- Public and private higher education institutions will be governed by the same set of norms for regulation, accreditation and academic standards.
- Policy aims to achieve 100% youth and adult literacy.

Need of New Education Policy 2020

- New education policy is focused on foundational literacy and numeric by 2025. School students will only going to attend the exams in class 2nd, 5th and 8th instead of every academic year.
- Board examinations will continue for 10th and 12th classes. But it will re-designed. The examination will held twice a year and have two parts one is objective and other one is descriptive.
- The meaning of the policies to reduce the curriculum law of the students and allow them to be more interdisciplinary and multi lingual. In 6th class coding will introduced to the students and experimental learning will be adopted.

- Mid day meal scheme will extend to include breakfast. More focus will be given to the health of the student through the deployment of counsellors and social workers.

Benefits of New Education Policy 2020

Some of the important benefits of the New Education Policy 2020 are as follows:

- The New Education Policy will give importance to students' practical knowledge instead of just pushing them towards rote learning. It will help students to develop scientific temper from a young age.
- The NEP aims to make it easier to set up new quality of higher educational institutes which will be at par with the global standards.
- Since NEP will make it easier for foreign colleges to set up their campuses here many students who are unable to go abroad due to multiple reasons will be able to experience it and get global exposure. This will promote value-based education.
- The government will establish a new organisation that will work across the country to offer more resources for digital education.
- There will be technology integration to improve the many operations in the classroom.

Impulse of New Education policy 2020

- **Holistic Development**

Focusing on the over all development of students, including cognitive, social, emotional, and physical aspects.

- **Flexible Curriculum**

Encouraging a multidisciplinary and flexible approach to education, allowing students to choose subjects based on their interests and aptitudes.

- **Quality Education**

Enhancing the quality of education through improved curriculum, teaching methods, and assessment techniques.

- **Equitable Access**

Ensuring equal access to education for all, regardless of socioeconomic background or

- **Technology Integration**

Integrating technology into education to facilitate personalized and adaptive learning experiences.

- **Vocational Education**

Promoting vocational education and skill development to prepare students for various careers.

- **Research And Innovation**

Encouraging research and innovation in education, curriculum design, and pedagogical methods.

Principles of New Education Policy 2020

- Recognizing, Identifying, and strengthening the unique capabilities of each student.
- Promoting each student's holistic development in both academic and non-academic spheres.
- Flexibility for learners to choose their learning trajectories and programs, and thereby choose their paths as per their talents and interests.
- No hard separations between arts and sciences, curricular and extra-curricular activities, vocational and academic streams, among others to eliminate harmful hierarchies and silos in areas of learning.
- Multi-disciplinary and a holistic education across the sciences, social sciences, arts, humanities, and sports to ensure the unity and integrity of all knowledge.
- Promotion of Multilingualism and the Power of Language in learning and teaching. Life Skills such as communication, teamwork, cooperation, and resilience.
- Encouraging innovation and out-of-the-box ideas through Autonomy, Good Governance and Empowerment.

Innovation of New Education Policy 2020

- **Coding and Computational Thinking:**
The policy proposes the integration of coding and computational thinking in the curriculum to enhance problem-solving skills and digital literacy.
- **Holistic Report Cards:**
NEP 2020 suggests shifting from traditional marks-based assessment to holistic report cards that evaluate students' progress in various domains, including life skills, critical thinking, and values.
- **Early Childhood Education:**
NEP 2020 recognizes the importance of early childhood care and education, promoting play-based and activity-based learning in the early years.
- **Technology Integration:**
The policy emphasizes the use of technology for interactive and personalized learning experiences, including digital content, online assessments, and virtual labs.

- **Global Exposure:**

The policy encourages exposure to international perspectives, foreign languages, and exchange programs to make students globally competent.

Conclusion

NEPs in India have evolved over time to address the changing needs of the country's education system. While the previous policies focused on increasing access and improving quality, the NEP 2020 seeks to transform the education system by incorporating multidisciplinary learning and critical thinking, among other features. It is essential to ensure adequate investments, infrastructure, and training to achieve the vision of the NEP 2020. The study suggests that while the new structure has the potential to bring about significant changes in the education system, there is a need for adequate resources and infrastructure teacher training and developmental and effective evaluate and assessment mechanisms.

IMPACT OF NEW EDUCATION POLICY 2020 ON HIGHER EDUCATION

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Abstract

Well defined and futuristic education policy is essential for a country at school and college levels due to the reason that education leads to economic and social progress. Different countries adopt different education systems by considering the tradition and culture and adopt different stages during their life cycle at school and college education levels to make it effective. The New Education Policy announced by Government of India (NEP 2020) was a welcoming change and fresh news amidst all the negativities surrounding the world due to the challenges posed by Covid19 pandemic. The announcement of NEP 2020 was purely unexpected by many. The changes that NEP 2020 has recommended were something that many educationists never saw coming. Though the education policy has impacted school and college education equally, this article mainly focuses on NEP 2020 and its impact on Higher Education. This paper also outlines the salient features of NEP and analyses how they affect the existing education system.

Keywords: *New Education Policy, Higher Education, Covid-19*

Introduction

The National Education Policy 2020 is a welcome and ambitious re-imagination of India's education system into a modern, progressive and equitable one. Successful execution of this policy calls for dramatic simplification of decision-making structures and re-prioritization of budgetary resources in months and years to come. Given that there are around 350 million Indians today in school-going or college-going age groups, the NEP calls for a large-scale implementation of a magnitude never before attempted anywhere in the world. This presents substantial execution challenges, both quantitative and qualitative.

Objectives of the Study

The primary objective of this research is to study the impact of New Education Policy 2020 on higher education. The study also outlines the salient features of NEP and analyses how they affect the existing education system.

Research Methodology

This research is a descriptive study. The necessary secondary data was collected from various websites including those of Government of India, magazines, journals, other publications, etc.

Salient Features of Nep Related to Higher Education

The new NEP has been introduced with an aim to formalize changes in the system from school level to college/university level. The National Education Policy is expected to bring positive and long-lasting impact on the higher education system of the country. The fact that foreign universities will be allowed to open campuses in India is a commendable initiative by the government. This will help the students experience the global quality of education in their very own country. The policy of introducing multi-disciplinary institutes will lead to a renewed focus on every field such as arts, humanities and this form of education will help students to learn and grow holistically. Thus, students will be equipped with stronger knowledge base.

The four structures will be established as four independent verticals within a single umbrella institution, India's Higher Education Commission (HECI). There are a lot of reforms and new developments which have been introduced by NEP in the higher education sector. Some of the salient features are:

- **Single Regulatory Body for Higher Education:** The NEP aims to establish Higher Education Commission of India which will be the single regulatory body except for legal and medical education.
- **Multiple Entry and Exit Programme:** There will be multiple entry and exit options for those who wish to leave the course in the middle. Their credits will be transferred through Academic Bank of Credits.
- **Tech- Based Option for Adult Learning Through Apps, Tv Channels:** Quality technology-based options for adult learning such as apps, online courses/modules, satellite-based TV channels, online books, and ICT-equipped libraries and Adult Education Centres, etc. will be developed.
- **E-courses to be Available in Regional Languages:** Technology will be part of education planning, teaching, learning, assessment, teacher, school, and student training. The e-content to be available in regional languages, starting with 8 major languages – Kannada, Odia, Bengali among others to join the e-courses available in Hindi and English.
- **Foreign Universities to Set-up Campuses in India:** World's top 100 foreign universities will be facilitated to operate in India through a new law. According to the HRD Ministry document, "such (foreign) universities will be given special dispensation regarding regulatory, governance, and content norms on par with other autonomous institutions of India."
- **Common Entrance Exam for All Colleges:** The common Entrance exam for all higher education institutes to be held by National Testing Agency (NTA). The exam will be optional.
- A Higher Education Council of India (HECI) will be set up to regulate higher education.

The Council's Goal will be to Increase Gross Enrollment Ratio. The HECI will Have 4 Verticals:

- National Higher Education Regulatory Council (NHERC), to regulate higher education, including teacher education, while excluding medical and legal education.
- National Accreditation Council (NAC), a "meta-accrediting body".
- Higher Education Grants Council (HEGC), for funding and financing of universities and colleges. This will replace the existing National Council for Teacher Education, All India Council for Technical Education and the University Grants Commission.
- General Education Council (GEC), to frame "graduate attributes", namely the learning outcomes expected. It will also be responsible in framing a National Higher Education Qualification Framework (NHEQF). The National Council for Teacher Education will come under the GEC, as a professional standard setting body (PSSB).

Detailed Analysis of Impact of NEP on Higher Education**Regulatory System of Higher Education:**

A significant change in NEP 2020 is the proposal to set up the Higher Education Commission of India (HECI), as an umbrella body for higher education, excluding medical and legal education. This will usually bring out a question that what will happen to the present UGC and AICTE? HECI is aiming at reforming the higher education sector; the Bill will separate the Academic and Funding aspects of the sector. According to the new Bill, HECI will not have any financial powers. The funding processes which were handled by the University Grants Commission (UGC) will be taken care by the Ministry of Education, previously known as the Ministry of Human Resource Development (MHRD). This change however is expected to clear the regulatory mess in India's Higher Education system. HECI is expected to have four independent verticals - National Higher Education Regulatory Council (NHERC) for regulation, General Education Council (GEC) for standard-setting, Higher Education Grants Council (HEGC) for funding, and National Accreditation Council (NAC) for accreditation. To have uniformity in education standards, a single umbrella body was always a requirement and this has been a vision of numerous educationists.

Graded Accreditation and Graded Autonomy:

The concept of "empowerment and autonomy to innovate" is one of the key features in NEP 2020 which supports a "phasing out" strategy from Affiliated Colleges to Autonomous Institutions. The increased flexibility offered to autonomous institutions also gives hope in curriculum enrichment. It also says that with appropriate accreditations, Autonomous degreegranting Colleges could evolve

into Research-intensive or Teaching-intensive Universities, if they so aspire. The announcement of setting up Multidisciplinary Education and Research Universities (MERUs) in the country gives more hope. These institutions will be at par with the existing IITs and IIMs and will aim to showcase multidisciplinary education for the Indian students. Another important change the NEP 2020 suggests that the National Testing Agency will serve as a premier, expert, autonomous testing organization to conduct entrance examinations for undergraduate and graduate admissions and fellowships in Higher Education Institutions. The high quality, range, and flexibility of the NTA testing services will enable most universities to use these common entrance exams - rather than having hundreds of universities each devising their own entrance exams - thereby drastically reducing the burden on students, universities and colleges, and the entire education system. It will be left up to individual universities and colleges to use NTA assessments for their admissions. It also surely helps the students to easily transfer their degrees and credits to universities abroad.

Internationalisation at Home:

NEP 2020 also allows foreign universities and colleges to come to India and this brings out a challenge for the native institutions to improve the quality of education provided by them. The Indian higher education sector is buzzing all around as the opportunity of paving the way for foreign universities to set up campuses in the country. India has one of the largest networks of higher education systems in the world, with more than 900 universities and 40,000 colleges. But GER (Gross Enrolment Ratio) of India in higher education is 26.3%, which is significantly low when compared to other BRICS countries like Brazil (50%) or China (51%), and very much lower when compared with European and North American nations which would be more than 80%. India must achieve a significant growth in the area of global higher education for obtaining a sustainable economic growth, which should not be driven by natural resources, but by knowledge resources. As per the reports, India will need another more than 1,500 new higher education institutions by 2030 to accommodate a huge inflow of students, that's why the Indian government wants to promote FDIs (Foreign Direct Investment) and open up the ECB (External Commercial Borrowing) route to strengthen the capital investment for the education sector.

More Holistic and Multidisciplinary Education:

The NEP 2020 claims that, a holistic and multidisciplinary education would aim to develop all capacities of human beings -intellectual, aesthetic, social, physical, emotional, and moral in an integrated manner. Such an education will help develop well-rounded individuals that possess critical 21st century capacities in fields across

the arts, humanities, languages, sciences, social sciences, and professional, technical, and vocational fields; an ethic of social engagement; soft skills, such as communication, discussion and debate; and rigorous specialization in a chosen field or fields. The NEP 2020 envisions one large multidisciplinary Higher Education Institution (HEI) in or near every district, by 2030. Towards the attainment of such a holistic and multidisciplinary education, the flexible and innovative curricula of all HEIs shall include credit-based courses and projects in the areas of community engagement and service, environmental education, and value-based education.

Environment education will include areas such as climate change, pollution, waste management, sanitation, conservation of biological diversity, management of biological resources and biodiversity, forest and wildlife conservation, and sustainable development and living. Value-based education will include the development of humanistic, ethical, Constitutional, and universal human values of truth (satya), righteous conduct (dharma), peace (shanti), love (prem), nonviolence (ahimsa), scientific temper, citizenship values, and also lifeskills; lessons in seva/service and participation in community service programmes will be considered an integral part of a holistic education. As the world is becoming increasingly interconnected, Global Citizenship Education (GCED), a response to contemporary global challenges, will be provided to empower learners to become aware of and understand global issues and to become active promoters of more peaceful, tolerant, inclusive, secure, and sustainable societies.

The Structure and Lengths of Degree Programmes:

In the context of the National Education Policy 2020 scheme, any undergraduate degree in any institution will be of duration of three or four years. One can leave the degree within this period. Any educational institution will have to give to the student a diploma degree after the student completes two years of study, a degree after the student completes three years of study and a certificate to those students who complete one year of study in any professional or vocational course of their choice. The Government of India will also help in establishing an Academic Bank of Credit for storing the academic scores digitally. This will enable the institutions to count the credit at the end and put it in the degree of the student. This will be helpful for those individuals who might have to leave the course mid-way. They can start the course later on from where they left off and not start from the beginning once again. Even though NEP 2020 says that Higher education institutions will be given the freedom to start PG courses there may be some difficulty in designing One Year PG Degree for students who have completed 4 Year UG Degree and a Two Year PG Degree for students who have completed 3 Year UG Degree.

Conclusion

NEP 2020 is an advanced regime that will facilitate value-based education and scientific learning. It will replace the older system of 'curriculum' which is rigid and unamenable to change with changing time due to the unwieldy bureaucratic system to change it. The NEP 2020 lays emphasis on making the education system holistic, flexible and aligned to the needs of 21st-century education. However, in order to accomplish all these goals, we must overcome all the execution challenges in a sustained manner for years to come. The drafting committee of NEP 2020 has made a comprehensive attempt to design a policy that considers diverse viewpoints, global best practices in education, field experiences and stakeholders' feedback. The mission is aspirational but the implementation roadmap will decide if this will truly foster an all-inclusive education that makes learners industry and future ready.

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WOMEN EMPOWERMENT THROUGH NEW EDUCATION POLICY

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Abstract

New Education Policy would transform the education sector in the country as it focuses on making education accessible, equitable and inclusive. The vision laid in the New Education Policy is to build the education system into high-spirited on acquiring key 21st century skill. New Education Policy has laid many favorable provisions to foster gender equity and to do away with gender stereotype which plays a crucial role in girls withdrawing from school. Women need to be empowered through education in order to equip her to face the challenges of the 21st century. If empowerment merely mean to provide access within existing gender differentiating system, it will remain only a travesty but empowerment should mean an all round development.

Keywords; *New Education Policy, Women, Government*

Introduction

The connection between a new education policy and women's empowerment lies in the potential for equal access to education to contribute significantly to empowering women. A progressive education policy can promote gender equality by ensuring that girls and women have the same educational opportunities as boys and men. This, in turn, can lead to increased economic and social empowerment for women, allowing them to participate more actively in various aspects of society and decision-making. It's important for education policies to address barriers that disproportionately affect women's access to education and create an inclusive learning environment for everyone. The impact of a new education policy on women can vary based on the policy's provisions. Generally, if the policy promotes gender equality, accessibility, and quality education, it could positively affect women's educational opportunities and empowerment. However, the actual impact would depend on how effectively the policy is implemented and if it addresses any existing gender disparities in education

The New Education Policy and Women Entrepreneurs

The New Education Policy in India aims to transform the education system by promoting holistic learning and skill development. This can benefit women

entrepreneurs by providing them with better access to quality education and training, enhancing their ability to innovate and succeed in business. The policy's emphasis on vocational training and multidisciplinary education can empower women to enter various sectors, including entrepreneurship. However, success will also depend on the implementation of supportive measures and gender-sensitive policies.

The New Education Policy and Women Education

The New Education Policy in India recognizes the importance of promoting gender equality and women's education. It strives to ensure equal access to education for all genders and emphasizes the inclusion of women in all aspects of education, from early childhood to higher education. By encouraging the removal of barriers that hinder women's participation and progress in education, the policy aims to empower women with knowledge and skills, enabling them to pursue diverse careers, including entrepreneurship. The policy's focus on flexibility, choice, and inclusive education can contribute to breaking down traditional gender roles and fostering a more equitable society.

New Education Policy and Women in Higher Education

The impact of a new education policy on women in higher education can vary based on the specific provisions and goals of the policy. However, potential examples of impact could include:

- **Increased Access:** If the new policy focuses on increasing access to education, it could result in more women having the opportunity to pursue higher education, especially in rural or underserved areas
- **Scholarships and Financial Support;** If the policy introduces scholarships or financial support specifically for women, it could alleviate financial barriers and encourage more women to enroll in higher education.
- **Gender-Neutral Curriculum;** A policy that promotes gender-neutral curriculum development could lead to a more inclusive and balanced education system that benefits both male and female students.
- **Safe and Inclusive Environment ;** If the policy addresses issues like safety on campuses and the prevention of gender-based violence, it could create a safer and more inclusive environment for women to pursue their education.
- **Faculty Representation;** The policy might encourage hiring more female faculty members, which could serve as role models and mentors for women students, fostering a supportive academic environment.
- **Career Guidance:** The introduction of career counseling and guidance services could help women explore diverse fields of study and professions, empowering

them to make informed choices about their higher education and career paths.

- **Research and Leadership Opportunities;** A policy that promotes women's participation in research and leadership roles within academic institutions could contribute to greater gender equality in higher education.
- **Flexible Learning Options;** If the policy supports flexible learning options such as online courses or part-time study, it could benefit women who might have family or work responsibilities.
- **Parental Support;** Policies that provide parental support facilities, like childcare services on campuses, can make it easier for women with children to pursue higher education
- **Addressing Stereotypes;** The policy might include measures to challenge stereotypes and biases that hinder women's participation in certain fields, encouraging them to pursue a wider range of disciplines.

The New Education Policy and Women in Services

The New Education Policy in India can have a positive impact on women's participation in the services sector. By promoting skill-based and vocational education, the policy can equip women with the necessary skills to excel in various service-oriented industries such as healthcare, hospitality, finance, and more. This can open up new opportunities for women to enter and thrive in traditionally male-dominated sectors, thereby contributing to greater gender equality in the workforce. The policy's emphasis on multidisciplinary learning and flexible pathways can empower women to pursue careers in services and other fields, fostering their economic independence and societal contribution.

Government Initiative for Women Empowerment

Education is instrumental in bolstering the spirit of women to carry out their continual fight against exploitation and withstand social evils. The phrase 'women empowerment', which has passed into the current coin of social discourse very rapidly and extensively, is virtually meaningless without education. The Indian nation is exasperated utterly to witness the appalling state of women education even after 75 years of Independence. The policy envisions equitable and inclusive education for all, with special focus on children and youth, especially girls, from socially and economically disadvantaged groups. The policy, which has come to the fore, recently, is expected to usher in a new era in women education.

The policy is a comprehensive framework for elementary education to higher education as well as vocational training in both rural and urban India. It is pointed out that the policy does not pronounce much on the gender issues, yet certain proposals made in the policy may be expected to bring about remarkable changes

into the bleak scenario. There are always new challenges ahead for intelligence NEP 2020 provides for setting up a Gender Inclusion Fund (GIF) to build the nation's capacity to provide equitable quality education for all girls as well as transgender students. The NEP states that the "Gender Inclusion Fund" will be available to states to implement priorities determined by the Central government critical for assisting female and transgender children in gaining access to education (such as the provisions of sanitation and toilets, bicycles, conditional cash transfers, etc.)

The policy further says, "This fund will also enable states to support and scale effective community-based interventions that address local context- specific barriers to female and transgender children's access to and participation in education". The fund will be used to provide quality education to all students and to ensure facilities, secured and hygienic toilets .Besides toilets, hostel facilities for girl students have been recommended by NEP. The fund will focus on ensuring 100% enrollment of girls in schooling and a record participation rate in higher education, decrease gender gaps at all levels, practice gender equity and inclusion in society, and improve the leadership capacity of girls through positive civil dialogues. The NEP 2020 recognizes that female and transgender individuals across all the groups included in Socio-Economically Disadvantaged Groups (SEDGs) are the worst-affected people.

There are plans to implement schemes of giving out bicycles to form cycling groups and creating walking groups to schools to include community participation and make safety nets for these vulnerable students. The policy proposes to locate specific social causes such as gender stereotyping and customs and beliefs that have perpetuated the unequal treatment meted out to girls, including their education. Another remarkable proposal made in the policy is to enhance the number of women on leading positions of the institution, including principals, teachers, wardens, physical instructors, and other staff. It will help the women in important positions to deal with the issues concerning women and create an ambience based on the principle of equality.

NEP 2020 aims at addressing the issue of gender inequity in recruitment of teachers in rural areas. To decrease the gender imbalance among teachers (especially in some rural areas), alternate pathways for female teacher recruitment will be introduced without compromising on merit and qualification, both educational and professional. The policy underlines the necessity for teachers and facilitators like Anganwadi workers to undergo proper training to counsel the families of girl students. Offering of proper counseling to the families is felt to be imperative for facilitating equal opportunities and space for girls in education as often education of boys is seen to be prioritized over that of girls in our society and as there is no dearth of lame excuses for not sending girls to schools.

The NEP 2020 will focus on the safety and security of school-going girls both inside and outside the campus. The schools have to ensure an environment without harassment, discrimination, and domination against women to go for regular accreditation by the statutory bodies. The policy will identify social mores and gender stereotypes preventing girls from accessing education and causing regular dropouts. The teachers, Anganwadi workers, and local social entrepreneurs will be trained to deliver proper counseling to girl children's families. All educational institutions will be mandated to conduct awareness programmes on gender issues to break stereotyped gender roles, on the importance of harassment-free environments and equal treatment of genders, and on legal protections and entitlements for girls and women including the Prohibition of Child Marriage Act, Protection of Children from Sexual Offences Act (POCSO), the Maternity Benefit Act, and the Sexual Harassment of Women at Workplace Act.

Empowerment of Women Through Skilling, Education and Micro Finance

The Government of India has taken various steps to ensure empowerment of women through their social, educational, economic and political uplifting through various schematic interventions. While the schemes implemented by the Government like Beti Bachao Beti Padhao (BBBP), Pradhan Mantri Awas Yojana (Urban & Rural), the National Social Assistance Programme (NSAP), Pradhan Mantri Vay Vandana Yojana (PMVVY) and Scheme for Adolescent Girls (SAG) support women and girls to be socially secure, the initiatives like Samagra Shiksha, Scheme of National Overseas Scholarship, Babu Jagjivan Ram Chhatrawas Yojna, Swachh Vidyalaya Mission, etc. ensure that schools are girl-friendly especially for vulnerable sections of society and have adequate facilities in place to fulfill their special requirements.

In order to enhance the employability of female workers, the Government is providing training to them through a network of Women Industrial Training Institutes, National Vocational Training Institutes and Regional Vocational Training Institutes. To ensure economic independence of women through skill development and vocational training, the Government has also introduced Skill India Mission. The National Skill Development Policy focuses on inclusive skill development, with the objective of increased women participation for better economic productivity. Pradhan Mantri Kaushal Vikas Kendras lay emphasis on creating additional infrastructure both for training and apprenticeship for women; flexible training delivery mechanisms, flexible afternoon batches on local need-based training to accommodate women; and ensuring safe and gender sensitive training environment, employment of women trainers, equity in remuneration, and complaint redressal mechanism. There are schemes like Pradhan Mantri Mudra Yojana and Stand Up

India, Prime Minister's Employment Generation Programme (PMEGP), for helping the women to set up their own enterprise. Under the Swachh Vidyalaya Mission, it was ensured that all schools have at least one functional toilet for girls. Pradhan Mantri Ujjwala Yojna (PMUY) aims to safeguard the health of women by providing them with clean cooking fuel and also from drudgery of collecting firewood.

Though, "Police and Public Order" are State subjects under the Seventh Schedule to the Constitution of India and responsibility to maintain law and order, protection of life and property of the citizens including investigation and prosecution of crime against women and children rests primarily with the respective State Governments, the Central Government gives high priority to ensuring safety and security of women and has undertaken various legislative and schematic interventions in this regard. These include legislations such as "The Criminal Law (Amendment) Act, 2018", "The Criminal Law (Amendment) Act, 2013", "The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013", "The Protection of Women from Domestic Violence Act, 2006", "The Dowry Prohibition Act, 1961", etc.

The schemes/ projects include One Stop Centres (OSCs), Universalisation of Women Helplines (WHL), Mahila Police Volunteers (MPV), Emergency Response Support System (ERSS) which is a pan-India single number (112)/ mobile app based system for emergencies, a cyber-crime reporting portal to report obscene content and assistance to States/ UTs for strengthening cyber forensic capabilities, safe city projects in 8 cities (Ahmedabad, Bengaluru, Chennai, Delhi, Hyderabad, Kolkata, Lucknow and Mumbai), training and skill development programs for Investigation Officers (IOs), Prosecution Officers (POs) and Medical Officers (MOs), distribution of Sexual Assault Evidence Collection (SAEC) Kits to States/ UTs, establishment of state of the art DNA laboratory at CFSL, Chandigarh, assistance to 24 States/ UTs to strengthen Forensic Science Laboratories, assistance to States/ UTs for their respective victim compensation schemes under Central Victim Compensation Fund (CVCF), setting up of Fast Track Special Courts (FTSCs) for speedy disposal of cases of rape and cases under POCSO Act, setting up/ strengthening of Anti Human Trafficking Units (AHTUs) in all districts of the country, setting up/ strengthening of Women Help Desks (WHDs) at Police Stations, Integrated Emergency Response Management System (IERMS) at 983 railway stations, Video Surveillance System at Konkan Railway Stations, scheme for customization, deployment and management of State-wise vehicle tracking platform, etc.

In addition, the Government of India has decided to implement the Umbrella Scheme for Safety, Security and Empowerment of Women as an integrated women empowerment program under the name '**Mission Shakti**', for addressing the issues of women on a life-cycle continuum basis and for making them equal partners in

nation-building through convergence at different levels of governance and a participative approach.

NGOs working for the empowerment of women need to take interventions on livelihood development options related to the market and value chain. Policies and guidelines should be made in such a way that it is easy for women entrepreneurs to get credit facilities. Government should promote creation of Self Help group by women. There is need for industry-specific targets for women's employment and motivate their implementation by firm. Tax benefits should be given to companies that provide employment to 30 percent women workers.

Conclusion

NEP would transform the education sector in the country as it focuses on making education accessible, equitable and inclusive. The vision laid in the New Education Policy is to build the education system into high-spirited on acquiring key 21st century skill. New Education Policy has laid many favorable provisions to foster gender equity and to do away with gender stereotype which plays a crucial role in girls withdrawing from school. Women need to be empowered through education in order to equip her to face the challenges of the 21st century. If empowerment merely mean to provide access within existing gender differentiating system, it will remain only a travesty but empowerment should mean an all round development. Education is one strong weapon in realizing this goal and also effective tool to bridge a gender gap in the society.

With the introduction of New Education Policy, there is a thin ray of hope for the apparent implacable darkness in the quest for girls' education as getting proper basic education is the birthright of each and every individual. As the policy prescribed to approach gender as a cross-cutting priority to achieve gender equality in education in partnership with states and local community organizations, it is optimistic that the state government will be able to assist in restructuring the present education system in meeting the demands of the state and also take positive steps to increase access of women leadership in the state. The New Education Policy, if implemented with strategic planning and proper functioning, will effectively help to improve female literacy rate in the state. As the new policy to be implemented comes with a numerous challenges, it is anticipated that the generation of today will be able to witness the revolution in education system which will prepare them to face the challenges of the 21st century. The policy has many positive features but the same can only be achieved by strictly making it happen.

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IMPACT OF NEW EDUCATION POLICY

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History of the Indian Education System

In India, the concept of education policies has been there since the time of the Britishers. Philosophers and scholars, today, study India's education policies in two parts, that is, pre-independence and post-independence, and are also further divided.

Until 1000 AD, there were not many literary sources to define the education system. The prominent sources before this time that gave us a brief about the education system of that time were the Rigveda, the Aranyakas, the Upanishads, the Epics, and the Puranas. Aryans were the first to introduce a formal education policy in India. After the development of kingdoms, during the Vedic period, powerful kings and leaders focused on higher education. During this time, enough emphasis was laid on universities such as Nalanda and Taxila. Eventually, different communities including Buddhism, Brahmanism, and Islam stood at an impasse related to how education will be influenced according to their religion and beliefs.

During the British period, modern and formal education came into being. This was the first revolutionary incident in the history of education in India. Although, there is no denying that the Britishers focused on spreading Christianity among the locals, but they also gave a new turn by making education more accessible to all the people. It was not restricted to people of higher statutes. They encouraged educational activity by establishing schools and grants-in-aid.

Hence, in the year 1715, St. Mary's School was established in Madras, followed by the establishment of two more charity schools in 1717 by the Danish missionaries. In 1718 a charity school in Bombay and another in 1731 in Calcutta were opened. In 1781, Sir Warren Hastings, the first Governor-General of India, established the Calcutta Madrasa which was focused on Arabic and Persian studies. Additionally, in 1791 he also founded the Benares Sanskrit College to promote classical studies in Sanskrit. Additionally, Indian reformers such as Raja Ram Mohan Roy also played a significant role during this time.

Now, let's discuss education in the post-independence era. It was evident that new India needed new reforms that cater to the needs of locals. Hence, previous reforms were restructured. According to new reforms, university education and

senior secondary education should be separate. There were many such decisions that were to be taken and the goal set for the country's educational policy was to create a system of universal elementary education by 1960.

After independence, India adopted the Constitution in 1950, according to that, education became the responsibility of both state and central governments. It was during this time that Education Commissions were also set up. The first Commission was the University Education Commission of 1948, followed by the Secondary Education Commission (1952). Next, was the Indian Education Commission introduced for the academic year 1964-66. And with that, the first National Education Policy was put into place in 1968.

New Education Policy 2023 24 (NEP 2023)

India has always been a major contributor in the gamut of fields including yoga, mathematics, chess, metallurgy, medical science and surgery, astronomy, civil engineering, architecture, shipbuilding and navigation, fine arts, and others. High standards of transdisciplinary teaching and research were set by world-class institutions in ancient India, such as Takshashila, Nalanda, Vikramshila, and Vallabhi, which also welcomed researchers and students from all backgrounds and nations. And who doesn't know the prominent scholars of India? Chanakya, Maitreyi, Gautama, Patanjali, Chakrapani Datta, Madhava, Panini, Aryabhata, and many others who made a significant impact on the world as we know it today.

If India has so much to offer to the world then why are most of the students moving abroad for studies and to settle? Why is 6 lakh in India too much amount but in other countries, it's the individuals' minimum wage? Where did India fall back? In this article, we will gain a deeper understanding of India's education system and what the future holds for it.

New Policy

The "New Education Policy 2023" signifies a transformative step in the educational trajectory of the nation. Addressing the dynamic requirements of the modern era, this policy places renewed emphasis on holistic learning, digital literacy, and skill development. The preparation of the policy for education in schools and colleges falls under the purview of the National Education Policy, which the Government of India updated in 2023. The new policy includes significant changes aimed at positioning India as a global knowledge superpower.

As part of the policy, the Ministry of Human Resource Management has been renamed the Ministry of Education. Education from preschool to secondary school will be universalised to achieve a 100% Gross Enrollment Ratio (GER) in school education by 2030, except for medical and law studies.

The highlight of the New Education Policy 2023 is its robust framework, catering to diverse learners from different backgrounds. By focusing on creating global citizens rooted in local values, the New Education Policy 2023 aims to reshape India's academic landscape, ensuring a brighter, more inclusive future for all.

Effects of New National Education Policy 2023

The New Education Policy 2023 (NEP) 2023 has redefined the educational landscape with a forward-thinking approach. A notable shift from rote learning to skill-based education emphasizes critical thinking and problem-solving. The New Education Policy 2023 stresses inclusivity, ensuring learners from diverse backgrounds enjoy equal opportunities. With its emphasis on local languages and cultures, the policy promises a rooted yet global outlook for students. Enhanced teacher training modules promise a stronger foundational base, while increased financial outlays aim for improved infrastructure. Digital education gains a significant thrust, preparing students for a tech-dominated future. Through the NEP 2023, the nation is forging a path to holistic, meaningful learning.

New Education Policy 2023 (NEP 2023) Implementation and Review Committee

The Ministry plans to establish an Implementation and review committee in accordance with the National Education Policy 2023, which the Higher Education Department officials will supervise. The committee will be responsible for evaluating the effectiveness of the policy.

Additionally, a task force will be created to transform the credit bank system and IITs into multidisciplinary institutions. In the event of a delay in executing this plan, state and district officials will be held accountable.

Overview of New National Education Policy 2023 24

What is the Article About	New Education Policy 2023
Who Launched the Scheme	Indian government
Beneficiary	Citizens of India
Purpose of the Article	The main objective of this policy is to universalize education and make India a global knowledge super power

What is the 5+3+3+4 Structure?

The 5+3+3+4 structure is a revamped educational framework introduced in New Education Policy 2023 to transform and adapt the traditional learning system to better suit the evolving needs of learners. It emphasizes foundational learning, middle schooling, secondary education, and high school stages. This system aims to create a holistic pedagogical environment.

Foundational Stage (5 years)

The first segment, spanning five years, comprises the initial years of a child's education. It includes:

- 3 years of pre-primary education, focusing on playful and activity-based interactive learning.
- The subsequent 2 years include grades 1 and 2, emphasizing foundational literacy and numeracy.

Preparatory Stage (3 years)

This 3-year phase encompasses grades 3 to 5. A multi-faceted teaching approach integrates subjects for a comprehensive learning experience. At this stage:

- Greater emphasis is placed on discovery and exploration.
- The curriculum introduces complex concepts, moving away from rote learning to promote understanding and application.

Middle Stage (3 years)

This segment, consisting of grades 6 to 8, delves deeper into subject matter:

- Subjects are explored in greater detail, encouraging students to think critically.
- Project-based learning is introduced, ensuring that students gain hands-on experience.

Secondary Stage (4 years)

The final segment, comprising grades 9 to 12, prepares students for their future endeavors, be it higher education or vocational paths. During these four years:

- Students have the flexibility to choose subjects of interest.
- Holistic development is emphasized, with a focus on real-world skills and competencies.

In conclusion, the 5+3+3+4 structure is a progressive step towards restructuring the educational framework. It ensures that learning is seamless, integrated, and suited to the diverse needs of every learner.

New Education Policy 2023 Counseling

- The National Education Policy 2023 was first created in 1986 and revised in 1992
- Over 30 years have passed since its creation, during which significant changes have occurred in the world and society
- The New Education Policy 2023 was launched by the education sector to prepare students for the demands of the 21st century
- The policy was created through a consultative process that considered expert opinion, field experience, public research, stakeholder feedback, and more
- The policy was uploaded on a portal, and feedback was obtained from stakeholders and the public
- State and Union Territory Governments and Ministries of the Government of India were invited to give their views and comments.
- The policy was made available in 22 languages
- Meetings were held with education secretaries, and education dialogues were held in many states
- A special meeting of CAGE on New Education Policy 2023 was held, attended by 26 education ministers, representatives of states and union territories, members of CAGE, heads of organisations, and university vice-chancellors
- The New Education Policy 2023 were implemented by the government based on feedback and suggestions from all stakeholders.

NEP Guidelines 2023: Key Points

- **Holistic Approach:** The New Education Policy 2023 aims to foster overall cognitive, emotional, and societal development of students.
- **ECCE Emphasis:** Focus on Early Childhood Care and Education ensures strong foundational learning for every child.
- **New Structure:** A revamped 5+3+3+4 curriculum structure integrates experiential and skill-based learning.
- **Vocational Push:** By 2025, the goal is for 50% of learners to have vocational education exposure.
- **Regional Language Priority:** NEP encourages instruction in regional or home languages up to Grade 5.
- **Digital Integration:** Incorporating tech-driven platforms like DIKSHA ensures accessible quality education.
- **Rethinking Assessments:** Move from summative to a more comprehensive, adaptive evaluation system.
- **Teacher Training:** Continuous professional development and training modules align educators with the new methodologies.

- **Inclusivity and Equity:** New Education Policy 2023 commits to ensuring education for all, irrespective of socioeconomic or physical barriers.

Sarthak Scheme Launched Under the NEP 2023

The government is continuously striving to enhance the standard of education by implementing various changes. Recently, the National Education Policy was launched by the government. Education Minister Ramesh Pokhriyal Nishank is now set to kickstart the meaningful Sarthak Yojana for the all-encompassing development of students and teachers through quality education.

The views, discussions and suggestions of stakeholders such as States and Union Territories were considered while preparing the scheme. The Ministry of Education received a total of 7177 suggestions. The New Education Policy 2023 has 297 education policy recommendations which have been consolidated and assigned to respective agencies with fixed deadlines. The scheme also comprises 304 dimensions to accomplish these tasks.

Objective of New Education Policy 2023

The prime goal of the National Education Policy is to elevate the standard of education in India to a global level, thereby enabling the country to emerge as a leader in knowledge-based industries. This objective is achieved through the universalisation of education outlined in the National Education Policy.

To this end, the government has implemented several amendments to the old education policy under the New Education Policy 2023, aimed at enhancing the quality of education and enabling children to access good education.

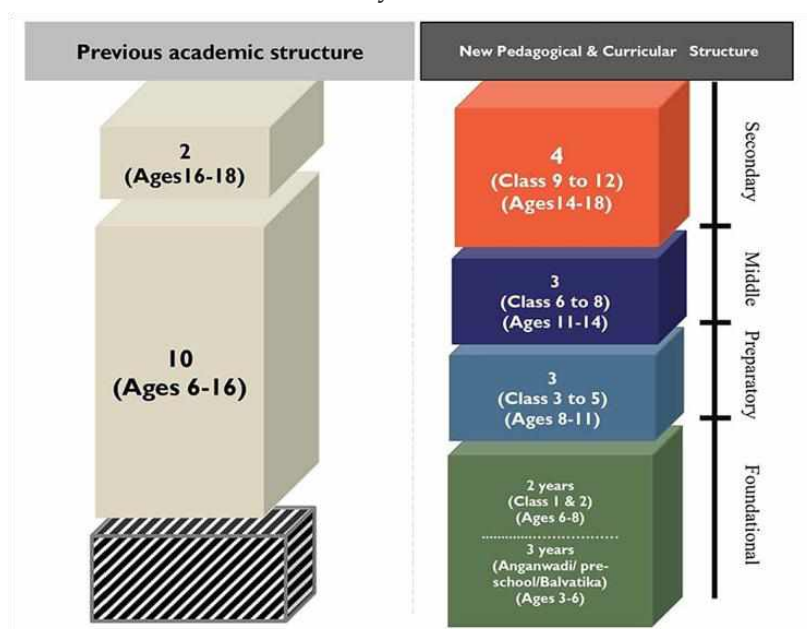
What is New National Education Policy 2023 (NEP 2023)

National Education Policy 2023 is the first education policy of the 21st century and aims to provide quality education to all irrespective of their socio-economic background. This Education Policy lays emphasis on technology, innovation, and educational research. It stresses the importance of critical thinking, creativity, and problem-solving skills, and encourages the use of diverse teaching methods and local resources.

Here are the Parameters on Which NEP 2023 is Based:

1. Focus on holistic development of students by recognising, identifying, and fostering the unique capabilities of each student as well as sensitising parents as well as teachers.
2. Achieving foundational literacy and numeracy by all students by Grade 3.
3. Focuses on the flexibility of education.

4. No separation between arts and sciences, curricular and extracurricular activities, vocational and academic streams, etc.
5. Emphasis on conceptual learning over rote learning
6. Emphasis on critical thinking, decision-making, innovative learning, etc.
7. Focus on ethical and humane values.
8. Promoting multilingualism and the power of language in teaching and learning.
9. Focus on life skills such as negotiations, communication, etc.
10. Promoting the use of technology.
11. Focus on teachers' training and mentorship programmes.
12. Special emphasis on reviewing the work given to the students.
13. The schools' structure 10+2 will be changed to 5+3+3+4
14. Multiple entry and exit options in degree courses.
15. Discontinuation of MPhil Programmes.
16. Decreases the number of entrance exams.
17. Board exams will be held twice a year.



Is India Ready for NEP 2023?

Did you know that, according to a report by ASER, 50% of children in government schools cannot read, write or do basic arithmetic despite being in school for 4-5 years? And when you hear it, you begin to question if India is ready for technological adaptation, and internationalisation. According to the UNDP index, pre-pandemic data shows that India has the highest population of poor people with a total of 228.9 million. Do you think that these 228.9 million people are concerned about education or rather they earn the bare minimum to feed themselves and their families?

India, in the 21st century, is fixated on competing in the global world and is inviting international universities when the students don't have the foundational knowledge. Additionally, India has only a budget of 2.9% of the GDP reserved for education. How can the government cover infrastructural development, reach out to remote areas, and invite foreign universities at this low budget? And can it depend on only foreign investment for the revolution that the New Education Policy talks about? The country is far from removing this disparity. That's something to think about!

Features of New Education Policy 2023

- Ministry of Human Resource Management renamed as Ministry of Education
- Universalisation of education under National Education Policy (excluding medical and law studies)
- New education pattern of 5+3+3+4 (12 years of schooling and 3 years of pre-schooling)
- Vocational testing internship to start from class VI
- Education up to class V to be taught in the mother tongue, or regional language
- No science, commerce, or art streams – students can choose any subject
- Students taught coding from class VI
- All schools to be digitally equipped
- E-content to be translated into regional language
- Development of virtual labs.

Some Highlights of New Education Policy 2023

- Multiple entry and exit points for higher education with appropriate certification
- Undergraduate courses of 3 or 4 years with various exit options and certifications
- Formation of an academic bank of credit to store and transfer digital academic credits
- Emphasis on e-learning to reduce dependence on textbooks
- National testing agency offering common entrance test for admission to higher education
- Goal of building one multidisciplinary higher education institution in every district by 2030
- Aim to make all higher education institutions multi-disciplinary by 2040
- Higher education commission of India as single body for entire higher education (except medical and legal education)

- Four verticals under Higher Education Commission of India: National Higher Education Regulatory Council, General Education Council, Higher Education Council, and National Accreditation Council
- Equal treatment for government and private education, with changes for education for the disabled.

Let us Have a Look at all of those States that Implemented NEP Since it was Proposed.

- Karnataka became the first state that issued an order related to the implementation of NEP 2022 in 2021.
- Later on 26 August 2021 Madhya Pradesh also decided to implement New National Education Policy.
- Uttar Pradesh CM Yogi Adityanath assures that the implementation of NEP will be in phases in the state.
- Goa is set to implement NEP in the state in 2023.
- States like Maharashtra, Andhra Pradesh, Rajasthan, and Assam are also making efforts for the implementation of New NEP.
- Meghalaya CM said that it will soon become the first state to fully implement the New National Education Policy.

The policy envisions a holistic and integrated education approach, focusing on skill development, multi-disciplinary learning, and promoting creativity and critical thinking. It also emphasises using technology and digital resources to enhance the learning experience.

The implementation process of the new policy will require the collaboration and support of all stakeholders, including the government, educational institutions, teachers, students, parents, and the industry

Principles of New Education Policy

New Education Policy Consists of the Following Principles:

- The goal is to promote quality education.
- Children's inner capabilities should be recognized and strengthened.
- Students' overall development should be encouraged.
- The country's literacy rate and enrollment rate are increasing.
- To give students the opportunity to select any subject or course they want.
- Language learning should be encouraged in students.
- Educate students in moral and ethical values

Conclusion

New Education Policy 2023 (NEP) is designed to reform and equalize education standards according to today's need. Now school curriculum in our country will work according to 5+ 3+ 3+ 4 format instead of 10+2 format. NEP 2023 will work on the process of easing the learning experience for the students and will help them to adept at-least one skill before leaving the school. It will work on betterment of students as well as education system in India.

India has come a long way, indubitable, but what the government and leaders need to remember is that the law, policies, and schemes should not only be stringent on paper but also see the light of the day and make an impact if the country wants to fulfil it's 2030 Agenda for Sustainable Development.

The essay on the New Education Policy concludes by stating that the policy is an essential initiative that will greatly contribute to the growth of our country and society as a whole. Nevertheless, with a youth-dominated population, India is capable of truly achieving a better state with the proper implementation of this education policy. However, the implementation of this policy will greatly determine its success.

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EMPOWERING WOMEN THROUGH NATIONAL EDUCATION POLICY: A PATH TO GENDER EQUALITY AND SOCIOECONOMIC DEVELOPMENT

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Abstract:

The National Education Policy (NEP) is a transformative initiative that aims to revamp the education system in India. One of its crucial objectives is to promote gender equality and empower women through education. This paper explores the ways in which the NEP can empower women, enhance their participation in various sectors, and contribute to the overall development of the nation and examine how it serves as a catalyst for women's empowerment, fostering their participation in the workforce, leadership roles, and societal transformation.

Keywords: NEP 2020, Women Empowerment, Gender Equality, Socioeconomic Development.

Introduction:

Empowering women is a global imperative, and one of the most potent tools for achieving this is through education. The National Education Policy (NEP) of India, introduced in 2020, has ushered in a transformative approach to education, with a significant focus on women's empowerment.

In this Paper delve into the NEP and its potential to bring about positive changes in gender equality and women's participation in education and society. The paper explores the key provisions of the NEP that directly impact women's empowerment and discuss the challenges and opportunities in its implementation. Women's empowerment is not just a societal goal; it is an imperative for national progress and development. Education is a powerful tool for empowering women and breaking the barriers of gender inequality. The National Education Policy (NEP) of India, introduced in 2020, recognizes the importance of education in achieving gender parity and women's empowerment.

Historical Perspective:

Before delving into the NEP, it is essential to understand the historical context of women's education in India. Traditionally, women in India had limited access to education, and societal norms often relegated them to domestic roles. However, with time and various reform movements, progress was made. The 1986 National Policy on Education acknowledged the importance of women's education, but significant gaps remained.

Gender Equality in Education: A Fundamental NEP Goal

The NEP recognizes that achieving gender equality in education is a fundamental step towards women's empowerment. It advocates for equal access to quality education for girls and boys, addressing issues like drop-out rates and gender-based discrimination. The NEP emphasizes early childhood care and education, ensuring that girls have access to quality education from the beginning. It promotes gender-neutral curricula that challenge stereotypes and biases, fostering an inclusive learning environment. The NEP aims to eliminate gender-based discrimination in schools and colleges, creating a safe and supportive atmosphere for female students.

Promoting STEM Education for Women

One of the significant pathways to women's empowerment is through Science, Technology, Engineering, and Mathematics (STEM) education. The NEP recognizes the need to bridge the gender gap in STEM fields and takes several measures. The NEP encourages girls to pursue STEM subjects by providing scholarships, mentorship programs, and awareness campaigns. It promotes equal opportunities for girls in STEM-related courses and research, reducing gender disparities in these fields.

Skill Development and Entrepreneurship for Women

The NEP acknowledges the importance of skill development and entrepreneurship in women's empowerment. It aims to provide women with the necessary skills and resources to become self-reliant. The NEP promotes vocational training and skill development programs for women, enabling them to enter diverse sectors, including traditionally male-dominated ones. It supports women entrepreneurs by facilitating access to funding, mentorship, and networking opportunities.

Higher Education and Leadership Roles

Women's empowerment extends to higher education and leadership positions. The NEP recognizes this and takes steps to ensure that women have equal opportunities in academia and leadership. It promotes inclusivity in higher education by addressing issues such as gender-based violence, discrimination, and access to research opportunities. It also encourages women to take up leadership roles in educational institutions, fostering a culture of gender equality.

Women's Participation in the Workforce

Empowering women through education extends to their participation in the workforce. The NEP envisions a future where women are active contributors to the

nation's economic growth. It focuses on equipping women with employability skills through higher education, vocational training, and internships. The NEP encourages employers to implement flexible work policies that support women in balancing their careers and family responsibilities.

Impact on Society and Development

The empowerment of women through education has far-reaching effects on society and development. The NEP's initiatives contribute to reducing gender gaps in education, employment, and leadership roles, fostering a more equitable society. Empowered women contribute significantly to a nation's economic growth through increased workforce participation and entrepreneurship. Educated and empowered women often play a pivotal role in driving positive social changes, including family planning, healthcare awareness, and community development.

Empowering Women A Paradigm Shift in India

The NEP 2020 has brought about a paradigm shift in India's education system. It seeks to address long-standing issues and redefine the way education is imparted in the country. Key highlights of the NEP that impact women's empowerment include Early Childhood Care and Education (ECCE): The NEP emphasizes universal access to quality early childhood education. This is particularly significant for women as it enables them to balance family responsibilities while ensuring their children receive a strong educational foundation.

- **Gender-Inclusive Education:** The policy recognizes the importance of making education more inclusive and gender-sensitive. It promotes the creation of a safe and supportive environment for female students, addressing issues like gender-based discrimination and harassment.
- **Multidisciplinary Approach:** The NEP encourages a multidisciplinary approach to education, allowing students to pursue diverse fields of study. This flexibility is empowering for women who often have varied interests and aspirations.
- **Vocational Education:** The policy emphasizes vocational education and training, which can empower women with practical skills and make them more employable, thereby reducing gender disparities in the workforce.
- **Digital Literacy:** In an increasingly digital world, the NEP recognizes the importance of digital literacy. This is a crucial skill for women, especially in rural areas, as it opens up opportunities for online learning and remote work.
- **Equitable Access:** The NEP aims to provide equitable access to education, particularly for marginalized communities and regions. This includes girls from socio-economically disadvantaged backgrounds who often face multiple barriers to education.

- **Teacher Training:** The policy emphasizes continuous professional development for teachers, including training on gender-sensitive pedagogy. Well-trained teachers are better equipped to create an inclusive and empowering learning environment.
- **Higher Education:** In higher education, the NEP promotes gender diversity by encouraging the establishment of more women's hostels and ensuring a supportive atmosphere for female students.

Challenges in Implementation:

While the NEP 2020 holds immense promise for women's empowerment through education, several challenges must be addressed for effective implementation

Resource Allocation: Adequate funding and resources are crucial for implementing the policy effectively, especially in marginalized areas.

Changing Mindsets: Deep-seated societal norms and attitudes towards women's roles must change to fully realize the benefits of gender-inclusive education.

Infrastructure: Many regions lack proper educational infrastructure, making it difficult for girls to access quality education.

Teacher Training: Ensuring that teachers are well-trained in gender-sensitive pedagogy is essential but may require significant effort.

Opportunities and Positive Outcomes:

Despite the challenges, the NEP offers numerous opportunities and potential positive outcomes

- **Economic Empowerment:** Education empowers women to participate in the workforce, increasing their economic independence and reducing gender disparities in income.
- **Political Participation:** Education can also lead to increased political participation among women, fostering greater representation in decision-making processes.
- **Health and Well-being:** Educated women tend to have better health outcomes and make more informed decisions regarding their well-being and that of their families.
- **Breaking the Cycle of Poverty:** Education has the potential to break the cycle of poverty in families, as educated women are more likely to ensure their children receive an education.
- **Social Empowerment:** Education empowers women to challenge societal norms and advocate for gender equality, contributing to broader social change.

Conclusion:

The National Education Policy 2020 represents a significant step towards women's empowerment in India. By focusing on gender-inclusive education, equitable access, and a multidisciplinary approach, the policy lays the foundation for a more equal and empowered society. However, realizing these goals will require

sustained effort, investment, and a shift in societal attitudes. As India continues to implement the NEP, it has the potential to become a beacon of women's empowerment through education, setting an example for the world to follow. It also serves as a powerful instrument for women's empowerment. By promoting gender equality in education, encouraging women's participation in STEM fields, providing skill development opportunities, and fostering their leadership roles, the NEP paves the way for a more inclusive and prosperous society. Empowering women through education is not just a goal; it is a catalyst for transformative change, leading to gender equality, socioeconomic development, and a brighter future for India. The NEP's commitment to women's empowerment aligns with the broader global agenda of achieving the Sustainable Development Goals and creating a more equitable world for all.

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THE CRUCIAL ROLE OF STUDENTS IN SHAPING THE NEW EDUCATION POLICY

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Abstract

New Education Policy represents a significant opportunity to transform India's education system into one that is more inclusive, flexible, and responsive to the needs of students and society. While policymakers and educators have important roles to play in implementing the NEP, students are not passive recipients of education; they are active stakeholders who can contribute significantly to its success. By actively engaging in discussions, advocating for change, and participating in the development and implementation of the policy, students can help shape the future of education in India, ensuring that it truly meets the needs of the learners it serves.

Keywords: New Education policy, India, students

Introduction

The New Education Policy (NEP) of India, introduced in 2020, has been a revolutionary step towards transforming the country's education system. It envisions a learner-centric approach and aims to equip students with 21st-century skills. While policymakers, educators, and experts have played vital roles in crafting this policy, it's essential not to overlook the pivotal role students themselves can and should play in shaping and implementing the NEP.

Student Feedback Mechanisms

One of the fundamental ways students can contribute to the NEP is through active participation in the feedback mechanism. This policy encourages open dialogue between students and educational institutions. Students must provide feedback on the effectiveness of teaching methods, curriculum, and the overall learning experience. Honest feedback ensures that the policy remains student-centric and responsive to their evolving needs.

Students, as the primary beneficiaries of the education system, possess a unique perspective that can offer valuable insights to refine and enhance the NEP. They can provide feedback on existing challenges, such as outdated curriculum, examination stress, and lack of practical skills. By actively participating in policy discussions and surveys, students can highlight areas that require attention and improvement.

Promoting Inclusivity

One of the key objectives of the NEP is to create a more inclusive education system. Students can actively participate in making this a reality by advocating for equal opportunities for all, regardless of socio-economic background, gender, or physical abilities. They can help identify barriers that prevent marginalized communities from accessing quality education and suggest solutions to address these disparities.

Curriculum Development

The NEP emphasizes a shift towards a more holistic and skill-oriented curriculum. Students can contribute to this process by sharing their interests, career aspirations, and suggestions for relevant subjects and courses. Their input can help in designing a curriculum that aligns with the evolving needs of the job market and society.

Mental Health and Well-being

The NEP recognizes the importance of mental health in education. Students can play a crucial role in promoting mental well-being by raising awareness about the challenges they face, such as academic pressure and peer competition. They can advocate for the inclusion of mental health support services within educational institutions and contribute to destigmatizing mental health issues.

Environmental sustainability is another area highlighted in the NEP. Students, as the future custodians of the planet, can actively engage in eco-friendly practices within educational institutions. They can advocate for sustainable infrastructure, waste reduction, and the inclusion of environmental studies in the curriculum to foster environmental consciousness from an early age.

Digital Literacy

In an increasingly digital world, digital literacy is essential. Students can take the lead in advocating for improved access to technology and digital resources, especially for students in rural and underserved areas. They can also participate in initiatives that promote responsible and safe internet usage.

Student Governance

The NEP encourages the establishment of student parliaments and councils to promote student involvement in decision-making processes. By actively participating in these bodies, students can voice their concerns, propose changes, and work collaboratively with educators and administrators to create a more student-centric education system.

Innovative Learning Methods

The NEP encourages innovative teaching and learning methods. Students are often early adopters of technology and creative approaches to education. They can collaborate with educators and policymakers to explore new ways of delivering content and engaging students. By sharing their experiences and preferences, students can help shape a more engaging and effective learning environment.

In the quest to transform India's education system, one of the most exciting aspects of the New Education Policy (NEP) is its emphasis on innovative learning methods. This visionary approach recognizes that the world is rapidly evolving, and traditional teaching methods may no longer be sufficient to prepare students for the challenges of the 21st century. To harness the full potential of innovative learning, students can play a pivotal role in collaboration with educators and policymakers.

- **Technology Integration:** Students today are digital natives, well-versed in the use of technology. They can actively participate in the integration of technology into the classroom. This includes advocating for increased access to computers, tablets, and the internet in educational institutions. They can also suggest digital learning platforms and tools that enhance the learning experience.
- **Blended Learning:** The NEP promotes a blended learning approach, combining traditional classroom teaching with online resources. Students can provide valuable input on the effectiveness of this approach, sharing their experiences and preferences. They can highlight what works and what doesn't, helping educators tailor blended learning methods to suit their needs.
- **Peer Learning:** Collaborative and peer-based learning methods are gaining popularity. Students can advocate for more group projects, discussions, and peer teaching within the curriculum. They can also help educators identify subjects and topics where peer learning can be particularly beneficial.
- **Experiential Learning:** The NEP emphasizes the importance of practical and hands-on learning. Students can actively engage in discussions on how to incorporate real-world experiences into the curriculum. They can suggest internships, field trips, and workshops that provide practical insights into their chosen fields of study.
- **Personalized Learning:** Every student is unique, and the NEP recognizes this by encouraging personalized learning paths. Students can provide feedback on the effectiveness of personalized learning tools and approaches, helping educators tailor instruction to individual needs and interests.
- **Creative Assessment Methods:** The NEP promotes a shift away from rote memorization and high-stakes exams. Students can actively contribute to discussions about alternative assessment methods, such as project-based assessments, portfolios, and continuous evaluation. Their input can lead to fairer and more meaningful evaluations of their knowledge and skills.

- **Skill Development:** In a rapidly changing job market, the acquisition of practical skills is crucial. Students can collaborate with educators to identify and prioritize the skills that should be integrated into the curriculum. This can include digital literacy, communication skills, problem-solving abilities, and more.
- **Feedback Mechanisms:** Students can play a significant role in the development of feedback mechanisms for evaluating the effectiveness of innovative learning methods. They can provide regular feedback on what is working and what needs improvement, allowing for continuous refinement of teaching techniques.
- **Teacher Training:** Educators often need training to effectively implement innovative learning methods. Students can advocate for professional development opportunities for teachers to ensure they are well-prepared to deliver engaging and effective lessons.
- **Advocacy and Awareness:** Students can also engage in advocacy efforts to promote the benefits of innovative learning methods within their communities and among policymakers. Their voices can help garner support for the continued implementation of these methods.

Conclusion

The NEP's focus on innovative learning methods offers a tremendous opportunity to reshape the educational landscape in India. Students, as active participants in the learning process, have a vital role to play. By actively collaborating with educators and policymakers, sharing their experiences, and advocating for innovative approaches, students can help create a more engaging and effective learning environment that prepares them for success in the ever-changing world.

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5. National Education Policy(NEP), 2020

STUDENT'S PERCEPTION TOWARDS E-LEARNING MATERIALS

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Abstract:

A society's access to global knowledge and immediate communication is made possible by the Internet, which is widely used as a research and instructional tool. Anywhere, including homes, workplaces, schools, fast-food outlets, airplanes, and even beaches, can have Internet access. One of the instructional education programs that might assist students in their studies is e-learning. The goal of this study was to look into how well secondary school pupils used e-learning

Introduction:

Information technology has a huge impact on daily life, and its importance to education cannot be overstated. Due to the closure of educational institutions, which creates obstacles for student's learning. Through cutting-edge learning management systems, information technology is helping to solve the problem of continued learning during this quarantine period. It has given educators the chance to use IT technologies for both teaching and evaluating the completion of students' course work. Teachers, students, and institutional officials are all working to ensure that technology is used as effectively as possible and that the educational process runs smoothly. Worldwide educational institutions and students have embraced and valued the online learning environment. This acceptability is based on its simplicity of use, adaptability of learning, and controlling environment.

Objectives:

- To determine the student's level of exposure to e-learning.
- To investigate the effectiveness of using e-learning among college schools students.

Reserch Design:

Sample Size: 124

Sampling Method: For the collection of primary data, the questionnaire was randomly distributed through online form. We use random sampling method to collect the data.

Tools Used: Percentile for analyzing the data

Table: 1

SI. No	Particulars	Frequency	Percentage
	Gender		
1	Male	77	66.95%
2	Female	38	33.04%
	Age		
1	Up to 18	23	20%
2	18to 25	77	66.95%
3	25 to 31	7	6.08%
4	31 and above	8	6.95%
	Living in		
1	Rural	66	53%
2	Semi urban	8	7%
3	Urban	50	40%
	Course studying		
1	School	0	0
2	Under graduate	107	86%
3	Post graduate	0	0
4	Research	17	14%
	How often you refer e-learning materials		
1	Regularly	50	40%
2	Occasionally	16	13%
3	For purpose	41	33%
	Would you like to adapt the e-learning right now		
1	Yes	108	87%
2	No	16	13%
	Place, where you comfortable to access e-learning materials		
1	Home	41	33%
2	School	0	0
3	College	75	61%
4	Library	8	6%

	How excited you are using e-learning materials?		
1	Very excited	8	6%
2	Feeling good	84	67%
3	Satisfactory	8	6%
4	Not excited	24	21%
	How do you feel when you using e-learning materials		
1	Feeling good	108	87%
2	Satisfactory	8	6%
3	Not bad	8	6%
	Do you think e-learning is more difficult than traditional classroom learning?		
1	Yes	49	39%
2	No	54	43%
3	May be	21	18%
	How confident are you that teachers can motivate students to learn in the e-learning materials		
1	Strongly disagree	16	13%
2	Disagree	33	27%
3	Neutral	33	27%
4	Agree	33	27%
5	Strongly agree	8	6%
	Is it enabling you to cover a wide area of knowledge?		
1	Yes	100	80%
2	No	8	6%
3	May be	16	14%
	Do you think the e-learning materials are relevant and aligned with your learning goals?		
1	Yes	92	74%
2	No	8	6%
3	May be	24	20%
	Would you recommend the e-learning materials to other students?		
1	Yes	108	88%
2	No	8	6%
3	May be	8	6%

Findings:

- In this study, majorities (66.95%) are male respondents and (33.05%) respondents are female.
- The majority of the respondents are between the age group of 18 to 25.
- Majority of the respondents are from rural (53%) and next majority of the respondents are from urban (40%)
- The majority of the respondents are undergraduate students (86%)
- Majority of the respondents (40%) are regularly referring e-learning materials.
- In this study, majority of the respondents (87%) are like to adapt e-learning materials.
- The majority of the respondents (61%) are feel comfortable to access e-learning materials in college.
- The study represents that the majority of the respondents (87%) are feeling good when they using e-learning materials.
- Majority of the respondents (43%) are clearly defined that the e-learning is not that much difficult than the traditional courses.
- From this study we understand it is enabling to cover a wide area of knowledge by the majority of the respondents (80%).
- The majorities of the respondents of the study (74%) think that the e-learning materials are relevant and aligned with your learning goals.
- In this study the majority of the respondents (88%) are recommend the e-learning materials to other students.

Suggestions:

This study suggests that the use of electronic learning resources aids in students' knowledge acquisition. The e-learning resources are simple to alter and have the capacity to cover a wide range of knowledge, according to the responses of the undergraduate students. The children have faith that their teachers can inspire them to learn by using online resources. Additionally, colleges are where students can most easily access e-learning materials.

Conclusion:

In conclusion, views among students about e-learning are complex and evolving. While some people appreciate the ease and freedom it offers, others might find it difficult to interact with others. Things like course design, technological accessibility, and individual learning preferences all have a big impact on how people perceive these things.

It is essential to consider student feedback and experiences as e-learning develops and adapts to their needs in order to maximize its effectiveness and inclusion in education.

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THE IMPACT OF NEW EDUCATION POLICY

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Abstract

The New Education policy announced by means of government of India (NEP 2023) turned into a welcoming trade and fresh news amidst all the negativities surrounding the world because of the demanding situations posed by Covid-19 pandemic. The declaration of NEP 2023 became simply surprising with the aid of many. The changes that NEP 2023 has endorsed had been something that many educationists never saw coming. Though the training coverage has impacted college and university education similarly, this article especially specializes in NEP 2023 and its effect on better education. This paper also outlines the salient capabilities NEP and analyses how they affect the prevailing education get.

Keywords: Newschooling policy, better education, Covid-19

Introduction

The National education policy on education (NPE) is a policy formulated by means of the authorities of India to sell schooling among India's humans. The coverage covers basic schooling to schools in both rural and concrete India. The first NPE turned into promulgated via the authorities of India through prime Minister Indira Gandhi in 1968, the second one by means of high Minister Rajiv Gandhi in 1986, and the third by means of high Minister Narendra Modi in 2023.

The National Education Policy 2023 (NEP 2023), which changed into accepted by using the Union cabinet of India on 29 July 2023, outlines the vision of India's newschooling device. The new coverage replaces the preceding country wide policy on education, 1986. The coverage is a comprehensive framework for standard schooling to better schooling as well as vocational education in both rural and urban India. The coverage aims to transform India's education device by 2021. The language policy in NEP is a wide guiding principle and advisory in nature; and it's miles as much as the states, establishments, and colleges to determine at the implementation. The NEP 2023 enacts numerous modifications in India's schooling coverage. Its objectives to increase country expenditure on schooling from round 4% to six% of the GDP as quickly as viable.

Objectives of the Study

- The primary goal of this studies is to observe the impact to present education coverage 2023 on better education.
- The look at additionally outlines the salient functions of NEP and analyses how they affect the present education device.

Salient Features of Nep Related to Better Education

The new better training regulatory shape will make sure that awesome administrative, Accreditation, financing, and instruction altrendy-placing role sare achieved by separate, Self sustaining, and empoweredour bodies. These fourstructures will be installedas4 Unbias edvertica lsinsidea unmarried umbrella organization, India'shighertraining Fee(HECI). There are numerous reforms and new traits which have been Delivered with the aid of NEP in the better .Anumberof the salient features are:

- **Unmarried Regulatory frame for Higher Training:**

The NEP targets to set up higher education fee of India to be able to be the unmarriedRegulatorybody besidesforfelonyandclinical education.

- **A Couple of Access and go out Programme:**

There might be multiple entry and exit options for folks who wish to go away the route inside the Middle.Their credit will be transferredvia academic financia l institution of credits.

- **Tech-based Choice for Grown up Studying Thruapps,Television Channels:**

Satisfactory generation-based alternativesfor grownup gaining knowledge of which includeapps,online publications/modules, Satellite-primarily based tv channels, on-line books, andICT-equipped libraries and grown up training Centres,etc. Could be developed.

- **E-guides to be Available innear by Languages:.**

Over seasuniversities to set-upcampusesin India.

Particular Analysis of Effect to Upon Higher Education

- **Regulatory system of higher education:**

A full-size change in NEP 2023 is the proposal to set up the better schooling fee ofIndia(HECI), as anumbrella body forhigher training, apart fromclinicaland felony schooling.This could typically carry out a query that what's going to manifest to the present UGC andAICTE? HECI is aiming at reforming the higher training zone; the invoice will separate theinstructional and funding factors of the arena. Consistent with the brand new bill, HECI will no thaveanymonetarypowers.The investment tactics which have beendealtwithwiththeaidof the university grants commission (UGC) can be taken care by way of the Ministry oftraining, formerly called the Ministry of Humanuseful resource development (MHRD).

This change however is predicted to clear theregulatory messinIndia's better training gadget.HECI is expected to have 4 unbiased verticals - country wide higher education RegulatoryCouncil(NHERC)for law, trendy education Council (GEC) for fashionable-placing, highereducation presents Council (HEGC) for investment, and country wide Accreditation Council (NAC) for accreditation. To haveuniformityin

schooling requirements, a single umbrella body became usually a requirement and this has been a vision of several educationists. That is taken into consideration as the right step in streamlining training policy.

But, to make certain first-rate of better education, institutes should be measured based totally on relevant parameters like studies, industry linkages, placements and academic excellence, and so forth. If the HECI can control this, the benefits to its largest stakeholder, the youth of India, is probably good sized.

Conclusion

The brand new education policy has a laudable vision, but its power will depend on whether it could efficiently combine with the alternative policy projects of government like virtual India, Skill India and the new industrial coverage to call a few, as a way to effect a coherent structural transformation. Hence, coverage linkages can make sure that training policy addresses to and learns from ability India's reveal in engaging extra dynamically with the company area to shape vocational schooling curriculum if you want to make it a success. There is additionally a need for more proof-based choice-making, to evolve to hastily evolving transmutations and disruptions. NEP has reassuringly provisioned for real-time evaluation structures and a consultative tracking and assessment framework. This shall empower the schooling device to continuously reform itself, rather than watching for for a brand new education coverage each decade for a shift in curriculum. This, in itself, can be an incredible success. The NEP 2023 is a defining second for better schooling. Powerful and time-certain implementation is what is going to make it genuinely path-breaking.

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IMPACT OF NEP AMONG SCHOOL AND COLLEGE STUDENTS

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Abstract

The digital age is spreading its wings while also offering managerial problems to fulfill its growing needs, as the twentieth century is known as the computer era. Despite being a serious burden for emerging countries like India, education is the most overlooked part. Many bright minds are attempting to improve the current and modified educational system, which dates back to the 1980s. In layman's words, the NEP, 2020 is an update of the educational system from the classic 1980s paradigm to the 21st century to adapt to and accept changes brought on by developing technology. The National Education Policy of 1986 has been replaced by the NEP 2020. T. S. R. Subramanian and a group of former Cabinet Secretaries began talking to people in January 2015 about what they called "The New Education Policy."

Keywords: NEP-2020, Among School and college students.

Introduction

Indian Prime Minister Narendra Modi presided over the Union Cabinet's approval of the National Education Policy 2020, paving the way for significant reform in both schools as well as higher education. The newest model of strategy intends to pave the path for countrywide class changes and improved education systems. This policy will succeed the NPE of 1986, which has been in place for 34 years. This is the twenty-first century's primary education policy, taking over from the NPE of 1986, which had been in place for 34 years.

Major Changes in Nep-2020

For School Education Here are some of the major changes school students can expect from NEP 2020. Structural change from 10+2 to 5+3+3+4 The new framework describes three years of pre-school or Anganwadi rather than 12 years of schooling.

Here's How it's Done:

Foundational Stage (Ages 3 To 8)

Preschool/Anganwadi for three years, followed by two years of elementary school. Activity-based learning is projected to take place in early childhood, which is recognized today as a field of schooling.

Preparatory Stage (Ages 8 To 11)

From classes III to V, students will learn the basics of reading, writing, and speaking a variety of languages. Students will learn about the arts, science, and math. Currently, physical education is being introduced.

Middle Stage (Ages 11 To 14)

It will be exposed to a wide range of abstract concepts. Experiential learning will be used to connect concepts from other fields.

Secondary Stage (Ages 14 To 18)

Classes IX and X, as well as Classes XI and XII, make up the final level, which is divided into two independent multidisciplinary learning stages.

Bridging the Spoken and Written Language Gap

The NEP 2020 emphasizes learning through one's native language as the primary mode of instruction., but does not require anyone to use a specific language. Because it is easier for pupils to understand difficult concepts when they are taught in their mother tongue, the home language or the local language.

Improve Your Language Skills

The NEP has stressed the importance of learning and teaching different languages. Students have the option of studying many native Indian languages in addition to Sanskrit. They will also have the chance to learn a language from another country.

Change in Exam Structure

The PARAKH, which is an evaluation body, is likely to change how the Class X and Class XII board exams are set up. (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development). The reorganization intends to promote interdisciplinary education and eliminate the necessity of participating in coaching sessions. One possibility is to hold the board exams twice a year rather than just once, as is currently the case. Literacy and content-area knowledge will be evaluated for children in Grades 3, 5, and 8 respectively rather than the percentages they must memorize.

Preparation for the Real World

NEAT has been established as a governing body to oversee the integration of utilizing modern technology to enhance student performance and achievement NEAT (National Educational Alliance for Technology) seeks to personalize learning with Artificial Intelligence experiences based on the needs of the learner. To boost learning

results, it even advocates establishing national alliances with educational technology companies. 1. However, one of the most difficult challenges is establishing a strong digital infrastructure in remote areas. 2. Memorization is expected to give way to holistic, integrated, pleasurable, and fascinating learning. Interdisciplinary subjects will most likely be popular among students. 3. During a 10-day "bagless" learning time, students in Classes VI through VIII will engage. This term will function similarly to an internship, to gain practical experience. 4. Beginning with Class VI, the chance to study coding will be presented to the students

Impact of New Education Policy (Nep) 2020

NEP 2020 will open up new learning opportunities to the students. Its biggest impact would be the change in the learning environment and the learning process for the students. The new education policy will:

- Increase focus on the skill improvement and competency development of the students.
- Make the students future-ready by building 21st-century skills.
- Make students focus on both academic and non-academic pursuits.
- Provide various learning opportunities for pre-primary, open, and distance-learning students.
- Give access to counselling and other services for students.

School Education

Focus on Foundational Literacy and Numeracy : The policy accords the highest priority to achieving Foundational Literacy and Numeracy by all students by Grade 3. The policy states, "The highest priority of the education system will be to achieve universal foundational literacy and numeracy in primary school by 2025. The rest of this Policy will become relevant for our students only if this most basic learning requirement (i.e., reading, writing, and arithmetic at the foundational level) is first achieved. Proficiency in Reading with Understanding and Numeracy) was launched on 5 July 2021 to achieve this goal. [18] The "10 + 2" structure will be replaced with "5+3+3+4" model. [19] This will be implemented as follows:[20][21] Foundational Stage: This is further subdivided into two parts: 3 years of preschool or anganwadi, followed by classes 1 and 2 in primary school. This will cover children of ages 3–8 years. The focus of studies will be in activity-based learning. Preparatory Stage: Classes 3 to 5, which will cover the ages of 8–10 years. It will gradually introduce subjects like speaking, reading, writing, physical education, languages, art, science and mathematics. Middle Stage: Classes 6 to 8, covering children between ages 11 and 13. It will introduce students to the more abstract concepts in subjects of mathematics, sciences, social sciences, arts and humanities. Secondary Stage: Classes 9 to 12,

covering the ages of 14–18 years. It is again subdivided into two parts: classes 9 and 10 covering the first phase while classes 11 and 12 covering the second phase.

These 4 years of study are intended to inculcate multidisciplinary study, coupled with depth and critical thinking. Multiple options of subjects will be provided.

Instead of exams being held every academic year, school students will only attend three exams, in classes 2, 5 and 8. Board exams will be continued to be held for classes 10 and 12 but will be re-designed. Standards for this will be established by an assessment body, PARAKH (Performance Assessment, Review and Analysis of Knowledge for Holistic Development) To make them easier, these exams would be conducted twice a year, with students being offered up to two attempts. The exam itself would have two parts, namely the objective and the descriptive. This policy aims at reducing the curriculum load of students and allowing them to be more "inter-disciplinary" and "multi-lingual". One example given was "If a student wants to pursue fashion studies with physics, or if one wants to learn bakery with chemistry, they'll be allowed to do so". Report cards will be "holistic", offering information about the student's skills. Coding will be introduced from class 6 and experiential learning will be adopted. The Midday Meal Scheme will be extended to include breakfasts. More focus will be given to students' health, particularly mental health, through the deployment of counsellors and social workers. identifying stage-wise targets and goals to be achieved by 2025, and closely tracking and monitoring progress of the same". Subsequently, the NIPUN Bharat Mission (National Initiative for Proficiency in Reading with Understanding and Numeracy). Accordingly, all State/UT governments will immediately prepare an implementation plan for attaining universal foundational literacy and numeracy in all primary schools, identifying stage-wise targets and goals to be achieved by 2025, and closely tracking and monitoring progress of the same".

Higher Education

It proposes a 4-year multi-disciplinary bachelor's degree in an undergraduate programme with multiple exit options. These will include professional and vocational areas and will be implemented as follows. A certificate after completing 1 year of study A diploma after completing 2 years of study A Bachelor degree after completion of a 3-year programme. A 4- year multidisciplinary Bachelor degree (the preferred option) MPhil (Masters of Philosophy) courses are to be discontinued to align degree education with how it is in Western models. A Higher Education Commission of India (HECI) will be set up to regulate higher education. The Council & goal will be to increase gross enrollment ratio. The HECI will have 4 verticals National Higher Education Regulatory Council (NHERC), to regulate higher education, including teacher education, while excluding medical and legal education. National Accreditation Council (NAC), Higher Education Grants Council (HEGC), for funding

and financing of universities and colleges. This will replace the existing National Council for Teacher Education, All India Council for Technical Education and the University Grants Commission. General Education Council (GEC), to frame ‘graduate attributes’, namely the learning outcomes expected. It will also be responsible in framing a National Higher Education Qualification Framework (NHEQF). The National Council for Teacher Education will come under the GEC, as a professional standard setting body (PSSB). Other PSSBs will include professional councils such as Veterinary Council of India, Council of Architecture, Indian Council of Agricultural Research and National Council for Vocational Education and Training. The National Testing Agency will now be given the additional responsibility of conducting entrance examinations for admissions to universities across the country, in addition to the JEE Main and NEET. The policy proposes that higher education institutes like the IITs make changes with regard to the diversity of learning. The policy proposes to internationalize education in India. Foreign universities can now set up campuses in India. The fees of both private and public universities will be fixed.

Make Space for Personalization

The New Education Policy is eliminating the rigid system of limited education streams. Thus, higher education solutions will need to modify their products and services accordingly. They will have to focus on offering personalized solutions that can be catered to students’ stream choices.

Focus on Specialization

With more learning choices, students will ultimately prefer specialized learning above everything. Thus, higher education solutions must reform its existing catalog of subject knowledge. They will be needed to employ multiple experts to deliver precise services on multiple subjects.

It will also promote unconventional subjects, like coding, web designing, etc., in a traditional learning space.

Integrate Intuitive Tools

Adding intuitive elements like gamification will be a need for modern education solutions. As learners will get the chance to delve into different topics, fun, and interactive elements will simplify the initial stage.

Moreover, the use of video-based elements will boom among education solutions, thanks to NEP.



Major Reforms in Higher Education

Multi-Modal Education

Online, open and multi-modal learning have been promoted vigorously by both schools and higher education institutions.

This initiative has helped in reducing the learning loss due to the Covid-19 pandemic and will contribute greatly to achieving education in remote and inaccessible parts of the country.

SWAYAM, DIKSHA, SWAYAM PRABHA, Virtual Labs and other online resource portals have all seen a sharp rise in student registrations.

In addition to the above, UGC has notified Open and Distance Learning (ODL) and Online Programmes Regulations under which 59 Higher Educational Institutions (HEIs) are offering 351 full-fledged Online programmes and 86 HEIs are offering 1081 ODL programmes. The permissible limit of online content in a programme has also been raised to 40%.

Innovation and Start-Ups

To encourage an **ecosystem of start-up and innovation**, 2,774 Institution Innovation Councils have been set up in HEIs in 28 States and six UTs.

Promotion of Indian Languages

Stress is being paid to **multilingualism in education** and testing to ensure that lack of knowledge of English does not impede the educational attainment of any student.

With this objective in mind, states are publishing bilingual/ trilingual textbooks at the foundational level and content on the DIKSHA platform has been made available in 33 Indian languages.

NIOS has introduced **Indian Sign Language (ISL)** as a language subject at the Secondary Level. However, on a large scale, today remarked that **NEP-2020 has created a suitable platform** in universities and other educational institutions for **translation of research, ideas and innovations into actions** for betterment of society.

Overall, the NPE 1986 created a pool of education and trained human resources who contributed to the value chain but NEP 2020 dreams of creating human resources who will create value propositions.

With the implementation of the new NEP 2020, the Indian education system is poised to become closer to international standards. In an online survey conducted across 1103 students across India, nearly 96.4% were optimistic about the results that come out of the implementation of new policy.

NEW EDUCATION POLICY 2020		
KEY DIFFERENCES		
	EXISTING ACADEMIC STRUCTURE	NEW ACADEMIC STRUCTURE
STREAMS	There are 3 streams which a student can choose from. -Science -Commerce -Arts	No hard separation of streams. A student can choose his stream according to his/her interest or desire.
PEDAGOGICAL STRUCTURE	10+2+3	5+3+3+4
BOARD EXAMS	Based on memorising facts and used to be held once a year.	Based on core competencies with students allowed to take the exam twice.
AWARD OF DEGREE	After completion of 3 or 4 years, the degree is provided to the students.	Multiple exit options with certificate after 1 year and diploma after 2 years.
VOCATIONAL EDUCATION	NIL	Vocational education from class 6th with internships.
MARKSHEET SCORING	Based on Marks obtained in exam	360 degree performance evaluation
ENTRANCE TEST	Multiple Entrance Test	Single Entrance Test

Conclusion

The policy introduces a whole gamut of changes and reads largely as a very progressive document, with a firm grasp on the current socio-economic landscape and the prospect of future uncertainty.

Education for a new generation of learners has to essentially engage with the increasing dematerialisation and digitalisation of economies, which requires a completely new set of capabilities in order to be able to keep up. This seems to be an even more vital requisite now, with the trend towards digitalisation and disruptive automation being quickened by the pandemic.

Overall, the NEP 2020 addresses the need to develop professionals in a variety of

fields ranging from Agriculture to Artificial Intelligence. India needs to be ready for the future.

And the NEP 2020 paves the way ahead for many young aspiring students to be equipped with the right skillset.

The new education policy has a laudable vision, but its strength will depend on whether it is able to effectively integrate with the other policy initiatives of government like Digital India, Skill India and the New Industrial Policy to name a few, in order to effect a coherent structural transformation.

Hence, policy linkages can ensure that education policy addresses to and learns from Skill India's experience in engaging more dynamically with the corporate sector to shape vocational education curriculum in order to make it a success.

There is also a necessity for more evidence-based decision-making, to adapt to rapidly evolving transmutations and disruptions.

NEP has reassuringly provisioned for real-time evaluation systems and a consultative monitoring and review framework. This shall empower the education system to constantly reform itself, instead of expecting for a new education policy every decade for a shift in curriculum.

This, in itself, will be a remarkable achievement. The NEP 2020 is a defining moment for higher education. Effective and time-bound implementation is what will make it truly path-breaking.

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NEW EDUCATION POLICY CHALLENGES AND OPPORTUNITIES IN HIGHER EDUCATION IN INDIA

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Abstract:

Education is important for the economic and social Development of nation. The weapon may prove to be harmful if it is misused. Due to proper interpretation and implementation of policies, the generations may be benefitted. It will result in strong economic and social development. The National policy in education, 1986 was replaced by New National Education Policy. [NEP 2020] National Education Policy is the holistic reform in the education across all levels stages of education in India. It made reforms in Primary, Secondary and Higher education in single policy document. It is the Evolution in the field of education in India. This Study is based on secondary data, the available literature on the topic is referred. This paper aims at discussing challenges and Opportunities in National Education policy 2020 with respect to higher education in India. This paper will help the researchers, academicians and policy makers gain insight in the NEP policy.

keywords: New Education Policy, Challenges and Opportunities Higher Educational Institutes.

Introduction :

“Education is the most powerful Weapon to be used to change the world”

- Nelson Mandela

Kothari Commission [1964-66] had recommended a 6 % allocation of GDP, National Education Policy, 2020 is an evolution in the Education field. It tried to increase access, equity, And inclusion as one of the key changes. Internationalization of higher education is one of the Aims in the NEP. NEP promoted more and more Philanthropic activity in the education sector. NEP tried to imbibe that education is a concurrent subject. NEP suggested a “light but tight” regulatory Framework to ensure integrity, transparency, and Resource efficiency of the educational system through audit and public disclosure while Encouraging innovation and out-of-the-box ideas through autonomy, good governance, and Empowerment.

Challenges to be in Implementing Nep:

Following are the challenges in front of higher Educational institutions while implementing National Education Policy 2020.

- **Gross Enrollment Ratio[GER]:**

The GER is 27.1 in 2019-20 (AISHE 2019-20). Total Enrollment of students in higher education institutes in India is around 342.5 lakhs, with 50.4% male and 49.6% female enrolments. The Gross Enrollment Ratio (GER) for women in 2019-20 is 27.3 % as compared to 9 % for men. It means that more eligible women as compared to men are attending college and university in India. Increasing the GER is one of the key aims of the National Education Policy (NEP). The Modi Government wants to touch a 50 % GER by 2035 through various reforms included in the NEP.

- **Inclusion & Equity:**

National Education Policy, (NEP) 2020 is based on the principles related to diversity, equity and inclusion. Equitable and inclusive education as per NEP 2020 aims to ensure that every child should get opportunity to learn and excel. Special emphasis will be given on socially and economically disadvantaged groups which include: gender identities, socio-cultural identities, geographical identities, and socio-economic conditions. A separate "Gender Inclusion fund" will be created as also "Special Education Zones" for disadvantaged regions and groups.

Quality benchmark:

One of the core values of NAAC is "quest for excellence". The new quality benchmarks being declared by the National Accreditation & Assessment Council [NAAC], Bangalore for accreditation purpose. Likewise, NEP is also based on the fundamental pillars of access, affordability, equity, quality and accountability. So, quality initiatives and quality improvement programs are must.

- **Infrastructural facilities:**

In the present situation, the ICT enabled infrastructural facilities with high speed WI-FI connection is the prime necessity. It is required in order to keep pace with the fast changing technology.

- **Effective and Visionary Leadership in it is:**

The visionary leadership in the field of higher education and higher education institutes is the need of an hour. Intervention of politics in education should be existed to the extent it is required for effective policy framing and implementation. Timely decision by Ministry of Education, investment for future, releasing grants, approvals, etc. are some of the issues to be handled smoothly.

- **Lack of funds:**

About 3% of GDP is spent on education in India in 2019-20. The expectation is around 6% in NEP. The share from the budget of Central and State Government needs to be increased more.

to channelize funds towards strengthening higher education. For the department of higher education an amount of Rs.40810.34 crore (revenue) has been allocated.

- **Capacity building, training, retraining and un-Training to faculty:**

The capacity building workshops, training to faculty of HEIs is important and should be frequently arranged. The initial training, retraining and un-training (wipe out old, outdated matter and train with new concepts and viewpoints). Industry and academia need to be bridge gap for employability or self-employability. Lack of specific skill development courses or add on courses for employability or self-employability. New Education Policy is not just about the degree. It is all about equipping students for employment or self-employment. The student development programs to be conducted on need based system.

- **Faculty recruitment & promotions:**

The Permanent faculty to be recruited as per the requirement. The permanent faculty try to establish and develop the departments and higher institutions. It creates positive impact on institutional development in the long run.

- **Mind-set of students towards education:**

Due to multiple entry and exits in NEP 2020, there is high chance of increase in drop out rate in HEI. The time will provide the correct scenario on this aspect. Orientation and motivation to students for Post-graduation is to be augmented. The Scholarships for the deserving students, imbining research aptitude and scientific temper among the students will help them for sustainable development. It is being observed by few studies that due to fast Pace of the world, the students are facing certain emotional and mental disorder. A congruence between emotions and behaviour of the students is required in order to develop them as a responsible citizen. To achieve this, following remedies are suggested-cultivating student's key competencies, giving freedom to express views, incorporation of moral values, enhancing life survival skills, creating readiness for self-learning in them. Choice based credit system [CBCS] will help the students to learn the subjects of their linking/sand credit earned as per the credit in Academic Bank of Credit [ABC]. Handholding and mentoring cell in the institution may orient the students in difficult situations.

- **Dependence on ICT:**

The new policy focuses on online and e-learning. MOOCs, courses on Swayam, NPTEL, Coursera, etc. are gaining importance due to their contents and course delivery. Online education will play an important role to bridge the gap between the students and the institutes.

- **Huge Number of Colleges :**

There are 1043 Universities, 42343 colleges and 11779 stand alone institutions (AISHE Report 2019-20). This number is increasing day by day and adds in to the

competition with existing institutions. There should be motivation and a positive force for accreditation and certification from the apex bodies for institutions. It could be achieved through making cluster of Institutions to help each other, support of management, declaring benchmark for quality purpose, ranking of college/university as per NIRF, Times etc. Participating and updating the reports in AISHE and following guidelines as per RUSA is important for the institutions. Institutions need to try hard for their image and goodwill building.

- **Internationalization & Foreign Universities:**

Internationalization of higher education has received its due importance in NEP, to make India hub for International students. HEIs will play a vital role in attracting foreign students in India. The universities will also have to be alert and keep themselves ready to welcome students.

- **Opportunities to be in Implementing NEP:**

The NEP 2020 paves the way towards less regulation and more autonomy for institutions through an effective self-regulatory framework. New Education Policy is not just about the degree

Conclusion:

The researcher has put up the views on challenges and opportunities in National Education Policy 2020 mainly for higher educational institutions. The views mentioned by the researcher are compiled through reading and experience. However the researcher is optimistic that NEP will prove to be a boon in the long run. All higher education institutions with current nomenclature of affiliated colleges will expand as multi-disciplinary autonomous colleges with degree giving power in their name or become constituent colleges of their affiliated universities. An impartial agency National Research Foundation will fund for innovative projects in priority research areas of basic sciences, applied Sciences, and social sciences & humanities. The system will transform itself as student centric with the freedom to choose core and allied subjects within a discipline and across disciplines. Faculty members also get autonomy to choose curriculum, methodology, Pedagogy and evaluation models within the given policy framework. These transformations will start from the academic year 2021-22. And will continue until the year 2030 where the first level of transformation is expected to be visible.

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IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

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Abstract

Education is fundamental for achieving full human potential, developing an equitable and just society, and promoting national development. Providing universal access to quality education is the key to India's continued ascent, and leadership on the global stage in terms of economic growth, social justice and equality, scientific advancement, national integration, and cultural preservation. Universal high – quality education is the best way forward for developing and maximizing our country's rich talents and resources for the good of the individual, the society, the country, and the world. India will have the highest population of young people in the world over the next decade, and our ability to provide high – quality educational opportunities to them will determine the future of our country. On July 29th, 2020, the Indian Education System noticed a historical decision made by the Union Cabinet, the New Education Policy. On this day, the Ministry of Education announced the major reforms in the educational structure under the newly laid National Education Policy (NEP) 2020. Education policies are usually revised every few decades. The first came in 1968, the second in 1986, and the third reformation of the Indian education culture was seen in 2020. NEP is the first inclusive, participatory, and holistic approach that reforms the existing educational structure. This new education policy 2020 takes into consideration different fields like experiences, empirical research, stakeholder feedback, and lessons from best practices. It is a progressive shift and if implemented in its true vision, this new education structure can bring India at par with the leading countries of the world. The objective of this reformation of the Indian education system is “No child will be left behind”. It is intended to fill the gaps in the current education scenario. So, we can say, NEP 2020 is brought for the ‘learning to learn’ approach. The new education policy 2020 aims to overhaul India's existing education regime and make it more learning-centric. Students will be provided with the best opportunity to learn research-based learning. Teachers will be given the chance to learn advanced teaching skills. To help students and make them understand the new education policy, teachers should develop counselling and career guiding skills.

Keywords: *National Education Policy 2020, Impact of Students, Impact of Teachers, Skill Development and Research based Learning.*

Impact of New Education Policy Among Future Generation

Introduction:

NEP is basically a comprehensive framework to guide the development of education in the country. The urge of such a framework was first realized in the year 1968 which was then revisited and revised in the year 1986. This was again reviewed

and updated in 1992 as per the need of the hour. Since then, the entire world and the overall sector have witnessed massive changes. Hence, this year, the government decided to revise these policies to make them more relevant and compelling for the education ecosystem. On July 29th, 2020, the Indian Education System noticed a historical decision made by the Union Cabinet, the New Education Policy. On this day, the Ministry of Education announced the major reforms in the educational structure under the newly laid National Education Policy (NEP) 2020. The new NEP has been introduced with an aim to formalize changes in the system from K-12 level to college/university level. Keeping in mind the developing scenario, education content henceforth, will focus on key-concepts, ideas, applications and problem-solving angles. Let's take a look at some of the innovative policies introduced for the primary and secondary level education.

- **National Curricular and Pedagogical Framework to be Developed by National Council of Educational Research and Training (NCERT):** A national Curricular and Pedagogical Framework for Early Childhood Care and Education for children up to the age of 8 will be developed by NCERT.
- **Coding to be Introduced From Class 6:** Mathematical thinking and scientific temper will be a part of School curriculum. Students will be allowed to take up coding from class 6.
- **Board Exams:** Board exams will be conducted in two parts – Objective and Descriptive. These examinations should be designed to promote knowledge application rather than rote learning. Going forward, boards may also develop viable models of the main exams such as annual/semester/modular.
- **No Hard Separation of Streams for Students:** There will be no hard separation of learning areas like science and humanities in terms of curricular. There will not be any separation between co-curricular and extra-curricular areas and all subjects, including arts, music, crafts, sports, yoga, etc. will be a part of the overall curriculum.

NEP is the first inclusive, participatory, and holistic approach that reforms the existing educational structure. This new education policy 2020 takes into consideration different fields like experiences, empirical research, stakeholder feedback, and lessons from best practices. It is a progressive shift and if implemented in its true vision, this new education structure can bring India at par with the leading countries of the world. Let's understand the key changes that this new education policy proposes. The objective of this reformation of the Indian education system is "No child will be left behind". It is intended to fill the gaps in the current education scenario. So, we can say, NEP 2020 is brought for the 'learning to learn' approach.

NEP's Focus on Higher Education:

Similarly, there are a lot of reforms and new developments which have been introduced by NEP in the higher education sector. Let's take a look at some of the important ones which are well-poised to create a positive difference in the sector.

- **Single Regulatory Body for Higher Education:** The NEP aims to establish Higher Education Commission of India which will be the single regulatory body except for legal and medical education.
- **Multiple Entry and Exit Programme:** There will be multiple entry and exit options for those who wish to leave the course in the middle. Their credits will be transferred through Academic Bank of Credits.
- **Tech- Based Option for Adult Learning Through Apps, Tv Channels:** Quality technology-based options for adult learning such as apps, online courses/modules, satellite-based TV channels, online books, and ICT-equipped libraries and Adult Education Centres, etc. will be developed.
- **E-courses to be Available in Regional Languages:** Technology will be part of education planning, teaching, learning, assessment, teacher, school, and student training. The e-content to be available in regional languages, starting with 8 major languages – Kannada, Odia, Bengali among others to join the e-courses available in Hindi and English.
- **Foreign Universities to Set-up Campuses in India:** World's top 100 foreign universities will be facilitated to operate in India through a new law. According to the HRD Ministry document, "such (foreign) universities will be given special dispensation regarding regulatory, governance, and content norms on par with other autonomous institutions of India. "Whether you aspire to study at these universities in your home country or study abroad, please remember that an education loan in India can help finance your higher studies independently.
- **Common Entrance Exam for all Colleges:** The common Entrance exam for all higher education institutes to be held by National Testing Agency (NTA). The exam will be optional.

The National Education Policy is expected to bring positive and long-lasting impact on the higher education system of the country. The fact that foreign universities will be allowed to open campuses in India is a commendable initiative by the government. This will help the students experience the global quality of education in their very own country. The policy of introducing multi-disciplinary institutes will lead to a renewed focus on every field such as arts, humanities and this form of education will help students to learn and grow holistically. Thus, students will be equipped with stronger knowledge base.

Highlights of the New Education Policy:

- The present school system will be divided into 5 + 3 + 3 + 4 stages as Foundation, Preparatory, Middle & Secondary respectively.
- Mother tongue or regional language will be taught up to at least class 5.
- Vocational education will be integrated from class 6 with 10 days of mandatory internship.
- National Testing Agency will conduct SAT-Like college entrance tests twice a year.
- Students will be benefitted with a 4-Year multi-disciplinary bachelor's program.
- Mid-term drop-out students will be able to complete the degree after a break.
- Foreign colleges could enter India, and Indian universities would go global.

These will be some changes in the existing education policy to bring out the best in one self, be it any field of study. It can surely make India a global knowledge superpower. In its essence, the NEP underlines the principle of creating a transformation framework that shifts the focus from conventional rote-learning to a more inquiry-based, project-led education ecosystem. The main objective of the National Education Policy is to help students enhance their learning outcomes and facilitate their holistic development.

Significance of New Education Policy 2020:

- **Recognizing Importance of Formative years:** In adopting a **5+3+3+4 model for school education starting at age 3**, the policy recognizes the primacy of the formative years from ages 3 to 8 in shaping the child's future.
- **Departure From Silos Mentality:** Another key aspect of school education in the new policy is the breaking of the strict division of arts, commerce and science streams in high school. This can lay the foundation for a multi-disciplinary approach in high education.
- **The Confluence of Education and Skills:** Another laudable aspect of the scheme is the introduction of vocational courses with an internship. This may nudge the vulnerable sections of society to send their children to school. Also, it would help in realization of the goal of Skill India Mission.
- **Making Education More Inclusive:** The NEP proposes the extension of the Right to Education (RTE) to all children up to the age of 18. Further, the policy seeks to leverage the huge potential of online pedagogy and learning methodologies for increasing gross enrolment in higher education.
- **Light but Tight Oversight:** According to the policy, in spite of periodic inspection, transparency, maintaining quality standards and a favourable public

perception will become a 24X7 pursuit for the institutions, leading to all-round improvement in their standard. The policy also seeks to establish a super-regulator for education which will be responsible for standards-setting, funding, accreditation and regulation of higher education India.

- **Allowing Foreign Universities:** The document states universities from among the top 100 in the world will be able to set up campuses in India. This will lead to an infusion of international perspective and innovation, which will make the Indian education system more efficient and competitive.
- **Ending Hindi vs English Debate:** Most crucially, NEP, once and for all, buries the strident Hindi versus English language debate; instead, it emphasizes on making mother tongue, local language or the regional language the medium of instruction at least till Grade 5, which is considered the best medium of teaching.

The Fundamental Principles of NEP:

- **Recognizing, Identifying, and Fostering the Unique Capabilities of Each Student:** Every student is different. Be it their learning styles or interests or competence. Teachers as well as parents must be sensitized to understand the unique capabilities of students and acknowledge the same. This will make more room for growth and will instill more confidence in students.
- **Achieving Foundational Literacy and Numeracy:** Foundational literacy and numeracy (FLN) can be defined as a child's ability to read basic texts and solve basic Mathematics problems. Ensuring that students have the necessary understanding of words and numbers by the time they reach third grade, is one of the most important principles of NEP 2020.
- **Flexibility:** Each child's inclination varies. Some students might be interested in Mathematics, some others might be interested in Sports and certain others in Arts. The flexibility to choose the career trajectory that the students want, as per their interests, is one of the fundamental principles of NEP 2020.
- **No Hard Separations:** Intentionally or unintentionally, more often than not, people tend to place more importance on curricular activities than extracurricular activities and the same happens with Science and Arts. The former usually gets more emphasis. The National Education Policy highlights that there shouldn't be a hard separation between these. All subjects and activities should receive equal and undivided attention.
- **Multidisciplinary & Holistic Education:** "Ensuring Unity and integrity of all knowledge", is one of the most important notions put forward by NEP 2020. Through multidisciplinary, students will be able to gain a wide variety of skills that are necessary to succeed in life. Education is not just about textbook

knowledge and NEP 2020 ensures to constrain this issue which has been prevalent in our education system for a very long time.

- **Emphasis on Conceptual Understanding:** Memorizing for exams and forgetting the mugged-up concepts soon after has become a pattern. NEP 2020 tries to curb this by emphasizing a better comprehension of the concepts as opposed to cramming.
- **Creativity and Critical Thinking:** NEP 2020 promotes logical thinking and innovation. A close observation of the principles will help one understand that they all go hand in hand. Fostering the unique capabilities of students, teachers and parents will help catalyze independent thinking and innovation.
- **Ethics and Human & Constitutional Values:** Another fundamental principle that will guide the educational systems at large is values like empathy, respect for others, cleanliness, courtesy, democratic spirit, the spirit of service, respect for public property, scientific temper, liberty, responsibility, pluralism, equality, and justice.
- **Promoting Multilingualism and the Power of Language:** India is a land of thousands of diversities and to acknowledge the same, educational institutions must promote multilingualism in teaching and learning.
- **Life Skills:** Life skills are necessary abilities that enable individuals to deal with the challenges of life. Communication, resilience, problem-solving, perseverance, etc. are some important life skills.
- **Focus on Regular Formative Assessment for Learning:** Formative assessments are used to identify students' strengths and weaknesses, address students' areas of need, and the like. It helps assist teachers in recognizing gaps in knowledge and functioning to close those gaps.
- **Extensive Use of Technology:** With the rapid development of technology, there are a lot more possibilities for better teaching and learning. NEP 2020 promotes the use of technology since it can help transcend various barriers, and make management better & more efficient.
- **Respect for Diversity & Respect for the Local Context:** Education is concurrent and it is of paramount importance to respect diversity and place emphasis on the local context. The textbooks must capture the cultural nuances and draw examples from life that the students will be able to connect with. This will ensure better comprehension and understanding.
- **Full Equity and Inclusion:** Equity and inclusion must be at the heart of all educational institutions so that no student feels left out. Regardless of socioeconomic status and other markers, every child must have access to quality education, this policy asserts that bridging the social category gaps in access,

participation, and learning outcomes in school education will continue to be one of the major goals of all education sector development programs.

- **Synergy in Curriculum Across all Levels of Education:** A combined effort to ensure better, high-quality education. From early- childhood education to higher education, the curriculum must be designed in a rhythmic way. The students must be introduced to concepts properly and guided with utmost precision.
- **Teachers and Faculty are at the Heart of the Learning Process:** From recruitment to professional development to service conditions, the overall well-being of teachers will be given due importance.
- **‘Light but Tight’ regulatory framework to ensure integrity, transparency, and resource efficiency:** The policy will ensure that integrity, transparency, and resource efficiency are in place. It will help ensure that the quality is not compromised and that every stakeholder has access to the necessary information.
- **Outstanding Research:** Quality education doesn’t come easy. NEP 2020 says that extensive research must be conducted to ensure that the standards are high.
- **Continuous Review:** There can’t be growth and development without review and feedback. Continuous and consistent reviews of progress will be able to throw light on what is working and what is not.

A Rootedness and Pride in India:

Another important principle of NEP 2020, that educational institutions must keep in mind is ensuring that the rich and diverse culture of India, is communicated and that the traditions and ancient history are preserved.

- **Education is a Public Service:** Education is not business. It is a necessity, and every individual should have access to quality education. It is to be considered the basic right of every child.
- **Substantial Investment in a Strong, Vibrant Public Education System:** The promotion and support of genuine charitable and community involvement is another fundamental principle of the National Education Policy, 2020, that will help guide the institutions better.

Impact on Teachers:

The Government of India has decided to make their teachers more skilled and equipped with futuristic teaching skills. See what teachers will get from the new education policy:

- Introduction of professional teaching standards.
- Clearer outlined roles and responsibilities.
- Training to monitor and improve their capabilities.

- More focus on 21st-century teaching skills.
- A transparent recruitment and selection process for teachers to motivate them and improve their performance.

Impact on Students:

NEP 2020 will open up new learning opportunities to the students. Its biggest impact would be the change in the learning environment and the learning process for the students. The new education policy will:

- Increase focus on the skill improvement and competency development of the students.
- Make the students future-ready by building 21st-century skills.
- Make students focus on both academic and non-academic pursuits.
- Provide various learning opportunities for pre-primary, open, and distance-learning students.
- Give access to counselling and other services for students.

The NEP 2020 will shift the focus of assessments from merely academic grades to higher-order skills such as critical thinking, creativity, problem-solving, and idea-generation to create higher performance standards demonstrated through varying degrees of competency.

In terms of technology, here are some of the reasons why the NEP's decision to introduce coding at a young age is something to cheer for –

It will help improve problem-solving skills in children; It will make the young learners ready for a future that relies primarily on digital tools for all tasks; Coding helps students develop an analytical mindset, problem-solving attitude and creativity. Overall, it has a very positive effect on developing brains; Learning to code early allows students to showcase their skills at competitive programming exams and competitions, such as International Olympiads in Informatics, and opens up a whole world of possibilities; Teaching coding from as early as the 6th grade will help the country develop better engineers who will bring in innovative ideas and solutions; Students with a robust knowledge of coding since their formative years will find it much easier to familiarize themselves with new-age technologies. This will also ensure better employability in the future; Now, one can also enroll in one of the multiple online coding classes. Learning coding at a young age will make education future-proof and give students much better prospects at finding a job in a digital world.

The NEP recognizes the importance of technology in bridging the language barrier between teachers and students, creating digital and e-tech libraries, popularizing language learning, and ensuring greater access to education. It has also proposed that coding for kids be introduced in school curriculums as one of the important skills to

develop. The idea behind integrating technology with the learning and teaching process for better learning outcomes has led to the introduction of coding for kids as a subject as early as the 6th grade. It also recognizes the use of technology such as Artificial Intelligence to a personalized

Learning Experience Based on Individual Requirements.

The NEP brings in various adaptive changes and unique motivations to strengthen the Indian education system and prepare the creators of tomorrow with holistic knowledge in a practical sense. The NEP will help the future generation in the following ways -

- Since the new education policy has greatly emphasized digital literacy, e-learning, and new-age technologies, it will help bring new learning channels beyond just traditional classroom learning.
- Whether it is with online courses and modules, new apps, satellite-based TV channels, and more, it will help diversify the scope of education and make the curriculum more flexible. This will result in students having the option to choose their courses, educational trajectories, and careers based on their aptitude and interests.
- The NEP 2020 will help inculcate various future-ready qualities such as competitiveness with disruptivetech, flexibility, and the ability to build a skilled workforce that can handle the new & advanced technologies of the future.

Conclusion:

The new education policy 2020 aims to overhaul India's existing education regime and make it more learning-centric. Students will be provided with the best opportunity to learn research-based learning. Teachers will be given the chance to learn advanced teaching skills. To help students and make them understand the new education policy, teachers should develop counselling and career guiding skills. While the NEP focuses on multiple aspects, including revamping the current curriculum and the need for early childhood care, one of the key focuses of the policy remains the interplay of education and technology. And this is why including coding in the curriculum from an early age is a significant step in the right direction.

Coding is expected to become a highly sought-after and in-demand skill by the time today's youngsters are graduates in the real world. To prepare and equip them adequately with the necessary skills is the best approach. The NEP, with its monumental reforms, is going to be a major step forward in building a coding culture in India, especially for the future generation. Apart from bringing in a range of positive changes, it will also help students unlock their true potential as coders and creators of tomorrow and the NEP 2020 emphasizes the holistic development of students in academic and non-academic areas.

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IMPACT OF NATIONAL EDUCATION POLICY ON HIGHER EDUCATION

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Abstract:

After 75 years of independence, India has now reached its goal of having 100% or universal literacy throughout the country. It is important to consider the plans and objectives established for India's independence. The goal is to achieve national equality, which will result in equality in education. This demonstrates the need for change in India's educational system. By offering top-notch education to everyone, the National Education Policy directly aids in the long-term transformation of our country into a fair and thriving knowledge society. The new National Education Policy, which provides a complete framework for primary education through higher education as well as vocational training in both rural and urban India, was adopted by the Union Cabinet of India on July 29, 2020. The new strategy seeks to make education available to everyone from preschool through secondary school, with a 100% Gross Enrolment Ratio (GER) in school education by 2030, and a 50% GER in higher education by 2025. The implementation of NEP 2020 presents both many opportunities and difficult problems to the education community. In this essay, "Impact of National Education Policy on Higher Education: Opportunities & Challenges," we examine how NEP relates to HE, examine how it affects teachers, express the opportunities and challenges associated with implementing NEP, and outline the path leading up to NEP 2025.

Keywords: National Education Policy, Higher Education, universalisation, impact on teachers

Introduction:

A new program called the National Education program was created to deal with the dire problems the Indian educational system was experiencing. The concept for India's future educational system is laid forth in the NEP 2020, which was adopted by the Indian Union Cabinet on July 29th, 2020. In accordance with National Education Policy 2020, all people will have access to a high-quality education, which will directly contribute to our country's sustainable transformation into a just and thriving knowledge society. The former National Policy of Education (1986) has been replaced with this NEP. The new regulation was developed from a draft created by a commission chaired by Dr. K. Kasturirangan, formerly of the Indian Space Research Organization (ISRO). The Kasturirangan Committee is the second committee to work on the policy, and it has been working on it for the past six years. Numerous reforms

to India's education policy are implemented by the NEP. The NEP is a comprehensive framework for education that includes both rural and urban vocational training, as well as education from the primary grades through higher education.

The NEP 2020 has set an ambitious goal of enhancing the quality of Higher Education Institutions (HEI), placing India as a hub of global education, and virtually doubling the GER in higher education from 26.3 percent (2018) to 50 percent by 2035. The main goals are to facilitate research, enhance faculty support, promote internationalization, and provide a flexible curriculum through an interdisciplinary approach with numerous departure points throughout a four-year undergraduate degree.

The establishment of the Higher Education Commission of India (HECI) for the whole higher education sector will mark one of the most significant changes. The HECI will serve as a single regulatory body, with independent verticals handling a number of tasks such academic standard-setting, funding, and accreditation. These organizations will eventually take the place of previous regulating organizations like the All India Council for Technical Education (AICTE) and the University Grants Commission (UGC).

Objectives of the Study:

- a. To be aware of the main points of the NEP as they relate to higher education
- b. To examine the development and current state of the Indian Educational System.
- c. To assess how National Education Policy 2020 will affect higher education

Evolution of India's Education Policy:

The University Education Commission 1948–1949, sometimes referred to as the Radhakrishnan commission, was the first body formed after India gained its independence. This committee, which prioritized higher education, was run by Sarvepalli Radhakrishnan.

The education that occurs after primary school but before university education began was the primary emphasis of the Secondary Education Commission in 1952–1953.

The Education Commission, popularly known as the Kothari Commission, was run by Dr. D. S. Kothari from 1964 to 1966. This Commission used a comprehensive approach and provided the government with advice on the national educational pattern and broad policies, accounting for every stage from primary to post-graduate education.

In order to achieve national integration and increased economic and cultural growth, the government launched The National strategy on Education in 1968 based

on the Kothari Commission's recommendations and a strategy for equal educational opportunities.

In order to equalize educational opportunity for all, the National Policy on Education of 1986 placed special focus on eliminating inequities in the educational system. The "Common Minimum Programme" that was included to this statute in 1992 was made specifically for women, Scheduled Tribes (ST), and Schedule Castes (SC).

Every kid now has a fundamental right to primary education according to the passage of the Right of Children to Free and Compulsory Education (RTE) Act in 2009.

In 2016, the T.S.R. Subramanian Committee, also known as the Committee for Evolution of the New Education Policy, tried to overcome implementation flaws in order to raise the standard and credibility of education.

On May 31, 2019, the Dr. K. Kasturirangan Committee's report on the new National Education Policy was turned in. This proposal aimed to solve the problems with current education system's access, equity, quality, affordability, and accountability. The HRD ministry was renamed Ministry of Education by the committee.

Under the Following Headings, the Effects of New National Education Policy can be Examined:

Quality Colleges and Universities will Benefit from Widespread Consolidation:

The value volume of the country's higher education institutions will be significantly impacted by institutional restructuring and consolidation because it would reduce them by almost one third. The average number of students enrolled in a college in India is currently 693 (AISHE 18-19, Ministry of Human Resource Development, KPMG in India Analysis), despite the policy's goal of building institutions of higher learning with 3000+ students. To encourage excellence, this new policy concentrates on increasing the number of independent colleges. Out of the almost 40000 colleges in India, less than 1000 independent colleges are still operating. This demonstrates that the policy's limitation will result in numerous mergers and cooperation among higher education institutions in India. The aforementioned change is anticipated to reduce India's higher education sector from 50000 colleges to only 15,000 colleges.

Place an Emphasis on Transdisciplinary Education

IIT, IIM, and AIIM are examples of single-disciplinary Islands of Excellence that define the Indian higher education system. The goal of the new national education policy is to create major multi-disciplinary universities known as multidisciplinary

education and research universities (MERUs), similar to those found in the United States of America and the United Kingdom. By establishing MERUs, all societal groups will have access to high-quality education in a variety of fields, spanning both urban and rural areas of the nation. This will provide students a lot of flexibility in choosing their areas of interest.

Lack of Faculty and the Need to Raise Faculty Standards:

The right to education act increased the instructor to student ratio in our country from 1:30 to 1:20, which is regarded as a healthy ratio. This modification will result in the system employing at least 500000 new academic members. The quality of the faculty must also be addressed in addition to the faculty deficit. By 2022, a set of national professional standards for teachers (NPST) will have been developed, and these standards will be used to decide tenure, ongoing professional development initiatives, pay, promotions, and other recognitions for teachers, among other aspects of managing their careers. The policy also mentions developing performance criteria for instructors that explicitly define the function of the teacher at various levels of expertise and the necessary competencies at each step.

Research Activities Catalyzing:

The National Research Foundation (NRF) that the NEP has proposed is likely to put a dedicated emphasis on high-quality research, as well as reduce research funding by making it more competitive and by increasing the effectiveness of funding procedures to have a more targeted approach to funding research initiatives. The students will be exposed to research activities from an early age.

Enhancing Access and Equity Through Online and open-Distance Learning (ODL) Programs:

ODL enrolls about 40 lakh students, or 11% of all Indians enrolled in higher education. The pandemic issue also contributes to ODL system improvement, which is expected to significantly increase in the upcoming years and assist double India's Gross Enrolment.

Conclusion:

The 2030 Sustainable Development Goals and the needs of the 21st century are two goals that are aligned with the new national education policy 2020, which is a strong policy. The NEP is the result of a protracted process that aims to reach a gross enrollment ratio of 100% by 2030. The Ministry of Human Resource Development (MHRD) recently presented the national education strategy 2020 with the goal of building a more inclusive, cohesive, and productive society. Although the policy's

intention appears to be great in many aspects, implementation is where success will ultimately be determined. The NEP 2020's reforms are focused on developing students' 21st-century abilities, including as creativity, problem-solving, critical thinking, and digital literacy. The current education models need to be reevaluated in light of the challenges of the global economy as technology improvements, fast globalization, and unanticipated developments - such as the covid-19 pandemic - reshape the future of employment.

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NEW EDUCATION POLICY-CHALLENGES OPPORTUNITIES IN HIGHER EDUCATION

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Abstract :

The foundation of any country's growth and development is its educational system, the National Education Policy 2020 has been repurposed as the foundation for this reform, which might aid in the development of a new educational system in the nation as well as the improvement of those economic and social indices. Due to the fact that education promotes social and economic advancement, a nation's school and college levels require a well-defined and futuristic education strategy. Taking into account tradition and culture, different nations implement various educational systems. Many education professionals never anticipated the adjustments that NEP 2020 has suggested. Although both high school and college education have been touched by the education policy, this article primarily concentrates on NEP 2020 and its effects on higher education.

Introduction:

“Education is a Key to Success and this Success Can be Attained by the Appropriate Implementation of the Policy,”

NEP is essentially a thorough framework for directing the growth of education in the nation. Since then, there have been significant changes in both the sector as a whole and the entire world.. The new NEP was introduced with the intention of formalising systemic improvements from the K-12 to the college/university levels. Education content moving forward will concentrate on key concepts, ideas, applications, and problem-solving stances in light of the evolving situation.. The government's decision to permit international colleges to establish campuses in India is an admirable one. The introduction of multidisciplinary institutions will result in a renewed emphasis on all academic disciplines, including the arts and humanities, and this method of instruction will support students' holistic learning and development. Students will therefore possess a stronger knowledge base.

Objective

- To study the impact of New Education Policy 2020 on higher education.
- To outlines the salient features of NEP

- To analyses how NEP, affect the existing education system.

Theoretical Framework New Education Policy 2020 Highlights

- The 10+2 board format is eliminated.
- The new school will have a 5+3+3+4 configuration.
- There are up to 5 preschools, 6–8 middle schools, 8–11 high schools, and 12 and up.
- Graduation Any degree will be four years long.
- Vocational classes are offered from the sixth grade forward.
- Subject options are available to students in grades 8 through 11.
- All courses leading to graduation will have a major and a minor.
- A single authority will oversee all forms of higher education.
- The UGC and AICTE will merge.
- All universities, whether public or private, open or deemed, vocational or otherwise, New Teacher

NEP 2020 in Higher Education

- The policy envisages broad based, multi-disciplinary, holistic Under Graduate education with flexible curricula, creative combinations of subjects, integration of vocational education and multiple entry and exit points with appropriate certification. UG education can be of 3 or 4 years with multiple exit options and appropriate certification within this period. Academic Bank of Credits to be established to facilitate Transfer of Credits
- Multidisciplinary Education and Research Universities (MERUs), at par with IITs, IIMs, to be set up as models of best multidisciplinary education of global standards in the country.
- National Research Foundation will be created as an apex body for fostering a strong research culture and building research capacity across higher education.

How NEP Affects Higher Education

The NEP 2020 has set an ambitious goal of enhancing the quality of Higher Education Institutions (HEI), placing India as a hub of global education, and virtually doubling the GER in higher education from 26.3 percent (2018) to 50 percent by 2035. The main goals are to facilitate research, enhance faculty support, promote internationalisation, and provide a flexible curriculum through an interdisciplinary approach with numerous departure points throughout a four-year undergraduate degree.. These organisations will eventually take the place of previous regulatory authorities like the All India Council for Technical Education and the University Grants Commission (UGC) (AICTE).

- Integration of vocational education within higher education. At least 50 per cent learners to have exposure to vocational education by 2025.
- Enhanced equity and inclusion – Establishing high-quality HEIs in aspirational districts and Special Education Zones. At least one large multidisciplinary HEI in or near every district by 2030 .
- Reputed international universities to be encouraged to set up Indian campuses.

Issues Related to NEP 2020

- **Knowledge-Jobs Mismatch:** The knowledge and skills taught and the jobs offered consistently don't match up. One of the biggest issues the Indian educational system has faced since Independence is this. Since NEP 2020 makes no mention of education in rapidly developing technological areas like artificial intelligence, cyberspace, nanotechnology, etc., it was unable to verify this.
- **The Requirement of Enormous Resources.** A lofty goal of 6% of GDP for public spending has been established. Given the low tax-to-GDP ratio and conflicting demands on the national exchequer from the national defence, healthcare, and other important sectors, mobilising financial resources will be very difficult.

Drawbacks of NEP

- The new education policy aims to prioritise mother tongue or regional language instruction in schools (until 5th standard, but preferably till 8th).
- This policy might be ineffective, though, as it undermines the use of English in many private schools. One of the most frequently used and widely spoken languages in the world is English.
- India has traditionally stood out by promoting the use of English in educational settings, providing us an advantage over other Asian nations.
- As many states in Southern India have multiple regional languages, this strategy will also have a negative impact on parents whose occupations require frequent relocations. Therefore, a move would interfere with the child's schooling.
- NEP 2020, in conclusion, seems admirable on paper but would be a difficult undertaking in practise. I therefore anticipate seeing things work as intended.

Conclusion :

Right now, the new national education policy is picture-perfect. But the implementation of it before the deadline is the key to its success. To reap the enormous benefits that will be introduced into the system with its proper execution, we must now patiently wait and see how things develop in the future. The country's higher education system is anticipated to have good and long-lasting effects as a result of the National Education Policy. The government's decision to permit international colleges to establish campuses in India is an admirable one. This will enable the children to benefit from a local education that is of a high international standard.

EDUCATION IS A PATH WAY OF WOMEN EMPOWERMENT

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Abstract

Women's empowerment enables and develops the skills or abilities of women so that they can think and act freely, make their own choices and control their lives, thereby reducing discrimination and exploitation against them. This leads to an increase in the number of women in social, economic and political fields, and they can play an equal role in society with men. Women have a valuable position in all areas of life. Some women were able to show their potential. So now we have come out of those dark ages of women's oppression. The process of empowerment brings so much awareness to the woman that she gains control over social and economic resources, education and her own life, directing and increasing her participation in decision-making inside and outside the home. This empowerment is only possible through education. It is a continuous, comprehensive process with various possibilities. Support can be gained and sustained through a number of strategies such as education, research and documentation campaigns/networking/training/media etc.

Keywords: *Empowerment, Education, Development, Discrimination, Strategy*

Introduction

If you teach a man, you teach an individual; if you teach a woman, you teach an entire family. - Mahatma Gandhi.

The content highlights the importance of education in the promotion of women's empowerment. Education is considered a human right and a key factor in achieving equality. Women's empowerment was first defined at an International Women's Conference in 1985 as self-rule, self-reliance and self-management. Women's empowerment is the process of equal access to opportunity, prohibition of gender discrimination, freedom from sexual violence, economic autonomy, decision-making power and freedom of expression. Education is seen as a turning point in women's lives as it gives them knowledge, critical thinking and practical skills which lead to self-esteem and self-confidence. Educated women improve the standard of living of their families and of the nation as a whole. High women's literacy rates have a positive impact on various aspects of life such as reduction of infant mortality, promotion of education for female children and improvement of decision-making

skills within households. The content highlights how education and empowerment go hand in hand. Education allows women to break out of traditional roles, react to opportunities, and transform their lives. Empowerment depends on both internal and external conditions such as fearlessness, Women's education plays an important role in the development of women's families," says Dr. Radhakrishnan. Educated women have a positive influence on the development of the whole family. The content also talks about the relationship between education and women's empowerment. "Education is the essential one for personal growth, participation in society and changes in social attitudes towards women," says Radhakrishnan. "Education is a powerful tool for empowering women, breaking social taboos, and promoting gender equality in educational, social and economic affairs." empower women with the skills, knowledge and decision-making skills they need to transform society.

Importance of Female Education

- There are many social evils that women face in India, including dowry, female foeticide, workplace harassment, etc.
- More education for women helps the country's economy by allowing them to participate in the workforce.
- The Ministry of Health's recent survey shows a direct correlation between children's nutritional status and their mothers' education.
- According to the survey, more educated women give their children a stronger nutritional foundation.
- Developing economists have studied the ways in which girls' education helps them become agents for positive change.
- All in all, education for women has many benefits, not just for individual women, but for the whole of society.

Obstacles in the Path of Women's Education

- The social position of women in India is largely dominated by men, and women are confined to traditional social roles, particularly in the rural areas.
- Despite India's rapid growth and aspirations to become a superpower, the issue of gender inequality continues to be a thorn in the side of women, even among educated and working women in urban areas.
- The gender pay gap perpetuates the myth of women's lesser efficiency in tasks, and the average salaries of men and women differ significantly.
- Women's safety is a major issue in India, and despite the government's efforts, many parents are hesitant to send their daughters to school.

Status of Female Education in India

The Indian government is investing heavily in the education of its citizens. In 2022, the Union Budget allocated an additional Rs 11.054 crore for education, taking the total budget allocated to education to Rs 1.04,278 crore, and the Union Budget has been praised for digitizing educational resources to make them available to all. The “one class, one television channel” initiative included in the Prime Minister’s (PM) “e-Vidya” scheme aimed at improving education and the workforce has been highly praised by education leaders. India has an average literacy rate of 77%. The literacy rate of men is 84.40% and that of women is 71.50% according to the latest census data. Reading and writing are the basic skills of literacy, and the acquisition of knowledge, values and so on, but the literacy rate varies greatly from state to state. Kerala has consistently topped this list whereas Bihar has fallen to the bottom of this list with a literacy rate of 61.80%.

Rank	State	Literacy	Male	Female
1	Kerala	94	96.11	92.07
2	Lakshadweep	91.85	95.56	87.95
3	Mizoram	91.33	93.35	89.27
4	Goa	88.7	92.65	84.66
5	Tripura	87.22	91.53	82.73
6	Daman and Diu	87.1	91.54	79.55
7	Andaman and Nicobar Islands	86.63	90.27	82.43
8	Delhi	86.21	90.94	80.76
9	Chandigarh	86.05	89.99	81.19
10	Puducherry	85.85	91.26	80.67

Focus on Women Education

Focus on women’s education and empowerment in rural areas, especially women from marginalised groups, so that they can make informed decisions at their own speed. Quality empowerment focuses on internalizing progress, which benefits not only women but also society at large. Providing guidance to parents, infrastructure and financial support can provide girls with educational opportunities. Education should develop analytical skills, aspirations and personality development, which goes beyond academic achievements. Past initiatives have failed to achieve the desired results, so a new approach is needed for women’s Education and Empowerment.

Strategies for Women Education

In order to prioritize girls' education in school education, it is necessary to develop an action plan. Particular attention should be paid to universalizing elementary education. The most recent national program for girls' education has not yet closed the gap between boys' literacy rates and girls' literacy rates. Issues related to socio-cultural and modernization pose challenges to girls' education. It is essential to break traditional gender roles and provide basic education to girls. Girls' education is essential for economic and social development. Constitutional obligations must be respected to safeguard their rights. Cultural, political and constitutional provisions are essential for achieving girls' education and building a successful society.

Provisions Supporting for Women Education

The Constitution of India takes children and women's well-being and development very seriously. There are many provisions for children, which not only guarantee equality and prohibit discrimination based on caste, sex, and religion, but also protect children from abuse and exploitation. In the framework of the democratic system, laws, policies, plans, and programmes are designed for the overall well-being of children. Some of the important constitutional provisions on girl child are:

- Article 14 guarantees equality of rights and opportunities for men and women, while prohibiting discrimination on any grounds.
- Article 23 prohibits forced labour, and
- Article 24 prohibits any child under 15 from being employed to work.
- Article 42 ensures fair and humane working conditions, and provides for maternity relief.
- Article 45 guarantees free and compulsory schooling for all children, and
- Article 47 encourages the promotion of nutrition and quality of life.
- Articles 73 and 74 encourage women to be involved in politics and the grass roots development process.

These are a few of the constitutional provisions that are beneficial for girl children in our country. The main issue is retention. Most of the girl students enrol in schools, but it is very challenging to keep them through the entire process.

Promotional Tools of Women Education

- Through giving parental motivational campaigns
- Residential schools for girls.
- Parental associations should be formed to encourage and to take care of girls education.

- Various programs and initiatives should be implemented by the state and central government to support girls' education.
- Community awareness programmes Installing basic amenities such as buildings and toilets will support women's education.
- Gender-sensitive content in the curriculum Providing natural learning experiences (NLEs)
- Encouraging activity-based learning
- Providing appropriate counselling at the appropriate time
- Appointing counsellors in schools Organising co-oracular activities

Effective Role of Education in Women Empowerment

Education is "one of the most effective means of providing women with the knowledge, skills, and confidence they need to be fully engaged in the process of development." Educating women benefits society as a whole. Education has a greater effect on poverty and poverty reduction than men's education. Education also has a greater impact on child health and child mortality rate. Educated women's responsibility is immense. Women play an important role in the development of the behavioural and mental makeup of the next generation. The primary duty of the educated woman is to nurture and shape the children, who will be the leaders of the future. The educated woman is always conscious of the significance of health and knows how to seek health care for herself and her children. The educated woman has a good idea about her children's educational attainment. A mother's education will have a greater impact on a child's life than a father's. The empowered woman can stand with the men. She is not inferior to men.

Conclusion

Many great women have made themselves are amazingly powerful and successful in their lives through their individual efforts. They are a source of inspiration and motivation for today's women. A women can do what men do in this world. Their self-confidence is an integral part of women compulsion The literacy rate among women in India is very low compared to world standards. It was in India found that female literacy rates varied widely across states. Bihar, U.P. Rajasthan etc., the literacy rate of women is very low. We know that the level of health there is also very bad. They have the lowest lifetime Infant mortality there is very high. Kerala is the state with the lowest infant mortality rate interest In India, the most of the states are very backward in terms of female education. To recover from them dangers we should remember that " Education is a path way of women's empowerment".

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NEP & HEI

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Abstract

Access, equity, quality, and accountability are the four pillars on which the new NEP is built. (Negi). The majority of NEP 2020's discussions centre on a path from early education through higher education, including vocational education. A significant change that occurred in India, aside from COVID-19, was the creation of the New Education Policy (NEP) 2020. Researchers have become interested as a result of the repeated recommendations from various committees to boost the budgetary allocation for education to 6% of the GDP. This essay seeks to define the issues and priorities of NEP 2020. The NEP 19's institutional restructuring and consolidation strategy aims to create high-quality educational infrastructure ecosystems, but this is easier said than done, and the main goal of having vibrant, multidisciplinary institutions of high quality that can boost higher education in India and ensure equitable access is another perplexing strategic challenge the system faces.

Keywords: Skill Development; Research and Innovation; Digital Learning ; Globalization .

Introduction

The plan is based on the Draught National Education Policy 2019, which the Committee for Draught National Education Policy, led by Dr. K. Kasturirangan, a former head of the Indian Space Research Organisation, submitted to the Ministry of Human Resource Development on December 15, 2018. The four-part National Education Policy includes Part I on school education, Part II on higher education, Part III on "Other Key Areas of Focus" like adult education, Part IV on "Making it Happen," which outlines how the policy will be put into practise.

In Europe, institutions that provide higher, postsecondary, tertiary, and even third-level education are frequently referred to as HEIs. In India, higher education begins after the 12th standard, or higher secondary, to keep things simple. While it takes three years to finish a degree programme, pass it, or receive an honours B.A., B.Sc., or B.Com. degree from a college in India, pursuing an engineering course would take four to five years, with an additional six months of required internship to finish a degree in medicine or law. The typical length of a PG course is two years. On the other hand, certain programmes, like the Master of Computer Application (MCA), are three years long.

Opportunities

New Educational Policy

- Weekly university openings are a huge undertaking. There are currently about 1,000 universities in India. It will take 15 years to open one new institution if we want to double the gross enrollment ratio in higher education, one of the policy's stated aims, by 2035. The numbers involved in reforming our education system are no less intimidating than opening one university every week on an ongoing basis.
- The National Education Policy 2020 seeks to re-integrate 2 crore children who are not currently enrolled in school. Regardless of your perspective, completing this over a 15-year period calls for the construction of over 50 schools per week.
- It is a massive undertaking to monitor many universities and institutes.
- It will be difficult to use institutions' capacity.
- Since single-stream institutions are not permitted, either bigger institutions will take over smaller ones, or smaller ones will be shut down.



Higher Educational Institution

- India has a huge possibility to draw foreign students and foreign universities because it has established itself as an international centre for education. India's cost of education is lower than that of many other nations. Today, education tourism is a brand-new and growing industry.
- Student progression promotion: Institutions and universities work to inspire students to pursue their degrees, post-graduate studies, or professional programmes.
- Promoting student participation in class: Students will find the NEP flexible and handy for learning because to many access and exit points. Through peer learning,

experiential learning, and other methods, students will be better equipped in the classroom with KSA knowledge, skills, and attitude.

- Hard internship that goes beyond obtaining a certificate of completion In order for students to gain practical experience, the internship must be properly adhered to. Strong connections between the university and the businesses providing the internships will also be facilitated by this.

Challenges

New Educational Policy

The Indian Union Cabinet approved the National Education Policy of 2020. It replaces the outdated education strategy from 1986, which had numerous flaws. It is the intricately planned intentional effort to enhance Indian education.

The National Education strategy 2020 (NEP 2020), the Government of India's new education strategy, was announced nearly 30 years after the policy's previous significant change in 1986. This is a huge step forward for the country.

There are currently over 1,000 universities in India. One of the policy's declared objectives, to double the Gross Ratio Enrollment in Higher Education by 2035, requires us to establish one new institution per week for the following 15 years. The biggest obstacle is without a doubt opening a new university every week.

The National Education Policy 2020 seeks to re-integrate 2 million kids who are not currently enrolled in school. Any way you look at it, to do this in 15 years, 50 schools must be closed each week.

This is not a challenge for the weak, seen positively. According to the National Education Policy 2020, spending on education will rise from 4.6% to 6% of GDP, or over INR 2.5 lakh crores annually. The funds will be wisely allocated towards the construction of schools and universities around the nation, the hiring of teachers and professors, and ongoing costs like offering schoolchildren free breakfast. The fact that this policy was implemented at a time when the economy was being strangled by Covid-19 makes matters much more challenging. Even prior to Covid, related closures, government tax cuts were extremely little, and financing shortages were significant.

As a very acceptable move in school education, the policy intends to reform the curriculum framework. However, in order for this curriculum to be successful, we need teachers who have been taught and understand the teaching requirements. Many curricular adjustments necessitate significant shifts in both instructors' and parents' thinking.

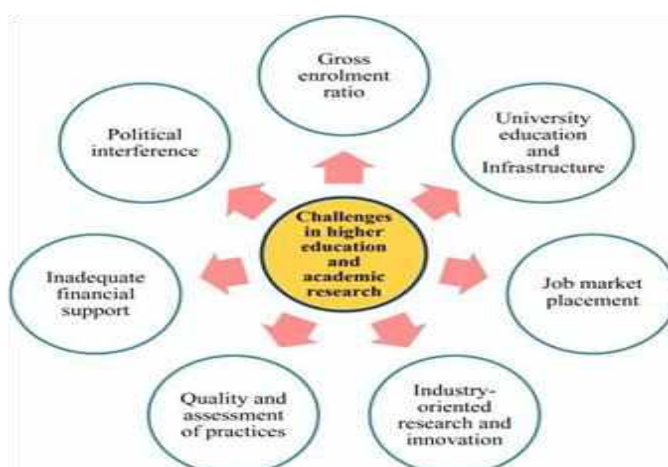
In higher education, the 2020 National Education Policy's emphasis on disciplinary education is a very welcome step. For decades, universities, particularly in India, have been compartmentalised and governed by departments. The 2020 National Education Policy includes a variety of initiatives aimed at improving the quality and scope of India's education system.

Higher Educational Institution

Poor infrastructure is also a challenge for India's higher education system, particularly for public sector institutions with inadequate physical facilities and equipment. A large number of colleges were operating on the second or third floor of the building, while on the ground or first level, ready-made shelters or photocopying businesses were in operation.

Enrollment: India's Gross Enrollment Ratio (GER) in H.E is only 15%, which is low when compared to both developed and developing countries. With the increase in school enrollment, the provision of higher education organisations is insufficient to meet the region's growing need.

Equity: There is no GER interest among the various segments of the firm. Previous research has found that GER differs more between males and females in higher education in India. Geographic differences exist in some countries with high GER, while others are substantially below the national GER, indicating major inequities within the higher education sector.



Quality in H.E is a multi-dimensional, multi-level, and complicated concept. Keeping standards in H.E. is one of the most pressing concerns confronting India today. Furthermore, the government is always concerned with education quality. Today, a substantial number of colleges and universities in India are still unable to meet the current UGC requirements, and our universities have not been able to compete with the world's best universities.

Political Interference: The majority of educational establishments are controlled by government figures who hold key positions in university governing agencies. They take advantage of innocent students for selfish intentions. Students arrange events, consider their own ambitions, and continue to advance their political careers.

Faculty shortages and the state education system's failure to attract and retain well-qualified teachers have been weakening quality education for some years. Despite the fact that there are several positions in higher education, a large number of

NET / PhD applicants stay unemployed, and these qualified candidates instead apply in other divisions, which is the greatest impact to the higher education system.

Accreditation: According to NAAC data, just about 25% of the country's entire higher education institutions were accredited as of June 2010. Only 30% of authorised universities and 45% of accredited schools were deemed to be of 'A' standard."

Higher Education System:- Centralisation, hierarchical systems, and a lack of accountability, openness, and professionalism pose obstacles to Indian education management. As a result of the increased responsibility for administrative functions of universities in order to improve the associated colleges and graduates, the emphasis on academics and study has been lessened (Kumar, 2015).

Conclusion

With its concentration on academic research, higher education frequently produces graduates with little or no income. The national government education agency is responsible for developing GER to include all inhabitants of the country in higher education. India's National Education Policy 2020 is working towards that goal by enacting new policies to improve the quality, attractiveness, accessibility, and expansion of higher education provision in the private sector while maintaining strict quality control controls in all institutions of higher learning.

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IMPACT OF NEW EDUCATION POLICY 2020 ON HIGHER EDUCATION

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Introduction:

The National Policy on Education (NPE) is a policy formulated by the Government of India to promote education among the people of India. The policy covers primary education to colleges in both rural and urban India. The first NPE was declared by the Government of India by Prime Minister Indira Gandhi in 1968, the second by Prime Minister Rajiv Gandhi in 1986 and the third by Prime Minister Narendra Modi in 2020.

The National Education Policy 2020 (NEP 2020), which was approved by the Cabinet of India on 29 July 2020, outlines a vision for India's new education system. The new policy replaces the previous National Education Policy of 1986. The policy is a comprehensive framework for primary to higher education as well as vocational education in both rural and urban India. The policy aims to transform the Indian education system by 2021. The language policy in the NEP is a broad guideline and advisory in nature; and implementation is decided by states, institutions and schools. NEP 2020 enacts a lot of changes in Indian education policy. Its goal is to increase state spending on education from roughly 4% to 6% of GDP as soon as possible.

In January 2015, a committee headed by former Cabinet Secretary T.S.R. Subramanian began a consultation process for a new education policy. Based on the committee's report in June 2017, the NEP was proposed in 2019 by a panel headed by former Indian Space Research Organization (ISRO) chief Krishnaswamy Kasturirangan. The Ministry of Human Resource Development later released the Draft New Education Policy (DNEP) 2019, which was followed by a series of public consultations. The draft NEP had 484 pages. The ministry underwent a rigorous consultation process in formulating the policy proposal: "Over two thousand proposals from 2.5 lakh gram panchayats, 6,600 blocks, 6,000 urban local bodies (ULBs), 676 districts have been adopted." The vision of the National Education Policy is:

"The National Education Policy 2020 envisions an India-centric education system that directly contributes to the sustainable transformation of our nation into an equitable and vibrant knowledge-based society by providing high-quality education to all.

The goal of holistic and interdisciplinary education should be to promote all human capacities - mental, cultural, social, physical, emotional and moral - in an integrated manner. Such comprehensive education will be the long-term method for all undergraduate courses, including medical, technical and professional. Optimal learning environments and student support provide a holistic approach that includes appropriate curricula, interactive teaching methods, consistent formative assessment, and appropriate student support.

Objective:

- The main purpose of this study is to investigate the impact of the new education policy 2020 on higher education.
- The study also outlines the key features of NEP and analyze how they affect the existing education system.

Research Methodology:

This research is a descriptive study. Necessary secondary data was collected from various websites including Government of India website, journals, magazines, other publications etc. This data was then analyzed and reviewed to arrive at conclusions. Detailed analysis of impact of NEP on higher education:

Regulatory System of Higher Education:

A key change in the NEP 2020 is the proposal to create the Higher Education Commission of India (HECI) as the body for higher education, excluding medical and legal education. This usually raises the question of what will happen to the current UGC and AICTE. HECI aims to reform the higher education sector. This bill separates the academic and funding aspects of the field. According to the new bill, HECI has no financial powers. The funding process, which was earlier done by the University Grants Commission (UGC), is now done by the Ministry, formerly known as the Ministry of Education.

Ministry of Human Resource Development (MHRD). However, the change is expected to clear the regulatory mess in India's higher education system. HECI will have four independent divisions: the National Higher Education Regulatory Council (NHERC) for regulation, the General Education Council (GEC) for standard setting, the Higher Education Grants Council (HEGC) for funding and the National Accreditation Council (NAC) for accreditation. Unification of educational standards has always required a single governing body, and this was the view of many educators. This is considered a right step in the rationalization of educational policy.

However, to ensure the quality of higher education, institutions should be evaluated on relevant parameters such as research institutes, industry linkages, place of employment and academic excellence. If HECI manages this, it can pay off big for its biggest shareholder, the youth of India.

Graded Accreditation and Graded Autonomy:

The concept of "empowerment and autonomy to innovate" is one of the key features of NEP 2020, which supports the strategy of phasing out "universities affiliated to autonomous institutions. The increased flexibility offered to autonomous institutions also promises to enrich the curriculum. It also states that with proper accreditation, self-governing degree-granting colleges can become research-intensive and teaching-intensive universities if they so desire. The announcement of the establishment of the Multidisciplinary Education and Research University (MERU) in the country gives more hope. These institutes are on par with the existing IITs and IIMs and aim to provide interdisciplinary education to Indian students.

Another important change in the NEP 2020 shows that the National Examinations Agency will act as a professional and independent premier examination agency for conducting under graduate and post graduate entrance examinations and scholarships for higher education institutions. The quality, range and flexibility of NTA's test services allow most universities to use these common entrance tests, rather than hundreds of universities each designing their own entrance tests, greatly reducing the burden on students, colleges, colleges and the education system in general. Whether or not NTA assessments are used for admission is up to each university. It is also sure to help students easily transfer their degrees and credits to universities abroad.

Internationalization at Home:

NEP 2020 also allows foreign universities and colleges to come to India and this brings out a challenge for the native institutions to improve the quality of education provided by them. The Indian higher education sector is buzzing all around as the opportunity of paving the way for foreign universities to set up campuses in the country. India has one of the largest networks of higher education systems in the world, with more than 900 universities and 40,000 colleges. But GER (Gross Enrolment Ratio) of India in higher education is 26.3%, which is significantly low when compared to other BRICS countries like Brazil (50%) or China (51%), and very much lower when compared with European and North American nations which would be more than 80%.

Conclusion:

The policy introduces a whole range of changes and largely reads as a very progressive document with a firm understanding of the current socio-economic environment and

the prospect of future uncertainty. Essentially, education for a new generation of students must engage with the increasing dematerialization and digitization of economies, requiring a whole new set of skills to keep up. That seems to be an even more important advantage now that the pandemic has accelerated the trend toward digitization and disruptive automation. Overall, NEP 2020 addresses the need to develop professionals in various fields from agriculture to artificial intelligence. India must be prepared for the future. And NEP 2020 paves the way forward for many young aspiring students to be equipped with the right skills.

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EMPOWERING RURAL WOMEN THROUGH NEP-2020, IN INDIA

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Abstract:

While the policy does place emphasis on gender sensitization, the curriculum needs further attention. Sex education must be properly included in the teaching-learning process and made a requirement. According to the National Education Policy (NEP) 2020, all children and youth, particularly females from socially and economically disadvantaged groups, will receive an equitable and inclusive education. The policy's focal point is crucial because, despite efforts to educate women, girls continue to drop out at a significant rate after secondary school. At the secondary and upper secondary levels, the enrollment ratio also declines. Menstruation and the absence of decent restrooms are two of the many factors that cause females to drop out of school before completing their education.

Key words: NEP-2020, Women, Empowerment, India

**"I Measure the Progress of a Community, by the Degree of Progress Which
Women Have Achieved"**

– Dr. B. R. Ambedkar

Introduction:

A historic undertaking, the New Education Strategy (2020) is the first comprehensive central government strategy in 34 years. The NEP acts as a framework to guide the expansion of education across the country. More than 2 lakh recommendations from various local self-government bodies, including 2.5 lakh gram panchayats, 6,600 blocks, 6,000 ULBs, and 676 districts, went into the creation of the NEP 2020. By 2035, the goal was to have a society that is inclusive, diverse, and equal with a higher Gross Enrollment Ratio (GER) of 50%. This was done in an effort to foster overall effectiveness and citizenship. The strategy has articulated the fundamental shift in the educational system and aims to make India a global knowledge powerhouse while retaining equity and inclusivity.

Education is vocal in bolster up the atmosphere of women to carry out their insistent fight against exploitation and hold up social evils. Without education, the term women's empowerment," which has rapidly and widely entered the present social discourse, is essentially worthless. The awful situation of women's education, even 75 years after India's independence, has completely infuriated the entire nation.

In India, the estimated male literacy rate is 82.14%, compared to a nationwide female literacy rate of 65.46%, according to the 2011 Census. 74.04 percent of Indians are literate on average. Between male and female literacy rates, a gender difference of about 17% exists. In rural areas, there is a larger gender divide.

The literacy rate for rural women is only 57%, whereas the rate for rural men is higher at 77%. However, after a number of new policy initiatives by the government, the gender gap in India has shrunk in comparison to prior years, according to the All-India Survey on Higher Education (AISHE) report 2018–19. Over 48.6% of all students enrolled in higher education were female, making up over half of the total enrollment. Data from the International Work Organization show that in 2017, the percentage of women who were in the work force was 27%, down from 34% in 2001. In India, there are more than 50 million women who do not pursue education or employment. According to the 2016 Monster Salary Survey, Indian women make 25% less money than women worldwide.

Objectives:

- To understand the conditions of rural women education.
- To study NEP-2020 initiatives for rural regional in India.
- To analyse the NEP-2020 initiatives for rural women empowerment.

Methodology:

The current study is based on an abundance of secondary material that was gathered from several publications, including books, periodicals, newspapers, and websites that are prominently acknowledged in the bibliography.

Need of the Study:**What Else Education-Related Policies Can Do:**

There are benefits and drawbacks to NEP, just like there are two sides to any coin. The NEP 2020 has received praise for its numerous efforts, but many of them have also raised doubts and prompted intense criticism, which are referred to as critical weaknesses in the programme. The NEP strongly emphasises the use of mother tongues to teach the key subjects in primary education, with English teaching arriving much later. In contrast to other nations like Germany, Russia, Japan, China, France, etc., which all share a single mother tongue, India is a diverse nation with 22 major languages and tens of thousands of dialects. Therefore, it will be a difficult task that requires a lot of time, effort, and trained staff to translate the major concepts into these numerous regional languages (and mother tongues). Another reason why some people have been loud in their opposition to the NEP is that the adoption of local and regional languages is regarded as an effort to impose Hindi on the non-Hindi-

speaking regions. For children who can only afford to attend government-run institutions, the NEP suggests that English training in government schools start in class 5. Early instruction in the universal language of English would widen the gulf between the various socioeconomic groups and eliminate many options for government school kids.

Nep 2020 from a Different Perspective:

The NEP is hailed for its futuristic outlook, which has the potential to significantly alter the state of education as we know it. Some of its benefits include:

- **Increased expenditure on the Education Sector:** Currently, the Indian education sector only gets 3% of the GDP of the nation; however, with the adoption of NEP 2020, the sector will receive a much-needed boost as expenditure will increase to around 6%.
- **Modifications to School Structure:** The current 10+2 school structure will be replaced with the 5+3+3+4 pattern to decrease the pressure of board exams on students.
- A focus on vocational education will also be present in classes six through eight, giving children the chance to learn practical skills like carpentry, plumbing, ceramics, gardening, and more while considering their interests and expanding their understanding of and respect for these crafts.
- **Broader Learning Alternatives:** Students in grades 9 through 12 now have access to multidisciplinary course alternatives, which means that the lines between the different streams will be less rigid and allow for a greater variety of topic pairings.
- **Creating Education as a Fundamental Right:** Currently, the government guarantees that children between the ages of 6 and 14 may get a compulsory education, a goal for which numerous efforts, like the "Sarva Shiksha Abhiyan," have been successfully executed. However, it kept some children out of the school system. As a result, the new NEP promises to universalize education so that all children from 3 to 18 years old can receive a free education in institutions run by the government.
- **Possibility of Learning Programming in School:** A significant step towards enhancing the educational process would be the inclusion of computer and coding skills in the curriculum as early as 6th grade.

Nep for Empowering Rural Women:

It is encouraging to see so many women pursuing education at various institutions and effectively working in a variety of sectors. However, it is abundantly evident from the numbers provided above that the government needs to take the subject of women's education more seriously than ever. The country must first and foremost

ensure that women receive 100 percent high-quality education if it is to involve women in all spheres of public life, utilise their skills for the benefit of the country, and safeguard them from all sorts of injustice.

Fight Against Exploitation and Withstand Social Evils:

Education has an important role in boosting women's spirits so they can continue to fight against exploitation and face social evils. Without education, the term women's empowerment," which has rapidly and widely entered the present social discourse, is essentially worthless. The awful situation of women's education, even 75 years after India's independence, has completely infuriated the entire nation. In India, the estimated male literacy rate is 82.14%, compared to a nationwide female literacy rate of 65.46%, according to the 2011 Census. 74.04 percent of Indians are literate on average. Between male and female literacy rates, a gender difference of about 17% exists. In rural areas, there is a larger gender divide. The literacy rate for rural women is only 57%, whereas the rate for rural men is higher at 77%. However, after a number of new policy interventions by the government, the gender gap in India has shrunk in comparison to prior years, according to the All-India Survey on Higher Education (AISHE) report 2018-19. Nearly 48.6% of all students enrolled in higher education were female, making up nearly half of the total enrollment. Data from the International Labour Organisation show that in 2017, the percentage of women who were in the labour force was 27%, down from 34% in 2001. In India, there are more than 50 million women who do not pursue education or employment. According to the Monster Salary Survey from 2016, women in India make 25% less money than women worldwide. It is encouraging to see so many women pursuing education at various institutions and effectively working in a variety of sectors. However, it is abundantly evident from the numbers provided above that the government needs to take the subject of women's education more seriously than ever. The country must first and foremost ensure that women receive 100 percent high-quality education if it is to involve women in all spheres of public life, utilise their skills for the benefit of the country, and safeguard them from all sorts of injustice.

To solve the issue, we need a rigorous, thoughtful, and incredibly practical national strategy. In light of this, the Union Cabinet of India approved the National Education Policy-2020 (NEP 2020) on July 29, 2020, outlining the goals for the country's future educational system. The K. Kasturirangan Committee created the National Education Policy 2020 to address a number of issues that are worsening the educational environment in India and to combat the threat of female illiteracy. The strategy aims to provide all students with an egalitarian and inclusive education, with a special emphasis on girls and young people from socially and economically disadvantaged groups.

The recently highlighted policy is anticipated to usher in a new era for women's education. In both rural and urban India, the policy provides a complete framework for education from early childhood through higher education.

It also covers vocational training. Although the policy does not make many statements on gender-related issues, several of its recommendations could potentially make a significant difference in the current grim situation.

Nep 2020 for Gender Inclusion Fund (gif):

In order to strengthen the nation's ability to deliver equitable, high-quality education for all girls and transgender pupils, NEP 2020 calls for the establishment of a Gender Inclusion Fund (GIF). According to the NEP, states will access the "Gender Inclusion Fund" to carry out initiatives deemed essential for assisting female and transgender children in accessing education (such as the provision of sanitation and toilets, bicycles, conditional cash transfers, etc.) and which have been determined by the central government. According to the policy, "States will be able to support and scale up community-based interventions that address local context-specific barriers to female and transgender children's access to and participation in education through the use of this fund," the policy continues. The money will be used to ensure facilities, safe and hygienic restrooms, and quality instruction for all pupils. NEP has suggested adding hostel amenities for female students in addition to toilets. The fund will priorities achieving full gender parity in education and a record-high participation rate in higher education, reducing gender gaps at all levels, promoting gender equity and inclusion in society, and enhancing girls' leadership potential via constructive civil discourse.

For Socio-Economically Disadvantaged Groups:

In all Socio-Economically Disadvantaged Groups (SEDG) categories, the NEP 2020 acknowledges that women and transgender people are the most adversely affected. Plans call for putting into action programmes that distribute bicycles to form cycling groups and establish walking groups at schools to encourage community involvement and provide safety nets for these vulnerable youngsters.

The strategy aims to identify particular social factors, such as gender stereotypes, traditions, and beliefs, that have contributed to the treatment of girls that is less favourable, including their educational opportunities. An additional noteworthy suggestion given in the policy is to increase the proportion of women in positions of authority within the institution, including those of principals, teachers, wardens, physical education instructors, and other employees. Another remarkable proposal made in the policy is to enhance the number of women in leading positions in the institution, including principals, teachers, wardens, physical instructors, and other staff. It will help women in important positions to deal with issues concerning women and create an atmosphere based on the principle of equality.

Gender Equity in Recruitment for Teachers in Rural Areas:

The goal of NEP 2020 is to address the problem of gender inequality in teacher recruitment in rural areas. Alternative recruitment methods for women teachers shall be implemented without compromising quality and qualification, both educationally and professionally, in order to reduce the gender imbalance among teachers (particularly in some rural areas). The policy emphasises the need for educators, such as Anganwadi workers, to receive the appropriate training before providing guidance to the families of female pupils. Since girls' education is frequently seen as less important than boys' in our society and since there are many lame reasons why parents choose not to send their daughters to school, it is felt that providing families with the proper counselling is essential for facilitating equal opportunities and space for girls in education.

Safety and Security:

The NEP 2020 will put a special emphasis on ensuring the safety and security of female students both within and outside of the campus. For the schools to be regularly accredited by the statutory organisations, they must provide a climate free from bullying, discrimination, and the dominance of women. The strategy would highlight societal norms and gender biases that restrict girls' access to education and lead to frequent dropouts. Teachers, Anganwadi staff, and local social entrepreneurs will receive training on how to provide appropriate counselling to families of female children. The conduct of awareness programmes on gender issues, the importance of harassment-free workplaces and gender equality, and legal rights and protections for girls and women, such as the Prohibition of Child Marriage Act, the Protection of Children from Sexual Offences Act (POCSO), the Maternity Benefit Act, and the Sexual Harassment of Women at Workplace Act, will be required of all educational institutions. The purpose of this course is to increase educators' awareness of gender-sensitive and inclusive classroom management.

Removal of the Gender Gap:

The NEP 2020 is expected to introduce changes aimed at removing the gender gap in male and female literacy rates. For achieving this aim, proper awareness needs to be created among the teachers, parents and the community. No change will come until and unless society is made aware of the evils of depriving girls of the attainment of education. In spite of the constitutional provisions, the girls still remain vulnerable to atrocious forces. The girl students must be made aware of their legal rights, and legal literacy should be mandatory incorporated into the curriculum. Only a gender-responsive educational curriculum will reverse gender bias and discrimination within the educational system and society.

Gender Stereo Types from the Society:

A curriculum that is properly stocked with progressive concepts and materials will go a long way towards eradicating social mores and gender stereotypes. Carefully integrating sex education into the curriculum is required, along with lessons on menstrual hygiene and health. While the policy does place emphasis on gender sensitization, the curriculum needs further attention. Sex education must be properly included in the teaching-learning process and made a requirement. Instruction on menstrual health and cleanliness should be part of this.

Skill Enhancement Courses:

The policy's emphasis on skill development must also benefit females from all societal groups, as this will encourage them to enroll in educational institutions and help them become economically independent. The skill-improvement classes that NEP emphasizes would be a definite step in the right direction for female students. Economic empowerment of women through education will undoubtedly be progressive, draw female students to educational institutions, and hopefully alter the way that traditional families distinguish between male and female educations, seeing the former as a more lucrative proposition.

Legal Literacy:

Legal literacy is another significant topic that needs to be covered in compulsory education. The female student has to understand her legal rights. NEP 2020 curriculum designers must make sure that these two crucial domains are appropriately incorporated into the curriculum and not just added for show or for its purely aesthetic worth

Female Health:

In addition, female health should be prioritized, and it should be ensured that female students receive proper nutrition. While the midday meal and even the breakfast mentioned in NEP are commendable government initiatives, they are insufficient to combat the under nutrition that female students face.

Conclusion:

Real education can only be achieved if we give equally importance to women's education. Rural women empowerment is significant possible through the education.

Many challenges await of us in implementing women's education achieved when gender inequality is overcome. We define education as a continuous lifelong process and prove true to it definition women's education should be continuous and aggressively advocates for women to receive respect and the position it deserves.

Education not only ensures greater participation development processes, but also awareness rights in society so that women can to promote their participation in social life as equals all areas. Financial independence brought about by education is an added incentive. Financial independence and awareness helps narrow the vicious circle of reinforcement negative stereotypes and helping women on charter trips individuals on their own, social progress, politics and the economy.

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A STUDY ON IMPACT OF NEW EDUCATION POLICY (NEP) ON HIGHER EDUCATION IN NORTH EAST INDIA

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Abstract

The Indian government launched the New Education Policy (NEP), an extensive reform programme with the goal of modernizing the nation's educational system. Geographical difficulties, a distinctively diverse cultural population, and a historically undeveloped educational system are the hallmarks of the North East. Numerous important factors that have the potential to have a big impact on higher education in the North East are highlighted by the NEP. Through a concentration on skill-based education, the NEP also seeks to improve graduates' employability. This is particularly important in the North East since it can help address the region's particular employment issues and promote entrepreneurship. The NEP also aims to enhance the employability of graduates by focusing on skill-based education. In the context of the North East, this can be particularly significant in addressing the region's unique employment challenges and encouraging entrepreneurship. This study aims to explore the potential impact of the New Education Policy on higher education in the North East region of India. By analyzing the policy's key principles and objectives in relation to the specific context of the North East, this research seeks to assess the implications on student engagement, access to quality education, employability, and regional development.

Keyword: *New Education Policy, Educational Institutions, North East India, Employment Challenges and Entrepreneurship*

Introduction

The Government of India launched the New Education Policy (NEP), a major reform programme with the goal of revamping the nation's educational system. The policy, which will go into effect in 2020, tackles a variety of facets of education, from pre-kindergarten to higher education, with a focus on inclusivity, flexibility, and technological integration. The NEP aims to transform the conventional approach to higher education and promote a vibrant learning environment that gives students useful skills for the contemporary work place.

The eight states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura that make up the North East region of India present special problems and opportunities for the implementation of the NEP. The North

East, which is distinguished by its cultural diversity and distant geographic settings, has historically experienced inequalities in infrastructure and educational opportunities when compared to other regions of the country. The NEP's implementation in this area may have profound effects on higher education, opening up fresh opportunities for growth and development.

The NEP places emphasis on a number of important factors that have a big potential to affect higher education in the North East. It encourages pupils to explore a wider variety of disciplines by first supporting a flexible and heterogeneous approach to education. With the help of this strategy, students from the area might be encouraged to follow their interests and engage in multidisciplinary research, creating a more vibrant and creative higher education environment. The NEP also promotes online learning and digital tools, placing a strong emphasis on integrating technology into the classroom. The incorporation of technology can close the access gap and improve learning possibilities for students given the region's remote location and restricted access to traditional educational institutions.

The Main Objective of the New Education Policy (NEP)

- **Evaluate Policy Alignment:** Assess the extent to which the NEP aligns with the specific needs, challenges, and aspirations of the higher education system in the North East region. Analyze how the policy's principles and objectives can be adapted to suit the diverse cultural, social, and economic contexts of the states in the region.
- **Identify Opportunities:** Identify the opportunities presented by the NEP that can enhance higher education in the North East. This includes exploring the potential for interdisciplinary studies, skill-based education, technology integration, and research development in the region.
- **Assess Access to Quality Education:** Examine how the NEP can improve access to quality higher education in remote and underserved areas of the North East. Evaluate the feasibility of establishing new educational institutions, upgrading existing ones, and promoting digital learning initiatives to bridge the education gap.
- **Analyze Employability and Entrepreneurship:** Investigate the impact of the NEP on enhancing the employability of graduates from the North East region. Assess the potential of the policy to foster entrepreneurship and innovation, which can contribute to regional economic growth.
- **Understand Infrastructural Challenges:** Identify the infrastructural challenges that may hinder the effective implementation of the NEP in the North East. Evaluate strategies to overcome these challenges and ensure the policy's successful execution.

- **Recommend Policy Adaptations:** Based on the findings, propose specific policy adaptations or modifications that can optimize the NEP's impact on higher education in the North East region. Consider the region's unique characteristics to tailor the policy for maximum effectiveness.
- **Contribute to Policy Discourse:** Contribute to the ongoing policy discourse by providing empirical evidence and insights on the implications of the NEP on higher education in the North East. Inform policymakers, educational institutions, and stakeholders on potential strategies for successful implementation.
- By achieving these objectives, the study aims to shed light on how the NEP can play a transformative role in shaping higher education in the North East region, contributing to its overall social, economic, and educational development.

Role of the New Education Policy on Higher Education in North East India

The impact of the New Education Policy (NEP) on higher education in North East India plays a crucial role in shaping the educational landscape of the region. The NEP's implementation seeks to bring about transformative changes in higher education, addressing key issues and providing opportunities for growth and development.

- **Promoting Inclusivity:** The NEP emphasizes inclusivity in higher education, ensuring that students from diverse backgrounds in the North East region have access to quality education. By promoting equity and addressing regional disparities, the policy aims to increase enrollment and retention rates among marginalized communities.
- **Encouraging Multidisciplinarity:** The NEP encourages multidisciplinarity in higher education, allowing students to pursue a broader range of subjects and engage in interdisciplinary studies. This approach fosters innovation and creativity, which can have a positive impact on addressing regional challenges and promoting sustainable development.
- **Enhancing Technology Integration:** The NEP focuses on technology integration in education, aiming to bridge the digital divide and improve access to educational resources in remote areas of the North East. By promoting online learning and digital infrastructure, the policy enhances the learning experience and facilitates remote education.
- **Improving Employability and Entrepreneurship:** The NEP emphasizes skill-based education, preparing students for the job market and entrepreneurship. By aligning the curriculum with industry needs and encouraging vocational training, the policy enhances graduates' employability and fosters entrepreneurship, contributing to the region's economic growth.

- **Strengthening Research and Innovation:** The NEP aims to strengthen research and innovation in higher education institutions. This focus can lead to the development of cutting-edge research facilities, attracting talented researchers, and addressing region-specific challenges through innovative solutions.
- **Facilitating Infrastructure Development:** The NEP encourages the establishment of educational institutions in underserved areas, promoting infrastructural development in the North East. This can lead to the expansion and up gradation of existing institutions, enhancing the availability of quality education in the region.
- **Empowering Faculty Development:** The NEP emphasizes faculty development, promoting capacity-building initiatives to upgrade the skills and knowledge of educators in the North East. By investing in faculty training, the policy aims to improve the overall quality of education in higher institutions.

Review of Literature

Choudhury, A., and Baruah, P. (2021). Addressing Regional Disparities: A Case Study of NEP Implementation in Assam's Higher Education. This study examines the implementation of the NEP in Assam's higher education system, a state in the North East region. The authors analyze the policy's impact on access, quality, and inclusivity in higher education institutions in Assam. The research provides insights into the challenges and opportunities faced during the policy implementation process.

Deb, S., and Mahanta, S. (2022). NEP and Skill Development: A Study of Mizoram's Higher Education. Focusing on Mizoram, this study explores the NEP's influence on skill development initiatives in higher education institutions. The research assesses the effectiveness of the policy in preparing students for employability and entrepreneurship in the context of Mizoram's unique socio-economic environment.

Singh, R. K., and Sharma, N. (2023). Digital Transformation in Nagaland: NEP's Impact on Higher Education Accessibility. This article investigates the impact of the NEP on digital transformation in Nagaland's higher education sector. The study examines the integration of technology to enhance accessibility and the delivery of education in a region characterized by remote locations and infrastructural challenges.

Das, S., and Phukan, B. (2022). Promoting Multidisciplinarity: NEP's Role in Shaping Higher Education in Sikkim. Focusing on Sikkim, this research delves into the NEP's emphasis on multidisciplinary education and its implications for higher education in the state. The study assesses the potential of interdisciplinary approaches to address regional issues and foster innovation in higher education institutions.

Saikia, P., and Nath, K. (2021). NEP's Impact on Faculty Development in Manipur's Higher Education. This study examines the NEP's influence on faculty development and capacity-building initiatives in Manipur's higher education sector. The research

assesses the strategies adopted by educational institutions to upgrade faculty skills and knowledge in line with the policy's objectives.

Jamir, A., and Aier, V. (2022). NEP and Research Infrastructure: A Case Study of Tripura's Higher Education. Focusing on Tripura, this article investigates the NEP's impact on research infrastructure and capacity-building in higher education institutions. The study analyzes the measures taken to promote research culture and innovation in the region.

Sharma, D., and Lepcha, T. (2021). NEP Implementation Challenges in Arunachal Pradesh's Higher Education. This research discusses the challenges faced during the implementation of the NEP in Arunachal Pradesh's higher education system. The study provides insights into the institutional, infrastructural, and cultural barriers that affect policy execution in the state.

Agarwal, R., and Yadav, S. (2021) An Overview of the New Education Policy 2020: It's Impact on Higher Education in India. This article provides a comprehensive overview of the key provisions of the NEP 2020 and analyzes its potential impact on higher education in India. The authors discuss the policy's implications for multidisciplinary, technology integration, employability, and research development.

Bhatia, A., and Sharma, M. (2022) NEP Implementation Challenges and Opportunities in Indian Higher Education. This research paper examines the challenges and opportunities in implementing the NEP in Indian higher education institutions. The study highlights institutional barriers, faculty concerns, and infrastructural limitations that may affect successful policy execution.

Gupta, R., and Kumar, A. (2023). Impact of NEP on Faculty Development and Research in Indian Universities. This study evaluates the NEP's impact on faculty development and research activities in Indian universities. The authors explore how the policy influences research infrastructure, funding opportunities, and faculty engagement in research projects.

Jain, S., and Verma, P. (2023). NEP and Skill Development: A Case Study of Employability in Indian Higher Education. Focusing on skill development, this article presents a case study of the NEP's impact on employability in Indian higher education. The study assesses how the policy aligns with industry needs and enhances students' job prospects.

Mehra, R., and Singh, V. (2023). Digital Transformation in Indian Higher Education: Implications of NEP on Online Learning. This research investigates the NEP's implications for digital transformation and online learning in Indian higher education. The authors analyze the policy's role in promoting e-learning initiatives and its impact on accessibility to education.

Prasad, A., and Rana, S. (2022). NEP and Multidisciplinary in Indian Higher Education. Focusing on multidisciplinary, this study explores the NEP's impact on

promoting cross-disciplinary education in Indian higher education. The research examines how the policy encourages students to pursue diverse subject combinations.

Sharma, D., and Chatterjee, S. (2023). NEP and Inclusivity in Indian Higher Education. This article examines the NEP's role in promoting inclusivity in Indian higher education. The authors analyze how the policy addresses social and economic disparities, improving access to education for marginalized communities.

Statement of the Problem

The Government of India's New Education Policy (NEP), which was unveiled in 2020, promises to transform the nation's educational system, especially higher education, by fostering inclusion, multidisciplinary, and technological integration. Despite the NEP's broad objectives to revolutionize education, its effects on higher education in India's North East remain a significant source of worry and curiosity. The North East, which is made up of eight states with different cultural backgrounds and topographical difficulties, has historically experienced educational inequality and infrastructure limits. What are the obstacles and opportunities it presents for enhancing accessibility, quality, employability, and regional development? How much does the New Education Policy's implementation affect the landscape of higher education in North East India?

Significance of the Study

The study of the impact of the New Education Policy (NEP) on higher education in North East India holds significant importance for various stakeholders, policymakers, educational institutions, and society at large. The study's significance lies in its potential to provide valuable insights and inform decision-making processes.

- **Policy Evaluation:** The study evaluates the implementation of the NEP in the North East region, allowing policymakers to assess the effectiveness of the policy in addressing the region's unique educational challenges. It provides a comprehensive analysis of the policy's impact on various aspects of higher education, identifying areas of success and areas that require further attention.
- **Regional Development:** By examining the NEP's implications on higher education in the North East, the study contributes to discussions on regional development. It sheds light on how the policy can help bridge the educational divide and foster sustainable growth in the region by equipping students with relevant skills and knowledge.
- **Inclusive Education:** The study explores the NEP's role in promoting inclusivity in higher education. It examines whether the policy has succeeded in increasing access to quality education for marginalized communities, promoting social equity, and providing educational opportunities for underprivileged students.

- **Employability and Entrepreneurship:** With a focus on skill-based education, the study assesses the NEP's impact on improving graduates' employability and fostering entrepreneurship in the North East. This analysis is crucial for understanding how the policy contributes to the region's human resource development and economic progress.
- **Technology Integration:** By examining the NEP's emphasis on technology integration, the study provides insights into the potential of digital learning and its accessibility in remote areas of the North East. This information is essential for advancing education through innovative digital platforms and bridging the educational gap.
- **Faculty Development:** The study investigates the NEP's influence on faculty development, which is crucial for enhancing the quality of education in higher institutions. It provides valuable insights into the training and support required to empower educators in the region.
- **Institutional Improvement:** By assessing the NEP's impact on research and infrastructure, the study helps identify areas where institutions can focus on upgrading facilities and promoting a research-oriented culture. This is significant for enhancing the overall quality and reputation of higher education institutions in the North East.

Objectives of the Study

To examine the difficulties that North East India's national education policy may encounter during implementation.

To study the chances for learning, employment, and promoting entrepreneurship provided by national education policies in North East India.

Research Methodology

This study's methodology is descriptive. The essential secondary data was gathered from a variety of websites, including those run by the Indian government and other publications like magazines and journals. The inferences and conclusions were then drawn from the analysis and examination of this data.

Challenges in the Implementation of the National Education Policy in North East India

The distinct cultural, geographical, and socioeconomic aspects of North East India present particular difficulties for the implementation of the National Education Policy (NEP). Here are a few of the major difficulties that could arise during the installation process.

Infrastructural Limitations:

Infrastructure issues in the North East region include poor communication, transport, and basic utilities. The creation and operation of new educational institutions as well as the inclusion of technology in the teaching and learning process may be hampered by these restrictions. (Jha, 2021).

Linguistic and Cultural Diversity:

There are several indigenous languages and civilizations in the North East. It can be difficult to modify the NEP in a way that promotes a uniform national education framework while accommodating the region's linguistic and cultural diversity. (Mukhopadhyay and Debbarma, 2020).

Accessibility and Connectivity:

The North East contains a large number of geographically distant places with poor connectivity and accessibility. It might be difficult to distribute internet resources to these far-flung regions while yet offering equal educational opportunities. (Devi and Saikia, 2022).

Teacher Shortage and Quality:

There is a teacher shortage in the area, and recruiting talented instructors to remote locations might be challenging. A challenge may lie in ensuring the availability of qualified faculty and developing their abilities. (Bhattacharya and Sharma, 2023).

Socio-economic Disparities:

There are socioeconomic inequalities in the North East, including areas of poverty and marginalized populations. It can be difficult to close the gap and guarantee that everyone in society has fair access to education. (Lahkar & Saikia, 2021).

Resistance to Change:

A New Education Policy must be implemented, which necessitates altering current procedures and frameworks. Implementing the NEP successfully may be hampered by resistance from numerous stakeholders, such as teachers, administrators, and parents. (Chhetri & Debbarma, 2022).

Funding and Resource Allocation:

The allocation of sufficient funds and resources is essential for the effective implementation of policies. It may be difficult to ensure enough financial assistance and resource allocation for the region's different demands. (Debbarma & Bora, 2022).

National Education Policy Provide Possibilities for a Variety of Learning and Skill-Development Activities

The National Education Policy (NEP), which strives to raise the region's educational quality and accessibility, has made a variety of educational opportunities available to people in Northeast India. The rules of the policy provide possibilities for a variety of learning and skill-development activities.

- **Multidisciplinary Education:** Through the NEP, students in Northeast India can explore a number of disciplines outside of their typical fields of study thanks to its strong emphasis on multidisciplinary education. This approach encourages a comprehensive educational experience that fosters critical thinking and creativity. (Ministry of Education, 2020).
- **Regional Languages and Culture:** The NEP encourages the inclusion of regional languages and cultures in the curriculum. By realizing the worth of regional languages, students in Northeast India can re-connect with their cultural roots and have access to a more inclusive learning environment. (Ministry of Education, 2020).
- **Technology Integration:** The NEP emphasizes the use of technology in the classroom heavily. Thanks to the advancement of digital infrastructure and e-learning chances, students in Northeast India's remote regions may now access top-notch educational resources and enhance their learning experiences. (Ministry of Education, 2020).
- **Vocational Education and Skill Development:** The NEP emphasizes the importance of using technology in the classroom. The growth of digital infrastructure and e-learning opportunities has made it possible for students in Northeast India's remote regions to access top-notch educational resources and enhance their educational experiences. (Ministry of Education, 2020).
- **Teacher Training and Professional Development:** The NEP places a strong focus on the value of teacher training and professional development. As a result, educators in Northeast India have the possibility to enhance their pedagogical approaches and teaching strategies, which will ultimately enhance the students' educational experiences. (Ministry of Education, 2020).
- **Research and Innovation:** The NEP aims to promote investigation and invention in the area of education. This gives educators and students in Northeast India the ability to take part in research projects and generate innovative ideas that will help the socioeconomic development of the area. (Ministry of Education, 2020).
- **Inclusive Education:** A major focus of the NEP is inclusive education, which promotes equal opportunities for all students, particularly those from marginalized groups and those who have disabilities. Diverse students in Northeast India now have the opportunity to get excellent instruction and succeed in school. (Ministry of Education, 2020).

- **Employability and Create Job Opportunities for Students in the Region**

Due to its emphasis on skill development and alignment of instruction with labour market demands, the National Education Policy (NEP) provides several employment prospects in Northeast India. The elements of the policy are meant to increase employability and open up career options for students in the area.

- **Skill-based Education:** The NEP places a strong emphasis on skill-based education, which gives students in Northeast India the real-world skills they need to succeed in the workforce. The policy improves employability by emphasizing vocational training and industry-relevant skills. (Ministry of Education, 2020).
- **Entrepreneurship and Start-ups:** The NEP promotes entrepreneurship by giving students the information and assistance they need to launch their own businesses. This gives students in Northeast India the chance to start their own businesses and boost the local economy. (Ministry of Education, 2020).
- **Research and Innovation:** The NEP intends to promote educational research and innovation, which will enhance a number of industries. Students in Northeast India now have the chance to participate in research and make a contribution to fields that need innovation. (Ministry of Education, 2020).
- **Regional Industries and Sectors:** The Northeast India-specific businesses and sectors are opened up for employment as a result of the NEP's emphasis on developing regional languages and cultures. This includes industries like traditional medicine, horticulture, tourism, and handicrafts. (Ministry of Education, 2020).
- **Digital Transformation:** The NEP encourages the use of technology in the classroom, fostering digital literacy and preparing students for employment in the digital economy. This opens up job chances in remote work and IT-enabled services in Northeast India. (Ministry of Education, 2020).
- **Teacher Training and Employment:** The NEP places a strong emphasis on the value of teacher preparation and professional development. This opens up job prospects in the education sector for people with pedagogical and teaching experience. (Ministry of Education, 2020).
- **Inclusive Employment:** Students from underrepresented groups and people with disabilities in Northeast India will have equal access to educational opportunities thanks to the NEP's emphasis on inclusive education. (Ministry of Education, 2020).

Entrepreneurship in Driving Economic Growth and Creating Job Opportunities

Through a number of regulations that promote an entrepreneurial attitude and offer assistance to prospective business people.

The National Education Policy (NEP) promotes entrepreneurship in Northeast India. The policy acknowledges the significance of entrepreneurship in promoting economic growth and opening up job opportunities.

- **Promoting Entrepreneurship Education:** The NEP places a strong emphasis on how entrepreneurship education should be incorporated into all educational levels' curricula. The goal of the strategy is to establish an entrepreneurial mindset and foster inventive thinking by early exposure of pupils to entrepreneurial concepts and abilities. (Ministry of Education, 2020).
- **Skill Development for Entrepreneurship:** The NEP places a strong emphasis on skill development, including vocational education that gives students the hands-on training they need to launch and run their own businesses. In Northeast India, this trains students for opportunities in entrepreneurship and self-employment. (Ministry of Education, 2020).
- **Start-up Incubation and Support:** Incubation centers for startups and innovation are encouraged to be established in educational institutions by the NEP. In order to help ambitious business owners in Northeast India convert their ideas into profitable companies, these centers offer mentoring, funding, and networking opportunities. (Ministry of Education, 2020).
- **Industry-Academia Collaboration:** The NEP supports the establishment of centers for startup and innovation incubation in educational institutions. These facilities provide coaching, funding, and networking opportunities in order to aid aspiring business owners in Northeast India in turning their concepts into successful businesses. (Ministry of Education, 2020).
- **Research and Innovation:** The NEP places a strong emphasis on higher education research and innovation. Northeast Indian students now have the chance to participate in cutting-edge research and create novel solutions that may be used to create new goods and services. (Ministry of Education, 2020).
- **Financial Support and Incentives:** The NEP promotes the provision of financial assistance and incentives for business owners. This includes having access to grants, loans, and tax breaks that can assist students in Northeast India in overcoming obstacles to their financial success and launching their own businesses. (Ministry of Education, 2020).
- **Recognition of Local Knowledge and Culture:** The value of regional expertise and culture is acknowledged by the NEP. As a result, business owners in Northeast India are encouraged to create enterprises based on customs, handicrafts, and natural resources, protecting and promoting the area's cultural heritage. (Ministry of Education, 2020).

By including these clauses, the NEP promotes a supportive environment for entrepreneurship in Northeast India, inspiring students and aspiring businesspeople to take chances, innovate, and advance the area's economic development.

Conclusion

The study on the impact of the New Education Policy (NEP) on higher education in North East India sheds light on the transformative changes and opportunities the policy brings to the region. The NEP, with its emphasis on inclusivity, multidisciplinary, technology integration, and skill development, presents a significant step forward in addressing the educational disparities and challenges in the North East.

The findings reveal that the NEP has the potential to enhance accessibility and quality of higher education in the region. By promoting inclusive education, the policy aims to bridge the gap between marginalized communities and mainstream education, ensuring that students from diverse backgrounds have equal opportunities for learning and employment. The focus on regional balance in educational institutions opens up prospects for the establishment of new colleges and universities, providing greater access to education in remote areas of the North East. Moreover, the NEP's emphasis on multidisciplinary and research and innovation encourages students to explore diverse fields and engage in cutting-edge research. This approach can foster creativity and problem-solving skills, empowering students to contribute to the region's development through innovative solutions.

The New Education Policy has the potential to bring about transformative changes in higher education in the North East region of India. By promoting flexibility, technology integration, skill-based education, and accessibility to quality institutions, the NEP can foster a more inclusive and progressive educational ecosystem in the North East. Addressing challenges and leveraging opportunities will be crucial in realizing the full impact of the policy and ensuring that the benefits reach all strata of society in the region.

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A BIRDS EYE VIEW ON NEW EDUCATION POLICY 2020

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Abstract

Well defined and futuristic education policy is essential for a country at school and college level due to the reason that education leads to economic and social progress. Different countries adopt different education systems by considering the tradition and culture and adopt different stages during their life cycle at school and college education levels to make it effective. Various innovations and predicted implications of NEP 2020 on the Indian Higher Education system along with its merits are discussed. Finally, some suggestions are proposed for its effective implementation to achieve its objectives.

Keywords: Well defined- futuristic education policy- school and college levels –economic and social progress –different education systems- tradition and culture-life cycle at school and college education levels –predicted implications – effective implementation-achieving the objectives

Introduction:

The first national education policy after independence was announced in the year 1968 and the Second national education policy which was improved version of the first was announced in the year 1986. The currently introduced National Education Policy 2020 envisions an India centered education system that contributes directly to transforming our nation sustainably into an equitable and vibrant knowledge society, by providing high quality education to all. India, being a growing liberal country for educational reforms, currently has about 845 universities and approximately 40,000 higher education institutions (HIEs), reflecting the overall high fragmentation and many small sized HEIs in the country which are affiliated to the universities. It is predicted that India will be the third largest economy in the world by 2030-2032 with estimated GDP of ten trillion dollars.

Highlights of New Education Policy 2020:

- New Policy aims for Universalization of Education from preschool to secondary level with 100 GER in school education by 2030.
- NEP 2020 will bring 2 crore out-of-school children back into the mainstream.
- New 5+3+3+4 school curriculum with 12 years of schooling and 3 years of Anganwadi/Preschooling

- Emphasis on Foundational Literacy and Numeracy, no rigid separation between academic streams, extracurricular, and vocational streams in schools; Vocational Education to start from Class 6 with Internships.
- Teaching up to at least Grade 5 to be in mother tongue/ regional language.
- Assessment reforms with a 360-degree Holistic Progress Card, tracking Student Progress for achieving Learning Outcomes.
- GER in higher education to be raised to 50% by 2035; 3.5 crore seats to be added in higher education.
- Higher Education curriculum to have Flexibility of Subjects.
- Multiple Entries/ Exits to be allowed with appropriate certification.
- Academic Bank of Credits to be established to facilitate the Transfer of Credits.
- National Research Foundation to be established to foster a strong research culture.
- Light but Tight Regulation of Higher Education, single regulator with four separate verticals for different functions.
- Affiliation System to be phased out in 15 years with grade autonomy to colleges.
- NEP 2020 advocates increased use of technology with equity; National Educational Technology Forum to be created.
- NEP 2020 emphasizes setting up of Gender Inclusion Fund, Special Education Zones for disadvantaged regions and groups.
- New Policy promotes Multilingualism in both schools and HEs; the National Institute for Pali, Persian, and Prakrit, Indian Institute of Translation and Interpretation to be setup.

Features of Nep:

The New Education Policy (NEP) 2020 in India introduces several key features aimed at transforming the education system:

5+3+3+4 Structure:

The policy proposes a new structure for school education, divided into four stages:

- Foundational (ages 3-8)
- Preparatory (ages 8-11)
- Middle (ages 11-14) and Secondary (ages 14-18)

Holistic Development:

The policy emphasizes Holistic education by focusing on cognitive, social, emotional and physical development of students rather than rote learning.

Curriculum Flexibility:

It allows students to choose subjects of interest across disciplines and promotes a multidisciplinary approach to education.

Vocational Educational:

NEP integrates vocational education into main stream curriculum from Grade 6 onwards, allowing students to develop practical skills for employment.

Assessment Reforms:

Education Policy 1986	New Education Policy 2020
1. Focus on Holistic Development: Limited emphasis on holistic development the focus was largely on academic achievements.	Strong emphasis on holistic development, including cognitive, emotional, social, and physical development.
2. Curriculum Structure: 10+2 structure for school education.	Shifts to a 5+3+3+4 curricular structure for school education, emphasizing foundational and flexible learning stages.
3. Multidisciplinary Approach: Emphasized specialization in specific subjects.	Promotes a multidisciplinary approach, allowing students to choose subjects based on interests and promoting flexibility.
4. Assessment System: Traditional examination-based assessment.	Moves towards a more comprehensive and holistic assessment system, reducing emphasis on rote memorization.
5. Early Childhood Education: Minimal attention to early childhood education.	Recognizes the importance of early childhood care and education as the foundation for lifelong learning.
6. Medium of Instructions: Encouraged the use of regional languages for primary education.	Stresses the importance of mother tongue or local language as the medium of instruction.

The policy recommends a shift from rote memorization to competency-based learning and assessment methods. Board exams will be redesigned to assess analytical skills and application of knowledge.

Higher Education Reforms:

The policy proposes a restructuring of higher education institutions, with increased focus on research and flexibility in curriculum. It aims to establish a single regulatory body for higher education, the Higher Education Commission of India (HECI).

Technology Integration:

NEP encourages the use of technology to improve teaching and learning processes, including online and digital resources.

Regulatory Framework:

The policy recommends the creation of a single regulatory body for higher education, replacing multiple existing regulatory bodies, to ensure better coordination.

Objectives of Nep:

Comparison of Education Policy 1986 & New Education Policy 2020:

Certainly, here's a comparison between the Education Policy 1986 and the New Enhanced Education Policy (NEP) 2020 in India:

Innovation in New Education Policy 2020:

The New Education Policy (NEP) 2020 in India incorporates several innovative elements to transform the education system. Here are some key innovations highlighted in the policy:

- **Codeing and Computational Thinking:** The policy proposes the integration of coding and computational thinking in the curriculum to enhance problem-solving skills and digital literacy.
- **Holistic Report Cards:** NEP 2020 suggests shifting from traditional marks-based assessment to holistic report cards that evaluate students' progress in various domains, including life skills, critical thinking, and values.
- **Teacher Professional Development:** NEP 2020 focuses on continuous professional development for teachers to their teaching skills, technology integration, and pedagogical practices.
- **Research and Innovation:** NEP 2020 aims to promote research and innovation in educational practices, curriculum design, and pedagogy to keep up with global trends.

- **Global Exposure:** The policy encourages exposure to international perspectives, foreign languages, and exchange programs to make students globally competent.

Conclusion:

National Education Policy of India 2020 is marching towards achieving such objective by making innovative policies to improve the quality, attractiveness, affordability, and increasing the supply by opening up the higher education for the private sector and at the same time with strict controls to maintain quality in every higher education institution. By encouraging merit-based admissions with Free-ships & scholarships, merit & research based continuous performers as faculty members, and merit Based proven leaders in regulating bodies, and strict monitoring of quality through biennial accreditation based on self-declaration of progress through technology-based monitoring, NEP-2020 is expected to fulfil its objectives by 2030.

PROMOTING MULTILINGUALISM AND CULTURAL DIVERSITY IN NATIONAL EDUCATION POLICY

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Abstract

This abstract provides a concise overview of the importance and benefits of promoting multilingualism and cultural diversity in national education policies. It highlights the significance of these policies in preserving cultural heritage, fostering inclusivity, enhancing cognitive skills, and promoting global competence. Additionally, it discusses the economic and academic advantages of such policies. The abstract also outlines key strategies for incorporating multilingualism and cultural diversity into education policies, such as curriculum design, teacher training, accessible resources, support for minority languages, and international exchange programs. In conclusion, this abstract emphasizes that these policies are vital for a nation's identity and future success in an interconnected world.

Keywords: *Multilingualism, Cultural Diversity, National Education Policy, Language education, Inclusivity*

Introduction

Language and culture stand as the very bedrock of a nation's identity and heritage, permeating the core of its existence. They serve as the vibrant threads that weave the tapestry of its collective memory, shaping the beliefs, thoughts, and interactions of its people. In an era marked by an unprecedented global interconnectedness and a fervent celebration of diversity, the imperative to champion multilingualism and cultural diversity within the framework of national education policy has never been more pronounced. This essay embarks on a journey to illuminate the profound significance of assimilating multilingualism and cultural diversity into the foundations of national education policies. It delves into the myriad of advantages that this inclusion brings, both at the individual level and for society as a whole. Through this exploration, we aim to underscore the indispensable nature of this endeavor in the modern world.

The Significance of Multilingualism and Cultural Diversity

1. Preserving Cultural Heritage

Language serves as a profound vessel, a living repository, that gracefully carries within it the cherished cargo of a culture's most cherished values, the echoes of its storied history, and the timeless resonance of its traditions.

It embodies the soul of a society, encapsulating the collective wisdom and shared experiences of generations past. In this eloquent journey through time, multilingual education emerges as the steadfast guardian entrusted with the solemn duty of preserving and passing on this invaluable cultural heritage from one generation to the next. National education policies that embrace and endorse the richness of multiple languages become the stalwart custodians of a nation's identity. They form the bulwark against the erasure of the distinctive tapestry that defines a people, ensuring that the vibrant mosaic of linguistic diversity remains intact. These policies, akin to sentinels standing guard over the nation's cultural legacy, play an indispensable role in sustaining the bonds that connect citizens to their roots and to one another. In this profound symbiosis of language and policy, we witness the harmonious interplay between cultural preservation and the broader landscape of education, an interplay that is as vital as it is transformative.

2. Fostering Inclusivity

Within the rich tapestry of a diverse society, one finds the harmonious convergence of people hailing from myriad linguistic backgrounds and culturally vibrant traditions. This amalgamation of voices and experiences is the hallmark of a thriving, interconnected world. Yet, in this splendid mosaic, the promotion of multilingualism within the educational realm takes on a role of profound significance, transcending mere linguistic acquisition. It emerges as the cornerstone of an inclusive and equitable society, ensuring that no group remains on the margins or feels ostracized in the educational landscape. Promoting multilingualism in education is not merely a matter of facilitating language acquisition; it is an assertion of an overarching principle: inclusivity. It carries the resonant message that every individual, regardless of their linguistic or cultural origin, has an equal and irrevocable stake in the educational journey. This message is a clarion call to every citizen, affirming that their unique perspectives, identities, and narratives are not only acknowledged but also celebrated within the national educational community.

In this holistic approach to education, the power of inclusivity extends far beyond linguistic proficiency. It fosters a sense of belonging and value, nurturing the growth of self-esteem and confidence among students. It establishes a fertile ground for the blossoming of diverse talents, ideas, and perspectives, enriching the collective experience of all members of society. This inclusive education is not just a pedagogical endeavor; it is a societal pact, a commitment to uphold the principles of diversity and social cohesion. Through it, the nation sends a resounding message that unity and strength are forged through the recognition and celebration of its rich tapestry of cultures and languages.

3. Enhancing Cognitive Skills

The acquisition of multiple languages has long been recognized as a gateway to the development of a broad spectrum of cognitive skills, extending far beyond the mere mastery of words and phrases. This linguistic journey, spanning diverse linguistic landscapes, offers a multifaceted exercise for the mind, cultivating and honing critical faculties that transcend language itself. The manifold benefits reaped from multilingualism are a testament to the profound interplay between language and cognitive development, with implications that reverberate throughout an individual's educational journey and beyond. Studies and research endeavors have consistently underscored the cognitive advantages bestowed by multilingualism. Among these, the enhancement of problem-solving skills stands as a paramount testament. The mental agility required to navigate multiple languages naturally extends to a heightened capacity for innovative thinking and effective troubleshooting. Multilingual individuals frequently exhibit a propensity for adaptability and creative problem-solving, traits that are invaluable across various academic disciplines and professional spheres.

Furthermore, multilingualism lends itself to the cultivation of critical thinking abilities. The process of deciphering and understanding distinct linguistic codes fosters a heightened awareness of nuance, context, and interpretation. This heightened cognitive flexibility is instrumental in the development of robust analytical skills, enabling individuals to approach complex problems with greater depth and precision. Multilingualism's impact on multitasking capabilities is equally noteworthy. The adeptness at swiftly transitioning between languages and their associated cultural contexts nurtures a mental dexterity that is particularly advantageous in an increasingly interconnected world. Multilingual individuals often exhibit superior multitasking abilities, seamlessly navigating various tasks, perspectives, and linguistic registers. National education policies that actively encourage and facilitate multilingualism thus serve as catalysts for the empowerment of students with an invaluable set of mental tools. These cognitive assets are not confined to the language classroom; rather, they resonate across diverse academic disciplines and professional pursuits. They equip individuals with the cognitive versatility required to excel in an ever-evolving global landscape, where the ability to approach challenges with a multifaceted, adaptable mindset stands as a cornerstone of success. In promoting multilingualism, national education policies do not merely enrich linguistic proficiency; they invest in the cognitive wealth of their citizens, nurturing minds that are poised to thrive in a world defined by complexity and interconnection.

4. Global Competence

In the contemporary global landscape, characterized by unprecedented levels of connectivity and interdependence, the ability to communicate effectively in multiple languages and navigate the intricacies of diverse cultures has emerged as an indisputable cornerstone of global competence. A multilingual education, far from being a mere linguistic pursuit, emerges as a transformative force, equipping students with the essential skills to not only participate but thrive in the complex, interwoven fabric of our interconnected world. Global competence, often viewed as the capacity to engage with international affairs, form meaningful connections across borders, and contribute effectively to a globally integrated workforce, hinges significantly on linguistic versatility and cultural acumen. In this context, multilingual education serves as a potent catalyst, unlocking a host of opportunities and perspectives for students.

First and foremost, multilingualism bestows upon individuals the ability to transcend linguistic barriers and engage directly with international issues. It opens the doors to a vast array of global knowledge, enabling students to access information, discourse, and cultural nuances that would otherwise remain concealed behind language barriers. This proficiency in multiple languages amplifies one's ability to participate in cross-cultural dialogues, understand diverse viewpoints, and engage constructively in international debates, be they political, economic, or social. Moreover, a multilingual education lays the foundation for forging genuine global connections. Language is not merely a tool for communication; it is a conduit for empathy and mutual understanding. Individuals proficient in multiple languages possess a unique capacity to relate to people from different backgrounds, bridging divides, and nurturing relationships that transcend borders. Such connections extend to both personal and professional spheres, fostering an enriching tapestry of global interactions and collaborations.

In the professional realm, the advantages of a multilingual education are equally pronounced. In an era where multinational corporations, international diplomacy, and cross-border innovation have become the norm, professionals who can navigate diverse linguistic and cultural landscapes are in high demand. Multilingual individuals are often better positioned to excel in global careers, contributing their unique perspectives and bridging communication gaps in a world where diversity is an asset. Thus, the ability to communicate proficiently in multiple languages and understand different cultures is no longer a mere skill but a fundamental component of global competence. A multilingual education is the gateway to unlocking this vital capability. It empowers students not only to engage with international issues but also to form enduring global connections and contribute effectively to a workforce shaped by the dynamic forces of globalization.

In embracing multilingualism, national education policies pave the way for a generation of individuals poised to excel in a world that is intricately interconnected, culturally diverse, and ever-evolving.

Benefits of Promoting Multilingualism and Cultural Diversity in Education

1. Linguistic Competence

The realm of education is undergoing a profound transformation in response to the demands of our increasingly multilingual and interconnected world. At the heart of this transformation lies the concept of multilingual education, a paradigm shift that extends beyond the mere acquisition of languages and delves into the cultivation of a multifaceted skill set. Central to this shift is the cultivation of linguistic proficiency in multiple languages, a skill that stands as a linchpin in navigating the complexities of our contemporary global landscape. The acquisition of proficiency in multiple languages within the educational framework carries profound implications. It is no longer an optional addendum but an indispensable asset in a world where linguistic diversity is the norm. This competence, rooted in multilingual education, not only broadens horizons but also opens a multitude of doors to diverse employment opportunities.

In a world where borders are increasingly porous and international cooperation is the lifeblood of various industries, multilingualism has become a coveted skill. Proficiency in multiple languages has emerged as a competitive advantage in the global job market, enabling individuals to access a broader spectrum of career opportunities. Multinational corporations, international organizations, and even smaller businesses value employees who can seamlessly navigate linguistic and cultural nuances, facilitating communication across borders and fostering relationships with a diverse clientele. Furthermore, the benefits of multilingual education transcend the professional sphere. They extend to the realm of enhanced communication skills, enriching personal interactions and fostering a deeper understanding of human connection. Multilingual individuals are often more adept at interpreting the nuances of language and communication, allowing them to engage in more meaningful and effective dialogues with people from diverse backgrounds. Moreover, proficiency in multiple languages nurtures cognitive flexibility, sharpening the mind's adaptability and problem-solving capabilities. Multilingual individuals frequently exhibit enhanced cognitive skills, such as multitasking, pattern recognition, and creative thinking, all of which are invaluable assets in both personal and professional life. Thus, the acquisition of proficiency in multiple languages through multilingual education has transcended the status of a mere academic pursuit. It has become a gateway to a multitude of employment opportunities, a catalyst for improved communication skills, and a driver of cognitive

enhancement. National education policies that prioritize and facilitate multilingual education are not only nurturing a generation of linguistically versatile individuals but also empowering them to excel in an increasingly interconnected and linguistically diverse world. In embracing the importance of multilingualism, we are preparing individuals to not only navigate but also flourish in a global landscape where linguistic and cultural diversity is celebrated.

2. Cultural Understanding

Language education is a powerful conduit through which individuals can embark on a profound journey of cultural exploration, fostering values of tolerance, empathy, and, ultimately, social harmony. Beyond the acquisition of linguistic skills, it serves as a gateway to the intricate tapestry of human cultures, facilitating not only the deconstruction of stereotypes but also the cultivation of a profound and inclusive understanding of diverse perspectives. Central to this transformative process is the cultivation of tolerance and empathy. Learning about different cultures through language education imbues individuals with a heightened sensitivity to the complexities of the world around them. As they delve into the linguistic and cultural nuances of others, they begin to grasp the rich tapestry of human experiences that exists beyond their own immediate surroundings. This newfound awareness serves as a catalyst for tolerance, breaking down the barriers of ignorance and prejudice that often underlie stereotypes and biases.

Furthermore, language education equips individuals with the tools to engage in genuine intercultural dialogue. It encourages open-mindedness, curiosity, and a willingness to learn from others. By exploring diverse linguistic and cultural landscapes, students are exposed to a myriad of worldviews, traditions, and belief systems. This exposure fosters empathy, as individuals begin to appreciate the shared human experiences that transcend cultural boundaries. The benefits of this empathetic understanding are manifold. It engenders a sense of unity in diversity, reinforcing the notion that, despite our differences, we are all part of a global community. This perspective is particularly vital in today's interconnected world, where the ability to navigate and collaborate with individuals from diverse backgrounds is essential for peaceful coexistence.

Moreover, language education encourages individuals to critically examine their own cultural biases and assumptions. It prompts self-reflection and encourages individuals to challenge preconceived notions. This process of introspection is crucial for personal growth and contributes to the broader societal goal of dismantling stereotypes and fostering inclusivity. In essence, language education serves as a bridge between cultures, promoting not only linguistic proficiency but also values of tolerance and empathy. It embodies a commitment to breaking down stereotypes and

embracing the richness of diverse perspectives. Through this educational lens, students emerge with a deeper understanding of the interconnectedness of humanity, armed with the tools to contribute to a more harmonious and inclusive society. As such, language education transcends the classroom, serving as a powerful force for positive change in an ever-diverse and interconnected world.

3. Economic Benefits

Multilingualism emerges as a dynamic catalyst, not only enriching a nation's cultural fabric but also propelling its economic engine to new heights. Beyond its intrinsic value in preserving linguistic diversity, multilingualism stands as a formidable tool for nations seeking to expand their global reach and bolster economic prosperity. In an increasingly interconnected world, individuals proficient in multiple languages are often at the forefront of international business, diplomacy, and tourism, contributing significantly to a nation's economic growth. The economic implications of multilingualism are manifold. One of the most palpable benefits lies in the realm of international business. Multinational corporations and global enterprises value individuals who can seamlessly navigate linguistic and cultural nuances. Multilingual professionals are better equipped to forge international partnerships, negotiate contracts, and engage effectively with clients and stakeholders from diverse linguistic backgrounds. This linguistic versatility not only opens doors to global markets but also enhances a nation's competitiveness on the international stage, ultimately bolstering its economic standing.

Furthermore, multilingualism plays a pivotal role in the arena of diplomacy. In an era marked by complex global challenges and opportunities, diplomacy relies heavily on effective cross-cultural communication. Diplomats and representatives who can converse fluently in multiple languages have a distinct advantage in building diplomatic relationships, mediating conflicts, and advocating for their nation's interests on the world stage. Their linguistic dexterity fosters more nuanced, productive, and fruitful dialogues, contributing to international cooperation and, in turn, bolstering economic stability. The tourism industry also reaps significant rewards from multilingualism. Tourists from diverse linguistic backgrounds flock to destinations that offer multilingual services, feeling more welcome and catered to. Multilingual guides, customer service representatives, and hospitality professionals enhance the overall visitor experience, driving tourism revenues and boosting a nation's economy. In essence, multilingualism in the tourism sector serves as a bridge, connecting nations with a global clientele and reaping economic dividends.

Moreover, the advantages of multilingualism extend beyond traditional economic sectors. As nations diversify their economies and engage in various global initiatives, individuals proficient in multiple languages become valuable assets in fields ranging

from international law and journalism to academia and technology. These multilingual professionals contribute to the exchange of ideas, knowledge transfer, and innovation, all of which fuel economic growth. Thus, multilingualism is not merely a linguistic feat but a strategic asset with profound economic implications. It empowers individuals to be more marketable in international business, more effective in diplomacy, and more appealing in the tourism industry. This linguistic versatility enhances a nation's global competitiveness and amplifies its economic reach, contributing significantly to its overall economic growth and prosperity. As such, embracing multilingualism is not just a cultural endeavor but an economic imperative in our interconnected world.

4. Academic Achievement

Empirical evidence underscores the profound impact of a multilingual educational environment on academic performance and cognitive development. Numerous studies have demonstrated that students who engage with a diverse linguistic landscape tend to excel academically, with a plethora of cognitive benefits contributing to their success. These advantages extend beyond the acquisition of languages themselves, fostering cognitive flexibility, creative thinking, and ultimately, culminating in enhanced educational outcomes. The academic achievements of students immersed in a multilingual environment are testament to the multifaceted cognitive benefits at play. One of the most notable advantages is the development of cognitive flexibility. As students navigate multiple languages, they exercise their minds in adapting to different linguistic structures, vocabulary, and communication norms. This constant cognitive gymnastics sharpens their ability to think flexibly, switch between tasks seamlessly, and approach challenges from diverse angles. This adaptability not only enhances problem-solving skills but also equips students to thrive in the ever-evolving landscape of modern education.

Moreover, the exposure to different languages and cultures catalyzes the cultivation of creativity. Multilingual individuals often exhibit a heightened capacity for thinking outside the box, as their experiences and perspectives span a broader spectrum. They are more adept at drawing connections between seemingly disparate concepts, leading to innovative solutions and a richer tapestry of ideas. This creative mindset extends to various academic disciplines, contributing to a more dynamic and innovative educational ecosystem. The benefits of multilingualism also ripple through the realm of language skills. Students exposed to diverse linguistic contexts tend to excel in their native language as well. Their enhanced cognitive abilities translate into improved reading comprehension, writing proficiency, and verbal communication. Consequently, they are better equipped to tackle complex academic tasks and articulate their thoughts with clarity and precision.

Furthermore, multilingual education nurtures cultural awareness and fosters a deeper understanding of global perspectives. Students gain insights into the worldviews, traditions, and histories of different cultures, enriching their academic discourse with diverse perspectives. This intercultural competence enhances their critical thinking abilities and equips them to engage meaningfully in cross-cultural dialogues, a skill set that is increasingly valuable in our globalized world. Thus, the positive correlation between a multilingual educational environment and academic excellence is well-documented and supported by empirical research. Exposure to different languages and cultures enhances cognitive flexibility, sparks creativity, and ultimately contributes to improved educational outcomes. These cognitive advantages are invaluable, transcending the classroom to empower students with the skills and perspectives needed to thrive in an ever-evolving educational landscape and a diverse, interconnected world. As such, the promotion of multilingual education is not merely an academic endeavor but a holistic investment in the cognitive enrichment of future generations.

5. National Identity

Multilingual education reinforces a nation's identity by preserving its linguistic and cultural diversity. It helps maintain a sense of unity while celebrating the richness of diversity within the nation.

Incorporating Multilingualism and Cultural Diversity in National Education Policy

1. Curriculum Design

National education policies wield considerable influence in shaping the intellectual and cultural landscape of a nation. In our increasingly interconnected world, it is imperative that these policies reflect the rich tapestry of languages and cultures that constitute the national fabric. To this end, comprehensive national education policies must encompass a diverse range of languages and cultures within their curricula, encompassing a multifaceted approach that includes offering courses in multiple languages, integrating cultural studies, and actively promoting intercultural dialogue. First and foremost, national education policies should strive to offer a spectrum of language courses that extend beyond the boundaries of the dominant or official language(s). This inclusive approach ensures that students have the opportunity to explore languages that resonate with their heritage, connect them to their roots, or align with their future career aspirations. By facilitating the acquisition of multiple languages, these policies empower students with a valuable linguistic toolbox that transcends communication barriers, enhances cognitive skills, and broadens their horizons.

In parallel, the integration of cultural studies into the curriculum is essential for fostering a deeper understanding and appreciation of the world's diverse cultures. Courses that delve into the customs, traditions, history, and art of various cultures provide students with a comprehensive perspective on the human experience. Such education not only enriches their cultural awareness but also cultivates empathy, tolerance, and respect for others' ways of life. It is through the exploration of diverse cultures that students gain a nuanced understanding of global interdependence and the interconnectedness of our shared human heritage. Promoting intercultural dialogue is another pivotal facet of national education policies. Encouraging students to engage in meaningful conversations and exchanges with peers from diverse cultural backgrounds nurtures open-mindedness and enriches their educational experience. It fosters an atmosphere of inclusivity, where diverse perspectives are valued and celebrated. Moreover, intercultural dialogue equips students with the skills to navigate our globalized world, where cross-cultural collaboration and communication are essential for success.

Furthermore, national education policies should actively support the preservation and promotion of minority languages and cultures. These policies should acknowledge the intrinsic value of linguistic and cultural diversity and take steps to ensure that minority languages are not marginalized or forgotten. Such support not only preserves a nation's rich linguistic tapestry but also fosters a sense of cultural pride and inclusivity among minority communities. Thus, national education policies play a pivotal role in shaping the cultural and linguistic awareness of future generations. Embracing linguistic and cultural diversity within these policies is not only a reflection of a nation's commitment to inclusivity but also a pragmatic approach to preparing students for an interconnected world. By offering courses in multiple languages, integrating cultural studies, and promoting intercultural dialogue, these policies empower students to become global citizens who are equipped with the skills and perspectives needed to thrive in a multicultural, interdependent world.

2. Teacher Training

Teacher training programs play a pivotal role in shaping the quality of education and the inclusivity of learning environments. In our increasingly diverse and interconnected world, it is paramount that these programs equip educators with a diverse toolkit of strategies to thrive in multilingual and multicultural classrooms. Teachers must be well-prepared to foster inclusive, culturally sensitive learning environments that honor the diversity of their students, ensuring that all learners can thrive. First and foremost, teacher training programs should incorporate comprehensive strategies for effective teaching in multilingual and multicultural

settings. This entails equipping educators with pedagogical approaches that cater to the diverse linguistic backgrounds of their students. Teachers should learn techniques for supporting language development among students who are non-native speakers of the dominant language while simultaneously ensuring that all students have access to the curriculum. This involves adapting teaching materials, employing translanguaging techniques, and encouraging bilingualism or multilingualism when relevant.

Moreover, educators should receive training on culturally responsive teaching practices. This goes beyond the mere recognition of cultural diversity to the active incorporation of diverse cultural perspectives into the curriculum. Culturally responsive teaching involves recognizing the unique cultural backgrounds of students, integrating culturally relevant content, and creating a classroom atmosphere that values and respects diverse traditions and viewpoints. It fosters an environment where students feel seen, heard, and validated, which in turn enhances their engagement and learning outcomes. Inclusive education is another critical dimension that should be emphasized in teacher training programs. Teachers should be equipped with strategies for accommodating students with diverse learning needs, including those with different linguistic, cultural, or socio-economic backgrounds, as well as students with disabilities. Inclusive practices ensure that every student has an equitable opportunity to access and benefit from education. This encompasses differentiated instruction, flexible assessment methods, and a commitment to removing barriers to learning.

Furthermore, teacher training programs should emphasize the development of intercultural competence among educators. This involves not only an understanding of different cultures but also the ability to navigate cultural differences with sensitivity and empathy. Educators should be trained to facilitate constructive intercultural dialogues in their classrooms, fostering an atmosphere where students learn to appreciate and learn from one another's diverse perspectives. Lastly, ongoing professional development should be a cornerstone of teacher training programs. The educational landscape is continually evolving, and educators must stay abreast of the latest research and best practices in teaching in multilingual and multicultural environments. Regular training updates ensure that teachers remain effective and adaptable in their approach to education, continually improving their ability to create inclusive and culturally sensitive learning environments. Thus, teacher training programs have a profound impact on the quality and inclusivity of education. By equipping educators with strategies for teaching in multilingual and multicultural environments, promoting culturally responsive teaching, fostering inclusivity, and developing intercultural competence, these programs empower teachers to create classrooms that celebrate diversity, honor cultural identities, and provide equitable

learning opportunities for all students. Ultimately, this investment in teacher training contributes to the development of well-rounded, globally competent citizens who are prepared to thrive in an increasingly interconnected world.

3. Accessible Resources

Ensuring equitable access to educational resources in a multitude of languages is not just a matter of linguistic diversity; it's a fundamental pillar of educational equity and social inclusion. To provide students from diverse linguistic backgrounds with quality education, national education policies must prioritize the availability and accessibility of resources, encompassing textbooks, instructional materials, and digital content, in a plethora of languages.

1. Textbooks

Access to textbooks in multiple languages is crucial for students to engage effectively with the curriculum. These textbooks should not merely be translations of the dominant language but should encompass culturally relevant content and pedagogical approaches that resonate with students from various linguistic backgrounds. These resources are essential for literacy development, comprehension, and mastery of subject matter across languages.

2. Instructional Materials

Beyond textbooks, a comprehensive range of instructional materials should be available in various languages. This includes reading materials, workbooks, audio-visual resources, and manipulatives that cater to the linguistic diversity of the student body. These materials should be culturally sensitive, representing diverse perspectives and experiences to make the learning experience more meaningful and inclusive.

3. Digital Content

In our digital age, the availability of online educational content is paramount. National education policies should prioritize the development and dissemination of digital resources in multiple languages. This includes e-books, online courses, educational apps, and multimedia content that facilitate flexible and interactive learning experiences for students across linguistic backgrounds.

4. Teacher Training and Support

Equally important is the preparation of educators to effectively use these resources. Teacher training programs should incorporate strategies for utilizing multilingual resources in the classroom, ensuring that educators can adapt their teaching methods to meet the needs of linguistically diverse students. This includes strategies for differentiated instruction and assessing student progress effectively in various languages.

5. Community Engagement

National education policies should encourage collaboration between schools and the linguistic communities they serve. This partnership can help identify specific resource needs and ensure that the resources are culturally and linguistically relevant. It also fosters a sense of ownership and engagement within these communities, reinforcing the importance of education.

6. Equity and Inclusivity

The provision of resources in multiple languages is not just a matter of accessibility but also one of equity and inclusivity. It is essential to recognize that students who are not proficient in the dominant language of instruction should not be at a disadvantage. Ensuring access to resources in their native or preferred language helps level the playing field, promotes academic success, and contributes to social cohesion.

7. Research and Evaluation

Continuous assessment and research on the effectiveness of multilingual resources are crucial. This ensures that the resources provided are meeting the intended objectives and making a positive impact on student learning outcomes. National education policies should allocate resources for ongoing research and evaluation to refine and improve the availability and quality of multilingual resources.

Thus, equitable access to resources in multiple languages is an integral part of a comprehensive approach to inclusive education. It is essential for bridging linguistic and cultural divides, ensuring that all students have an equal opportunity to thrive in the educational system. National education policies that prioritize and invest in these resources not only promote educational equity but also celebrate the richness of linguistic diversity within their societies, fostering a more inclusive and harmonious nation.

4. Support for Minority Languages

National education policies hold a profound responsibility not only to address linguistic diversity but also to actively support and promote the preservation of minority languages. These languages, often spoken by smaller segments of the population, are not merely linguistic artifacts; they constitute an integral part of a nation's cultural richness and diversity. Recognizing and preserving them is crucial for fostering a more inclusive, culturally vibrant society.

1. Cultural Heritage Preservation

Minority languages are often carriers of centuries-old traditions, folklore, and cultural practices. By preserving these languages, national education policies contribute to the safeguarding of a nation's cultural heritage.

They ensure that the wisdom, stories, and cultural expressions of minority communities are not lost to the sands of time but are passed down to future generations.

2. Linguistic Diversity

A nation's linguistic diversity is a source of strength and resilience. It reflects the mosaic of identities and histories that have shaped the country over time. Embracing this diversity is a testament to a nation's commitment to inclusivity, where every linguistic community feels valued and recognized for its unique contribution to the national tapestry.

3. Cognitive Benefits

Multilingualism, which includes the preservation of minority languages, offers cognitive benefits to individuals. Studies have shown that learning multiple languages enhances cognitive flexibility, problem-solving abilities, and cultural sensitivity. National policies that support the preservation of minority languages provide students with an opportunity to develop these cognitive advantages.

4. Inclusive Education

When minority languages are incorporated into the educational system, it sends a powerful message of inclusivity. Students from linguistic minority backgrounds feel that their language and culture are respected and acknowledged within the education system. This inclusivity enhances their sense of belonging and motivation to engage in the learning process.

5. Global Competence

In an interconnected world, being proficient in multiple languages is a valuable asset. Minority language preservation contributes to the development of multilingual citizens who can navigate global challenges, engage in international dialogue, and represent their nation effectively on the global stage. This global competence enhances a nation's influence and standing in the international community.

6. Economic Opportunities

Minority languages can also offer economic opportunities. They can be leveraged in tourism, local businesses, and cultural industries. By preserving these languages, national policies can stimulate economic growth in regions where minority languages are spoken, potentially improving the quality of life for minority communities.

7. Social Cohesion

The recognition and preservation of minority languages foster social cohesion. When individuals from diverse linguistic backgrounds can communicate and understand one another, it strengthens bonds within society, reduces prejudice and discrimination, and builds a sense of unity among citizens.

National education policies should, therefore, take a proactive stance in supporting the preservation of minority languages. This can include initiatives such as offering minority language courses in schools, providing resources for language revitalization efforts, and collaborating with linguistic communities to ensure the transmission of these languages to future generations. By doing so, national education policies not only honor the cultural diversity within their borders but also contribute to the enrichment of the national identity and the creation of a more inclusive, cohesive, and culturally vibrant society.

5. International Exchange Programs

Promoting and expanding student exchange programs, both on a national and international scale, represents a visionary approach to education that goes far beyond the traditional classroom. These programs are invaluable in providing students with immersive experiences in diverse languages and cultures. They offer a multifaceted array of benefits that extend beyond language acquisition, offering a profound opportunity for personal growth, cultural enrichment, and global competence.

1. Cultural Immersion

Student exchange programs immerse participants in the daily life and culture of the host country or region. This immersive experience allows students to go beyond the superficial aspects of culture and truly engage with the customs, traditions, and values of the community. By living and interacting with locals, students gain a deeper understanding of different worldviews and ways of life.

2. Language Acquisition

One of the primary benefits of student exchange programs is language acquisition. Living in an environment where the target language is spoken daily provides a rich linguistic context that accelerates language learning. Students often return with a significantly improved command of the language, ranging from basic communication skills to fluency.

3. Personal Growth

Student exchange programs foster personal growth and independence. Participants learn to navigate unfamiliar situations, adapt to new environments, and develop problem-solving skills. They become more self-reliant and resilient, gaining a sense of confidence that extends beyond their time abroad.

4. Global Competence

Exposure to different languages and cultures equips students with global competence. They learn to appreciate cultural diversity, communicate effectively with people from various backgrounds, and navigate the complexities of our interconnected world. These skills are increasingly valuable in both academic and professional settings.

5. Broadened Perspectives

Immersion in a foreign culture challenges students' preconceptions and broadens their perspectives. They gain a more nuanced understanding of global issues, cultural nuances, and intercultural dynamics. This expanded worldview encourages tolerance, empathy, and open-mindedness.

6. Academic Enrichment

Many exchange programs offer unique academic opportunities, such as studying at renowned institutions or engaging in specialized coursework. This academic enrichment can provide students with a competitive edge in their academic pursuits and future careers.

7. Networking and Relationships

Student exchange programs facilitate the development of global networks and lasting friendships. Participants build relationships with peers from around the world, creating a diverse and supportive network that can be professionally and personally enriching.

8. Cultural Awareness

Living in a foreign country encourages students to become more culturally aware and sensitive. They learn to navigate cultural differences, adapt to local customs, and appreciate the beauty of cultural diversity.

9. Career Opportunities

Experience in a foreign country can enhance career prospects. Employers often value the adaptability, intercultural skills, and language proficiency that exchange program alumni bring to the workplace.

National and international student exchange programs, when integrated into national education policies, serve as transformative platforms for holistic education. These programs not only nurture linguistic competence but also cultivate global citizens who are equipped to thrive in an interconnected world. They celebrate the beauty of cultural diversity, bridge gaps between nations, and foster a sense of interconnectedness that transcends borders. As such, encouraging and expanding these programs is an investment in the future of education, where students emerge as informed, empathetic, and culturally enriched global citizens.

Conclusion

Championing multilingualism and cultural diversity within a nation's educational framework transcends the realm of mere pedagogy; it stands as a resounding testament to a nation's unwavering dedication to embracing its inherent diversity and actively engaging in a rapidly globalizing world. Beyond the mere acquisition of linguistic skills and cultural understanding, this commitment reflects the profound influence that language and culture exert in shaping individuals' identities and

perspectives. It represents a proactive stride towards equipping citizens with the multifaceted skills, knowledge, and values indispensable for thriving in an increasingly multicultural and interconnected global milieu. In essence, the integration of multilingualism and cultural diversity into education goes beyond the sphere of policy; it is an intrinsic facet of a nation's identity and a pivotal harbinger of its future prosperity. The embrace of multilingualism and cultural diversity within education signifies a profound celebration of a nation's intrinsic diversity. It underscores a profound respect for the multitude of languages, traditions, and worldviews that coexist harmoniously within a nation's borders. This celebration lays the foundational stones for engendering a sense of unity and belonging among all citizens, transcending linguistic and cultural boundaries.

In an era typified by growing global interdependence, the cultivation of global citizens assumes paramount importance. Educational policies that prioritize multilingualism and cultural diversity empower individuals with the essential tools for meaningful engagement with diverse global perspectives. This imbued global competence fosters an understanding of intricate global issues, encourages intercultural dialogue, and motivates active participation in international affairs. Exposure to a multitude of languages and cultures serves as a source of profound enrichment in the educational journey. It broadens the horizons of students, providing them with opportunities to traverse the tapestry of global cultures. Such exposure nurtures cultural sensitivity, empathy, and an enduring appreciation for the exquisite diversity that defines the human experience.

Multilingualism is heralded for its cognitive advantages, including heightened problem-solving skills, creativity, and adaptability. By incorporating multilingual education, national policies not only foster linguistic proficiency but also invest in the cognitive development of their citizens. This enrichment extends beyond the classroom, bolstering individual capabilities that resonate throughout diverse facets of life. The integration of multilingualism and cultural diversity into education represents a forward-looking national identity—one that is dynamic, inclusive, and representative of the interconnected world of the present and future. It signals a commitment to empowering citizens with the skills needed to navigate the complexities of an ever-evolving global landscape, fostering a sense of purpose and unity in the process. In conclusion, the commitment to promote multilingualism and cultural diversity within national education policy is more than a matter of educational practice; it is an embodiment of a nation's values, aspirations, and vision for the future. These principles are not mere policies; they constitute vital elements of a nation's core identity and serve as potent catalysts for its enduring success in an increasingly diverse and globalized world.

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TEACHER TRAINING AND PROFESSIONAL DEVELOPMENT IN THE CONTEXT OF NATIONAL EDUCATION POLICY

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Abstract

The National Education Policy (NEP) of 2020 in India represents a transformative vision for the country's education system. This essay explores the crucial role of teacher training and professional development within the context of the NEP. It emphasizes that teachers are at the heart of any educational system and discusses how the NEP envisions a comprehensive approach to teacher preparation and ongoing development. The essay highlights the significance of multidisciplinary education, modern teaching methods, and continuous professional growth in aligning with the NEP's objectives. Moreover, it emphasizes the direct impact of well-trained and motivated teachers on student learning outcomes, including the cultivation of critical thinking and problem-solving skills. In conclusion, the essay underscores the importance of collaborative efforts among policymakers, educational institutions, and teachers to prioritize and support teacher training and professional development, enabling India's education system to evolve and thrive in the 21st century.

Keywords: Teacher Training, Professional Development, National Education Policy, Education Transformation, Student Learning Outcomes

Introduction

Education serves as the bedrock upon which societies build their progress and foster development. However, the attainment of quality education is contingent not solely upon the presence of effective curricula and well-equipped classrooms but equally upon the competence and unwavering commitment of educators. In this context, the National Education Policy (NEP) emerges as a pivotal framework, spotlighting the pivotal roles of teacher training and professional development as cornerstones for elevating the entire educational landscape. This essay undertakes an in-depth examination of the profound significance that teacher training and professional development hold within the framework of the NEP. Moreover, it delves into the transformative potential that these elements possess, offering a glimpse into the future of education in our nation.

The National Education Policy: A Transformative Vision

In the year 2020, India unveiled the National Education Policy (NEP), a visionary and comprehensive roadmap designed to usher in a profound transformation of the

nation's education system. At its core, the NEP advocates for a holistic approach to education, prioritizing the cultivation of vital skills such as critical thinking, creativity, and innovation within the student body. Yet, the successful attainment of these lofty objectives hinges profoundly on the capabilities and efficacy of educators themselves. This landmark policy underscores the pivotal role that teachers play in reshaping the educational landscape. In essence, they serve as the architects and facilitators of the NEP's vision. While the policy outlines ambitious educational ideals, it is the teachers who must translate these ideals into tangible classroom experiences. Their competence, dedication, and adaptability are the linchpins upon which the success of the NEP ultimately rests.

In this context, the NEP stands not as a standalone document but as a dynamic framework that recognizes the symbiotic relationship between policy and practice. It acknowledges that the transformation of India's education system necessitates not only updated curricula and modern infrastructure but also a cadre of highly trained and motivated educators who can inspire, guide, and mentor the next generation. As the NEP seeks to nurture critical thinking, creativity, and innovation among students, it simultaneously imposes a corresponding responsibility on teachers. They must be equipped with the knowledge, skills, and pedagogical strategies to foster these attributes effectively. In this way, the NEP is not just a blueprint for the future but a catalyst for elevating the teaching profession to new heights, fostering a generation of educators who are not just purveyors of knowledge but also mentors, guides, and inspirations to their students. Thus, the National Education Policy of 2020 is not merely a visionary document; it is a call to action that recognizes the centrality of teachers in reshaping the education landscape. It underscores the indispensable role teachers play in bringing the NEP's holistic vision to life and nurturing a generation of students who are well-equipped to meet the challenges and opportunities of the future. Ultimately, the success of the NEP rests upon the shoulders of these dedicated educators, making them the linchpin of India's educational transformation.

The Role of Teachers in Implementing Nep

Educators occupy the central position in any educational ecosystem, serving as the primary conduits through which policies and ideals, such as those articulated in the National Education Policy (NEP), find expression within the classroom. Recognizing the pivotal nature of this role, the NEP underscores the indispensable importance of cultivating a corps of highly skilled, motivated, and adaptable teachers capable of responding to the evolving needs of students and society at large. The NEP's acknowledgment of the crucial role teachers play reflects a deep understanding that no educational reform or policy can achieve its intended impact without the active involvement and commitment of those who engage with students daily. Teachers,

therefore, are not mere implementers but rather the interpreters and enablers of the NEP's transformative vision. The NEP's emphasis on teacher quality aligns with the contemporary demands of education. In an era marked by rapid technological advancements, changing societal dynamics, and a growing focus on skill-based learning, teachers must possess a diverse set of competencies. They need not only to impart knowledge but also to foster critical thinking, creativity, problem-solving, and adaptability among their students.

To bridge the gap between policy and practice, investing in teacher training and continuous professional development (CPD) emerges as an imperative step. This investment ensures that teachers are well-equipped with the requisite pedagogical skills, subject knowledge, and innovative teaching methodologies. Furthermore, CPD programs empower educators to stay attuned to emerging trends, effectively utilize technology, and adapt their teaching approaches to cater to the diverse learning styles and needs of their students. In essence, the NEP recognizes that the effectiveness of any educational reform hinges on the caliber of its educators. To bring about the holistic transformation envisioned by the policy, it is crucial to foster an environment in which teachers are not only encouraged but also supported in their pursuit of ongoing professional growth. This includes opportunities for further education, workshops, mentoring, and engagement in research and innovation. Thus, teachers are indeed the heart of any educational system, and the NEP's recognition of this fact is a testament to its commitment to quality education. To successfully realize the NEP's objectives of nurturing well-rounded, adaptable, and empowered individuals, the nation must invest in teacher training and continuous professional development. Only through such investments can we ensure that teachers are not just transmitters of knowledge but also the catalysts for a brighter educational future in India.

Teacher Training: A Foundation for Quality Education

Teacher training serves as the bedrock upon which educators are equipped to meet the multifaceted demands of modern education. Within the ambit of the National Education Policy (NEP), there exists a visionary blueprint for teacher preparation that extends beyond the conventional to encompass a holistic, four-year integrated teacher education program. This program is designed not only to impart pedagogical knowledge but also to inculcate a profound understanding of child psychology, curriculum development, and classroom management. In this manner, prospective teachers emerge from their training as not just conveyors of content but as facilitators of holistic development. At the heart of this teacher training paradigm within the NEP is the concept of multidisciplinary education. It recognizes that in today's interconnected world, learning is not confined to discrete subjects but rather flourishes at the intersection of diverse disciplines. Teachers are thus encouraged to

adopt a versatile and integrated approach, fostering connections between subjects and engendering critical thinking among their students. This holistic perspective on education not only equips learners with a more comprehensive understanding of the world but also ignites a lasting passion for learning.

Moreover, the NEP-driven teacher training program is acutely attuned to the evolving educational landscape, leveraging modern teaching methods, technology integration, and experiential learning. This pedagogical trifecta ensures that educators are well-prepared to harness the tools of the 21st century. By embracing innovative teaching strategies, they create dynamic, engaging classrooms that align seamlessly with the NEP's overarching goal of promoting 21st-century skills. Incorporating technology into education is a key component of the NEP, and teacher training plays a pivotal role in this regard. By familiarizing educators with cutting-edge technological tools and teaching methodologies, the NEP empowers them to harness the power of digital resources for enhanced learning experiences. This not only facilitates broader access to education but also equips students with the digital literacy skills essential for success in the modern world. Thus, teacher training under the NEP represents a paradigm shift in the preparation of educators. It extends beyond the conventional pedagogical approach to embrace a multidisciplinary, technologically integrated, and experiential model. Through this comprehensive training, teachers are positioned not just as content deliverers but as architects of a more holistic and dynamic educational experience. In doing so, they become the torchbearers of the NEP's vision, empowering students with the skills and knowledge required to thrive in the complex, interconnected landscape of the 21st century.

Professional Development: A Lifelong Journey

Teacher training is not a finite destination marked solely by certification; rather, it signifies the commencement of an enduring odyssey of professional development. In its wisdom, the National Education Policy (NEP) underscores the imperative of lifelong learning for educators and advances mechanisms to facilitate their regular skills and knowledge augmentation. The NEP recognizes that education is an ever-evolving field, and educators must be at the forefront of these developments to deliver the best possible education to their students. To this end, the policy introduces a multifaceted approach to continuous professional development (CPD) for teachers. This approach is not confined to traditional in-service training but also encompasses a rich tapestry of opportunities, including workshops, online courses, and avenues for involvement in research and innovation. One of the central tenets of CPD within the NEP is the promotion of a growth mindset among educators. It encourages teachers to view themselves as perpetual learners, eager to embrace new pedagogical approaches,

technologies, and teaching strategies. This proactive stance empowers teachers to stay current with the latest trends in education and to adapt their methods accordingly.

Moreover, CPD in the context of the NEP emphasizes the significance of innovative teaching methods. It encourages educators to explore creative approaches that resonate with the diverse learning styles of their students. By doing so, teachers can ensure that their classrooms remain dynamic and engaging, fostering a culture of curiosity and a love for learning. Additionally, CPD serves as a means for educators to address the diverse needs of their students. The NEP acknowledges that classrooms are populated by learners with varying abilities, backgrounds, and learning preferences. Through ongoing professional development, teachers can acquire the tools and strategies necessary to differentiate their instruction effectively, ensuring that every student has the opportunity to succeed. In sum, the National Education Policy's emphasis on continuous professional development for teachers underscores the recognition that the journey of learning extends indefinitely. Through the avenues of CPD, educators remain well-informed, adaptable, and innovative, aligning their teaching practices with the evolving educational landscape. In embracing this ethos of lifelong learning, teachers not only enhance their own professional growth but also elevate the quality of education they provide, thereby nurturing a generation of empowered and informed learners.

Impact on Student Learning

Allocating resources towards teacher training and continuous professional development is an investment that yields profound and tangible dividends in the realm of student learning outcomes. A well-prepared, motivated educator possesses the transformative capacity to ignite the flames of curiosity, cultivate a vibrant and engaging learning environment, and customize instruction to address the unique needs of each student. Within the framework of the National Education Policy (NEP), this investment takes on an even more pronounced significance, leading to the cultivation of students endowed with the critical attributes necessary for navigating the complexities of the 21st century. First and foremost, a teacher who has undergone comprehensive training and continues to evolve through professional development possesses the power to inspire. Their passion for their subject matter, as well as their dedication to nurturing young minds, serves as a powerful motivator for students. Such educators can ignite the spark of curiosity within their students, instilling a love for learning that transcends the confines of the classroom.

Moreover, a well-trained teacher excels at creating an immersive and stimulating learning environment. They leverage a repertoire of pedagogical strategies, classroom management techniques, and innovative teaching methods to ensure that students are actively engaged in the learning process. Such an environment fosters not only

academic growth but also the development of essential life skills such as communication, teamwork, and problem-solving. Perhaps most significantly, teacher training and professional development align directly with the NEP's objectives of cultivating critical thinkers, adept problem solvers, and lifelong learners. A teacher equipped with the tools and knowledge to foster these attributes can shape students who are not merely repositories of facts but active participants in their own education. These students learn to question, analyze, and synthesize information, skills that are indispensable for success in an ever-evolving, knowledge-driven world. Thus, investing in teacher training and ongoing professional development constitutes a pivotal strategy for enhancing student learning outcomes. It empowers educators to inspire, create, and customize instruction, ultimately molding students into critical thinkers, problem solvers, and lifelong learners. In the context of the NEP, this investment serves as a linchpin for the development of students who are well-prepared to navigate the complexities and seize the opportunities of the 21st century, positioning them as capable and informed global citizens.

Conclusion

In summary, teacher training and professional development emerge as linchpins in the triumphant execution of the National Education Policy (NEP). The NEP stands as a visionary blueprint, aspiring to orchestrate a profound transformation within India's educational landscape, while simultaneously equipping students to confront the multifaceted challenges and seize the abundant opportunities of the future. However, the realization of this ambitious vision hinges critically upon a harmonious collaboration among policymakers, educational institutions, and teachers themselves in prioritizing and robustly supporting teacher training and continuous professional development. At its core, the NEP recognizes that teachers serve as the fulcrum of the educational system, wielding the profound ability to translate the policy's lofty ideals into practical classroom experiences. They are not just conduits for information but rather the architects of intellectual growth, instilling in their students the skills, knowledge, and attitudes required to navigate an ever-evolving world.

The NEP, therefore, underscores the pressing need to equip educators with the requisite knowledge and skills that will empower them to be effective agents of change. It champions a comprehensive approach to teacher training, encompassing multidisciplinary education, modern teaching methods, technology integration, and experiential learning. Through these means, teachers are poised not only to transmit knowledge but also to foster critical thinking, creativity, and innovation among their students. Crucially, the role of teacher training extends beyond the initial certification. It heralds the commencement of an ongoing journey of professional development. The NEP prescribes mechanisms for educators to continuously upgrade their

competencies, including in-service training, workshops, online courses, and opportunities for research and innovation. These avenues enable teachers to remain abreast of the latest educational trends, incorporate innovative pedagogical approaches, and cater to the diverse needs of their students. To actualize this vision and achieve the NEP's transformative objectives, it is imperative that all stakeholders rally together. Policymakers must ensure that teacher training and professional development are at the forefront of their agendas, allocating resources and crafting policies that promote and facilitate educators' growth. Educational institutions must offer dynamic and responsive training programs that align with the evolving demands of education. Furthermore, teachers themselves must embrace a culture of continuous learning, committing themselves to their own development for the betterment of their students. In conclusion, teacher training and professional development are not mere adjuncts but rather the very backbone of the NEP's mission to reshape India's education system. Through a collective commitment to these critical facets, India's educational landscape can indeed evolve and thrive in the 21st century, equipping its citizens with the knowledge, skills, and resilience required to flourish in a rapidly changing world.

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GOVERNANCE AND IMPLEMENTATION CHALLENGES IN NATIONAL EDUCATION POLICY

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Abstract

National Education Policies (NEPs) are instrumental in shaping the educational landscape of a nation, aiming to provide quality and equitable education to its citizens. However, the effective governance and implementation of these policies often encounter formidable challenges. This abstract provides a succinct overview of the key governance and implementation challenges inherent in NEPs. Governance challenges encompass issues such as policy consistency amidst political transitions, bureaucratic complexities in managing multiple stakeholders and agencies, resource allocation and funding dilemmas, and the recruitment and training of qualified educators. Furthermore, challenges in infrastructure development and upkeep present substantial roadblocks.

Implementation challenges center around resistance to change from various stakeholders, including teachers, administrators, and parents. Capacity constraints in data collection, monitoring, and evidence-based decision-making hinder progress. Addressing issues of equity and inclusivity, curricular reforms, and the establishment of effective assessment and accountability mechanisms also pose significant hurdles. Understanding and addressing these challenges are critical for governments seeking to achieve the objectives outlined in their NEPs, fostering equitable and high-quality education systems. This abstract serves as a foundational exploration of these challenges, highlighting the need for comprehensive strategies to overcome them and drive effective policy implementation in the education sector.

Keywords: *Education Policy, Governance Challenges, Implementation Issues, National Education System, Educational Governance*

Introduction

Education serves as a cornerstone for the progress and prosperity of any nation. Acknowledging this pivotal role, governments worldwide take on the responsibility of crafting comprehensive national education policies. These policies are designed not only to facilitate effective education systems but also to ensure equity and responsiveness to evolving societal needs. However, the task of implementing these well-intentioned policies often encounters substantial governance and implementation challenges. These challenges, if not effectively addressed, can impede the attainment of policy objectives and hinder the desired enhancements in the education sector. National education policies represent a nation's commitment to fostering an educated citizenry capable of contributing to economic growth, social cohesion, and innovation.

These policies are meticulously crafted to address a spectrum of educational needs, from early childhood education to higher learning. They outline strategies to improve teaching methodologies, enhance educational infrastructure, and broaden access to quality education for all, regardless of socioeconomic backgrounds. Yet, the realization of these noble objectives is far from straightforward. The governance challenges that arise in the context of national education policies are multifaceted. One significant issue revolves around policy consistency. The continuity of educational reforms is often disrupted by changes in political leadership, resulting in shifts in priorities and policy directions. The fluctuating political landscape can undermine the long-term planning and investments necessary for sustainable educational progress.

Bureaucratic complexities further complicate the execution of education policies. Educational reforms necessitate the involvement of multiple government departments and agencies, each with its own set of procedures, regulations, and stakeholders. Negotiating this intricate web of bureaucracy can lead to delays in decision-making processes and hinder the effective implementation of policies. Adequate funding is paramount for the successful execution of national education policies. However, the allocation and management of financial resources can prove to be daunting tasks. Competing demands for limited resources among various sectors, coupled with issues such as corruption and misallocation of funds, pose significant obstacles to policy realization. Another governance challenge revolves around the recruitment and training of competent educators. High-quality education is contingent on the quality of teachers. However, recruiting, training, and retaining skilled and motivated educators can be a formidable task. Additionally, teacher unions and labor disputes can further complicate the landscape of policy implementation. Infrastructure development is often an integral component of education policies, encompassing projects such as building schools, equipping them with libraries and technology, and ensuring safe and conducive learning environments. However, these infrastructure development projects can encounter delays, cost overruns, and issues related to quality, all of which hinder the attainment of policy goals.

The implementation of national education policies is no less challenging. Resistance to change is a common hurdle. Implementing new policies may face opposition from various stakeholders, including teachers, administrators, and parents, who may be hesitant to accept changes that disrupt established routines or challenge their interests. Capacity constraints present a significant impediment to effective policy implementation. Many countries lack the requisite capacity for data collection, analysis, monitoring, and evidence-based decision-making. Building this capacity is essential for tracking progress and making informed adjustments to policies. Ensuring equity and inclusivity within education systems is another formidable challenge.

Despite the policy objectives of providing quality education to all, disparities in access and outcomes persist among different demographic groups. Addressing these disparities requires targeted efforts and resources. Curriculum reforms, a common feature of education policies, entail changing teaching methods and content. However, implementing these changes is intricate and involves training teachers, updating teaching materials, and monitoring outcomes. The inherent complexities can slow down the process of policy realization.

Assessment and accountability mechanisms are crucial for gauging the effectiveness of policies. Yet, designing and implementing fair and reliable assessment tools and holding stakeholders accountable for results can be intricate undertakings that require careful planning and resources. Thus, national education policies are pivotal instruments for shaping the future of a nation through the enhancement of its education system. However, the governance and implementation challenges discussed here are substantial roadblocks that must be overcome to realize the full potential of these policies. Addressing these challenges demands a steadfast commitment to policy continuity, transparency, equitable resource allocation, stakeholder engagement, and evidence-based decision-making. Only through a comprehensive and strategic approach can governments hope to surmount these obstacles and drive positive change in their education sectors, thereby building a stronger and more equitable society.

Governance Challenges

1. Policy Consistency

The challenge of maintaining policy consistency over time is akin to navigating through the shifting tides of political leadership. Changes in government, which are a hallmark of democratic societies, can bring about shifts in educational priorities and policies. New administrations may arrive with their own visions and agendas for education, leading to a potential disruption of long-term plans and investments in the sector. This inconsistency can be detrimental, as it creates uncertainty within the education system, making it challenging to implement policies effectively. Achieving policy continuity despite political transitions necessitates a delicate balance between adapting to evolving needs and preserving the fundamental goals of education policy, often requiring cross-party consensus and a focus on long-term educational goals.

2. Bureaucratic Complexity

The implementation of education policies is often a labyrinthine journey involving numerous government departments, agencies, and stakeholders, each with its unique set of procedures, regulations, and interests. This bureaucratic complexity can introduce significant delays and bottlenecks in decision-making processes.

The need for coordination among these entities and the negotiation of interdepartmental disputes can slow down the translation of policy objectives into actionable initiatives. To overcome this challenge, governments may need to streamline bureaucratic procedures, establish clear lines of communication, and create cross-agency task forces to facilitate efficient policy implementation. Simplifying administrative processes can go a long way in expediting progress.

3. Funding and Resource Allocation

Adequate funding forms the lifeblood of effective education policy implementation. However, ensuring the equitable allocation and efficient management of resources presents its own set of formidable challenges. Competing demands for limited financial resources among various sectors of government can create tension and foster competition, making it difficult to secure the necessary funds for educational initiatives. Moreover, issues such as corruption, misallocation of funds, and lack of transparency can undermine the effectiveness of resource allocation efforts, diverting critical financial support away from education. Solving these challenges requires rigorous budgeting practices, transparent financial management systems, and mechanisms to ensure that resources are directed to areas where they can have the most significant impact, without falling victim to corruption or inefficiency.

4. Teacher Recruitment and Training

The cornerstone of high-quality education lies in the caliber of its educators. However, recruiting, training, and retaining competent teachers can be a formidable challenge. Identifying and attracting individuals with the necessary skills and dedication to the teaching profession can be a resource-intensive process. Moreover, ongoing teacher training and professional development are essential to keep educators up to date with evolving pedagogical methods and educational standards. In addition to these challenges, teacher unions and labor disputes can complicate policy implementation. Balancing the interests of teachers and educational objectives is a delicate task, often requiring negotiation and compromise. Solutions may involve investing in teacher training and professional development programs, improving working conditions, and fostering a cooperative environment between educational authorities and teacher unions.

5. Infrastructure Development

A vital component of education policies often involves the improvement of educational infrastructure, encompassing the construction and maintenance of school buildings, libraries, technology integration, and the creation of safe and conducive learning environments.

While these initiatives are crucial for providing quality education, they are not without their own set of challenges. Infrastructure development projects can encounter delays due to regulatory hurdles, land acquisition issues, or unforeseen construction challenges. Cost overruns can strain budgets, leading to financial shortfalls. Quality control is another concern, as inadequate infrastructure can undermine the educational experience. To address these challenges, governments must engage in meticulous planning, establish clear project timelines, and ensure rigorous quality control throughout the construction and maintenance processes. Moreover, strategic partnerships with the private sector and international organizations can help secure funding and expertise for infrastructure development initiatives, further facilitating policy goals in this regard.

Implementation Challenges

1. Resistance to Change

The resistance to change is a natural human response when implementing new education policies. Teachers, administrators, and parents often become attached to established routines and practices, which they may perceive as effective or familiar. The prospect of change can evoke fear, uncertainty, and skepticism about the potential benefits of new policies. Teachers may worry about increased workloads or disruptions to their teaching methods, administrators about resource allocation, and parents about the impact on their children's education. Overcoming this resistance necessitates effective communication and collaboration with stakeholders. Engaging them in the policymaking process, providing clear explanations of the rationale behind the changes, and offering professional development opportunities can help ease the transition. Additionally, demonstrating the positive outcomes of policy changes through pilot programs or small-scale implementations can build confidence in their effectiveness.

2. Capacity Constraints

Many countries, especially those with limited resources or developing education systems, struggle with capacity constraints when attempting to implement complex education policies effectively. Building the necessary capacity involves several dimensions. First, it entails the ability to collect and analyze data systematically to inform policymaking and monitor progress. This requires investment in data infrastructure, training of personnel, and the establishment of data-driven decision-making processes. Second, it involves the ability to adapt policies based on evidence and changing circumstances. Policymakers must possess the skills to interpret research findings and adjust policies accordingly.

Building capacity often requires long-term investments in education and training, collaboration with international partners, and a commitment to evidence-based policymaking.

3. Equity and Inclusivity

Achieving equity and inclusivity within education systems is a fundamental goal of education policies. However, this objective is fraught with challenges. Inequalities in access to quality education persist in many countries, often along lines of socioeconomic status, ethnicity, gender, or geographic location. Addressing these disparities necessitates targeted efforts and resources. This can involve the provision of additional resources to schools in underserved communities, the implementation of affirmative action policies, and efforts to eliminate discriminatory practices. Equity also requires a commitment to inclusivity, ensuring that marginalized groups, such as students with disabilities or those from minority backgrounds, have equal access to educational opportunities. Overcoming these challenges often involves a combination of legal reforms, awareness campaigns, and proactive measures to ensure that no one is left behind.

4. Curriculum Reforms

Changes in curriculum and pedagogical methods are common components of education policies aimed at improving the quality of education. However, implementing these changes can be intricate and resource-intensive. It often begins with the training of teachers to adopt new teaching approaches, which requires time and financial investment. Additionally, updating teaching materials, textbooks, and resources to align with the new curriculum can be a complex process. Monitoring and assessing the outcomes of curriculum reforms to ensure they achieve their intended objectives is equally important. Successful implementation requires a well-structured plan that includes teacher training, curriculum development, assessment design, and ongoing evaluation to fine-tune the curriculum based on feedback and results.

5. Assessment and Accountability

Effective education policies hinge on robust assessment and accountability mechanisms. These mechanisms are essential for tracking progress, measuring the impact of policies, and ensuring that educational goals are met. Developing fair and reliable assessment tools is a complex undertaking, involving the design of standardized tests or performance assessments that accurately reflect student learning. Additionally, accountability mechanisms should extend to various stakeholders, including teachers, schools, and education authorities. Holding stakeholders accountable for results can be a politically sensitive issue, as it may involve performance evaluations, resource allocation decisions, or even the potential for sanctions. Balancing the need for accountability with fairness and transparency is a constant challenge in policy implementation.

This necessitates the establishment of clear guidelines, transparent reporting systems, and mechanisms for providing support and resources to underperforming schools or individuals to facilitate improvement rather than punitive measures.

Conclusion

National education policies serve as a linchpin for a nation's development and progress by shaping the educational landscape, which, in turn, profoundly impacts various facets of society. These policies are carefully designed to not only enhance the quality of education but also ensure its accessibility to all citizens, fostering an informed and empowered populace. However, despite the noble intentions that underlie these policies, their successful execution often encounters significant governance and implementation challenges. Addressing these hurdles is essential to unlock the transformative potential of education and pave the way for a more equitable and prosperous society. First and foremost, it is crucial to recognize the pivotal role that national education policies play in determining a nation's future trajectory. These policies set the standards for educational excellence, shaping the minds of the next generation and preparing them to contribute to the nation's socio-economic development. Quality education equips individuals with the skills, knowledge, and critical thinking abilities necessary to address complex challenges, foster innovation, and drive progress in various sectors. Additionally, education policies aim to ensure that this quality education is accessible to all citizens, irrespective of their backgrounds or circumstances. They seek to eliminate disparities in access and outcomes, breaking down barriers that impede certain groups, such as marginalized communities or individuals with disabilities, from enjoying the benefits of education. The ultimate goal is to create a more inclusive and just society where every citizen has an equal opportunity to realize their potential.

However, the realization of these lofty aspirations is far from straightforward. Governance and implementation challenges often pose formidable roadblocks. These challenges can manifest in various ways, such as policy inconsistency caused by shifts in political leadership. Changes in government can lead to alterations in educational priorities and policies, disrupting long-term plans and investments. To overcome this hurdle, a steadfast commitment to policy continuity is essential, transcending political transitions and focusing on the enduring goals of education. Bureaucratic complexities represent another challenge. Education policies typically involve multiple government departments and agencies, each with its unique procedures, regulations, and stakeholders. This labyrinthine bureaucracy can impede decision-making processes and hinder the smooth implementation of policies. Transparency and streamlined administrative procedures are vital to mitigate these complexities. Furthermore, the

availability of adequate funding is paramount for the effective execution of education policies. Ensuring equitable allocation and efficient management of resources can be arduous, given the competition for limited funds among various sectors. Corruption and misallocation of funds further exacerbate the issue. Adequate funding is essential not only for infrastructure development but also for teacher training, curriculum reforms, and assessment mechanisms.

Teacher recruitment and training are cornerstones of educational excellence, yet they present their own set of challenges. Attracting and retaining competent educators can be challenging, and teacher unions and labor disputes can complicate matters. To address these challenges, investments in professional development, improved working conditions, and collaboration with teacher unions are essential. Moreover, infrastructure development projects, a common component of education policies, can encounter delays, cost overruns, and quality issues. Ensuring efficient infrastructure development requires meticulous planning, transparent project management, and rigorous quality control measures. To surmount these governance and implementation challenges, several key principles must guide education policy efforts. Continuity, where education remains a priority across political cycles, is vital. Transparency in decision-making processes and resource allocation fosters trust and accountability. Adequate funding must be secured and efficiently managed. Stakeholder engagement, including teachers, parents, and communities, should be actively pursued to build a consensus around policy objectives. Finally, evidence-based decision-making, with a focus on data-driven policy adjustments, ensures that policies remain responsive to changing needs. By effectively addressing these challenges and adhering to these principles, governments can make substantial progress toward achieving their education-related goals. Ultimately, they can contribute to building a stronger, more equitable society where every citizen has the opportunity to thrive and contribute to the nation's growth and prosperity. Education, as a fundamental pillar, is not only an investment in the future but also a catalyst for positive change in the present.

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INCLUSIVE EDUCATION PRACTICES WITHIN THE FRAMEWORK OF NATIONAL EDUCATION POLICY

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Abstract

The concept of inclusive education has gained prominence worldwide as a means to provide equitable and quality education to all students, regardless of their backgrounds, abilities, or characteristics. Within the framework of national education policies, inclusive education practices have emerged as a transformative approach that aligns with principles of equity, diversity, and social justice. This abstract provides a succinct overview of the significance of inclusive education practices within the context of national education policies, highlighting their benefits, challenges, and potential impacts. Inclusive education practices encompass a range of strategies such as accessible infrastructure, curriculum differentiation, teacher professional development, collaboration, and fostering inclusive classroom cultures. These practices hold immense significance as they promote equity and access, offer academic and social benefits, align with legal and ethical imperatives, and prepare students for life in diverse societies. However, they also come with challenges, including resource allocation, resistance to change, assessment complexities, and the need to address diverse needs within inclusive classrooms. The impacts of inclusive education practices are far-reaching, encompassing improved educational outcomes, social cohesion, reduced stigma, and legal compliance. In conclusion, embracing inclusive education practices is not just a policy choice; it is a moral and ethical imperative that empowers all students to reach their full potential and contribute meaningfully to their communities and the world.

Keywords: *Inclusive Education, National Education Policy, Equity in Education, Diverse Learning Needs, Educational Inclusion*

Introduction

Inclusive education is a paradigm-shifting approach to the provision of education that fundamentally acknowledges and accommodates the diverse range of needs exhibited by students, irrespective of their socio-cultural backgrounds, abilities, or distinctive characteristics. It champions the principles of equitable access to quality education and the dismantling of barriers that have historically obstructed learning and full participation in educational processes. Within the sphere of national education policies, inclusive education practices have emerged as a focal point, resonating with the core values of equity, diversity, and social justice. This essay delves into the profound significance of inclusive education practices within the overarching framework of national education policies, shedding light on their multifaceted benefits, challenges, and the profound impacts they hold.

Inclusive Education and National Education Policies

Inclusive education practices involve creating learning environments that accommodate the diverse needs of students. These practices encompass a range of strategies and approaches, including:

- **Accessible Infrastructure**

Ensuring that educational facilities are physically accessible to students with disabilities represents a foundational aspect of inclusive education practices. Inclusive education strives to create learning environments where all students, regardless of their physical abilities, can fully participate in educational activities. To achieve this goal, educational facilities must incorporate a range of accessibility features, including ramps, elevators, and adapted classrooms, to eliminate physical barriers and provide equitable access for all.

- **Curriculum Differentiation**

Adapting curriculum materials, teaching methods, and assessment strategies to accommodate diverse learning styles and abilities is a cornerstone of inclusive education. Inclusive education recognizes that students come to the classroom with unique strengths, weaknesses, and preferences for how they learn best. Therefore, to ensure equitable access to quality education for all, it is imperative to tailor the educational experience to meet the individualized needs of every learner.

- **Teacher Professional Development**

Providing teachers with comprehensive training and ongoing support to effectively teach diverse student populations, including those with special needs, is an essential component of inclusive education practices. Inclusive education acknowledges that teachers play a central role in creating a learning environment where every student can thrive, regardless of their individual abilities, backgrounds, or learning styles. Here's an in-depth exploration of the importance and elements of teacher training and support in inclusive education:

- **Collaboration and Support Services**

Facilitating collaboration between educators, specialists, and support staff to address the individualized needs of students, including those with disabilities, language barriers, or learning difficulties, is a cornerstone of inclusive education practices. Collaboration among various stakeholders within the educational ecosystem is instrumental in creating an environment where every student can thrive and reach their full potential. Here's an in-depth exploration of the importance and elements of collaboration in inclusive education:

- **Inclusive Classroom Practices**

Fostering a classroom culture that promotes acceptance, tolerance, and mutual respect among students, regardless of their differences, is a fundamental aspect of inclusive education practices. Inclusive classrooms aim to create an environment

where diversity is not only acknowledged but celebrated, where students understand and appreciate each other's unique backgrounds, abilities, and perspectives.

Significance of Inclusive Education Practices

Equity and Access: Ensuring Equal Opportunities for All

Inclusive education practices are deeply rooted in the principle of equity, championing the idea that every student, regardless of their background, abilities, or individual characteristics, should have equal access to a high-quality education. This commitment to equity is pivotal in addressing historical educational disparities and advancing social justice within the education system. It acknowledges that barriers to education, whether they stem from physical, cultural, or socio-economic factors, must be systematically dismantled to ensure that all learners have the same starting point on their educational journey. Inclusive education, therefore, strives to level the playing field, providing every student with equitable opportunities to succeed academically and socially.

Academic and Social Benefits: A Synergy of Learning and Growth

Inclusive classrooms are not just spaces where students with diverse backgrounds and abilities coexist; they are vibrant ecosystems of mutual learning and growth. The academic advantages of inclusivity are profound. When students from different backgrounds collaborate and engage in the learning process together, they have the opportunity to learn from each other's perspectives, experiences, and approaches to problem-solving. This cross-pollination of ideas and insights enriches the educational experience for all students, fostering a deeper understanding of subject matter and enhancing critical thinking skills.

The social benefits of inclusivity are equally transformative. In inclusive environments, students interact with peers who may have different abilities, cultural backgrounds, languages, or experiences. These interactions promote empathy, understanding, and a sense of belonging. Students learn to appreciate diversity as a valuable asset, leading to more inclusive attitudes in their future endeavors and contributing to the creation of a harmonious and socially just society.

Legal and Ethical Imperatives: A Rights-Based Approach

Inclusive education practices are not just a pedagogical choice; they are deeply rooted in legal and ethical imperatives. National education policies and international conventions, including the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), recognize inclusive education as a fundamental right. This rights-based approach asserts that every individual has the inherent right to education

without discrimination of any kind, and it underscores the obligation of states and educational institutions to ensure that this right is upheld.

By mandating inclusive education as a legal and ethical imperative, nations and international bodies underscore their commitment to providing an inclusive, equitable, and accessible education to all, regardless of individual characteristics or abilities. In doing so, they not only comply with legal obligations but also send a powerful message about the inherent worth and dignity of every person, regardless of their background or abilities.

Preparation for the Real World: Fostering Tolerance and Cooperation

Inclusive education practices extend beyond the classroom, preparing students for life in a diverse and inclusive society. They instill values of tolerance, cooperation, and empathy from an early age, which are essential attributes for thriving in an increasingly interconnected and multicultural world. In the real world, individuals will encounter diverse perspectives, collaborate with people from various backgrounds, and navigate complex social landscapes. Inclusive education equips students with the skills and attitudes needed to thrive in such environments, fostering a sense of social responsibility and a commitment to building inclusive communities and workplaces.

Moreover, inclusive education serves as a powerful tool for breaking down societal barriers and stereotypes. When students grow up in environments that celebrate diversity and inclusion, they are more likely to challenge prejudice, discrimination, and exclusion in all aspects of their lives, contributing to the construction of a more equitable and just society. Thus, inclusive education practices, driven by principles of equity, offer a myriad of academic, social, legal, and ethical benefits. They prepare students not only for academic success but also for meaningful engagement in a diverse and inclusive world. By championing the rights of all learners and promoting a culture of empathy and acceptance, inclusive education practices play a pivotal role in advancing social justice and shaping a brighter future for individuals and societies alike.

Challenges of Inclusive Education

Resource Allocation: Balancing Investment and Impact

The successful implementation of inclusive education practices often requires a strategic allocation of resources, encompassing various facets of the educational ecosystem. These resources may include investments in teacher training programs, specialized support staff, and the creation of accessible infrastructure. While these allocations are essential for fostering inclusive environments, they can pose significant financial challenges for education budgets. Adequate teacher training programs, for

example, are fundamental for equipping educators with the necessary skills to effectively cater to diverse learning needs. Additionally, support staff, such as special education professionals, speech therapists, and counselors, play a crucial role in providing individualized support to students with unique requirements. Moreover, ensuring accessible infrastructure, including ramps, elevators, and adapted classrooms, is indispensable for accommodating physical disabilities.

The challenge lies in striking a balance between allocating resources to meet these inclusive education needs and managing budget constraints. Schools and educational authorities must carefully consider the long-term benefits of inclusive practices, recognizing that investments in inclusive education can yield positive academic and social outcomes that extend far beyond the classroom.

Resistance to Change: Navigating Educational Paradigms

Resistance to the adoption of inclusive education practices can manifest in various forms, often rooted in traditional beliefs or apprehensions about accommodating diverse learners. Educators, communities, or institutions may express concerns about the perceived complexities of integrating students with diverse needs into regular classrooms. Some may fear that this integration could disrupt established teaching methods or require a significant shift in pedagogical approaches. Addressing resistance to change is a critical aspect of implementing inclusive education. This resistance can be mitigated through targeted professional development programs that provide educators with the knowledge and tools to effectively teach diverse student populations. Additionally, fostering open and inclusive dialogues within communities and educational institutions can dispel misconceptions and alleviate concerns. It is essential to communicate the value of inclusive education not only in terms of academic benefits but also in terms of promoting social cohesion and preparing students for a diverse and interconnected world.

Assessment and Evaluation: Beyond Traditional Metrics

Inclusive education practices challenge the adequacy of traditional assessment methods in capturing the progress of all students in diverse learning environments. Standardized tests and rigid evaluation criteria may not accurately reflect the multifaceted growth and development of students in inclusive settings. This challenge necessitates the adoption of more flexible and inclusive evaluation approaches. Formative assessments, for example, provide ongoing feedback that can guide instructional decisions and accommodate individual learning needs. Performance-based assessments, portfolios, and peer assessments offer alternative ways to gauge student progress and achievement in inclusive classrooms.

It is crucial to adapt evaluation practices to align with the principles of inclusive education, focusing on a holistic understanding of student growth that extends beyond academic metrics to encompass social and emotional development.

Diversity within Diversity: Meeting Individualized Needs

Inclusive classrooms embrace the diversity within diversity. Students in these settings may have a wide range of unique needs, spanning from physical disabilities and learning difficulties to cultural and linguistic differences. Meeting the specific requirements of each individual can be challenging, as there is no one-size-fits-all approach to inclusive education. To address this complexity, educators must employ a highly personalized and individualized approach. This involves not only recognizing the diverse learning needs of each student but also collaborating with specialists, support staff, and parents to develop tailored strategies and interventions. It requires a commitment to differentiation in teaching, ensuring that instructional methods and materials are adapted to meet the varying needs and abilities of students. Moreover, fostering a culture of inclusion and acceptance within the classroom can create an environment where students feel valued and supported, regardless of their individual differences. This, in turn, contributes to a positive and inclusive classroom culture where every student has the opportunity to thrive.

In summary, the challenges associated with implementing inclusive education practices are multifaceted and require a thoughtful and proactive approach. While resource allocation, resistance to change, assessment complexities, and accommodating diverse needs present significant hurdles, they are not insurmountable. With strategic planning, professional development, and a commitment to fostering inclusive environments, educational institutions can overcome these challenges and create equitable and inclusive educational experiences for all students.

Impacts of Inclusive Education Practices

Improved Educational Outcomes: Nurturing Success for All

Inclusive education practices have consistently demonstrated their capacity to enhance academic achievement across diverse student populations. These practices fundamentally challenge the notion that students with disabilities or unique learning needs should be educated separately. Instead, they promote the idea that when students of varying abilities learn together, they can mutually benefit from the experience. Research indicates that inclusive classrooms often yield improved academic outcomes for all students. For students with disabilities, the benefits are evident as they have the opportunity to engage with their peers in meaningful ways and access a curriculum tailored to their needs. For typically developing students, the

presence of peers with diverse abilities fosters a collaborative learning environment that encourages problem-solving, critical thinking, and the development of interpersonal skills. This improved academic performance is not confined to specific subject areas; it extends to various aspects of the curriculum, including literacy, mathematics, and social studies. Moreover, inclusive education cultivates a love for learning, nurturing students' curiosity and motivation to excel academically.

Social Cohesion: Building Bridges of Understanding

Inclusive classrooms serve as fertile ground for the cultivation of social cohesion, a vital aspect of inclusive education. By bringing together students from diverse backgrounds, abilities, and experiences, these classrooms encourage the development of empathy, understanding, and acceptance among students. The benefits of social cohesion extend well beyond the school walls. Students who grow up in inclusive environments are more likely to become adults who appreciate diversity, respect differences, and embrace inclusivity as a societal value. This not only leads to more inclusive workplaces but also contributes to the building of harmonious communities and a more inclusive society at large. The interpersonal relationships formed in inclusive classrooms transcend mere tolerance; they foster genuine friendships based on mutual respect and shared experiences. These bonds have the potential to break down stereotypes, dispel misconceptions, and bridge cultural or social divides, creating a more compassionate and interconnected world.

Reduced Stigma: Empowering through Acceptance

Inclusive education plays a pivotal role in reducing the stigma traditionally associated with disabilities and differences. Stigmatization often stems from misconceptions and a lack of exposure to individuals with diverse needs. In inclusive classrooms, students have the opportunity to interact with peers who may have disabilities or unique characteristics, demystifying these differences and humanizing the individuals behind them. The transformative power of reduced stigma cannot be overstated. When students with disabilities are included in regular classrooms, they are no longer marginalized or singled out. Instead, they become integral members of the learning community, contributing their unique perspectives and talents. This shift in perception is instrumental in creating a more inclusive society that values diversity as a strength rather than viewing it through a lens of deficiency. Moreover, the reduction of stigma extends to other spheres of life, such as employment and social interactions, where individuals with disabilities are often confronted with prejudices and barriers. The acceptance and understanding nurtured in inclusive classrooms can pave the way for a more inclusive and equitable society that provides equal opportunities for all.

Legal Compliance: Upholding Rights and Obligations

Embracing inclusive education practices is not only a pedagogical choice but also a matter of legal compliance. International conventions and national laws, such as the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), affirm the rights of students with disabilities to receive education on an equal basis with their peers. By adhering to inclusive education practices, educational institutions and nations align themselves with these legal frameworks, thereby upholding the rights of all learners. This commitment extends beyond compliance; it reflects a dedication to the principles of equity, non-discrimination, and the fulfillment of human potential. Furthermore, the embrace of inclusive education positions nations and institutions as champions of human rights and social justice. It sends a powerful message that every individual, regardless of their abilities or backgrounds, is entitled to a quality education and the opportunity to participate fully in society. Thus, the impacts of inclusive education practices extend far beyond the classroom. They encompass improved educational outcomes, social cohesion, reduced stigma, and legal compliance, contributing to the creation of a more inclusive and equitable society. Embracing inclusive education is not only an educational imperative; it is a societal commitment to fostering a world where diversity is celebrated, differences are valued, and every individual has the opportunity to thrive.

Conclusion

Inclusive education practices within the framework of national education policies represent a pivotal shift toward more equitable, diverse, and socially just education systems. While challenges exist, the benefits are substantial, with inclusive education fostering academic success, social cohesion, and respect for diversity. As nations strive to create inclusive societies, embracing inclusive education practices is not just a policy choice; it is a moral and ethical imperative that empowers all students to reach their full potential and contribute meaningfully to their communities and the world.

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PARENT AND COMMUNITY ENGAGEMENT IN SHAPING NATIONAL EDUCATION POLICY

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Abstract:

This abstract provides a concise overview of the essay on the importance and benefits of parent and community engagement in influencing national education policy. National education policies are pivotal in shaping a country's educational landscape, and they should reflect the collective aspirations and needs of the entire society. Engaging parents and communities in the policymaking process is essential as it ensures representation, local contextualization, transparency, and accountability. Furthermore, it leads to improved policy quality, increased implementation success, enhanced parental involvement, community cohesion, and effective conflict resolution. Recognizing the integral role of parents and communities in shaping education policies is crucial for creating more inclusive, effective, and accountable education systems.

Keywords: *Parent Involvement, Community Engagement, National Education Policy, Policy Influences, Education Stakeholders*

Introduction

National education policies serve as the cornerstone upon which the entire educational edifice of a nation is built. They wield a profound influence not only on the quality and direction of education but also on the overall progress and development of a country. These policies, far from being the exclusive domain of government officials and education experts, should be a reflection of the collective dreams, hopes, and aspirations of society at large. In essence, they must be a manifestation of the nation's shared vision for its future. To realize this vision effectively and ensure that national education policies are both impactful and inclusive, active involvement of parents and communities in the policymaking process is nothing short of imperative.

The Importance of Parent and Community Engagement

1. Representation and Inclusivity

Parents and community members are not passive observers but rather essential stakeholders deeply entwined with the educational fabric of a society. They offer a wealth of diverse perspectives, life experiences, and priorities that are invaluable in the development of education policies. The active engagement of these vital stakeholders in the policymaking process serves as a conduit for ensuring that a

comprehensive tapestry of voices is not just acknowledged but also woven into the very fabric of educational policies. This multifaceted approach not only bolsters the inclusivity of policies but also breathes life into their very essence by making them more representative of the diverse ne

1. Diverse Perspectives

Parents and community members, collectively representing a wide spectrum of backgrounds and experiences, bring a rich tapestry of viewpoints to the policymaking table. Their perspectives, rooted in the varied life experiences of individuals from all walks of life, introduce depth and dimension to the policymaking discourse. By actively engaging these stakeholders, policies have the potential to be far more nuanced and comprehensive, addressing a broader array of issues and concerns.

2. Varied Experiences

The life experiences of parents and community members span various professions, social strata, and cultural backgrounds. These experiences often shed light on the practical implications of education policies and their real-world impact on different segments of society. By incorporating these experiences into policymaking, a more practical and context-aware approach can be adopted.

3. Diverse Priorities

Every stakeholder group within the education system may have distinct priorities and concerns. Parents may be focused on the holistic development of their children, teachers on pedagogical methods, and communities on the broader societal implications of education. Engaging these groups ensures that the policies address a comprehensive range of priorities, ensuring a balanced approach.

4. Enhanced Representation

The engagement of parents and community members promotes a sense of ownership and inclusivity within the policymaking process. When individuals see that their voices are not just heard but actively sought after, it fosters a deeper sense of representation and involvement. This sense of ownership is essential for building trust and support for the resulting policies.

5. Local Insights

Communities often possess invaluable insights into local contexts, including the specific challenges and opportunities within their regions. These insights are crucial for tailoring education policies to meet the unique needs of different areas, ensuring that policies are contextually relevant and effective.

6. Transparency and Accountability

Involving parents and communities promotes transparency and accountability in the policymaking process. It ensures that decision-making is not shrouded in obscurity but is conducted in a public forum where stakeholders can monitor and

evaluate the choices made. This transparency fosters accountability, as policymakers are held responsible for their decisions.

7. Conflict Resolution

Education policies may sometimes give rise to disagreements and conflicts. Engaging parents and communities provides a structured platform for addressing and resolving such conflicts. It allows stakeholders to come together in constructive dialogue, fostering consensus and collaboration.

In sum, parents and community members are indispensable contributors to the educational policymaking process. Their diverse perspectives, experiences, and priorities serve as essential building blocks for policies that truly resonate with the multifaceted nature of society. Through their active participation, these stakeholders not only enrich the policymaking discourse but also fortify the very foundation of education policies, making them more representative, practical, and accountable. In doing so, they pave the way for a more inclusive and responsive education system that caters to the diverse needs and aspirations of the entire community.

2. Local Contextualization

The significance of parents and community members in the education policymaking process extends far beyond their status as stakeholders; they are repositories of invaluable local knowledge and insights that are paramount for crafting education policies that truly resonate with the unique contexts of different regions. This local insight, characterized by an intimate understanding of the specific challenges, resources, and opportunities within their communities, holds the potential to be the guiding star for education policies. Tailoring these policies to address the distinct needs of various regions not only fosters greater relevance but also amplifies their effectiveness, thereby creating a more responsive and equitable educational landscape.

1. Local Challenges

Different regions often face distinct educational challenges. These challenges may encompass issues such as access to quality education, teacher shortages, infrastructure gaps, or socioeconomic disparities. Parents and community members are acutely aware of these localized hurdles, as they witness their immediate impact on a daily basis. By engaging these stakeholders in policymaking, education policies can be strategically designed to address the specific challenges plaguing each region.

2. Regional Resources

Communities are often endowed with unique resources that can be harnessed to enhance the educational experience. These resources may include local expertise,

cultural assets, or vocational opportunities. Parents and community members are well-versed in identifying and leveraging these resources. Their input in policymaking facilitates the utilization of regional strengths, potentially opening up innovative avenues for educational enrichment.

3. Contextual Relevance

Education policies that are devised without consideration of the local context often risk being disconnected from the realities on the ground. This lack of relevance can hinder implementation and dilute the policy's effectiveness. Engaging parents and community members ensures that policies are contextualized, making them more attuned to the specific needs and dynamics of each region.

4. Community Involvement

Involving parents and communities in the policymaking process also promotes a sense of community involvement and ownership. When community members see their local insights being incorporated into policies, they are more likely to actively participate in the implementation process. This involvement bolsters the likelihood of policy success, as it garners grassroots support.

5. Equity and Inclusivity

Tailoring education policies to address the unique needs of different regions is an essential step towards achieving greater equity and inclusivity in education. By acknowledging and addressing the disparities that exist between regions, policymakers can work towards closing the educational achievement gap and ensuring that all students have equal access to quality education.

6. Resource Allocation

Efficient resource allocation is a critical aspect of education policymaking. Parents and community members can provide input on resource distribution, helping ensure that resources are allocated where they are needed most. This strategic allocation can optimize the impact of policies and maximize the benefits for students.

7. Cultural Sensitivity

Communities often have distinct cultural nuances and traditions that should be considered in education policies. Acknowledging and respecting these cultural aspects not only fosters inclusivity but also enhances the educational experience by making it more culturally sensitive and responsive.

Thus, the local insight and knowledge possessed by parents and community members are priceless assets in the realm of education policymaking. By actively involving these stakeholders, education policies can transcend the one-size-fits-all approach and be customized to address the specific needs, challenges, and opportunities present in different regions. This localized approach not only ensures greater policy relevance and effectiveness but also embodies a

commitment to fostering equitable and inclusive education systems that cater to the diverse needs of communities across the nation.

3. Accountability and Transparency

The active involvement of parents and communities in the educational policymaking process stands as a beacon of transparency and accountability within the realm of education. It not only facilitates openness in the development of education policies but also serves as a powerful mechanism for holding decision-makers accountable for their choices. This transparency and accountability are indispensable for upholding the integrity of the education system, ensuring that policies are not only well-informed but also aligned with the best interests of students, families, and society as a whole.

- **Transparent Decision-Making**

Inclusion of parents and communities in policymaking ensures that the process is conducted in an open, transparent manner. It allows stakeholders to witness the discussions, deliberations, and decision-making firsthand, dispelling any opacity that might otherwise shroud policymaking. Transparency in the process fosters public trust by demonstrating that decisions are made with utmost sincerity and integrity.

- **Public Scrutiny**

When parents and communities actively participate in the policymaking process, they become informed and engaged observers. This informed engagement enables them to scrutinize policies from various angles, assess their potential impact, and offer constructive feedback. This public scrutiny functions as a vital check and balance, helping to identify and rectify any potential flaws or biases in the policies.

- **Accountability Mechanism**

Engaging parents and communities establishes an accountability mechanism. When stakeholders have a seat at the table, decision-makers are held responsible for their choices. This accountability is not merely symbolic but extends to concrete actions and results. Decision-makers are answerable to the public, and this answerability compels them to make informed, equitable, and just decisions.

- **Enhanced Policy Quality**

The presence of vigilant stakeholders encourages policymakers to strive for the highest standards of quality and fairness. The knowledge that policies will undergo rigorous scrutiny motivates decision-makers to conduct thorough research, engage in comprehensive consultation, and refine policies to align with the best interests of all concerned parties. This quality enhancement leads to more effective, equitable policies.

- **Public Confidence**

Transparency and accountability are bedrocks upon which public confidence in the education system is built. When parents and communities perceive that their voices are not only heard but also heeded, it fosters trust in the system. This trust is pivotal for encouraging active participation and support for educational initiatives, ensuring their successful implementation.

- **Prevention of Unfair Practices**

Transparency and accountability are crucial safeguards against unfair practices or discriminatory policies. The active involvement of parents and communities provides a vigilant eye to identify and rectify any policies that may inadvertently marginalize certain groups or perpetuate inequality within the education system.

- **Policy Legitimacy**

Policies that are developed through inclusive, transparent processes enjoy a higher degree of legitimacy. They are more likely to be accepted and supported by the broader community because stakeholders can see that their concerns and perspectives have been taken into account. This legitimacy enhances the likelihood of successful policy implementation.

- **Continuous Improvement**

Accountability mechanisms ensure that education policies are not static but subject to ongoing evaluation and improvement. If a policy does not achieve its intended outcomes or has unintended negative consequences, stakeholders can advocate for necessary adjustments, fostering a culture of continuous improvement within the education system. In sum, involving parents and communities in educational policymaking serves as an invaluable mechanism for maintaining transparency and accountability. It empowers stakeholders to actively participate in shaping the direction of education policies, scrutinizing their content, and holding decision-makers responsible for their choices. This accountability mechanism is essential for preserving the integrity of the education system and ensuring that policies are equitable, responsive, and reflective of the collective interests and aspirations of the entire community.

4. Community Ownership

Active participation of parents and communities in the formulation of education policies not only empowers them as stakeholders but also fosters a profound sense of ownership and investment in the entire educational process. This ownership, when cultivated through inclusive policymaking, transcends passive engagement and often translates into enthusiastic support for schools, teachers, and students. The ripple effect of this heightened support reverberates throughout the education ecosystem, resulting in a more vibrant and effective educational landscape with far-reaching benefits for all.

- **Empowerment and Engagement**

Involving parents and communities in policymaking empowers them by giving them a voice and a stake in the educational system. This empowerment nurtures a sense of active engagement and participation, making individuals feel that they have a role to play in shaping the educational destinies of their children and communities.

- **Ownership and Commitment**

As stakeholders actively engage in the policymaking process, they develop a profound sense of ownership over the resulting policies. This ownership extends beyond rhetoric; it signifies a genuine commitment to the success and well-being of the educational system. When individuals perceive that their input is valued, they become deeply committed to seeing policies through to fruition.

- **Support for Schools**

Ownership of education policies often translates into enthusiastic support for schools. Parents and community members who have had a hand in shaping policies are more likely to rally behind schools, offering their time, resources, and expertise to bolster educational initiatives. This support can manifest in various ways, from volunteering in classrooms to fundraising for school programs.

- **Teacher Morale and Performance**

The active involvement of parents and communities can significantly impact teacher morale and performance. When educators witness the strong support of the community, they are motivated to excel in their roles. This elevated morale, in turn, can have a positive impact on the quality of instruction and the overall learning environment.

- **Student Success**

Policies that enjoy robust support from parents and communities often result in an environment conducive to student success. The combined efforts of engaged stakeholders create a more enriching educational experience, which can lead to improved student outcomes, higher graduation rates, and enhanced educational attainment.

- **Resource Mobilization**

Engaged communities are more adept at resource mobilization. Whether through community-driven fundraising initiatives, partnerships with local businesses, or grant applications, actively involved stakeholders are more likely to secure additional resources for schools. These resources can be used to enhance educational programs, facilities, and extracurricular activities.

- **Resilient Educational Ecosystem**

The sense of ownership cultivated through inclusive policymaking contributes to a resilient educational ecosystem.

When communities are invested in their schools and the success of their students, the education system becomes more adaptable and capable of weathering challenges, ensuring a sustained focus on educational excellence.

- **Civic Responsibility**

Involvement in education policymaking nurtures a sense of civic responsibility among parents and community members. This heightened sense of responsibility extends beyond education issues and can contribute to increased civic engagement and community development, fostering a more vibrant and cohesive society.

In conclusion, the sense of ownership and investment that parents and communities develop through active participation in education policymaking is a transformative force within the educational landscape. This sense of ownership generates unwavering support for schools, teachers, and students, ultimately creating a more vibrant and effective education ecosystem. It is a testament to the power of inclusive policymaking in not only shaping policies but also fostering a deep and enduring commitment to the betterment of education and society as a whole.

Benefits of Parent and Community Engagement

1. Improved Policy Quality

The active engagement of parents and communities in the process of shaping education policies serves as a catalyst for the development of well-rounded and informed policies. Rather than being conceived in isolation, these policies are enriched by the collective wisdom, insights, and practical experiences of those who are directly impacted by them. This collaborative approach leads to a plethora of benefits, ultimately yielding superior policy outcomes that are not only more effective but also more responsive to the evolving needs of the educational landscape.

- **Diverse Perspectives**

Parents and community members bring to the table a diverse array of perspectives, informed by their unique experiences and backgrounds. These perspectives serve as invaluable lenses through which policymakers can view the multifaceted dimensions of educational issues. The resulting policies are thus informed by a wide spectrum of viewpoints, making them more comprehensive and holistic.

- **Real-World Insights**

Education policies must not exist in a vacuum; they must resonate with the real-world experiences of those they affect. Parents and communities are well-versed in the practical implications of educational policies. Their insights are derived from firsthand experiences with schools, teachers, and students. As a result, policies shaped by their contributions are grounded in practicality and relevance.

- **Contextual Relevance**

The localized knowledge offered by parents and communities is instrumental in ensuring that policies are contextually relevant.

They are better equipped to identify and articulate the specific needs, challenges, and opportunities unique to their communities or regions. This tailoring of policies enhances their appropriateness and efficacy.

- **Informed Decision-Making**

Policymakers benefit greatly from the collective wisdom and insights of parents and communities when making decisions. They are provided with a more comprehensive understanding of the potential impacts and consequences of various policy choices. This informed decision-making leads to policies that are more likely to achieve their intended objectives.

- **Balanced Solutions**

The collaborative approach involving parents and communities promotes the development of balanced policy solutions. Policymakers are guided not only by empirical evidence but also by the practical wisdom of those who navigate the education system on a daily basis. This balance fosters policies that strike a harmonious equilibrium between theory and practice.

- **Foresight and Adaptability**

Education policies are not static but must evolve to meet the ever-changing needs of students and society. Engaging parents and communities ensures that policies are developed with an eye toward the future and the evolving demands of the educational landscape. This foresight allows for greater adaptability in policy implementation.

- **Effective Communication**

The active participation of parents and communities in policymaking fosters effective communication channels between education stakeholders. This communication ensures that information flows freely, allowing for timely feedback, course corrections, and continuous improvement in policy development and implementation.

- **Enhanced Public Support**

Policies that are developed collaboratively with the input of parents and communities tend to enjoy enhanced public support. When individuals see that their voices have been heard and respected, they are more likely to endorse and actively support the resulting policies. This support is vital for the successful implementation of policies.

- Thus, the engagement of parents and communities in shaping education policies elevates the policymaking process to new heights of inclusivity and effectiveness. It harnesses the collective wisdom, real-world insights, and localized knowledge of these stakeholders, resulting in policies that are well-rounded, informed, and responsive to the dynamic educational landscape.

Such policies, grounded in practicality and relevance, are poised to make a tangible difference in the lives of students and the broader community.

2. Increased Implementation Success

Education policies that secure the genuine support and endorsement of parents and communities possess a considerable advantage in terms of successful implementation. When these stakeholders not only understand but actively contribute to the policy's objectives, a virtuous cycle of engagement is set in motion. This dynamic cycle makes it significantly easier to marshal the requisite support, resources, and cooperation needed to translate policies into tangible, effective outcomes within the educational system.

- **Stakeholder Commitment**

The commitment and buy-in of parents and communities are pivotal for policy implementation. When these stakeholders genuinely support a policy, they become active champions of its success. Their commitment often extends beyond mere passive acceptance to enthusiastic advocacy, ensuring that the policy is embraced and enacted with dedication.

- **Resource Mobilization**

Policies that enjoy the backing of parents and communities have an advantage in resource mobilization. Engaged stakeholders are more adept at garnering the necessary resources, whether through community-driven fundraising, partnership initiatives, or grant applications. This heightened resource mobilization fortifies the policy's implementation by providing essential financial and material support.

- **Voluntary Participation**

Policies that resonate with parents and communities often lead to voluntary participation in various aspects of the educational process. Whether it involves volunteering in classrooms, assisting with extracurricular activities, or offering expertise and mentorship, actively involved stakeholders contribute to the policy's success by enhancing the educational experience.

- **Advocacy and Communication**

Engaged parents and communities are excellent advocates for policies, facilitating communication and cooperation between stakeholders. Their endorsement and active participation serve as a conduit for disseminating policy objectives and rallying support from various quarters, including educators, students, and the wider community.

- **Conflict Resolution**

In the event of challenges or conflicts arising during policy implementation, the support of parents and communities can be a valuable asset.

These stakeholders often play a mediating role, helping to resolve disputes and maintain a collaborative atmosphere conducive to successful implementation.

- **Feedback and Improvement**

Actively engaged stakeholders provide ongoing feedback on policy implementation. This feedback loop allows policymakers to make timely adjustments, address emerging issues, and fine-tune the policy's execution. The continuous improvement facilitated by engaged stakeholders enhances the policy's long-term effectiveness.

- **Institutional Memory**

When parents and communities are actively involved in policymaking and implementation, they contribute to the institutional memory of educational institutions. This historical perspective is invaluable for maintaining policy continuity, ensuring that the policies are not only implemented but also sustained over time.

- **Community Cohesion**

Policies supported by parents and communities contribute to greater community cohesion. These stakeholders become vested in the success of the educational system and the well-being of students. This sense of shared purpose fosters unity and strengthens the social fabric of the community.

- **Sustainability**

Policies with robust support from parents and communities are more likely to be sustainable in the long run. This sustainability ensures that the benefits of the policy continue to accrue over time, leading to lasting positive impacts on education outcomes.

- Thus, the active support and engagement of parents and communities are potent catalysts for the effective implementation of education policies. Their commitment, resource mobilization efforts, voluntary participation, advocacy, and feedback loop create a conducive environment that facilitates policy success. Policies that enjoy such support are better poised to make a substantial and enduring impact on the education system and the lives of students.

3. Enhanced Parental Involvement

The engagement of parents in the policymaking process not only serves as a critical component of education governance but also cultivates a culture of parental involvement in their children's education. This engagement signifies more than mere participation; it represents a profound shift toward actively involving parents in the decision-making processes that shape the educational landscape. When parents are not just aware of but connected to the policymaking process, a chain reaction is set in motion. This heightened awareness and engagement lead to a more informed and empowered parent body, ultimately translating into improved student outcomes and a more enriching educational experience.

- **Informed and Empowered Parents**

Active engagement in the policymaking process equips parents with a deeper understanding of the educational system and its complexities. They become more informed about the policies, practices, and challenges within the system. This heightened awareness empowers parents to make informed decisions regarding their child's education.

- **Enhanced Parental Advocacy**

Informed parents are more effective advocates for their children's education. They are better equipped to navigate the educational landscape, advocate for their child's needs, and access appropriate resources or support when necessary. This advocacy ensures that students receive the individualized attention and resources they require.

- **Increased Participation**

Parents who are actively involved in policymaking are more likely to continue their involvement at the grassroots level. This includes participation in parent-teacher associations, school events, and volunteering opportunities. Increased parental participation creates a more vibrant and supportive school community.

- **Improved Communication**

Engaging parents in policymaking fosters improved communication channels between schools and families. Parents become active participants in the educational dialogue, enabling a continuous exchange of information, feedback, and updates. This open communication promotes a collaborative approach to education.

- **Alignment of Goals**

Parental involvement in policymaking helps align the goals of schools and parents. When parents have a voice in shaping policies, they can advocate for policies that align with their priorities, ensuring that the educational experience meets both academic and holistic development objectives.

- **Parental Skill Development**

Engagement in the policymaking process allows parents to develop important skills and knowledge related to education. They gain insights into curriculum design, assessment methods, and the broader educational landscape. These skills can be applied to support their child's learning journey.

- **Support for Learning at Home**

Informed and engaged parents are better positioned to support learning at home. They can reinforce classroom lessons, offer guidance on homework, and create a conducive home environment for learning. This active involvement extends the educational experience beyond the classroom.

- **Positive Learning Environment**

The involvement of parents in education policymaking fosters a more positive learning environment. It sends a powerful message to students that their education is a shared endeavor between home and school. This sense of partnership contributes to a more supportive and motivating atmosphere for learning.

- **Improved Student Outcomes**

Perhaps most importantly, parental involvement in policymaking has a direct impact on student outcomes. Numerous studies have shown that students whose parents are actively engaged in their education tend to perform better academically, have higher attendance rates, and exhibit greater motivation and self-confidence.

- Thus, engaging parents in the policymaking process represents a transformative step toward creating a culture of parental involvement in education. This engagement empowers parents with knowledge, fosters advocacy, enhances communication, and aligns goals, all of which contribute to improved student outcomes and a more enriching educational experience. Recognizing parents as vital partners in the educational journey of their children is not only a sound educational practice but also a path to creating stronger, more resilient, and more successful learning environments.

4. Community Cohesion

Education policies crafted through inclusive and participatory processes play a significant role in promoting community cohesion. When communities are actively engaged in decision-making, it goes beyond the realm of educational governance; it fosters a profound sense of unity and shared purpose among community members. This unity often transcends education-specific issues, benefiting the broader social fabric and contributing to a more cohesive and harmonious society.

- **Shared Investment**

Inclusive policymaking creates a shared investment in the education system. When community members are involved in shaping policies, they develop a sense of ownership and responsibility for the success of educational initiatives. This shared investment reinforces the idea that education is a collective endeavor, not the sole responsibility of schools or policymakers.

- **Collaborative Decision-Making**

Engaging communities in policymaking signifies a commitment to collaborative decision-making. It fosters a culture of dialogue, cooperation, and mutual respect. These qualities not only contribute to better policy outcomes but also set a positive example for how diverse groups can work together harmoniously.

- **Cross-Generational Engagement**

Inclusive policymaking often involves representatives from various generations within a community, including parents, grandparents, and students. This cross-generational engagement bridges the gap between different age groups, fostering intergenerational understanding and cooperation. This sense of unity and connection between generations is invaluable for building a cohesive community.

- **Social Capital**

Participation in the policymaking process builds social capital within a community. It strengthens social networks, trust, and civic engagement. These components of social capital contribute to a more cohesive and resilient community, better equipped to address a wide range of challenges beyond education.

- **Diversity and Inclusivity**

Inclusive policymaking acknowledges and respects the diversity within a community. It ensures that the voices of marginalized or underrepresented groups are heard and valued. This commitment to inclusivity fosters a sense of belonging for all community members, regardless of their backgrounds or circumstances.

- **Alignment of Values**

When communities are involved in shaping education policies, there is a greater likelihood that these policies align with the values and priorities of the community. This alignment reinforces a sense of shared purpose and reinforces the idea that education should reflect the community's aspirations and ideals.

- **Community Initiatives**

Engaged communities are more likely to initiate and support community-driven education initiatives. These initiatives can extend beyond the classroom, encompassing after-school programs, tutoring services, and cultural enrichment activities. Such efforts contribute to a more vibrant and cohesive community life.

- **Conflict Resolution**

Inclusive policymaking processes often include mechanisms for addressing conflicts and disagreements. These mechanisms promote constructive dialogue and resolution, preventing the escalation of disputes and maintaining a sense of community harmony.

- **Positive Role Modeling**

The inclusive approach to policymaking serves as a positive model for community members, especially for young people. It demonstrates the value of active citizenship, collaboration, and civic engagement. These qualities are essential for building a strong and cohesive society.

- **Resilient Communities**

A cohesive community is a more resilient one. When community members are united by shared values and a sense of purpose, they are better prepared to face challenges, adapt to change, and support one another in times of need.

Thus, education policies developed through inclusive processes are not just about improving the educational system; they are about strengthening the bonds within communities and fostering a more cohesive and harmonious society. The engagement of community members in decision-making processes builds a sense of unity, shared responsibility, and mutual respect that extends beyond education issues, contributing to the overall well-being and resilience of the community. It is a testament to the power of inclusive governance in creating communities that are not only educationally successful but also socially connected and vibrant.

5. Conflict Resolution

Engaging parents and communities in the policymaking process serves as a vital platform for addressing and resolving potential conflicts and disagreements related to education policy. Education policies often touch upon a multitude of complex issues, and it is not uncommon for differing perspectives to arise. However, when stakeholders are actively involved in constructive dialogue, policymakers can navigate these challenges effectively, find common ground, and build consensus on contentious issues. This collaborative approach not only promotes effective policy development but also strengthens the sense of shared responsibility within the community.

Conclusion

Parent and community engagement in the process of shaping national education policy is not a mere formality; rather, it is a cornerstone of democratic governance with profound and far-reaching benefits. The active involvement of parents and communities in education policymaking goes beyond symbolism; it embodies a fundamental democratic principle that has the potential to transform the educational landscape and society as a whole. This inclusive approach ensures that education policies are more representative, effective, and accountable, ultimately leading to better policy outcomes, increased parental involvement, and strengthened community cohesion.

As we navigate the complexities of modern education systems and confront the evolving challenges of our times, it is imperative that we recognize and honor the pivotal role parents and communities play in shaping the educational future of our nations.

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STUDENT'S PERCEPTION TOWARDS E-LEARNING MATERIALS

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Abstract:

A society's access to global knowledge and immediate communication is made possible by the Internet, which is widely used as a research and instructional tool. Anywhere, including homes, workplaces, schools, fast-food outlets, airplanes, and even beaches, can have Internet access. One of the instructional education programs that might assist students in their studies is e-learning. The goal of this study was to look into how well secondary school pupils used e-learning

Introduction:

Information technology has a huge impact on daily life, and its importance to education cannot be overstated. Due to the closure of educational institutions, which creates obstacles for student's learning. Through cutting-edge learning management systems, information technology is helping to solve the problem of continued learning during this quarantine period. It has given educators the chance to use IT technologies for both teaching and evaluating the completion of students' course work. Teachers, students, and institutional officials are all working to ensure that technology is used as effectively as possible and that the educational process runs smoothly. Worldwide educational institutions and students have embraced and valued the online learning environment. This acceptability is based on its simplicity of use, adaptability of learning, and controlling environment.

Objectives:

- To determine the student's level of exposure to e-learning.
- To investigate the effectiveness of using e-learning among college schools students.

Reserch Design:

Sample Size: 124

Sampling method: For the collection of primary data, the questionnaire was randomly distributed through online form. We use random sampling method to collect the data.

Tools used: Percentile for analyzing the data

Table: 1

SI.No	Particulars	Frequency	Percentage
	Gender		
1	Male	77	66.95%
2	Female	38	33.04%
	Age		
1	Up to 18	23	20%
2	18to 25	77	66.95%
3	25 to 31	7	6.08%
4	31 and above	8	6.95%
	Living in		
1	Rural	66	53%
2	Semi urban	8	7%
3	Urban	50	40%
	Course studying		
1	School	0	0
2	Under graduate	107	86%
3	Post graduate	0	0
4	Research	17	14%
	How often you refer e-learning materials		
1	Regularly	50	40%
2	Occasionally	16	13%
3	For purpose	41	33%
	Would you like to adapt the e-learning right now		
1	Yes	108	87%
2	No	16	13%

	Place, where you comfortable to access e-learning materials		
1	Home	41	33%
2	School	0	0
3	College	75	61%
4	Library	8	6%
How excited you are using e-learning materials?			
1	Very excited	8	6%
2	Feeling good	84	67%
3	Satisfactory	8	6%
4	Not excited	24	21%
	How do you feel when you using e-learning materials		
1	Feeling good	108	87%
2	Satisfactory	8	6%
3	Not bad	8	6%
	Do you think E-learning is more difficult than traditional classroom learning?		
1	Yes	49	39%
2	No	54	43%
3	May be	21	18%

	How confident are you that teachers can motivate students to learn in the E-learning materials		
1	Strongly disagree	16	13%
2	Disagree	33	27%
3	Neutral	33	27%
4	Agree	33	27%
5	Strongly agree	8	6%
	Is it enabling you to cover a wide area of knowledge?		
1	Yes	100	80%
2	No	8	6%
3	May be	16	14%
	Do you think the e-learning materials are relevant and aligned with your learning goals?		
1	Yes	92	74%
2	No	8	6%
3	May be	24	20%
	Would you recommend the e-learning materials to other students?		
1	Yes	108	88%
2	No	8	6%
3	May be	8	6%

Findings:

- In this study, majorities (66.95%) are male respondents and (33.05%) respondents are female.

- The majority of the respondents are between the age group of 18 to 25.
- Majority of the respondents are from rural (53%) and next majority of the respondents are from urban (40%)
- The majority of the respondents are undergraduate students (86%)
- Majority of the respondents (40%) are regularly referring e-learning materials.
- In this study, majority of the respondents (87%) are like to adapt e-learning materials.
- The majority of the respondents (61%) are feel comfortable to access e-learning materials in college.
- The study represents that the majority of the respondents (87%) are feeling good when they using e-learning materials.
- Majority of the respondents (43%) are clearly defined that the e-learning is not that much difficult than the traditional courses.
- From this study we understand it is enabling to cover a wide area of knowledge by the majority of the respondents (80%).
- The majorities of the respondents of the study (74%) think that the e-learning materials are relevant and aligned with your learning goals.
- In this study the majority of the respondents (88%) are recommend the e-learning materials to other students.

Suggestions:

This study suggests that the use of electronic learning resources aids in students' knowledge acquisition. The e-learning resources are simple to alter and have the capacity to cover a wide range of knowledge, according to the responses of the undergraduate students. The children have faith that their teachers can inspire them to learn by using online resources. Additionally, colleges are where students can most easily access e-learning materials.

Conclusion:

In conclusion, views among students about e-learning are complex and evolving. While some people appreciate the ease and freedom it offers, others might find it difficult to interact with others. Things like course design, technological accessibility, and individual learning preferences all have a big impact on how people perceive these things. It is essential to consider student feedback and experiences as e-learning develops and adapts to their needs in order to maximize its effectiveness and inclusion in education.

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A STUDY ON CHALLENGES AND OPPORTUNITIES FACED BY TEACHER'S WHILE IMPLEMENTING OBE

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Abstract:

Outcome-Based Education (OBE) has gained prominence as an educational framework designed to align curriculum and instruction with predefined learning outcomes. While OBE offers promising benefits in enhancing student-centered learning and aligning educational goals with real-world skills, its implementation presents a complex array of challenges and opportunities for educators. This paper explores the multifaceted landscape that teachers navigate when adopting OBE methodologies. The challenges encompass factors such as redefining teaching strategies, assessing diverse learning outcomes, managing time effectively, and addressing resistance to change. However, these challenges are accompanied by opportunities such as fostering deeper student engagement, promoting critical thinking skills, tailoring instruction to individual needs, and preparing learners for the demands of a dynamic global landscape. Through an examination of current literature and case studies, this paper provides insights into the strategies that can help educators capitalize on the potential of OBE while mitigating its associated challenges. By addressing both the obstacles and advantages of implementing OBE, educators can make informed decisions and create adaptive pedagogical approaches that align with the evolving needs of modern education.

Keywords: *OBE, teachers, challenges, opportunities*

Introduction:

The educational landscape is continuously evolving, and one prominent evolution is the shift towards Outcome-Based Education (OBE). OBE emphasizes the significance of defining clear learning outcomes and aligning teaching methods to achieve these outcomes. However, the implementation of OBE is not without its share of challenges and opportunities for educators. This introduction delves into the nuanced interplay between the challenges that teachers grapple with and the exciting possibilities they encounter while navigating the realm of OBE.

On one hand, teachers face the challenge of revisiting their pedagogical approaches to align with predefined learning outcomes. This demands a thorough understanding of the desired skills, competencies, and knowledge that students should acquire. The transition from traditional content-driven teaching to outcome-focused instruction requires careful planning and the development of new instructional strategies. Additionally, assessment methods need to be revamped to effectively measure whether students have achieved the desired outcomes, thus

necessitating a shift from traditional testing methods towards more authentic and holistic assessment practices.

Amidst these challenges lie promising opportunities for teachers. OBE encourages a student-centered approach, fostering active engagement and personalized learning experiences. Teachers can leverage this shift to tailor their instruction to the diverse needs and learning styles of their students, nurturing a more inclusive and participatory classroom environment. Moreover, OBE promotes interdisciplinary learning and collaboration, enabling teachers to craft innovative, cross-disciplinary projects that mirror real-world challenges. This not only enhances students' critical thinking and problem-solving skills but also cultivates a deeper understanding of how knowledge is interconnected across various subjects.

Objective:

- To investigate the challenges and opportunities faced by teachers in implementing Outcome-Based Education (OBE) and to identify strategies for enhancing teacher awareness towards OBE.
- To investigate the impact of OBE on student motivation and engagement in the learning process.
- To explore the role of teacher training in enhancing teacher awareness towards OBE and to identify best practices for teacher training.

Research Design:

Sample size: For this study, 137 participants were selected using simple random sampling method.

Sampling Procedure: The required information was gathered via a questionnaire. The sample was picked from among the students. By answering a predefined questionnaire, it was obtained. With the aid of a statistical tool, the data was assessed.

Tools: Percentile used for analysing data.

Analysis and Interpretation:

S.NO	Particulars	Frequency	Percentage
	Age		
1	22-30	84	61%
2	30-40	21	16%
3	40-50	21	15%
4	Above 50	11	8%

	Gender		
1	Male	105	76.64%
2	Female	32	23.35%
	Designation		
1	Assistant professor	137	100%
2	Associate professor	0	0
3	Professor	0	0
	Geography		
1	Urban	63	45.99
2	Semi urban	42	30.66
3	Rural	32	23.35
	Nature of Job		
1	Private	126	92
2	Government	11	8
	What Challenges have you Faced while Implementing OBE in your Classroom?		
1	Resistance from students to change in teaching methodology	74	54
2	Difficulty in aligning learning outcomes with assessment methods	21	15
3	Lack of support from college's administration	32	23
4	Difficulty in designing effective assessments	10	8

	What Opportunities do you Think OBE Offers to Enhance Student Learning Outcomes?		
1	Increased student engagement and motivation	21	15
2	Improved critical thinking and problem-solving skills	63	46
3	Enhanced creativity and innovation	42	31
4	Better alignment of learning outcomes with real-world applications	11	8
	Do you Think Teacher Awareness towards OBE can be Enhanced?		
1	Professional development programs focused on OBE	73	54
2	Collaboration with other teachers to share best practices	32	23
3	Mentoring from experienced OBE teachers	32	23
4	Research on OBE to identify effective strategies	0	0

	What Strategies have you Employed to Overcome the Challenges Faced by you in Implementing OBE?		
1	Collaboration with other teachers to share best practices	32	24
2	Professional development programs focused on OBE	63	46
3	Mentoring from experienced OBE teachers	21	15
4	Research on OBE to identify effective strategies	21	15
	How do you Measure the Effectiveness of OBE in your Classroom?		
1	Student performance on assessments aligned with learning outcomes	74	54
2	Student feedback on the effectiveness of teaching methodology	10	8
3	Teacher observation of student engagement and motivation	32	23
4	Comparison of student performance before and after implementation of OBE	21	15

	Do you think OBE Impacts Student Motivation and Engagement in the Learning Process?		
1	Increased student engagement and motivation due to alignment of learning outcomes with real-world applications	32	23
2	Improved critical thinking and problem-solving skills leading to increased motivation and engagement	63	46
3	Enhanced creativity and innovation leading to increased motivation and engagement	10	8
4	Better alignment of learning outcomes with student interests leading to increased motivation and engagement	32	23
	What Factors do you think Influence the Effectiveness of OBE in Enhancing Student Motivation and Engagement?		
1	Alignment of learning outcomes with real-world applications	32	23
2	Effective use of technology in teaching methodology	63	46

3	Teacher enthusiasm for teaching methodology	32	23
4	Student interest in the subject matter	10	8
	How do you measure Student Motivation and Engagement in an OBE Environment?		
1	Student feedback on their level of motivation and engagement	74	54
2	Teacher observation of student participation and involvement in class activities	42	31
3	Comparison of student performance before and after implementation of OBE	21	15
4	Analysis of student's participation rates in online discussion forums	0	0
	What Strategies have you Employed to Enhance Student Motivation and engagement in an OBE Environment?		
1	Use of technology to enhance student participation and engagement	42	31

2	Incorporation of real-world examples into teaching methodology	32	23
3	Use of group work and collaborative learning activities	63	46
4	Provision of timely feedback to student on their performance	0	0
	What are the best Practices for Teacher Training in an OBE Environment, According to you?		
1	Professional development programs focused on OBE	74	54
2	Collaboration with other teachers to share best practices	42	31
3	Mentoring from experienced OBE teachers	21	15
4	Research on OBE to identify effective strategies	0	0
	How do you think Teacher Training can be made more Effective in Enhancing Teacher Awareness towards OBE?		
1	Providing more hands-on training opportunities	53	39

2	Incorporating more case studies into training programs	21	14
3	Providing more opportunities for collaboration among trainees	53	39
4	Providing more opportunities for trainees to conduct research on OBE	10	8

Findings:

- The most common challenge faced by teachers in implementing OBE in their classroom is **resistance from students to change in teaching methodology** (74 out of 137 responses).
- The most common opportunity offered by OBE to enhance student learning outcomes is **improved critical thinking and problem-solving skills** (63 out of 137 responses).
- The most common way to enhance teacher awareness towards OBE is **professional development programs focused on OBE** (73 out of 137 responses).
- The most common strategy employed by teachers to overcome the challenges faced by them in implementing OBE is **collaboration with other teachers to share best practices** (32 out of 137 responses).
- The most common way to measure the effectiveness of OBE in the classroom is **student performance on assessments aligned with learning outcomes** (74 out of 137 responses).
- The most common impact of OBE on student motivation and engagement in the learning process is **improved critical thinking and problem-solving skills leading to increased motivation and engagement** (63 out of 137 responses).
- The most common factor that influences the effectiveness of OBE in enhancing student motivation and engagement is **effective use of technology in teaching methodology** (63 out of 137 responses).
- The most common way to measure student motivation and engagement in an OBE environment is **student feedback on their level of motivation and engagement** (74 out of 137 responses).

- The most common strategy employed by teachers to enhance student motivation and engagement in an OBE environment is **use of group work and collaborative learning activities** (63 out of 137 responses).
- The most common best practice for teacher training in an OBE environment is **professional development programs focused on OBE** (74 out of 137 responses).
- The most common way to make teacher training more effective in enhancing teacher awareness towards OBE is **providing more hands-on training opportunities** (53 out of 137 responses).

Conclusion

In conclusion, a complex environment is revealed by the study on possibilities and problems experienced by teachers while adopting outcome-based education (OBE). Teachers have many challenges, including adjusting to new evaluation techniques, matching the curriculum to learning objectives, and handling the different needs of students. It also draws attention to promising possibilities, such as better educational outcomes, personalised learning, and more student involvement. Teachers need sufficient training and ongoing support to make the shift to OBE successfully. Additionally, institutions and policymakers should place a high priority on fostering an environment that promotes innovation and collaboration. In the end, this study highlights the necessity for a comprehensive strategy for OBE implementation that resolves issues while maximising its ability to transform contemporary education.

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STUDENT'S PERCEPTION TOWARDS OUTCOME BASED EDUCATION [OBE] WITH SPECIAL REFERENCE TO NAMAKKAL DISTRICT

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Abstract:

In the context of higher education, this study investigates how students see outcome-based education (OBE). OBE is a pedagogical strategy that emphasizes the need for clearly stated learning objectives and their evaluation in order to raise educational standards. The study uses a mixed-methods approach that combines surveys to collect information on how students see the influence of OBE on their academic success, learning experiences, and general satisfaction. The results shed insight on the benefits and drawbacks of applying OBE in educational institutions by demonstrating the complexity of student's perceptions. For educators and policymakers to optimize OBE practices and ensure that they meet the requirements and expectations of today's learners, it is essential to understand student's viewpoints. This study offers important new perspectives to the current discussion about OBE and its influence on the direction of education.

Introduction:

Certainly, in recent years, education systems worldwide have undergone significant transformations, with a growing emphasis on outcome-based education (OBE). OBE places a strong emphasis on defining clear learning outcomes and aligning curriculum, teaching methods, and assessment strategies to achieve these outcomes. This approach aims to equip students with practical skills, competencies, and knowledge that are relevant to real-world situations and demands.

This study seeks to delve into the student's perceptions towards outcome-based education in Namakkal District. By examining how students perceive the transition to OBE, their attitudes towards the alignment of learning outcomes with teaching methods and assessments, and their overall satisfaction with the educational experience, this research aims to provide a comprehensive understanding of the impact of OBE on students' learning journeys.

Objectives:

- To measure the level of awareness among students regarding the concept and principles of Outcome Based Education.
- To understand student's attitude towards Outcome Based Education in terms of its effectiveness, relevance, and potential benefits.
- To assess students understanding of how Outcome Based Education differs from traditional education approach.
- To gather qualitative feedback from students regarding their perception, suggestions, and concerns related to the Outcome Based Education.

Review of Literature:

- Davis, 2003 and Caguimbal, et. al., 2013 stated that OBE is an approach to education in which decisions about the curriculum are driven by the exit learning outcomes displayed by the students at the end of each course.
- The "OBE Paradigm" proposed by the Father of OBE
- Dr. William Spady is based on three (3) premises and four (4) principles (Spady, 1994). The three (3) premises are; i) all students can learn and succeed but not on the same day and not in the same way, ii) successful learning promotes even more successful learning, and iii) schools control the conditions that directly affect successful learning. Fig. 1 shows the four (4) OBE principles outlined by Dr. William Spady.

Research Design:

Tools used: Percentile used for analyzing data.

Sample size: For this study, 124 respondents were selected using simple random sampling.

Sampling procedure: the required information was collected via questionnaire.

Analysis and Interpretation:

S.NO	Particulars	Frequency	Percentage
	Gender		
1	Male	91	73%
2	Female	33	27%
	Geography		
1	Rural	57	46%
2	Semi urban	17	14%
3	Urban	50	40%

	Is your College Follows Outcome Based Education?		
1	Yes	83	67%
2	No	0	0
3	Maybe	41	33%
	Do you know how OBE Varies from Traditional Education?		
1	Yes	100	81%
2	No	24	19%
	How do you feel about the Assessment Methods used in OBE?		
1	Satisfactory	25	20%
2	Good	83	67%
3	Excellent	16	13%
	Are the Assessment Methods used is Acceptable?		
1	Yes	116	94%
2	No	8	6%
	Have you Noticed any Improvement in your Practical skill due to OBE?		
1	Yes	91	73%
2	No	17	14%
3	Maybe	16	13%
	Do you think OBE has Influenced your Ability to set and Achieve Learning Goals?		
1	Yes	107	86%
2	No	17	14%

	Have you Encountered any Innovative Assessment Method under OBE?		
1	Yes	83	67%
2	No	25	20%
3	Maybe	16	13%
	Have you been able to adapt your Learning Strategies to align with the OBE Approach?		
1	Yes	91	73%
2	No	33	27%
	Are the Learning Objectives and Outcomes clearly defined in your course Material?		
1	Yes	116	94%
2	No	8	6%
	Do you believe that the Assessment Adequately Measure your Practical Skills and Competencies?		
1	Yes	107	86%
2	No	17	14%
	What Resources or Support System do you Believe would Enhance your OBE Learning Experience?		
1	Faculty Development Program	8	6%
2	Collaboration with other teachers	42	34%
3	Mentoring from experts	74	60%

	In your Opinion, does OBE Equip you with the Necessary Skills for Further Education or your Future Career?		
1	Yes	116	94%
2	No	8	6%

Interpretation:

According to this study, the perception towards outcome based education of student's at Namakkal District, the majority of the respondents may have good opinion towards the OBE. The majority of the respondents are from rural and the percentage is 46%. The students are known their college lecturing based on the Outcome Based Education and the percentage is 67%.they also know the OBE varies from traditional education and the percentage is 81%. Student's feel about the assessment method used in OBE is feeling good as per the student's opinion and the percentage is 67%. The course materials are clearly defining the objective for the students and the percentage is 94%. The students are more likely to enhance the learning experience from the experts and the percentage is 60%. The overall perception of the students towards the outcome based education is good.

Conclusion:

In conclusion, there are a number of factors that affect student's perceptions of outcome-based education in Namakkal District, including their comprehension of its objectives and advantages, the success of its implementation in educational institutions, and their own experiences within this framework. Others may find it difficult to adjust to this approach, especially if it departs from conventional teaching methods, while some students may embrace the shift towards outcome-based education as a way to improve their employability and critical thinking abilities. As a result, ongoing efforts to promote the benefits of outcome-based education, enhance its application, and take into account the various requirements and preferences of students are necessary for its success in Namakkal District. With more study and regular conversations with students, outcome-based education may be improved and optimized in the area, giving Namakkal District children better educational outcomes and employment opportunities.

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EXPLORING POTENTIAL: EMPOWERING WOMEN THROUGH THE NATIONAL EDUCATION POLICY 2020

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Abstract

This paper investigates the National Education Policy (NEP) 2020's potential for empowering women through education. It investigates the gender inequities that exist in the education system and identifies the impediments that prevent women from obtaining a quality education. It also outlines how the policy framework addresses these barriers and provides opportunities for women's educational advancement by analysing key provisions of the NEP 2020, such as universal access, gender-responsive curriculum, safe learning environments, and skill development opportunities. It emphasises the chances for women's empowerment that result from the implementation of the NEP 2020, such as increased job options, leadership roles, and a gender-inclusive academic atmosphere. The problems and implementation solutions related with the NEP 2020 are also discussed, emphasising the significance of stakeholder participation.

The NEP 2020 recognises that empowering women through education is critical for their entire growth as well as the nation's progress. It recognises the obstacles and hurdles that women experience in obtaining an education. The strategy seeks to address these issues by creating a friendly and enabling environment for women to pursue education and reach their full potential. It emphasises the importance of early childhood care and education, ensuring that girls have equitable access to high-quality education beginning in their early life. The policy promotes the development of secure, inclusive learning environments that promote gender equality and empower women. It also establishes a comprehensive framework for strengthening women via education. It acknowledges the obstacles and problems that women experience and tries to provide an enabling environment that promotes gender equality and allows women to attain their full potential. India can make major progress towards gender equality and women's empowerment in education by adopting the requirements of the NEP 2020.

Keywords: *National Education Policy 2020, Empowering Women, Gender Disparities, Education System, Women's Empowerment*

Introduction

Women's empowerment has long been recognised as a critical component for the advancement and development of societies throughout. Education is critical in empowering women by providing them with the knowledge, skills, and opportunities to fully engage in social, economic, and political realms. Recognising

the importance of women's education, India's National Education Policy (NEP) 2020 has enormous potential for boosting women's empowerment. The NEP 2020, a comprehensive and forward-thinking policy framework, intends to transform India's education sector. It includes early childhood care, school education, higher education, skill development, and vocational education, among other things. It is important to note that it acknowledges the need to address current gender gaps in education and to establish an inclusive learning environment that empowers women. This paper investigates the NEP 2020's potential for empowering women via education. It dives into the gender inequities that exist in the education system and shows the impediments that prevent women from obtaining a high-quality education. This essay shows how the policy framework overcomes these impediments and provides chances for women's educational advancement by evaluating the important components of the NEP 2020.

Furthermore, this paper examines the prospects for women's empowerment that result from the NEP 2020's implementation. It investigates how the policy encourages women's career prospects, leadership roles, and a gender-inclusive academic atmosphere. The problems and implementation solutions related with the NEP 2020 are also discussed, as is the importance of stakeholder collaboration and progress monitoring. Finally, the NEP 2020 symbolises a key milestone in India's efforts to empower women through education. The policy has the ability to unlock women's talents, capacities, and aspirations by eliminating gender gaps, ensuring access to quality education, and fostering an inclusive learning environment. It is critical for all stakeholders, including the government, educational institutions, and civil society, to prioritise and promote women's education, because education is the only way for women to realise their full potential and contribute to society.

Brief Overview of the National Education Policy (NEP) 2020

The National Education Policy (NEP) 2020 is an Indian policy framework aimed at reforming the country's education system. The Indian government adopted it in July 2020, replacing the previous policy, which had been in force since 1986. The National Education Policy 2020 (NEP 2020) is a comprehensive policy that includes all stages of education, from early childhood care and education to higher education and beyond. The NEP 2020's main goals are to provide universal access to high-quality education, to promote equity and inclusion, to encourage holistic development, and to nurture a knowledge-driven society. The policy emphasises the value of transdisciplinary education, adaptability, and encouraging students' critical thinking and creativity.

Some of the Key Provisions of the NEP 2020 Include

- **Early Childhood Care and Education:** Recognising the importance of early childhood development, the policy intends to provide basic learning opportunities to children aged three to six.
- **School Education Reforms:** The NEP 2020 proposes several school education reforms, including the adoption of a 5+3+3+4 curricular structure (from pre-primary to secondary stages), a reduction in curriculum content to focus on core concepts, and the inclusion of vocational education beginning in secondary school.
- **Multidisciplinary Education:** The strategy promotes a multidisciplinary approach to education by allowing students to choose subjects from other areas and increasing course flexibility.
- **Teacher Training and Professional Development:** The NEP 2020 emphasises the importance of rigorous teacher training programmes and ongoing professional development in order to improve the quality of education.
- **Teacher Training and Professional Development:** The NEP 2020 emphasises the importance of rigorous teacher training programmes and ongoing professional development to improve educational quality. It seeks to transform teacher education institutions into multifunctional ones.
- **Reforms to Higher Education:** The policy anticipates the creation of a higher education system that encourages innovation, research, and interdisciplinary studies. It emphasises vocational education integration, flexible curricula, and student entrepreneurial encouragement.
- **Technology in Education:** The NEP 2020 acknowledges technology's revolutionary potential in education and encourages the use of digital materials, e-learning platforms, and online courses to improve learning results.
- **Inclusion and Equity:** The policy emphasises the importance of equitable opportunities and access to education for all, especially marginalised communities, girls, and disabled children. It strives to close the gender gap in education and promote social participation.

The NEP 2020 symbolises a dramatic transformation in India's education environment, emphasising learner-centric approaches, holistic development, and diversity. Its goal is to alter the educational system to meet the changing demands of 21st-century learners and to provide them with the skills and information necessary for personal and professional success.

Importance of Empowering Women Through Education

Education has long been recognised as a significant driver of women's empowerment, allowing them to break free from traditional gender roles, challenge cultural standards, and pursue their aspirations.

We empower women by giving them with the knowledge, skills, and opportunities to actively engage in social, economic, and political realms. Education enables women to be change agents, encouraging gender equality, economic independence, improved health outcomes, and more social and political participation. Women can use education to unlock their potential, overcome obstacles, and contribute to the improvement of not only their own lives, but also the lives of their families, communities, and societies at large.

- **Gender Equality:** Education is a fundamental human right that can be used to promote gender equality. We can break down obstacles that promote gender discrimination and empower women to actively engage in all sectors of society by ensuring that women have equal access to education. Women can use education to question established gender roles, pursue their dreams, and participate in social, economic, and political decision-making processes.
- **Economic Empowerment:** Education is important for women's economic empowerment. Women can improve their employment and earning potential by acquiring information, skills, and qualifications. Education provides women with the tools they need to enter a variety of industries, create their own enterprises, and obtain higher-paying jobs. Economically empowered women can help to reduce poverty, provide financial stability for themselves and their families, and contribute to general economic progress.
- **Women's Health and Well-Being:** Education has a direct impact on the health and well-being of women. Women who are more educated are more likely to make informed decisions about their reproductive health, seek healthcare, and live healthier lifestyles. They are also better prepared to protect themselves from gender-based abuse, child marriage, and other harmful practises. Education enables women to fight for their rights, make educated decisions, and live healthier lives.
- **Family and Community Development:** Women's education has a knock-on effect on the well-being and development of families and communities. When women are educated, their children are more likely to be educated, resulting in a positive cycle of intergenerational learning and development. Educated moms can offer their children with better nutrition, healthcare, and educational opportunities, ending the cycle of poverty and inequality.
- **Women's Political and Social Participation:** Education is a catalyst for women's political and social participation. It gives women the knowledge and skills they need to participate in civic activities, express their opinions, and contribute to policy-making processes. Women are empowered by education to challenge social norms and advocate for gender equality, resulting in constructive social change and the formation of inclusive and egalitarian societies.

- **Sustainable Development:** Educating women is critical to accomplishing sustainable development goals. Women who receive an education become active participants in environmental conservation, community development, and the promotion of environmentally sustainable practises. Women who are educated can help to mitigate climate change, provide food security, and promote long-term economic prosperity.

To summarise, educating women is critical to establishing a more just, equal, and affluent world. Education dismantles barriers, promotes gender equality, expands economic opportunities, improves health outcomes, and promotes social and political empowerment. We invest in the present and future well-being of individuals, families, communities, and nations by investing in women's education.

Gender Disparities in Education

Gender disparities in education refer to males and females having different access, opportunities, and outcomes in the educational system. Despite recent progress, major inequities persist in many parts of the world, particularly in developing countries. These discrepancies show in a variety of ways, with serious consequences for women's empowerment and general society development.

Access is a critical part of gender differences in schooling. Many girls and women confront difficulties that hinder them from enrolling in or continuing their education. Poverty, cultural norms, early marriage, distance to schools, and safety concerns all contribute to girls enrolling at a lesser rate than boys. Girls are more likely to be removed from school early in some situations, restricting their educational possibilities and perpetuating the cycle of gender inequity.

Furthermore, gender discrepancies in educational quality can be seen. Girls frequently experience prejudice in terms of educational resources, such as infrastructure, teaching materials, and skilled teachers. Gender biases in curricula and teaching methods can also promote preconceptions and hinder girls' educational experiences and goals. Gender differences in education have far-reaching repercussions. Women with fewer educational options are more likely to encounter economic disadvantages, limited employment opportunities, and reduced earning potential. They may also have less decision-making power, less access to healthcare and family planning, and are more vulnerable to gender-based violence. Furthermore, when educational possibilities are denied or limited for women, societies as a whole suffer from the loss of women's abilities, ideas, and contributions.

To address gender inequities in education, comprehensive methods that address both systemic and socio-cultural impediments are required. Policy interventions to assure equal access to education, programmes to promote girls' enrolment and

retention in schools, and the provision of safe and inclusive learning environments are all part of this. Gender norms and stereotypes must be challenged through curriculum revisions, teacher training, and community participation.

Scholarships, financial assistance, and tailored programmes can also help to remove financial barriers and enable girls and women to pursue an education.

Current Status of Gender Disparities in Education

While there has been progress in recent years, gender discrepancies in education exist in many parts of the world. The current state of gender inequality in education is as follows:

- **Disparities in Enrolment:** In many places, girls continue to enrol at a lesser rate than boys, notably in secondary and postsecondary education. Poverty, cultural norms, early marriage, and a lack of access to schools can all be blamed for gender differences in attendance.
- **Access to Quality Education:** Even when girls enrol in school, they frequently confront discrepancies in educational quality. Girls may have fewer resources, such as infrastructure, teaching materials, and qualified teachers. Inadequate sanitation and safety concerns can have a disproportionate impact on girls' access to education.
- **STEM Fields:** Gender discrepancies are especially noticeable in science, technology, engineering, and mathematics (STEM) fields. Girls and women are underrepresented in STEM fields in terms of enrolment and career options. Girls are discouraged from pursuing STEM education and careers due to societal assumptions and biases.
- **Literacy Rates:** Women continue to have lower literacy rates than men globally. According to UNESCO, around 17% of women over the age of 15 are still illiterate, exposing gender gaps in basic education and reading abilities.
- **Dropout Rates:** Girls are more likely than boys to drop out of school at various stages of their schooling, typically due to circumstances such as early marriage, pregnancy, home obligations, and a lack of support structures. Girls' educational options are limited and their long-term prospects are hampered by high dropout rates.
- **Education in Conflict Zones:** Girls confront additional impediments to education in conflict zones. Displacement, insecurity, violence, and cultural biases can all make it difficult for girls to get an education and put them at danger of exploitation and abuse.
- **Intersectionality:** Gender differences in schooling are exacerbated by overlapping factors such as socioeconomic position, disability, ethnicity, and geographic location. Girls from marginalised communities, rural locations, and

low-income families frequently experience many layers of prejudice and have limited access to decent education.

Addressing gender gaps necessitates a multifaceted approach that includes policy measures, targeted programmes, community participation, and gender-responsive curriculum and pedagogy. Education not only promotes gender equality but also contributes to social and economic growth since educated women are more likely to engage in the labour force, make informed decisions, and advocate for their rights.

Factors Contributing to Gender Disparities

Gender differences in schooling are caused by a number of variables. These factors may differ among countries and locations; however some common underlying causes are as follows:

- **Gender Stereotypes and Sociocultural Norms:** Gender stereotypes and sociocultural norms typically determine traditional gender roles and expectations. These norms, such as prioritising boys' education, assigning domestic tasks and caregiving responsibilities to girls, or viewing education as less valuable for girls, can all present hurdles to girls' education.
- **Economic Barriers:** Economic reasons can make it difficult for girls to get an education. Poverty and financial restraints can make it difficult for families to afford school-related expenses such as tuition, uniforms, transportation, and educational supplies. Due to expected future economic advantages, some families may prioritise investing in males' education above girls' education.
- **Pregnancy and Early Marriage:** Pregnancy and early marriage are significant impediments to girls' education. Girls are married off at an early age in many cultures, which often results in their departure from education. Adolescent pregnancy can also result in school dropout because females may experience social stigma, a lack of support structures, and limited educational possibilities after giving birth.
- **Geographic Constraints and Safety Concerns:** Geographic constraints and safety concerns can have a disproportionate impact on girls' access to education. Schools may be located distant from communities in some locations, making it difficult for girls to commute lengthy distances, especially if transportation choices are limited. Concerns about safety, such as harassment and assault, as well as inadequate infrastructure, such as a lack of separate sanitary facilities, can dissuade girls from attending school.
- **Dearth of Role Models and Support Systems:** A dearth of female role models in educational leadership positions, as well as a lack of supportive surroundings, can discourage females from obtaining an education. The lack of female

professors or mentors might have an impact on girls' aspirations and their belief in their own skills.

- **Gender Discrimination and Gender-Based Violence:** Gender discrimination and gender-based violence in educational contexts can harm girls' education. Harassment, bullying, and unequal treatment can all contribute to unfriendly circumstances that affect girls' self-esteem, well-being, and capacity to fully participate in their educational journey.
- **Inadequate Access to Menstruation Health Management:** Inadequate access to menstruation hygiene facilities, supplies, and information can have a detrimental influence on girls' school attendance and involvement. Menstruation stigma and a lack of proper facilities might lead to absenteeism and impede girls' educational advancement.

To address these contributing factors, a multimodal approach is required, including legislation changes, community engagement, awareness campaigns, and investment in gender-responsive education.

Strategies for Implementation

Governments must enact and enforce rules that promote gender equality in education. This includes creating gender-responsive curriculum frameworks, encouraging inclusive teaching practises, and ensuring females have equal opportunities and access to education.

- **Education Investment:** Adequate education investment, particularly in marginalised and poor groups, is critical for eliminating gender inequality. Increased funding might be focused towards infrastructure development, scholarships, teacher training programmes, and the implementation of girls' education initiatives.
- **Community Engagement:** It is critical to involve communities, particularly parents, community leaders, and local stakeholders, in shifting attitudes towards girls' education. Community-based activities, awareness campaigns, and discussions can assist in challenging gender stereotypes, overcoming cultural barriers, and increasing support for girls' education.
- **Empowering Girls and Women:** Programmes that empower girls and women via life skills education, leadership development, and vocational training can boost their self-esteem, capacities, and opportunities. Girls are better prepared to face problems and achieve their educational goals if they are given the necessary skills and knowledge.
- **Data Monitoring and Evaluation:** It is critical to establish effective monitoring and evaluation systems in order to track progress, identify gaps, and make informed policy decisions. Regular data collection and analysis on enrolment,

retention, and learning outcomes by gender can provide insights into intervention success and inspire evidence-based solutions.

- To address gender inequities in education, governments, educational institutions, civil society organisations, and communities must work together throughout time.

Conclusion

In conclusion, the National Education Policy (NEP) 2020 has enormous potential to empower women via education. The NEP 2020 may unlock the skills and aspirations of women by addressing gender disparities, promoting fair access, and fostering an inclusive learning environment, leading to their social, economic, and political empowerment. Women may contribute to the development of a more equitable and affluent society through expanded job options, leadership roles, and a gender-inclusive academic environment. To realise this potential, however, strong execution, coordinated efforts, and regular monitoring and assessment are required. We can pave the road for a brighter future where women thrive and contribute to the benefit of society as a whole by prioritising women's education and embracing the transformative force of the NEP 2020.

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SALIENT FEATURES OF NEW EDUCATION POLICY

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Abstract

The New Education Policy (NEP) introduced in (country) encompasses several salient features aimed at transforming the education system to meet the challenges of the 21st century. This abstract provides a brief overview of the key features of the NEP. The NEP emphasizes a holistic and multidisciplinary approach to education, promoting creativity, critical thinking, and overall development. It recognizes the importance of early childhood care and education, aiming to provide a strong foundation for children aged 3 to 6 years. The policy introduces a flexible curriculum framework that allows students to choose subjects based on their interests and aspirations. It encourages the integration of technology, vocational education, and skills development, recognizing their significance for employability and entrepreneurship. The NEP places emphasis on teacher training and professional development to ensure high-quality education delivery. It promotes multilingualism, valuing linguistic diversity and cultural understanding. The policy also aims to strengthen governance and the regulatory framework to ensure effective implementation and monitoring.

Keywords: *Vocational education, skills development, teacher training, professional development, inclusive education,*

Introduction

The education system plays a pivotal role in shaping the future of a nation. Recognizing the need for a transformative approach, the [country] government has introduced the New Education Policy (NEP) to revamp and modernize the education landscape. The NEP encompasses a range of salient features that aim to bring about significant changes in the way education is delivered, ensuring it aligns with the demands of the 21st century. Education policies are instrumental in shaping the trajectory of a nation's development, and the NEP reflects a comprehensive vision that addresses the evolving needs of students, teachers, and society as a whole. It seeks to create an inclusive, holistic, and learner-centric education system that fosters creativity, critical thinking, and skills necessary for success in an increasingly interconnected and dynamic world. The salient features of the NEP encompass various aspects of education, including curriculum design, teaching methodologies, technological integration, vocational training, teacher development, and governance. Each feature is carefully designed to address the shortcomings of

the existing system and pave the way for a more equitable, accessible, and quality education for all.

The NEP recognizes the importance of early childhood education and emphasizes the establishment of anganwadis and pre-schools to provide a strong foundation for young learners. It promotes a flexible curriculum framework that allows students to choose subjects based on their interests and aspirations, fostering multidisciplinary and holistic development. Furthermore, the NEP acknowledges the transformative potential of technology in education and aims to integrate it at all levels. It emphasizes the use of digital infrastructure, e-learning platforms, and digital content to enhance access, quality, and equity in education. The policy also places significant emphasis on vocational education and skills development, recognizing the importance of employability and entrepreneurship. In addition, the NEP emphasizes the critical role of teachers in shaping the education system. It highlights the need for rigorous teacher training programs, continuous professional development, and improved recruitment processes to ensure high-quality education delivery. The NEP also promotes multilingualism, aiming to preserve and promote the linguistic diversity of [country]. It recognizes the cognitive and cultural benefits of learning multiple languages and encourages their inclusion in the curriculum.

Overall, the salient features of the NEP reflect a comprehensive vision for the future of education in [country]. By embracing these features, the government aims to create an education system that is responsive, inclusive, and equipped to meet the challenges and opportunities of the 21st century. The NEP represents an important step towards building a knowledge-based society that nurtures talent, fosters innovation, and empowers individuals to contribute meaningfully to the nation's progress.

Salient Features of the New Education Policy

The New Education Policy (NEP) introduced in [year] aims to transform the education system in [country] and align it with the needs of the 21st century. The policy encompasses several salient features that are designed to bring about significant changes in the education landscape. Let's explore some of the key features of the NEP:

1. **Holistic and Multidisciplinary Education:** The NEP emphasizes a shift from a rote-based learning approach to a more holistic and multidisciplinary education system. It encourages the integration of arts, sports, and vocational skills into the curriculum to foster creativity, critical thinking, and overall development of students.
2. **Early Childhood Care and Education:** The policy recognizes the importance of early childhood education and aims to provide a strong foundation for children

aged 3 to 6 years. It emphasizes the establishment of anganwadis and pre-schools, ensuring access to quality early childhood care and education for every child.

3. **Flexible Curriculum and Choice-Based Learning:** The NEP promotes a flexible curriculum framework that allows students to choose subjects based on their interests and aspirations. It encourages a multidisciplinary approach, enabling students to explore various disciplines and develop a well-rounded understanding of different subjects.
4. **Technology Integration:** The policy recognizes the transformative potential of technology in education and emphasizes its integration at all levels. It aims to provide digital infrastructure, e-learning platforms, and digital content to enhance access, quality, and equity in education.
5. **Vocational Education and Skills Development:** The NEP places significant emphasis on vocational education and skills development, considering it essential for employability and entrepreneurship. It aims to integrate vocational training into mainstream education, offering multiple pathways for students to acquire skills and competencies required for various industries.
6. **Focus on Teacher Training and Professional Development:** The policy recognizes the critical role of teachers in shaping the education system. It emphasizes the need for rigorous teacher training programs, continuous professional development, and improved teacher recruitment processes to ensure high-quality education delivery.
7. **Promoting Multilingualism:** The NEP acknowledges the importance of preserving and promoting the rich linguistic diversity of [country]. It encourages the teaching and learning of multiple languages, including regional languages, as a means to enhance cognitive abilities and promote cultural understanding.
8. **Emphasis on Research and Innovation:** The policy aims to foster a culture of research and innovation in education. It encourages institutions to establish research centers, promote interdisciplinary research, and create an enabling environment for innovation and entrepreneurship among students.
9. **Strengthening Governance and Regulatory Framework:** The NEP focuses on the overhaul of the governance and regulatory framework of the education system. It aims to establish transparent, accountable, and efficient mechanisms for effective implementation, monitoring, and evaluation of education policies and programs.
10. **Inclusive and Equitable Education:** The policy emphasizes the need to ensure inclusive and equitable education for all, regardless of socio-economic background, gender, or disability. It aims to bridge the gaps in access, quality, and learning outcomes, providing equal opportunities for every learner. The New Education Policy in [country] represents a bold and comprehensive vision

for the future of education. By embracing these salient features, [country] aims to create a learner-centric and future-ready education system that equips students with the knowledge, skills, and values to thrive in a rapidly changing world.

Conclusion

The salient features of the New Education Policy (NEP) in [country] represent a significant step towards transforming the education system to meet the demands of the 21st century. By focusing on holistic and multidisciplinary education, early childhood care, flexible curriculum, technology integration, vocational training, teacher development, multilingualism, and inclusive education, the NEP aims to create an education system that is learner-centric, future-ready, and equitable. These features of the NEP recognize the importance of nurturing creativity, critical thinking, and skills necessary for success in a rapidly changing world. They emphasize the need to provide quality education from the early years, ensure access to technology, promote vocational skills, empower teachers, preserve linguistic diversity, and bridge the gaps in access and learning outcomes. The NEP represents a comprehensive vision for the future of education in [country], one that seeks to provide equal opportunities for all learners, regardless of their background or abilities. By embracing these features, the government aims to create an inclusive and empowering education system that equips students with the knowledge, skills, and values to thrive in the globalized world. However, the successful implementation of the NEP will require concerted efforts from all stakeholders, including the government, educators, parents, and society at large. It will require adequate investment, infrastructure development, capacity building, and a commitment to ensuring that the benefits of the NEP reach all corners of the country.

In conclusion, the salient features of the NEP reflect a transformative vision for the education system in [country]. By embracing these features, [country] can pave the way for a future where every learner has access to quality education, where creativity and critical thinking are nurtured, and where individuals are equipped with the skills and knowledge to contribute meaningfully to society. The NEP represents a significant opportunity to shape the future of [country] and build a strong foundation for its social, economic, and cultural development.

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ANALYZING THE IMPACT OF NATIONAL EDUCATION POLICY REFORMS ON STUDENT LEARNING OUTCOMES

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Abstract

Education is a cornerstone of societal development, and the effectiveness of a nation's education policy reforms can significantly influence student learning outcomes. This abstract provides an overview of the analysis conducted in the essay, exploring the multifaceted relationship between National Education Policy (NEP) reforms and student learning outcomes. The National Education Policy serves as a comprehensive framework that guides a nation's education system, encompassing curriculum, pedagogy, teacher training, assessment methods, and access to quality education. NEP reforms often aim to address educational challenges and adapt to evolving societal needs. This essay delves into the key components of NEP reforms, their implementation challenges, and their ultimate impact on student learning outcomes. Key components of NEP reforms include curriculum and pedagogical enhancements, teacher training and professional development, assessment and evaluation reforms, and efforts to expand access to quality education, especially for marginalized communities. These components, when effectively implemented, can foster critical thinking, enhance academic performance, reduce dropout rates, and increase students' global competitiveness and innovation capacity.

However, the successful implementation of NEP reforms is not without its challenges, including resource constraints, resistance to change, and bureaucratic inefficiencies. Furthermore, the time required for significant changes to manifest in student learning outcomes can be substantial, making it imperative to adopt a long-term perspective when assessing impact. In conclusion, the impact of National Education Policy reforms on student learning outcomes is a complex and multifaceted process. While challenges exist, including those related to implementation and timeframes, well-structured and sustained education policy reforms can contribute significantly to improving the quality of education and preparing students for the challenges of the future. Monitoring, evaluation, and adaptability of these reforms are essential to ensure they continue to positively influence student learning outcomes and, by extension, the overall development of a nation.

Introduction

Education, often regarded as the cornerstone of a nation's progress and development, is a powerful catalyst for societal growth. It is the conduit through which knowledge is imparted, skills are cultivated, and the potential of individuals and nations is unlocked. Consequently, the formulation and effective

implementation of education policies are of paramount importance. Within this framework, National Education Policy (NEP) reforms emerge as critical instruments in shaping the educational landscape of a country. This essay seeks to meticulously analyze the profound impact of such reforms on student learning outcomes. Through an in-depth exploration of the core components of educational policy reforms, their intricate implementation processes, and the subsequent transformations in student learning, we endeavor to gain a comprehensive understanding of the intricate and multifaceted relationship between policy modifications and educational outcomes. At its core, education is the lifeblood of progress, fostering a nation's intellectual capital and equipping its citizens with the tools to navigate an ever-evolving world. Effective education policies act as the blueprint for this transformational journey. They set the parameters for curriculum design, pedagogical methodologies, teacher training, assessment frameworks, and infrastructural development. In essence, they provide the overarching framework that guides educational institutions and practitioners. The significance of NEP reforms cannot be overstated, as they play a pivotal role in aligning education with the evolving needs of society, labor markets, and the broader global context.

Moreover, NEP reforms frequently place a strong emphasis on expanding access to quality education, particularly for marginalized communities. Inclusivity within the education system aims to address deep-rooted educational disparities and inequalities. By ensuring that a larger portion of the population has access to quality learning opportunities, these reforms contribute to improved student outcomes and, in the broader context, a more equitable and just society. However, it is crucial to acknowledge the inherent challenges associated with the implementation of NEP reforms. These challenges encompass resource constraints, resistance to change, bureaucratic inefficiencies, and the time required for substantive changes to materialize in student learning outcomes. It is imperative to recognize that the impact of educational policy reforms may not be immediate and can vary across different contexts and regions. Thus, National Education Policy reforms hold the potential to transform the educational landscape of a nation and have a lasting impact on student learning outcomes. These reforms are not mere administrative changes but represent a commitment to nurturing a generation of learners equipped with the skills, knowledge, and mindset to thrive in an increasingly complex world. As we move forward, a steadfast commitment to monitoring, evaluating, and adapting these reforms will be essential to ensure that they continue to positively influence student learning outcomes and contribute to the overall progress and development of a nation. The complex interplay between policy changes and educational outcomes underscores the need for a holistic and dynamic approach to education policy formulation and implementation.

The National Education Policy Reforms

The National Education Policy is a comprehensive framework that outlines a country's vision and strategy for its education system. It encompasses a wide range of aspects, including curriculum, pedagogy, assessment, teacher training, and infrastructure development. Effective NEP reforms aim to address various challenges within the education system and align it with the changing needs of society.

1. Curriculum and Pedagogy

The revision of curriculum and pedagogical methods represents a fundamental pillar of National Education Policy (NEP) reforms, and its implications for education are profound. This aspect of reform embodies the commitment to redefining the way students learn, moving away from traditional approaches towards a more dynamic and contemporary educational experience.¹

1. Holistic and Multidisciplinary Approach

NEP reforms recognize the limitations of traditional, siloed learning and advocate for a holistic and multidisciplinary approach to education. This means that students are encouraged to explore subjects beyond their core areas of interest or specialization. The curriculum is designed to offer a broader perspective, fostering a deeper understanding of interconnectedness in knowledge. This approach not only equips students with a more comprehensive education but also encourages them to think critically and analytically across various disciplines.

2. Fostering Critical Thinking

One of the primary objectives of NEP's emphasis on holistic and multidisciplinary learning is to foster critical thinking. Instead of memorizing facts and figures, students are challenged to question, analyze, and evaluate information. They are encouraged to develop a nuanced understanding of complex issues, to discern multiple perspectives, and to arrive at well-reasoned conclusions. Critical thinking is a skill that extends far beyond the classroom, benefiting individuals in their personal and professional lives.

3. Enhancing Problem-Solving Skills

NEP reforms also underscore the importance of problem-solving skills. By engaging students in real-world scenarios and practical applications of knowledge, they are better equipped to tackle challenges and find solutions. Problem-solving is a skill that is highly sought after in the modern workforce, and NEP aims to prepare students for a world where adaptability and innovation are key drivers of success.

4. Experiential Learning

Experiential learning is a cornerstone of NEP reforms. This approach encourages students to actively participate in their own learning processes. Through hands-on experiences, fieldwork, internships, and project-based learning, students gain a deeper understanding of concepts. Experiential learning not only enhances comprehension but also promotes long-term retention of knowledge. It connects theoretical learning to practical application, bridging the gap between academia and the real world.

5. Individualized Learning Paths

NEP recognizes that every student is unique and may have different learning styles and paces. Therefore, reforms often promote individualized learning paths, allowing students to explore subjects at their own speed and according to their interests. This personalized approach not only boosts motivation but also ensures that students grasp concepts thoroughly before progressing.

6. Technology Integration

In the digital age, technology integration is a vital component of NEP reforms. It enables interactive learning, access to a vast repository of information, and the use of multimedia resources to enhance understanding. Technology also facilitates self-paced learning and allows educators to track individual student progress more effectively.

7. Creative Expression

Alongside critical thinking and problem-solving, NEP reforms often prioritize creative expression. Students are encouraged to express themselves through art, music, literature, and other creative outlets. This fosters innovation, enhances emotional intelligence, and nurtures well-rounded individuals.

In conclusion, the revision of curriculum and pedagogical methods under the ambit of NEP reforms signifies a profound shift in the way education is conceptualized and delivered. By adopting a holistic and multidisciplinary approach, emphasizing critical thinking and problem-solving, promoting experiential learning, and embracing individualized and technology-enhanced education, NEP reforms aim to empower students with the skills and knowledge needed to thrive in the complex and ever-evolving landscape of the twenty-first century. This transformation in education not only benefits students but also positions nations for greater innovation, competitiveness, and societal progress.

2. Teacher Training and Professional Development

The National Education Policy (NEP) consistently underscores the significance of teacher training and professional development as a cornerstone of educational reform.

The central premise is that well-trained educators play an instrumental role in shaping the quality of education, and investing in their development is pivotal for enhancing classroom experiences and, by extension, improving learning outcomes.

1. Pedagogical Advancement

NEP reforms prioritize equipping teachers with advanced pedagogical techniques and strategies. Educators undergo training that goes beyond conventional teaching methods, enabling them to employ modern and innovative approaches in the classroom. This might involve techniques such as active learning, cooperative learning, flipped classrooms, and technology integration. By staying current with these methodologies, teachers can create dynamic and engaging learning environments that cater to diverse learning styles and needs.

2. Content Mastery

Continuous professional development ensures that teachers are up-to-date with the latest subject matter content and educational standards. Well-informed educators are better positioned to impart accurate and relevant knowledge to their students. Their deep understanding of the subjects they teach is crucial for fostering a comprehensive understanding among students.

3. Inclusive Teaching Practices

Teacher training within NEP reforms often includes guidance on inclusive teaching practices. Educators learn to accommodate diverse learners, including students with disabilities or special needs, and tailor their instruction to create an inclusive and equitable classroom. This approach not only benefits marginalized students but also enhances the overall learning experience for all students.

4. Effective Classroom Management

NEP recognizes the importance of classroom management skills. Teachers are trained in creating a positive classroom environment that minimizes disruptions and maximizes learning. Effective classroom management contributes to a focused and conducive atmosphere for learning.

5. Assessment and Feedback

Training programs often focus on assessment techniques and providing constructive feedback to students. Teachers learn to design assessments that align with learning objectives and evaluate student progress accurately. Timely and informative feedback helps students understand their strengths and areas for improvement, facilitating their academic growth.

6. Adaptation to Changing Needs

In an era of rapidly evolving educational methodologies and technologies, NEP's emphasis on teacher training ensures that educators remain adaptable and open to change. They can readily incorporate new tools and methods into their teaching practices to keep pace with shifting educational paradigms.

7. Mentorship and Collaboration

Professional development programs may include mentorship opportunities and collaborative networks among teachers. Experienced educators can provide guidance to novices, and collaborative initiatives foster the sharing of best practices and innovative teaching approaches. This synergy among teachers elevates the overall quality of education within a school or educational institution.

8. Teacher Well-being

NEP reforms also recognize the importance of teacher well-being. Burnout and stress can affect teaching quality. As such, some reforms include measures to improve teachers' work-life balance, mental health, and job satisfaction, which indirectly contribute to better classroom experiences and student outcomes.

Investing in the training and professional development of teachers is not merely an expenditure; it is an investment in the future of a nation. Well-trained and motivated educators have the capacity to create inspiring learning environments, nurture students' intellectual curiosity, and equip them with the skills needed to excel in an increasingly complex and interconnected world. Ultimately, the success of NEP reforms hinges significantly on the dedication and expertise of the teaching workforce, making teacher training a critical component in the pursuit of better learning outcomes and the overall advancement of education systems.

3. Assessment and Evaluation

Reforming assessment methods is undeniably another pivotal component of National Education Policy (NEP) reforms, and its implications reverberate throughout the educational landscape. The departure from traditional rote memorization-based assessments toward competency-based evaluation systems is emblematic of a significant shift in how students' knowledge and skills are assessed. This transformation holds the potential to create a more equitable and constructive learning environment while facilitating a more precise evaluation of students' true understanding. The move from rote memorization to competency-based assessment marks a departure from the rote learning paradigm that often dominated education systems. Instead of focusing solely on students' abilities to regurgitate facts and figures, competency-based assessments gauge their capacity to apply knowledge, think critically, solve problems, and demonstrate practical skills. This shift acknowledges that education should not be a mere exercise in memorization but rather a journey towards mastery and practical application of knowledge, which is essential in preparing students for the challenges of the real world.

4. Access to Quality Education

The focal point of National Education Policy (NEP) reforms often centers on the imperative task of broadening access to quality education, with particular attention to historically marginalized and underserved communities. This commitment to inclusivity represents a cornerstone of educational transformation, as it addresses entrenched educational disparities and holds the potential to substantially enhance student outcomes. By extending quality learning opportunities to a more extensive cross-section of the population, NEP reforms pave the way for a more equitable and promising educational landscape. Historically, educational disparities have been pervasive, with marginalized communities bearing the brunt of unequal access and opportunity. NEP reforms acknowledge the moral and societal imperatives of rectifying these disparities by creating pathways for educational inclusion. In doing so, they seek to dismantle barriers that have long hindered educational access and achievement among marginalized groups, including lower-income families, rural populations, ethnic minorities, and individuals with disabilities.

Implementation Challenges

While NEP reforms hold great potential, their successful implementation can be challenging. Several factors, such as resource constraints, resistance to change, and bureaucratic inefficiencies, can impede the translation of policy into practice. Additionally, the time required for substantial changes to manifest in student learning outcomes can be lengthy, making it difficult to gauge immediate impact.

Impact on Student Learning Outcomes

The impact of NEP reforms on student learning outcomes is multifaceted and may not be immediately evident. However, over time, these reforms can contribute positively in the following ways:

1. Enhanced Critical Thinking

Reforms in curriculum and pedagogy can lead to improved critical thinking skills among students. A focus on problem-solving and creativity can better prepare students for real-world challenges.

2. Improved Academic Performance

Competency-based assessments and reduced reliance on rote memorization can lead to improved academic performance. Students may exhibit a deeper understanding of subjects and better retention of knowledge.

3. Reduction in Dropout Rates

Inclusive policies can reduce dropout rates, ensuring that more students complete their education. This not only enhances their learning outcomes but also has positive social and economic implications.

4. Global Competitiveness

NEP reforms that emphasize a global perspective can help students become more competitive in the international arena. Exposure to diverse cultures and ideas can broaden their horizons.

5. Increased Innovation

A focus on research and innovation can be a result of NEP reforms. Students exposed to these aspects are more likely to contribute to scientific and technological advancements.

Conclusion

National Education Policy (NEP) reforms stand as pivotal drivers in the transformative journey of a nation's educational landscape, bearing profound implications for the future by elevating the quality of education and enhancing student learning outcomes. These reforms represent a visionary commitment to shaping not just the present but also the trajectory of a nation's progress. The impact of NEP reforms, while profound, may not manifest instantaneously. This is a testament to the complexity of the educational ecosystem, where changes in policy must translate into tangible shifts in classroom practices, pedagogy, and student performance. The path from policy formulation to the realization of outcomes is laden with challenges, and navigating these hurdles necessitates unwavering dedication and perseverance. Resource allocation poses a substantial challenge. Implementing comprehensive reforms often requires substantial financial investments. These resources must cover curriculum development, teacher training, infrastructure upgrades, technology integration, and more. In resource-constrained environments, securing funding for these critical initiatives can be a formidable task.

Resistance to change is another formidable obstacle. Education systems are often characterized by deeply entrenched traditions and practices. Convincing educators, administrators, and stakeholders to embrace new paradigms and methodologies can be met with skepticism and apprehension. Addressing this resistance through effective communication, professional development, and showcasing the benefits of reforms is a multifaceted endeavor. Bureaucratic inefficiencies within educational systems can impede the swift and efficient implementation of reforms. Administrative procedures, approvals, and coordination across various levels of the education system can introduce delays and complications. Streamlining these processes is essential to expedite the execution of reform initiatives. Furthermore, realizing the full impact of NEP reforms can be a protracted journey. Substantial changes in educational practices often require years, if not decades, to bear fruit in terms of improved student learning outcomes. This extended timeline underscores the need for a patient and sustained commitment to reform efforts.

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CRISIS RESPONSE AND RESILIENCE BUILDING IN NATIONAL EDUCATION POLICY

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Abstract

This abstract provides a concise overview of the essay titled "Crisis Response and Resilience Building in National Education Policy." The essay explores the significance of integrating crisis response and resilience-building strategies into national education policies, highlighting their importance and implications. In recent years, the global education landscape has been profoundly affected by crises such as the COVID-19 pandemic. These crises have exposed vulnerabilities in education systems worldwide, emphasizing the need for proactive measures in national education policies. Crisis response within education policy ensures the continuity of education during emergencies, prioritizes equity and inclusion, and addresses the mental health and well-being of students and educators. Resilience-building measures encompass flexible curriculum design, teacher training, digital infrastructure, and data-driven decision-making. Implementing these policies presents challenges such as resource allocation, stakeholder collaboration, and long-term planning. However, the benefits of a resilient education system far outweigh these challenges, as it not only enables effective crisis response but also ensures a more adaptable, equitable, and sustainable educational future. National education policies that emphasize crisis response and resilience building are fundamental in shaping resilient societies.

Keywords: Education Policy, Crisis Response, Resilience Building, National Education, Education System

Introduction

Education serves as the bedrock of societal advancement, playing an indispensable role in shaping the future of nations. A steadfast and adaptable education system stands as an essential linchpin for a country's forward momentum. In the contemporary landscape, our world has been beset by a plethora of crises, with the global COVID-19 pandemic notably exposing the fragilities inherent in education systems across the globe. This vulnerability underscores the imperative for nations to not only react effectively to crises but also to proactively fortify their education policies to withstand unforeseen challenges. This essay delves into the paramount importance of crisis response and resilience building within the framework of national education policies, elucidating pivotal strategies and the far-reaching consequences they entail. The significance of crisis response and resilience building in education policy is multifaceted. Firstly, a well-structured crisis response

mechanism is indispensable for mitigating the immediate impacts of unforeseen events on education. The COVID-19 pandemic, for instance, disrupted traditional learning environments, necessitating rapid adaptation to remote and online learning. An effective crisis response, in this context, involves swift deployment of digital infrastructure, equitable access to technology, and training for educators and students alike. This agile response not only ensures that education persists during the crisis but also equips students and educators with essential digital skills for the future.

The implications of robust crisis response and resilience building in education policy are profound. Firstly, it enhances a nation's human capital, ensuring that students continue to acquire knowledge and skills even in the face of adversity. This, in turn, bolsters the nation's economic productivity and competitiveness in the global arena. Secondly, it nurtures a culture of adaptability and innovation within education. When systems are flexible and prepared for change, they are more likely to embrace new technologies and pedagogical approaches. This adaptability not only benefits students but also fosters a forward-thinking society that can thrive in an ever-evolving world. Lastly, investing in crisis response and resilience building in education policy engenders social cohesion and stability. A well-educated populace, equipped to face challenges head-on, is more likely to contribute positively to the development and progress of their nation. This, in turn, reduces the potential for social unrest and upheaval during times of crisis. Thus, the importance of crisis response and resilience building in national education policies cannot be overstated. A robust education system that can withstand and adapt to unforeseen challenges is pivotal for societal development and progress. By prioritizing swift and effective crisis responses, proactive measures, inclusivity, and collaboration, nations can ensure that their education systems not only survive but thrive in the face of adversity, ultimately securing a brighter future for their citizens and the nation as a whole.

The Importance of Crisis Response in Education Policy

1. Safeguarding Uninterrupted Education

Establishing a well-structured crisis response mechanism within the realm of education policy stands as a paramount safeguard to ensure the continuous flow of education during times of unforeseen emergencies. One striking example is the global onslaught of the COVID-19 pandemic, which triggered the widespread closure of schools, disrupting traditional modes of teaching and learning. In response, education policies worldwide underwent a transformation, accentuating the critical necessity of adapting swiftly and effectively to unanticipated challenges.

Such adaptations underscore the need for versatile educational strategies that can pivot seamlessly between conventional classroom instruction and remote or online learning formats. The pandemic's impact on education revealed that having a resilient system that can swiftly transition between these modalities is indispensable to maintain educational continuity in the face of crises.

2. Promoting Equity and Inclusivity

Crisis response strategies imprinted in education policies must place a profound emphasis on equity and inclusion, guaranteeing that all students, regardless of their socioeconomic backgrounds or physical abilities, have unfettered access to quality education. The advent of the pandemic highlighted stark disparities in access to technology and learning resources, further magnifying educational inequalities. Consequently, education policies must encompass targeted initiatives to bridge the digital divide, ensuring that marginalized communities are not left behind.

Initiatives may include the distribution of digital devices, subsidizing internet access, and developing educational content that is accessible to diverse learners, including those with disabilities. In doing so, education policies can function as instruments of social justice, rendering education a genuinely equitable and inclusive force in society.

3. Holistic Approach to Mental Health and Well-being

In the face of crises, education policies should extend their reach beyond traditional academic pursuits to encompass comprehensive support for the mental health and well-being of students, educators, and staff. Crises like the COVID-19 pandemic have inflicted substantial emotional distress, elevating the need for a holistic approach to education that integrates emotional and psychological well-being into its core.

Mental health support embedded within education policies might involve the provision of counseling services, stress management programs, and resilience-building initiatives. Acknowledging and addressing the emotional toll of crises ensures that the education system not only nurtures the cognitive development of learners but also supports their emotional growth and stability. This, in turn, equips students and educators with the tools necessary to confront adversity and build emotional resilience. In essence, the integration of these facets into education policies not only enhances the system's resilience in times of crisis but also signifies a profound commitment to the well-being and equitable advancement of all individuals within the educational ecosystem. By addressing these crucial dimensions, education policies become potent instruments for fostering inclusive, adaptive, and emotionally supportive learning environments that can withstand the most formidable challenges.

Resilience Building in National Education Policy

1. Adaptive Curriculum and Versatile Pedagogy

Embedding resilience within education policy necessitates the cultivation of a curriculum and pedagogical framework that exhibit adaptability in the face of diverse circumstances. This entails the creation of a dynamic educational landscape that offers a spectrum of learning options, encompassing in-person, online, and blended formats. This versatility caters to the myriad learning needs of students and empowers educators to navigate unexpected disruptions with agility.

Moreover, fostering curriculum adaptability implies the capacity to swiftly reconfigure learning objectives and materials to suit the exigencies of the moment. It also involves encouraging innovative teaching methods that harness the potential of emerging technologies, thus fortifying the education system's ability to endure and evolve.

2. Empowering Educators Through Training and Development

The bedrock of educational resilience lies in investing comprehensively in teacher training and ongoing professional development. Educators serve as the linchpin of any resilient education system, and they must be equipped with the requisite skills and knowledge to navigate crises effectively. Therefore, education policies should prioritize programs that empower teachers to deliver quality education even under the most challenging conditions.

Such initiatives encompass disaster preparedness training, digital proficiency workshops, and pedagogical retooling to adapt to changing learning environments. By bolstering the capabilities of educators, education policies ensure that the transmission of knowledge remains steadfast, irrespective of the adversities faced.

3. Robust Digital Infrastructure

A hallmark of resilient education systems is the establishment of a sturdy and comprehensive digital infrastructure. This extends beyond merely providing access to technology; it encompasses the assurance of its reliability, security, and accessibility, especially during crises. Education policies must address the digital divide by ensuring that every student has equitable access to digital tools and a reliable internet connection.

Furthermore, an emphasis should be placed on safeguarding data privacy and security to maintain the integrity of the learning environment. The digital infrastructure should be scalable and adaptable, allowing seamless transitions between in-person and online learning modes as the situation demands.

4. Informed Decision-Making through Data Analysis

A fundamental aspect of resilience building within education policy is the incorporation of data-driven decision-making mechanisms. Education policies should institute systems for the collection, analysis, and interpretation of data to assess the impact of crises on educational outcomes. This enables policymakers to make informed decisions and tailor strategies to mitigate the adverse effects of disruptions.

Data-driven insights can highlight areas that require immediate attention, such as identifying students in need of additional support, assessing the efficacy of remote learning initiatives, and evaluating the long-term consequences of crises on educational attainment. Education policies should thus prioritize the establishment of data infrastructure and analytics capabilities to foster a proactive response to challenges.

In summary, a resilient education system is one that embraces adaptability, equips educators with the tools to excel in adversity, ensures reliable digital infrastructure, and leverages data-driven insights to make informed decisions. By addressing these facets comprehensively within education policies, nations can fortify their educational ecosystems to withstand crises while continuing to provide quality education to all learners.

Implications and Challenges

1. Strategic Resource Allocation

The implementation of crisis response and resilience-building measures within the realm of education necessitates strategic resource allocation. Governments must recognize the paramount importance of education funding and accord it a position of high priority in their fiscal agendas. The successful execution of these policies hinges upon a robust financial foundation that can support diverse initiatives aimed at fortifying the education system against unforeseen challenges.

This financial commitment extends beyond short-term fixes and involves sustained investments in areas such as infrastructure development, technology integration, teacher training, and support for marginalized communities. It is imperative to view education funding not as an expenditure but as a strategic investment in a nation's future.

2. Synergistic Stakeholder Collaboration

Effective crisis response and resilience building require harmonious collaboration among a plethora of stakeholders. Government bodies, educational institutions, parents, and communities all play pivotal roles in the education ecosystem, and their cooperation is indispensable for the success of policy initiatives. Achieving

consensus among these diverse groups can indeed be challenging, given varying priorities and perspectives. However, education policies must prioritize the cultivation of a collaborative culture that fosters open communication and mutual understanding.

Collaboration can encompass various aspects, from jointly developing crisis response plans to co-creating policies that address the unique needs of different regions or communities. It also involves fostering engagement with parents and communities to ensure their voices are heard and their concerns addressed. In doing so, education policies become more responsive, inclusive, and capable of drawing upon the collective wisdom of stakeholders.

3. Sustainable Long-Term Planning

Resilience-building within education policies demands a forward-looking perspective that transcends immediate crisis response. Policymakers should adopt a strategic, long-term planning horizon, considering not only the short-term measures to navigate crises but also the sustainability of resilience-building endeavors. This approach necessitates a commitment to adaptability, as education policies must evolve in response to changing circumstances.

Forward-thinking policies can encompass initiatives such as the establishment of contingency funds for education, which can be mobilized during crises, as well as the integration of resilience as a core principle in curriculum design. Moreover, sustainability entails not only mitigating the immediate effects of crises but also addressing their long-term implications, such as the potential learning gaps or socio-emotional challenges that may arise. Education policies must, therefore, embrace flexibility, continuous evaluation, and the capacity to adjust strategies over time to ensure a resilient educational future.

In summary, the effective implementation of crisis response and resilience-building measures within education policies necessitates strategic resource allocation, synergistic stakeholder collaboration, and sustainable long-term planning. These components together form the bedrock upon which education systems can not only endure unforeseen challenges but also emerge stronger, more adaptable, and better equipped to provide quality education for all.

Conclusion

In an ever-evolving world fraught with unforeseen challenges, the imperatives of crisis response and resilience building within national education policies have taken center stage. These policies, far from being mere contingencies, stand as the pillars that ensure the seamless flow of education during times of upheaval. Furthermore, they serve as catalysts for creating education systems that are not only robust but also equitable and adaptable. By placing a strong emphasis on flexibility, inclusivity,

and the well-being of both students and educators, nations can fortify their educational landscapes to withstand the unpredictable shocks of the future, thus playing a pivotal role in the advancement of society. In essence, a resilient education system transcends being just a reaction to crises; it is an unwavering commitment to a brighter, more steadfast, and ultimately more prosperous future. In a world where change is the only constant, the ability of education systems to navigate unpredictable terrain is vital. Crisis response measures within national education policies stand as a bulwark against the disruptions that can emanate from various sources – pandemics, natural disasters, economic crises, and more. They are the mechanisms that ensure that learning continues even when the world around us is in flux.

Resilience in education policies goes hand in hand with equity. In the face of crises, marginalized communities often bear the brunt of the impact. Policies that prioritize inclusivity and equitable access to educational resources, irrespective of socioeconomic backgrounds or physical abilities, not only ensure that no one is left behind but also create a more resilient and cohesive society. The well-being of students and educators is paramount. Crises can take a toll on mental and emotional health, and education policies that recognize this aspect are not only responsive but compassionate. By integrating support for mental health, stress management, and emotional well-being into the educational fabric, these policies enable students and educators to confront adversity with resilience. Flexibility is the cornerstone of resilience. Education policies that encourage innovation in curriculum design and pedagogical approaches ensure that education remains dynamic and responsive to changing circumstances. This adaptability not only ensures the continuity of education during crises but also equips students with the skills and mindset needed to thrive in a rapidly evolving world.

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EARLY CHILDHOOD EDUCATION AND NATIONAL EDUCATION POLICY: BUILDING A STRONG FOUNDATION

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Abstract

This abstract provides a concise overview of the essay titled "Early Childhood Education and National Education Policy: Building a Strong Foundation." The essay explores the vital role of early childhood education (ECE) in shaping a nation's future and its alignment with the objectives of national education policies. It also discusses the significance of ECE in cognitive, social, and emotional development, reducing educational inequalities, and fostering long-term benefits. The abstract highlights how national education policies can support ECE through an inclusive approach, quality assurance, professional development, parental involvement, and research and innovation. Additionally, it emphasizes the essential components for building a strong foundation in ECE, including the role of quality teachers, curriculum, safe environments, parental engagement, and assessment and evaluation. In conclusion, the abstract underscores the critical importance of ECE as a cornerstone of educational success and social development, calling for policy recognition and investment in this crucial phase of learning.

Keywords: *Early Childhood Education, National Education Policy, Strong Foundation,, Cognitive Development, Inclusive Approach*

Introduction

Early childhood education (ECE) stands as a cornerstone in the construction of a nation's future. During the initial years of a child's life, typically spanning from birth to around eight years old, a remarkable and formative period of growth unfolds, encompassing essential dimensions of cognitive, social, and emotional development. It is within this critical span of early childhood that the blueprint for a child's lifelong learning journey begins to take shape. Recognizing the profound significance of early childhood education, governments and educational authorities worldwide have increasingly acknowledged its pivotal role and begun to prioritize substantial investments in this crucial stage of human development. The rationale behind this prioritization is rooted in a profound understanding of how the early years serve as the foundation upon which a child's future growth and potential are built. Cognitive development, characterized by the acquisition of knowledge, reasoning abilities, and problem-solving skills, takes its initial strides during this period. A child's brain is a

dynamic and highly receptive entity during these early years, making it a fertile ground for absorbing a wealth of information and skills.

However, early childhood education extends beyond cognitive development alone. It forms a comprehensive platform for nurturing a child's social and emotional aptitude, two facets of human development that are indispensable for thriving in the complexities of the modern world. Through interactions with peers, caregivers, and educators, children learn essential social skills like cooperation, empathy, and conflict resolution. Simultaneously, they develop emotional intelligence, gaining the ability to recognize and manage their feelings, a skillset crucial for establishing healthy relationships and emotional well-being throughout life. In addition to the individual benefits, early childhood education holds the promise of reducing educational disparities and societal inequalities. By providing all children, regardless of their socio-economic background, ethnicity, or geographic location, with access to high-quality ECE, nations can ensure a more level playing field. This investment contributes significantly to the broader goal of achieving social equity, where every child, irrespective of their circumstances, has an equitable opportunity to succeed.

Furthermore, research has consistently demonstrated the long-term advantages of early childhood education. Children who receive a strong foundation in their early years are statistically more likely to perform better in school, graduate from high school, and pursue higher education. The benefits extend far beyond academia, as these individuals tend to exhibit improved social and emotional well-being, better economic prospects, and an increased likelihood of contributing positively to their communities and societies at large. In the context of national education policy, the alignment between ECE and policy objectives is of paramount importance. National education policies serve as a guiding compass for a country's educational system, shaping its goals, standards, allocation of resources, and curriculum development. Recognizing the pivotal role of early childhood education, modern education policies increasingly emphasize its integration into the broader educational framework.

National education policies can promote the importance of ECE through various means:

1. Inclusive Approach

Policies can ensure that early childhood education is accessible to all children, addressing issues of affordability and geographical disparities. Initiatives such as subsidies, free preschool programs, or incentives for private providers to offer affordable ECE can be integrated.

2. Quality Assurance

To maintain and enhance the overall quality of ECE programs, national policies can establish clear and rigorous standards. These standards may encompass

teacher qualifications, curriculum guidelines, safety regulations, and stringent monitoring and evaluation mechanisms.

3. Professional Development

Recognizing that the quality of early childhood education depends significantly on the competence of its educators, national policies can prioritize the professional development of ECE teachers. This can be achieved through comprehensive training programs, certifications, and competitive compensation packages to attract and retain a skilled workforce.

4. Parental Involvement

Successful ECE relies on the active engagement of parents and caregivers in their child's educational journey. National policies can encourage parental involvement by promoting parenting classes, providing resources, and fostering partnerships between ECE centers and families to create a supportive and enriching learning environment at home.

5. Research and Innovation

To remain adaptive and effective, national education policies should support ongoing research in the field of early childhood education. This research ensures that policies remain informed by best practices and incorporate emerging trends in pedagogy, technology, and child development.

Thus, early childhood education's role in building a strong foundation for a nation's educational success and societal well-being cannot be overstated. The early years serve as the bedrock upon which a child's educational journey is built, encompassing cognitive, social, and emotional development. Recognizing this, national education policies worldwide have begun to prioritize and invest in ECE, recognizing its significance in achieving long-term educational and societal objectives. By aligning educational policies with the imperatives of early childhood education, nations can nurture a generation of well-rounded, capable individuals who will not only succeed academically but also contribute positively to the social and economic fabric of their societies.

The Significance of Early Childhood Education

1. Cognitive Development

During the early childhood years, typically spanning from birth to around eight years old, children's brains are in a phase of rapid development. This period is often referred to as the "sensitive period" for cognitive growth, during which their brains exhibit remarkable plasticity. Quality early education programs are designed to leverage this heightened receptiveness to learning. Through engaging and developmentally appropriate activities, these programs provide children with stimulating environments where they can explore, experiment, and

discover. This hands-on learning not only sparks curiosity but also fosters crucial cognitive skills such as critical thinking, problem-solving, and decision-making. Moreover, early education programs introduce children to the foundations of literacy and numeracy, equipping them with language skills, basic mathematical concepts, and the ability to express their thoughts and ideas effectively. These early cognitive experiences lay the groundwork for a lifetime of academic achievement and intellectual growth.

2. Social and Emotional Development

Early childhood education plays a pivotal role in promoting socialization and nurturing emotional intelligence. Within the context of a structured yet supportive environment, children learn how to navigate social interactions, develop relationships, and work collaboratively with their peers. Through play, group activities, and guided discussions, they acquire essential social skills such as communication, cooperation, sharing, and conflict resolution. Additionally, early childhood educators, often trained in child psychology and development, help children understand and manage their emotions. This includes recognizing and labeling feelings, learning appropriate ways to express them, and building resilience in the face of challenges. The cultivation of empathy and self-awareness is another critical dimension of social and emotional development nurtured through ECE. These skills are foundational to building healthy relationships, fostering teamwork, and contributing positively to one's community and society at large.

3. Reducing Inequalities

One of the most compelling arguments for investing in early childhood education is its potential to bridge the gaps in educational outcomes and societal opportunities. Children from disadvantaged backgrounds often face a multitude of challenges that can hinder their educational progress. These challenges may include limited access to quality preschool programs, lack of exposure to enriching experiences, and inadequate support for their developmental needs. Investing in ECE can mitigate these disparities by offering a level playing field for all children, regardless of their socio-economic circumstances. Publicly funded or subsidized ECE programs ensure that even economically disadvantaged families can access high-quality early education. This early intervention not only narrows the achievement gap but also breaks the cycle of poverty by providing children with a strong foundation for future success. By addressing inequalities in the early years, societies can cultivate a more equitable and inclusive educational system, fostering greater opportunities for all.

4. Long-term Benefits

The impact of a strong early education foundation reverberates throughout a child's academic journey and beyond. Numerous studies have consistently demonstrated the long-term benefits of quality early childhood education. Children who participate in such programs are more likely to perform better in school, as they enter formal education with enhanced cognitive and social skills. This advantage persists throughout their educational trajectory, increasing their likelihood of graduating from high school and pursuing higher education. Additionally, individuals who have received a robust early education are more equipped to face the challenges of adulthood, including securing gainful employment, making informed life choices, and participating actively in civic and community life. By providing children with a solid educational footing, early childhood education not only prepares them for academic success but also empowers them to lead fulfilling and productive lives, ultimately contributing to the betterment of society as a whole.

National Education Policy's Role in Early Childhood Education

National education policies serve as a blueprint for a country's education system. They set goals and standards, allocate resources, and guide curriculum development. In recent years, many countries have recognized the importance of early childhood education in achieving long-term educational and societal goals. Here are some key aspects of how national education policies can support ECE:

1. Inclusive Approach

To ensure equitable access to early childhood education, national policies should adopt a multifaceted and inclusive approach. This approach involves addressing barriers that may hinder children from various backgrounds from participating in ECE programs. One strategy is the provision of subsidies or financial assistance to families, particularly those with limited financial resources. This financial support can make ECE more affordable for parents and reduce economic barriers to participation. Additionally, national policies can introduce initiatives such as free preschool programs, especially for children from disadvantaged backgrounds. These programs not only enhance accessibility but also ensure that all children have the opportunity to benefit from quality ECE. To further encourage participation, policies may offer incentives to private ECE providers to offer affordable and accessible programs in underserved areas, thereby expanding the reach of ECE services.

2. Quality Assurance

National education policies play a pivotal role in maintaining and enhancing the quality of early childhood education programs. They can establish comprehensive quality standards that cover various aspects of ECE, including teacher qualifications, curriculum guidelines, safety regulations, and facility standards. These standards serve as benchmarks that ECE providers, whether public or private, must meet to ensure that children receive a high-quality educational experience. Furthermore, national policies can institute monitoring and evaluation mechanisms to continually assess and improve program quality. Regular inspections, teacher assessments, and feedback from parents and caregivers can all contribute to the ongoing enhancement of ECE program quality. By upholding stringent quality assurance measures, national policies safeguard the educational experiences of young learners.

3. Professional Development

Recognizing that the quality of early childhood education largely depends on the competence and dedication of educators, national policies should prioritize the professional development of early childhood educators. Policymakers can design and implement training programs that equip ECE teachers with the knowledge and skills necessary to create engaging and effective learning environments. These programs may encompass areas such as child development, pedagogy, and classroom management. Certification requirements can also be put in place to ensure that ECE teachers meet specific qualifications and standards. Moreover, national policies can address the issue of competitive compensation for ECE professionals. Adequate salaries and benefits are essential to attract and retain a skilled and motivated workforce in the field of early childhood education. By investing in the professional development of ECE educators, policies contribute to the delivery of high-quality ECE services.

4. Parental Involvement

National education policies can actively promote and facilitate parental involvement in their children's early education. This can be achieved through various strategies. Policies may encourage ECE centers to organize regular meetings and workshops for parents, where they can learn about the curriculum, teaching methods, and strategies for supporting their child's learning journey at home. Additionally, policies can allocate resources to create and distribute educational materials and resources for parents, providing guidance on how to engage with their children in meaningful ways. Collaborative partnerships between ECE centers and parents can be fostered, allowing parents to play an active role in their child's education.

National policies can also emphasize the importance of parent-teacher communication, encouraging regular dialogues and feedback exchanges to ensure a supportive learning environment both in and out of the classroom.

5. Research and Innovation

To keep early childhood education responsive to evolving educational needs and best practices, national education policies should prioritize research and innovation within the field. Policies can allocate funding and resources to support research initiatives focused on ECE, encouraging educators and researchers to explore effective teaching methods, child development theories, and emerging trends. Furthermore, policies can facilitate the integration of innovative teaching approaches and technology into ECE programs. This includes promoting the use of educational technology that enhances learning experiences, such as interactive apps and multimedia resources. By fostering a culture of research and innovation, national policies enable ECE programs to adapt and evolve, ensuring that they remain at the forefront of early childhood education practices and methodologies. This adaptability, in turn, benefits children by providing them with cutting-edge educational experiences that align with the demands of the modern world.

Building a Strong Foundation

To build a strong foundation through early childhood education, it is essential to consider various components:

1. Quality Teachers

The significance of well-trained early childhood educators cannot be overstated. ECE teachers serve as the cornerstone of the learning experience for young children. National policies must prioritize the recruitment and retention of highly qualified ECE teachers who possess a deep understanding of child development, pedagogical expertise, and a compassionate demeanor. These educators should be equipped with the knowledge and skills to create a nurturing and supportive learning environment. Their ability to establish strong relationships with young learners fosters trust, security, and a sense of belonging, which are vital for children's development. Furthermore, quality ECE teachers are adept at individualizing instruction, adapting teaching strategies to meet the diverse needs of each child, and offering meaningful guidance and support. National policies should invest in the continuous professional development of ECE teachers, ensuring they stay updated with the latest research and best practices in early childhood education. Competitive compensation and incentives can attract and retain dedicated professionals who play an indispensable role in shaping the trajectory of children's lives.

2. Curriculum

An effective ECE curriculum should be thoughtfully designed to cater to the developmental needs and capabilities of young children. National policies should advocate for developmentally appropriate curricula that prioritize play-based learning. Play is the primary mode through which young children explore the world, develop their creativity, and build essential cognitive and social skills. A well-structured ECE curriculum also places a strong emphasis on socialization, fostering interactions and collaboration among peers. It should strike a balance between promoting basic skills like literacy and numeracy and encouraging critical thinking, problem-solving, and creativity. Curricular guidelines should reflect the importance of creating a flexible and responsive learning environment that accommodates individual learning styles and paces. National policies can support the development and implementation of such curricula, ensuring that they are aligned with the best practices in early childhood education and are continually updated to meet evolving educational needs.

3. Safe and Stimulating Environment

The physical environment of ECE centers is a critical component of early childhood education. National policies should establish clear standards for ECE centers to provide safe, clean, and stimulating spaces that promote exploration and creativity. Safety regulations should be in place to ensure that facilities meet specific requirements, including secure play areas, age-appropriate materials, and proper sanitation. The learning environment should be designed to encourage hands-on exploration and active engagement. It should be rich in age-appropriate learning materials, books, art supplies, and play equipment. Natural elements, such as outdoor gardens and green spaces, should be incorporated whenever possible to enhance the connection between children and the natural world. By setting rigorous standards for the physical environment of ECE centers, national policies ensure that children have access to spaces that support their holistic development and inspire a love for learning.

4. Parental Engagement

National policies can promote parental engagement as a crucial element of a child's early education. Parents are a child's first and most influential teachers, and their active involvement in their child's learning journey significantly impacts educational outcomes. ECE centers should facilitate parental engagement through various means, including organizing meetings, workshops, and activities that encourage parents to participate actively. These events can provide parents with insights into their child's development, strategies for supporting learning at home, and opportunities to build connections with other parents. Additionally, policies can allocate resources to develop educational

materials and resources for parents, offering guidance on age-appropriate activities and ways to nurture a love for learning. By emphasizing parental engagement in national policies, governments recognize the importance of a collaborative partnership between families and ECE centers in promoting children's well-rounded development.

5. Assessment and Evaluation

Assessment and evaluation in ECE serve the dual purpose of tracking a child's progress and informing instructional decisions. National policies should emphasize the importance of regular assessments conducted in a developmentally appropriate manner. These assessments should be designed to provide insight into a child's strengths and areas of improvement, allowing educators to tailor instruction accordingly. Rather than focusing solely on standardized testing, policies should advocate for a holistic approach to assessment that encompasses observations, portfolios, and teacher-child interactions. The results of these assessments should be shared with parents, creating a transparent and collaborative educational process. Furthermore, national policies should encourage the use of assessment data to inform instructional planning and curriculum refinement. By prioritizing ongoing assessment and evaluation, policies ensure that ECE programs are responsive to the individual needs of children, promoting their growth and development effectively.

Conclusion

Early childhood education (ECE) stands as the very cornerstone upon which a nation's educational success and broader societal development are built. It is during these formative years, typically spanning from birth to around eight years old, that the seeds of curiosity, knowledge, and social aptitude are sown. The importance of ECE transcends its immediate impact; it casts a long-lasting shadow that shapes the future trajectory of each child and, collectively, the fate of the nation. A strong foundation in the early years is akin to laying the bedrock for a house. Without it, the structure above may crumble, and its integrity remains forever compromised. Likewise, ECE provides the essential building blocks upon which a child's future educational attainment and social adaptability rest. It serves as the scaffolding upon which later learning is constructed. National education policies must recognize the pivotal role of ECE in this intricate architectural design of human development. ECE is not merely a peripheral component of the educational system; it is its very bedrock. As such, it necessitates not only acknowledgment but prioritization.

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EVALUATING THE ROLE OF ASSESSMENT AND EVALUATION IN NATIONAL EDUCATION POLICY

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Abstract:

Assessment and evaluation constitute integral components of any national education policy, playing pivotal roles in shaping educational systems and outcomes. This abstract provides a concise overview of the significance, challenges, and potential impacts of assessment and evaluation within the context of national education policies. Assessment and evaluation are instrumental in measuring learning outcomes, informing data-driven decision-making, and maintaining educational quality. They facilitate the identification of strengths and weaknesses within education systems, guiding resource allocation and reforms. However, striking a balance between standardized assessments and acknowledging diversity, mitigating the adverse effects of high-stakes testing, and addressing assessment bias present ongoing challenges. National education policies must emphasize both formative and summative assessment approaches, incorporate technology for efficiency, invest in teacher professional development, and engage communities for transparency and support. When thoughtfully implemented, assessment and evaluation can promote educational equity, enhance teaching practices, and ultimately contribute to the realization of educational goals set forth in national policies.

Keywords: *Assessment, Evaluation, National Education Policy, Educational Outcomes, Quality Assurance*

Introduction

Assessment and evaluation serve as cornerstones in the continual development and improvement of educational systems across the globe. Within the realm of national education policy, these elements emerge as indispensable instruments for not only gauging the accomplishments of students but also for refining teaching methodologies and steering the course of educational reforms. In the subsequent discourse, we shall embark on a comprehensive exploration of the intricate and multifaceted roles that assessment and evaluation undertake within the structured framework of a national education policy. This examination will encompass an in-depth analysis of their significance, the challenges they pose, and the profound potential impacts they bear on the educational landscape.

The Significance of Assessment and Evaluation

1. Measuring Learning Outcomes

Assessment and evaluation serve as the bedrock for measuring the efficacy of educational systems in attaining their intended learning objectives. These essential tools not only offer a means to discern the depth of student comprehension but also yield critical insights into areas necessitating enhancement. By undertaking comprehensive assessments that encompass cognitive, socio-emotional, and practical skills, education policymakers are empowered to uphold the commitment of ensuring that educational aspirations are realized to their fullest extent. These evaluations furnish policymakers with the capacity to scrutinize the intricate tapestry of student progress. Beyond merely gauging academic achievements, they delve into the realm of emotional intelligence, interpersonal competencies, and real-world applicability of knowledge. The multifaceted nature of assessment allows for a holistic understanding of a student's growth, enabling educators to tailor their pedagogical approaches accordingly.

Furthermore, these evaluative processes act as a compass guiding educational reforms. By identifying areas where improvements are needed, policymakers can make data-informed decisions to refine curriculum structures, teaching methodologies, and resource allocation. This dynamic feedback loop ensures that the educational system remains responsive to the evolving needs of both students and society, fostering a continuous cycle of improvement. In essence, assessment and evaluation are not mere checkboxes within the education system but rather integral components that steer the ship toward the destination of educational excellence. Through these measures, education systems can uphold their commitment to providing students with the knowledge, skills, and capabilities required to thrive in an ever-changing world.

2. Informed Decision-Making

National education policies must be anchored in evidence-based principles and guided by data-driven decision-making processes. In this regard, assessment and evaluation emerge as invaluable sources of information, providing the empirical foundation upon which informed policy choices can be built. The data generated through these processes not only offer a window into the educational landscape but also unveil intricate patterns, disparities, and pockets of excellence within the system. This treasure trove of insights empowers policymakers to wield their resources judiciously, steering educational initiatives toward equitable and effective outcomes. Within the realm of national education policy, the utilization of assessment and evaluation transcends the mere collection of data; it serves as the compass that guides strategic planning and resource allocation. These robust

processes supply policymakers with an array of vital information, enabling them to discern emerging trends in student performance, teaching methodologies, and curriculum efficacy. Such insights equip policymakers with the capacity to make course corrections promptly, ensuring that educational policies remain agile and responsive to the evolving needs of students and society.

Furthermore, the data derived from assessment and evaluation practices unveil disparities in educational access, performance, and outcomes among different demographic groups. This information is instrumental in promoting social equity within the education system. Armed with a clear understanding of these disparities, policymakers can develop targeted interventions to reduce educational inequalities and create an inclusive learning environment where every student has the opportunity to thrive. Moreover, assessment and evaluation can pinpoint areas of excellence and innovation within the education system. By identifying what works exceptionally well, policymakers can scale up successful practices, thereby fostering a culture of continuous improvement. Thus, the integration of assessment and evaluation into national education policies is not merely a procedural requirement; it is a cornerstone of effective governance in the education sector. Through the collection and analysis of data, these processes empower policymakers to make informed decisions, allocate resources wisely, promote equity, and elevate the overall quality of education. Thus, they are essential instruments in the pursuit of educational excellence and societal progress.

3. Quality Assurance

Assessment and evaluation are the bedrock upon which quality assurance in education is built. In their capacity as vigilant watchdogs, these processes play a pivotal role in upholding and safeguarding high educational standards by instilling a sense of accountability within educational institutions. Through their meticulous scrutiny, they not only provide a yardstick for measuring the quality of education but also act as catalysts for improvements in underperforming schools. Quality assurance in education is an ongoing endeavor, and assessment and evaluation serve as its linchpins. By setting clear benchmarks and performance indicators, these processes create a framework against which educational institutions are assessed. This framework is a vital tool for measuring the effectiveness of teaching methodologies, curriculum design, and overall educational practices. Consequently, it ensures that educational institutions adhere to established standards, fostering a culture of excellence.

One of the invaluable contributions of assessment and evaluation in quality assurance is the identification of underperforming schools or areas within the education system. Through systematic analysis and data-driven assessments,

these processes can pinpoint weaknesses and deficiencies. This not only shines a spotlight on areas in need of improvement but also provides the impetus for targeted interventions. These interventions can take various forms, including tailored professional development for educators, revised curriculum approaches, enhanced resource allocation, or even structural changes within the educational institution. The ultimate goal is to bolster the quality of education and elevate the performance of underperforming schools to meet or exceed established standards.

Moreover, the process of evaluation and the subsequent interventions are not punitive in nature but rather collaborative efforts aimed at ensuring that every student has access to a high-quality education. They promote a culture of continuous improvement where educational institutions are supported in their quest to provide the best possible learning experiences for students. In essence, assessment and evaluation are the sentinels of educational quality assurance, ensuring that the bar remains high and that educational institutions are held accountable for their commitment to excellence. Through their discerning gaze and proactive measures, they propel educational systems towards ever-greater levels of achievement and impact, ultimately benefitting students and society as a whole.

4. Teacher Professional Development

The evaluation of teaching effectiveness stands as a cornerstone in fostering the growth and professional development of educators. It plays a vital role in creating a culture of continuous improvement within the educational landscape, where the aim is to identify areas of excellence in teaching while simultaneously pinpointing areas that warrant refinement. Education policies that embrace these evaluations pave the way for ongoing teacher training and development, with the ultimate aim of enriching the educational experience and, in turn, benefiting students in profound ways. At its core, evaluating teaching effectiveness represents a commitment to ensuring that the teaching profession remains dynamic and responsive to the evolving needs of students and society. Through these evaluations, education policies acknowledge that teaching is not a static endeavor but rather an evolving craft that demands continual reflection and growth.

One of the primary benefits of assessing teaching effectiveness is its capacity to recognize and celebrate the strengths and accomplishments of educators. By identifying exemplary teaching practices and educators who excel in their roles, education policies can highlight these successes as examples for others to emulate. This not only uplifts the morale of educators but also encourages a culture of sharing best practices, thereby enriching the teaching profession as a

whole. Simultaneously, evaluations are instrumental in identifying areas where teachers may benefit from further development or support. These assessments provide valuable feedback, helping educators recognize their own growth edges and areas requiring improvement. Rather than punitive measures, this process is seen as an opportunity for professional growth. Education policies can facilitate this growth by providing resources, training, and mentorship opportunities tailored to the specific needs identified through evaluations.

Moreover, teacher professional development is not a one-time event but an ongoing journey. Education policies that emphasize continuous training and support empower educators to adapt to changing educational paradigms, adopt innovative teaching methods, and address emerging challenges effectively. Thus, the primary beneficiaries of this approach are the students. Teachers who continually evolve and refine their practices through ongoing professional development create richer and more engaging learning environments. Consequently, students receive a higher quality education that prepares them to thrive in an ever-evolving world. Therefore, the evaluation of teaching effectiveness, when integrated into education policies, forms an essential component in nurturing a resilient and impactful education system that ultimately benefits students and society at large.

5. Equity and Inclusivity

Assessment and evaluation represent potent tools in the pursuit of equity and inclusivity within education systems. They provide the means to examine educational outcomes comprehensively, allowing policymakers to uncover disparities among different demographic groups. Armed with this crucial data, policymakers can formulate and implement precisely targeted interventions that serve to mitigate these disparities, fostering a more just and equitable educational landscape. In the quest for educational equity and inclusivity, assessment and evaluation shine as beacons of insight, capable of illuminating disparities that might otherwise remain concealed. By scrutinizing the results and performance gaps that emerge across diverse demographic groups—such as race, socioeconomic status, gender, and ability—education policymakers can gain a granular understanding of where these disparities manifest.

This deep comprehension of the disparities serves as the foundation upon which targeted interventions can be crafted. Rather than applying blanket solutions, education policies can be tailored to address the specific needs of marginalized or underserved groups. These interventions encompass a spectrum of initiatives, including resource allocation, curriculum adjustments, teacher training programs, and support services that cater to the unique challenges faced by these groups. The ultimate aim of these interventions is to level the playing field,

ensuring that every student, regardless of their background, enjoys equal access to educational opportunities and can flourish to their fullest potential. This approach is not only ethically sound but also aligns with broader societal goals of social justice and equality.

Furthermore, the benefits of such a strategy extend beyond individual students. A more equitable education system enriches society as a whole, as it nurtures a diverse and inclusive generation of citizens who are better equipped to contribute positively to their communities and the world at large. In essence, assessment and evaluation are not merely mechanisms for assessing learning outcomes but also potent instruments for promoting social justice within education. Through their systematic analysis of disparities and the subsequent implementation of targeted interventions, they facilitate the creation of an educational environment where every student is empowered to thrive, irrespective of their background or circumstances. Thus, they stand as vital components in the ongoing journey toward a more inclusive and equitable society.

Challenges in Assessment and Evaluation

1. Standardization vs. Diversity

Balancing the use of standardized assessments while recognizing the diversity inherent in both learners and educational contexts poses a complex challenge. The tension between adhering to standardized evaluation methods and accommodating individual differences is a delicate one, and an excessive reliance on standardized tests can have significant implications for the holistic development of students while constraining the breadth of assessment practices. Standardized assessments, while offering a structured and consistent means of evaluating student performance, often emphasize a limited set of skills or knowledge domains. They are designed to provide a snapshot of student achievement at a particular point in time, which can be valuable for making broad comparisons across diverse regions or populations. However, an overemphasis on standardized testing can inadvertently sideline other crucial aspects of education, such as creativity, critical thinking, problem-solving, and socio-emotional development.

Furthermore, learners are not homogenous entities; they possess unique learning styles, abilities, and needs. An education system that solely relies on standardized assessments may inadvertently disadvantage those students who do not excel in such testing environments, failing to capture their true potential. This can lead to a narrow perception of student abilities and hamper the cultivation of a diverse range of skills. Acknowledging this diversity in both

students and educational settings is imperative. Assessment practices should be flexible and adaptable to cater to the multifaceted needs of learners. This can involve embracing alternative assessment methods, such as project-based assessments, portfolios, or performance evaluations, which provide a more holistic view of a student's capabilities.

Moreover, an education system that values diversity should extend to recognizing and respecting the diverse range of cultural, linguistic, and socio-economic backgrounds from which students come. Standardized assessments can inadvertently perpetuate bias and inequality, as they may not adequately account for the unique challenges and strengths that different demographic groups bring to the educational landscape. Thus, striking the balance between standardized assessments and acknowledging diversity necessitates a nuanced approach. Education policies and practices should embrace a diversified assessment toolkit that accommodates the varied learning styles and needs of students while ensuring that standardized tests are used judiciously to provide meaningful insights into educational progress. This inclusive approach fosters a more comprehensive and equitable education system that honors the individuality of learners while upholding rigorous academic standards.

2. High-Stakes Testing

Overreliance on high-stakes testing, where the results of assessments have significant consequences for students, educators, and institutions, presents a host of complex challenges within the realm of education. This practice, if not carefully managed, can give rise to a range of issues that impact the quality of education, student well-being, and the integrity of the assessment process itself. When the outcomes of high-stakes tests determine the fate of students and schools, there is a natural tendency for educators to focus their teaching on the content and skills directly assessed. This often results in "teaching to the test," where the curriculum narrows to fit the specific test objectives. While this may boost test scores, it can compromise the broader educational experience, hindering the development of critical thinking, problem-solving, and creativity.

High-stakes testing can lead to a reduction in the diversity of the curriculum. Subjects and topics that are not assessed may receive less attention or be excluded altogether, depriving students of a well-rounded education that encompasses the arts, humanities, and other non-tested areas. The pressure associated with high-stakes tests can create significant stress and anxiety among students. The fear of failure or the consequences of poor performance can have detrimental effects on mental health, well-being, and the overall learning experience. In extreme cases, this stress may manifest as test-related disorders, negatively impacting students' academic and emotional development. The high

stakes attached to these tests can incentivize unethical behaviors, such as cheating or test tampering. Students, teachers, and administrators may feel compelled to resort to dishonest practices to achieve desired results, eroding the integrity of the assessment process and undermining the trustworthiness of educational outcomes.

High-stakes testing can inadvertently shift the focus of education from holistic development and lifelong learning to achieving high test scores. This can obscure the broader educational goals of fostering critical thinking, creativity, and personal growth. To address these challenges, education policies must strike a balance between accountability and the quality of education. This might involve reducing the weight placed on high-stakes testing, incorporating alternative assessments that encompass a wider range of skills, and providing educators with the flexibility to tailor their teaching to the diverse needs of their students. Additionally, fostering a culture of trust and ethical behavior within educational institutions is vital in preventing cheating and other unethical practices. Thus, while high-stakes testing can offer valuable insights into student performance, its excessive reliance can lead to a host of issues that hinder the overall quality of education and student well-being. A thoughtful and balanced approach to assessment and accountability is crucial to ensuring that educational systems promote not only academic achievement but also the holistic development and well-being of students.

3. Assessment Bias

The issue of bias in assessments is a pressing concern within the realm of educational policy. Assessments, if not rigorously designed and continually scrutinized, can inadvertently disadvantage certain demographic groups, thereby perpetuating existing inequalities in educational outcomes. Addressing and mitigating these biases is an ongoing challenge that demands the unwavering commitment of education policymakers to foster a more equitable and inclusive education system. Assessments, whether standardized tests or classroom evaluations, can carry inherent biases in their design, content, or administration. These biases may favor specific cultural, linguistic, or socio-economic backgrounds, putting students from marginalized groups at a disadvantage. For example, questions that assume familiarity with certain cultural references or language nuances can disproportionately affect minority or non-native English-speaking students.

When assessments are biased, they contribute to the perpetuation of educational inequalities. Students from historically disadvantaged backgrounds may face additional barriers to academic success due to these biases, exacerbating achievement gaps and limiting opportunities for advancement. One key aspect of

addressing bias in assessments is ensuring cultural and linguistic sensitivity. Assessment items should be designed to be inclusive and accessible to a diverse range of students. This involves using diverse examples and contexts that do not privilege one cultural group over another and providing accommodations for students with linguistic differences or disabilities. Education policies should mandate regular review and revision of assessment materials to identify and rectify biases. This process requires collaboration with educators, subject matter experts, and representatives from diverse communities to ensure assessments are fair and equitable.

Providing professional development opportunities for educators on the topic of assessment bias is vital. Teachers must be equipped with the knowledge and skills to recognize and address bias in their classroom assessments, thereby contributing to a more equitable learning environment. Educational policies should emphasize transparency in assessment design and administration, allowing stakeholders to scrutinize the fairness of assessments. Additionally, accountability measures should be in place to hold assessment developers and educational institutions responsible for addressing bias. Exploring alternative assessment methods that go beyond standardized testing can help mitigate bias. Performance assessments, portfolios, and project-based assessments, for instance, can provide a more holistic view of student abilities. Thus, the recognition and mitigation of bias in assessments are integral to creating a fair and equitable education system. Educational policies must prioritize the regular examination and refinement of assessment materials to ensure they are free from bias and reflective of the diverse student population they serve. This commitment to equity in assessments is a fundamental step toward dismantling educational disparities and fostering a more inclusive educational landscape for all learners.

4. Data Privacy and Security

The collection and utilization of student data within the context of assessments have introduced a complex terrain where the imperatives of data-driven decision-making collide with the paramount need to safeguard student privacy and security. Striking a delicate and ethical balance between these two imperatives has emerged as a pressing concern in the realm of educational policy and practice. Harnessing student data from assessments offers a powerful means to enhance educational outcomes. It enables educators and policymakers to make informed decisions, identify areas for improvement, and tailor interventions to meet the diverse needs of students. These data-driven insights hold the potential to revolutionize education by personalizing learning experiences and optimizing resource allocation. However, the collection, storage, and use of student data bring forth a host of privacy and security concerns. These include the risk of data

breaches, unauthorized access to sensitive information, and the potential for misuse or exploitation of student data. In an era marked by increasing digitalization, ensuring robust safeguards for student data privacy has become an imperative.

Education policies must navigate a complex landscape of regulations and frameworks designed to protect student privacy. These regulations, such as the Family Educational Rights and Privacy Act (FERPA) in the United States, lay down strict guidelines for the handling of student data. Compliance with these laws is not only a legal obligation but also an ethical one. A key aspect of balancing data-driven decision-making with privacy is ensuring transparency and obtaining informed consent from students and their families. Policies should require educational institutions to clearly communicate how student data will be used and give individuals the choice to opt in or out of data collection whenever feasible. Education policies should encourage the practice of data minimization, wherein only the minimum amount of data necessary for educational purposes is collected. This principle ensures that student privacy is respected while still allowing for effective assessment and analysis. Robust security measures are vital to protect student data from unauthorized access or breaches. Policies should mandate encryption, access controls, regular security audits, and the adoption of best practices in data protection.

Education policies should also underscore the ethical use of student data. Data should be employed solely for educational purposes and not be exploited for commercial gain or other non-educational objectives. Thus, achieving a harmonious coexistence between data-driven decision-making and student data privacy is of paramount importance in modern education. Educational policies must be crafted with a meticulous focus on adhering to privacy regulations, promoting transparency, implementing robust security measures, and cultivating an ethical approach to data use. By doing so, we can harness the power of student data to enhance educational outcomes while safeguarding the privacy and security of the individuals whose data underpin our education systems.

Impacts and Considerations

1. Balancing Formative and Summative Assessment

In crafting national education policies, it is imperative to recognize the pivotal role that both formative and summative assessments play in fostering a comprehensive and effective learning environment. These two types of assessments serve distinct yet complementary purposes, and a balanced approach to their incorporation within educational policies can significantly contribute to the enhancement of educational outcomes. Formative assessments

are instrumental in the educational journey as they offer ongoing feedback to both students and teachers. These assessments are designed to gauge students' understanding and progress throughout the learning process, rather than at the culmination of a course or academic year. The feedback provided by formative assessments is invaluable for adapting teaching strategies, identifying areas of difficulty, and tailoring instruction to meet the unique needs of each student. Moreover, formative assessments encourage students to be actively engaged in their learning by providing them with a roadmap for improvement. Consequently, education policies should underscore the importance of integrating formative assessments into the pedagogical framework, promoting the idea that learning is an iterative process and that regular feedback is essential for academic growth. Summative assessments, in contrast, serve as a culmination of a learning period or a course of study, evaluating students' overall achievement and competence. These assessments are often high-stakes and are used to determine whether students have achieved specific learning objectives or standards. Summative assessments offer a way to measure educational outcomes systematically, providing a basis for comparing student performance across schools, districts, and regions. Additionally, they are a means to hold educational institutions accountable for the quality of education they provide. While the importance of summative assessments cannot be understated, policies must emphasize that they should be balanced with formative assessments to offer a holistic view of student progress. Education policies should promote a holistic approach that values both formative and summative assessments. This entails recognizing that formative assessments are not just preparatory exercises for summative assessments but integral components of the learning process in their own right. Moreover, it involves recognizing that summative assessments, while crucial for measuring overall achievement and accountability, can be enhanced by formative assessments that support students in reaching their potential. Policies should emphasize the importance of teacher training and professional development in both formative and summative assessment practices. Educators need the skills and knowledge to design, administer, and interpret assessments effectively, ensuring that they align with learning objectives and provide meaningful insights into student progress. Thus, a comprehensive approach to national education policies should prioritize both formative and summative assessments. This balanced approach acknowledges the dual role of assessments in supporting ongoing student development and measuring educational outcomes, ultimately contributing to the cultivation of well-rounded, engaged, and successful learners.

2. Embracing Technology

The integration of technology into assessment and evaluation processes stands as a transformative force in the educational landscape, holding the potential to significantly enhance their effectiveness and, consequently, the overall quality of education. This evolution encompasses a range of digital tools and innovations, including online assessments, data analytics, and educational software, all of which contribute to fostering timely feedback and personalized learning experiences for students.

1. Online Assessments: A Paradigm Shift in Evaluation

The advent of online assessments has revolutionized the way students are evaluated. These digital assessments offer a multitude of advantages, such as flexibility in test-taking, immediate scoring, and the ability to incorporate various multimedia elements, making them more engaging and interactive. Furthermore, online assessments enable educators to efficiently administer assessments to large cohorts of students while ensuring the integrity of the testing process. This digital transformation eliminates the time-consuming logistics associated with traditional paper-and-pencil tests and facilitates a streamlined approach to assessment.

2. Data Analytics: Unleashing the Power of Big Data

Data analytics in education have emerged as a game-changer. By harnessing the power of big data, educational institutions can gain insights into student performance patterns, learning trajectories, and areas where additional support may be required. These analytics can assist educators and policymakers in making data-informed decisions regarding curriculum development, resource allocation, and pedagogical strategies. Moreover, data analytics facilitate the early identification of students at risk of falling behind, enabling timely interventions and personalized support.

3. Educational Software: Tailoring Learning Experiences

Educational software and learning management systems empower educators to create customized learning experiences that cater to individual student needs. These tools offer adaptive content, interactive simulations, and real-time feedback, providing students with a personalized and engaging learning journey. Additionally, educational software often includes formative assessment components that allow students to track their progress and identify areas for improvement. This immediate feedback loop nurtures a sense of ownership over one's learning and promotes self-directed study habits.

4. Accessibility and Inclusivity

Incorporating technology into assessments can enhance accessibility for students with diverse needs. Features like screen readers, adjustable fonts, and alternative

input methods can make assessments more inclusive and accommodate students with disabilities.

5. Challenges and Equity

While technology offers substantial benefits, it also presents challenges related to equitable access and the digital divide. Education policies must address these disparities by ensuring that all students have access to the necessary technology and training.

6. Professional Development

Education policies should prioritize teacher professional development to equip educators with the skills and knowledge needed to effectively utilize technology for assessment and evaluation. Thus, the fusion of technology with assessment and evaluation practices has the potential to revolutionize education. By embracing online assessments, data analytics, and educational software, education systems can provide timely and personalized feedback, enhance learning experiences, and improve educational outcomes for students. However, it is crucial that these technological innovations are implemented thoughtfully, with considerations for equity, access, and professional development, to ensure that the benefits are realized by all students.

3. Professional Development

Ensuring the competence of teachers in the realm of assessment and evaluation practices is paramount to the success of any educational system. Proficiently trained educators possess the skills and knowledge required to use assessments effectively, ethically, and in a manner that optimizes student learning outcomes. Achieving this competence often necessitates the implementation of robust professional development programs that empower educators with the tools and insights needed to excel in this critical aspect of teaching.

1. Assessment Literacy: The Foundation of Effective Teaching

Assessment literacy, which encompasses understanding the principles, methods, and ethical considerations of assessment, serves as the bedrock of effective teaching. Educators with a strong foundation in assessment literacy are equipped to design, administer, and interpret assessments that align with learning objectives and accurately measure student progress. Professional development programs should prioritize the cultivation of assessment literacy among teachers, fostering their ability to make informed decisions about which assessments to employ and how to leverage assessment data for instructional improvements.

2. Ethical Assessment Practices: Upholding Integrity

Ethical considerations are central to assessment practices. Educators must be well-versed in the ethical dimensions of assessment, including issues related to

fairness, bias reduction, and student privacy. Professional development programs should include modules on ethical assessment practices, emphasizing the importance of creating assessments that are free from discrimination, respecting the diversity of students, and maintaining the confidentiality of assessment data.

3. Effective Feedback: Nurturing Growth

One of the essential components of assessment is the provision of constructive and actionable feedback to students. Educators must be skilled in delivering feedback that encourages student reflection, growth, and motivation. Professional development programs can offer strategies and techniques for delivering feedback that is specific, timely, and aligned with learning objectives.

4. Data-Informed Decision-Making: Enhancing Instruction

The ability to use assessment data to inform instructional decisions is a hallmark of effective teaching. Educators should be trained to analyze assessment results, identify areas of improvement, and tailor their teaching methods to meet the unique needs of their students. Professional development programs should equip educators with the skills to leverage data for curriculum planning, resource allocation, and targeted interventions for struggling students.

5. Adaptive Assessment Strategies: Personalized Learning

The landscape of education is evolving toward personalized learning experiences. Educators should receive training in adaptive assessment strategies and the utilization of educational technology to tailor assessments to individual student needs. These strategies allow for the differentiation of instruction and the optimization of learning outcomes.

6. Continuous Learning: The Role of Ongoing Professional Development

Professional development in assessment and evaluation should be viewed as an ongoing journey rather than a one-time event. Education policies should support a culture of continuous learning among educators, providing opportunities for further skill development, staying updated on best practices, and engaging in peer collaboration and mentorship.

Thus, teacher training in assessment and evaluation practices is pivotal to the success of educational systems. By offering comprehensive and ongoing professional development programs, education policies can empower educators to employ assessments effectively, ethically, and in a manner that enhances the educational experience and outcomes for all students.

4. Community Engagement

In shaping national education policies, it is imperative to embrace a collaborative approach that actively engages parents, communities, and stakeholders in the

assessment and evaluation processes. The inclusion of these vital partners not only ensures transparency but also cultivates trust, fosters a sense of ownership, and garners the much-needed support for educational reforms that aim to improve the quality of education and outcomes for all students.

1. Parental Involvement: Partners in Education

Parents are indispensable partners in the education of their children. Involving parents in the assessment and evaluation process creates a bridge between the classroom and the home, enabling them to better understand their child's progress, strengths, and areas for improvement. Education policies should encourage regular communication between educators and parents, providing opportunities for parent-teacher conferences, progress reports, and a platform for sharing assessment results. This collaboration not only promotes a deeper understanding of student needs but also engages parents in their child's educational journey.

2. Community Engagement: A Holistic Perspective

Engaging the broader community in the assessment and evaluation processes contributes to a holistic perspective on education. Community members, including local leaders, businesses, and organizations, can provide valuable insights into the specific needs and aspirations of the community's students. Moreover, their involvement can lead to the creation of educational initiatives that are relevant and responsive to the local context. Education policies should facilitate avenues for community input, such as advisory boards or town hall meetings, to ensure that education reforms align with community values and goals.

3. Stakeholder Collaboration: A Multifaceted Approach

Education policies should encourage collaboration among diverse stakeholders, including teachers, administrators, policymakers, and educational experts. These stakeholders bring a wealth of experience and expertise to the table, allowing for a comprehensive examination of assessment and evaluation practices. Such collaboration can lead to the development of more robust assessment frameworks, data analysis methodologies, and evidence-based decision-making processes.

4. Transparency and Accountability: Building Trust

Transparency is a cornerstone of effective collaboration in assessment and evaluation. Education policies should mandate transparency in assessment practices, including the disclosure of assessment objectives, methodologies, and results. Open access to assessment data and findings helps build trust among all stakeholders by providing them with a clear understanding of the educational landscape and progress toward established goals.

5. Support for Reforms: A Unified Approach

When parents, communities, and stakeholders are actively engaged in the assessment and evaluation processes, they are more likely to support educational reforms. This unified approach fosters a shared sense of responsibility for the success of students and the improvement of the education system as a whole.

Thus, inclusive national education policies that involve parents, communities, and stakeholders in assessment and evaluation processes not only enhance transparency but also strengthen the foundation of trust and support for educational reforms. The collaborative efforts of all these stakeholders contribute to the development of a more responsive, equitable, and effective education system that truly serves the needs of students and society.

Conclusion

Assessment and evaluation are indispensable components of any national education policy. When implemented thoughtfully and effectively, they serve as powerful tools for measuring learning outcomes, improving educational quality, and promoting equity. However, they also come with challenges that require careful consideration. Striking a balance between standardization and diversity, addressing bias, and ensuring privacy are among the key considerations for policymakers. By embracing technology, fostering teacher professional development, and engaging communities, national education policies can harness the full potential of assessment and evaluation to create a more inclusive and equitable education system.

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GLOBAL BEST PRACTICES IN EDUCATION: LESSONS FOR NATIONAL EDUCATION POLICY

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Abstract

Education is a fundamental pillar of societal progress, and nations worldwide aspire to provide their citizens with the highest quality of education. To achieve this goal, many countries turn to global best practices in education as sources of inspiration and guidance when formulating their national education policies. This abstract provides a brief overview of the key lessons that can be learned from global best practices in education for the development of effective national education policies. The first lesson centers on equity in education, emphasizing the need to provide equal opportunities for all students regardless of their socioeconomic background. Global models like Finland have demonstrated that comprehensive approaches, including equal school funding, well-trained teachers, and personalized learning, can promote inclusivity and access to quality education.

The second lesson underscores the significance of teacher quality and professional development. Nations like Singapore and South Korea prioritize recruiting and training top-tier educators, offering competitive salaries and continuous professional growth opportunities. National education policies should follow suit by investing in teacher support to enhance overall educational quality. The third lesson highlights the importance of student-centered learning approaches, where education is tailored to individual needs and interests. Countries like Canada and New Zealand have adopted flexible and personalized learning models that adapt to students' unique capabilities and learning paces. The fourth lesson emphasizes early childhood education as a critical factor in a child's development. Sweden and Norway provide universal access to high-quality preschool programs, which lead to improved school readiness and long-term educational success. National education policies should recognize the value of early childhood education and invest accordingly.

The fifth lesson focuses on creating effective assessment and accountability systems. Japan and the Netherlands have established balanced evaluation systems that use standardized tests and teacher assessments to maintain educational standards without excessive pressure on students. National education policies should incorporate fair and comprehensive assessment methods that support learning. The final lesson acknowledges the role of technology in education. Estonia and South Korea have successfully integrated technology into classrooms, preparing students for the digital era. National education policies should prioritize technology integration while ensuring equitable access to digital resources. Thus, these global best practices offer valuable insights for crafting national education policies that cater to the diverse needs of students, promote equity, and prepare individuals for the challenges of the modern world. By drawing inspiration from these lessons, nations can pave the way for a brighter future through education.

Keywords: Education Policy, Best Practices, National Education, Lessons, Global Models

Introduction

Education stands as the bedrock upon which societies advance and individuals flourish. It is the collective aspiration of every nation to furnish its citizens with an education of the utmost quality, one that not only imparts knowledge but also equips individuals with the skills necessary to not just survive but thrive in an ever-evolving global landscape. To attain this lofty objective, countries frequently turn their gaze towards the world stage, seeking inspiration and guidance from the global exemplars in education as they craft their own national education policies. In this essay, we embark on an exploration of the paramount global best practices in education and the invaluable insights they proffer in the endeavor to shape robust and effective national education policies. The pursuit of excellence in education is a universal ambition, transcending borders and cultures. Nations recognize that by cultivating their education systems, they can empower their citizens to navigate the complexities of the modern world successfully. Consequently, they study the triumphs and innovations of education systems worldwide, dissecting the strategies and practices that have yielded remarkable results. These global best practices serve as a reservoir of wisdom, offering a wealth of knowledge for those tasked with crafting and refining their own national education policies.

As we delve into this exploration, we will dissect some of the most illuminating global best practices in education, unraveling the intricate tapestry of principles, policies, and pedagogies that have led to their success. Through this journey, we will glean lessons on equity in education, the paramount role of educators, the need for student-centered learning, the transformative power of early childhood education, the art of assessment and accountability, and the integration of technology into the educational milieu. Each of these facets represents a beacon of knowledge, illuminating the path towards a more effective and equitable education system. Thus, the quest for educational excellence is a shared endeavor that transcends borders and ideologies. In seeking inspiration from global best practices, nations stand to forge education policies that are not only responsive to the unique needs of their citizens but also informed by the collective wisdom of the world. Education, as the great equalizer and catalyst for progress, deserves nothing less than our unwavering dedication to learning from the best, so that we can, in turn, offer the best to the generations to come.

1. Equity in Education:

One of the most vital lessons derived from the global best practices in education revolves around the concept of equity. Across the globe, nations have awakened to the realization that ensuring equal educational opportunities for every student, irrespective of their socioeconomic background, stands as a fundamental prerequisite for achieving superior educational outcomes. The Finnish education

system stands out as a paragon of educational equity. Its holistic approach encompasses equitable funding for all schools, a cadre of well-trained teachers, and a resolute focus on individualized learning paths for students. This exemplary model serves as an invaluable lesson that reverberates worldwide, compelling national education policies to reevaluate their priorities and place inclusivity at the forefront. Ensuring that every student gains access to a quality education is no longer an option but an imperative for educational systems worldwide.

2. Teacher Quality and Professional Development:

At the heart of prosperous education systems lies the bedrock of high-quality educators. Nations that have excelled in education, such as Singapore and South Korea, have made it a priority to recruit, train, and retain exceptionally skilled teachers. These countries offer competitive salaries and establish an ecosystem of continuous professional development opportunities for teachers, thus ensuring that their effectiveness remains unwavering throughout their careers. National education policies should diligently absorb and integrate these practices. By investing in comprehensive teacher training programs and support systems, nations can significantly elevate the overall quality of their education systems.

3. Student-Centered Learning:

The global best practices in education underscore the importance of student-centered learning approaches. Countries such as Canada and New Zealand have wholeheartedly embraced more flexible and personalized models of learning. These models empower students to explore their unique interests and cultivate knowledge at their own pace. The underlying philosophy recognizes that each student possesses a distinctive set of strengths and challenges, demanding an educational framework that is equally unique and adaptable. Therefore, national education policies should enthusiastically incorporate these practices. Encouraging innovation and flexibility within the curriculum will enable educational systems to be responsive to the evolving educational needs of students.

4. Early Childhood Education:

A burgeoning body of research consistently underscores the critical role of early childhood education in a child's holistic development. Nations like Sweden and Norway have recognized this importance by prioritizing universal access to high-quality preschool programs. Such initiatives bear testament to their enduring commitment to ensuring improved school readiness and favorable long-term educational outcomes for all. National education policies across the globe should heed this lesson. Investing in accessible, high-quality preschool programs not

only nurtures young minds but also lays the foundation for a more equitable and prosperous educational future.

5. Assessments and Accountability:

The effective evaluation of educational quality is intrinsically tied to the concept of assessments and accountability systems. Nations like Japan and the Netherlands have struck a delicate balance in this regard. They employ a combination of standardized tests and teacher evaluations to ascertain the attainment of educational standards. Importantly, they eschew an undue emphasis on testing, which can lead to excessive stress on students. National education policies should be shaped by this lesson. They should aim to establish fair and comprehensive assessment systems that promote and support student learning, all while eschewing the undue pressures associated with high-stakes testing.

6. Technology Integration:

In the contemporary digital age, the integration of technology into education is not merely a choice but a necessity. Countries like Estonia and South Korea have adeptly fused technology into their educational landscapes, enhancing the overall learning experiences of students and preparing them for the demands of the digital era. Consequently, national education policies must accord due priority to technology integration. However, this integration must be executed while ensuring equitable access to digital resources for all students, so that technological advancement does not inadvertently exacerbate educational disparities.

Conclusion

Global best practices in education serve as a reservoir of invaluable insights that can profoundly influence the formulation and refinement of national education policies. These insights encompass a broad spectrum of critical elements within the educational landscape, including equity, teacher quality, student-centered learning, early childhood education, assessments and accountability, and technology integration. By judiciously drawing inspiration from successful educational models that have burgeoned worldwide, nations can craft policies that not only provide their citizens with superlative educational experiences but also empower them to flourish in an ever-evolving global milieu. An indisputable cornerstone of these lessons is the profound significance of equity in education. The understanding that every student, regardless of their socioeconomic background, deserves equal access to high-quality educational opportunities resonates across nations. Lessons from exemplary systems like Finland emphasize the pivotal role of equitably distributed resources, well-prepared educators, and personalized learning experiences.

Consequently, national education policies must prioritize inclusivity, ensuring that every student, regardless of their circumstances, enjoys unfettered access to a quality education.

At the nucleus of thriving education systems are exceptionally skilled and motivated educators. Nations that have ascended the education ladder, such as Singapore and South Korea, underscore the imperative of recruiting, nurturing, and retaining top-tier teachers. Offering competitive compensation and fostering an environment of continual professional development serve as their guiding principles. Therefore, national education policies should meticulously incorporate these practices. By investing in teacher training and support mechanisms, nations can bolster the overall quality of their education systems. Another pivotal lesson revolves around the philosophy of student-centered learning. Countries like Canada and New Zealand champion flexible and personalized learning models, which recognize that each student is a unique amalgamation of strengths and needs. This approach empowers students to explore their passions and learn at their own pace. National education policies should enthusiastically embrace these practices, encouraging innovation and adaptability within the curriculum to cater to the diverse and evolving educational requirements of students.

A wealth of research underscores the momentous role played by early childhood education in a child's comprehensive development. Nations like Sweden and Norway exemplify this understanding by offering universal access to high-quality preschool programs, which significantly enhance school readiness and long-term educational outcomes. It is incumbent upon national education policies worldwide to acknowledge the centrality of early childhood education and to invest in widespread access to exemplary preschool programs. The dimension of assessment and accountability looms large in the world of education. Countries like Japan and the Netherlands skillfully deploy a blend of standardized tests and teacher evaluations to uphold educational standards. Crucially, they avoid undue stress and focus on holistic student development. National education policies should be underpinned by this wisdom, striving to establish equitable, comprehensive assessment systems that support and enhance student learning without subjecting them to undue pressure.

In our digitally permeated era, the seamless integration of technology into education is an imperative. Nations such as Estonia and South Korea serve as exemplars by adroitly embedding technology into their educational frameworks, augmenting the overall learning experiences of students and preparing them for the demands of a digitalized world. Consequently, national education policies must accord paramount importance to technology integration. However, they must also ensure that access to digital resources is equitable, thereby preventing the

exacerbation of educational disparities. In conclusion, the fusion of these global best practices into national education policies has the potential to redefine the trajectory of education, both for individuals and nations. Education is the crucible wherein the potential of individuals and the destiny of nations are forged. Thoughtful policy decisions, rooted in the lessons gleaned from around the world, can undoubtedly illuminate the path towards a brighter future for all, where education serves as the key to unlock the full spectrum of human potential in an ever-changing global landscape.

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HIGHER EDUCATION REFORMS: A KEY COMPONENT OF NATIONAL EDUCATION POLICY

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Abstract

Higher education is a critical component of a nation's education system, playing a pivotal role in shaping the future of individuals and society as a whole. This abstract explores the significance of higher education reforms as an essential element of national education policy. It highlights the importance of addressing issues related to accessibility, quality, and relevance in higher education. The abstract also discusses the potential benefits that effective higher education reforms can bring to individuals, the economy, and society at large. By prioritizing and implementing these reforms, nations can position themselves for success in the global knowledge economy and create opportunities for social development and progress.

Keywords: Higher Education, Reforms, National Education Policy, Accessibility, Quality Assurance

Introduction

Higher education occupies a central position in the trajectory of a nation's progress. It serves as the bedrock upon which intellectual advancement, innovative thinking, and the cultivation of a highly skilled workforce are built. Governments across the globe, with an astute acknowledgment of the pivotal role of higher education, have embarked on an array of initiatives aimed at overhauling and redefining its landscape. These comprehensive reforms are geared towards not only making higher education more accessible but also ensuring that it maintains the highest standards of quality and remains aligned with the evolving demands of contemporary society. In the following essay, we will delve into the significance of higher education reforms, portraying them as a cornerstone of a nation's educational policy, and elucidate the manifold advantages they confer upon individuals and society as a whole.

The Significance of Higher Education

1. Human Capital Development

Higher education serves as the crucible in which individuals are forged into valuable assets for the workforce and the broader economy. Through a rigorous academic curriculum and practical training, students acquire the knowledge and skills vital for their effective contribution to the labor market.

This development of human capital is not only advantageous for individuals but also a cornerstone of national economic growth.

2. Research and Innovation

Within the hallowed halls of higher education institutions, a vibrant culture of research and innovation thrives. These institutions are veritable hotbeds of intellectual curiosity and creativity, where scholars and students alike engage in groundbreaking research endeavors. Their collective efforts lead to advancements in fields such as science, technology, and various domains of knowledge, thereby propelling society into new frontiers of understanding and progress.

3. Cultural and Social Enrichment

Universities function as dynamic melting pots of diverse cultures, ideologies, and perspectives. They are breeding grounds for the cultivation of critical thinking and social awareness. By fostering an inclusive and intellectually stimulating environment, universities nurture enlightened citizens who possess a profound understanding of complex societal issues. This not only enriches the cultural tapestry but also equips individuals to engage in meaningful dialogues and contribute to the betterment of their communities and the world at large.

4. Global Competitiveness

A nation's competitiveness on the global stage is intrinsically tied to the quality of its higher education system. Robust institutions of higher learning produce highly skilled professionals who are sought after worldwide. Furthermore, these institutions often serve as conduits for international collaborations and knowledge exchange. The synergy between a strong higher education system and global competitiveness cannot be overstated, as it attracts talent and investment, fostering innovation and progress on a global scale.

5. Social Mobility

Higher education is a beacon of hope for individuals from diverse backgrounds who aspire to transcend the confines of their socio-economic status. It provides a pathway to upward social mobility, enabling students to break free from cycles of poverty and limited opportunities. By leveling the playing field and affording access to education, societies offer their citizens a chance to uplift themselves and contribute meaningfully to the betterment of their own lives and their communities. This not only promotes social justice but also harnesses the untapped potential of a nation's entire population.

Higher Education Reforms as a Necessity

Despite its significance, many higher education systems face various challenges, including inadequate funding, outdated curriculum, and limited accessibility. These challenges necessitate reforms to address the following key issues:

1. Access and Equity

Reforms in higher education are directed towards dismantling barriers that obstruct the path to knowledge and opportunities. These reforms are grounded in the principle that higher education should be a realm of equity, accessible to all, irrespective of their socio-economic background. To achieve this, governments and institutions implement measures such as financial aid, scholarships, and outreach programs, eradicating financial impediments that might deter aspiring students. Moreover, by reducing bureaucratic obstacles and enhancing inclusivity, higher education systems strive to ensure that every individual, regardless of their circumstances, has the chance to pursue their academic dreams and unlock their potential.

2. Quality Assurance

Ensuring the highest standards of education is paramount. In the pursuit of this objective, higher education reforms are a means to hone the craft of teaching and enhance the learning experience. These reforms encompass comprehensive faculty development programs that empower educators with cutting-edge pedagogical tools and methodologies. Simultaneously, accreditation processes are refined, creating a robust system that continually evaluates and benchmarks educational institutions. By underpinning quality, these reforms guarantee that every student receives an education that equips them with the skills, knowledge, and critical thinking abilities necessary for personal and professional success.

3. Curricular Relevance

The dynamics of society and the job market are in perpetual flux, demanding a curriculum that mirrors these shifts. Higher education reforms are the driving force behind the evolution of academic programs, ensuring that they remain aligned with contemporary demands. This involves a recalibration of course offerings, a focus on interdisciplinary learning, and a commitment to industry relevance. By doing so, universities produce graduates who are not only well-versed in their chosen fields but also possess the versatility and adaptability required to navigate an ever-changing professional landscape.

4. Research and Innovation

The heartbeat of global progress thrives within the laboratories and research centers of higher education institutions. Acknowledging the paramount importance of research, reforms channel substantial investments into research infrastructure and policies that spur innovation.

These investments bolster a nation's global competitiveness by fostering an environment conducive to breakthrough discoveries and technological advancements. Moreover, they ensure that the knowledge generated within the academic realm is not confined to textbooks but becomes a driving force behind societal development and economic growth.

5. Governance and Accountability

Transparent and accountable governance forms the backbone of a robust higher education system. Reforms in this realm are designed to enhance the organizational structure and governance mechanisms of educational institutions. By promoting transparency, reducing bureaucracy, and implementing effective oversight measures, these reforms hold institutions accountable for their actions and financial management. Consequently, this instills public trust in the higher education sector, ensuring that it operates with integrity and in the best interests of both students and society at large.

Benefits of Higher Education Reforms

1. Enhanced Employability

Reforms aimed at bolstering employability are a linchpin in higher education's response to the ever-evolving job market. By fostering a synergy between academia and industry, these reforms equip graduates with not only theoretical knowledge but also practical skills that are highly sought after by employers. Furthermore, through the establishment of robust internship programs and industry partnerships, students gain real-world experience and a deep understanding of their chosen fields. Consequently, the implementation of such reforms plays a pivotal role in reducing unemployment rates by ensuring that graduates are readily adaptable to the demands of the contemporary workforce.

2. Economic Growth

The nexus between a thriving higher education system and economic growth is undeniable. Higher education reforms that result in the production of a highly skilled and adaptable workforce have a cascading effect on a nation's economy. Not only do these graduates attract domestic and foreign investments, but they also serve as catalysts for innovation and entrepreneurship. The knowledge and skills imparted by institutions of higher learning become a wellspring of new ideas and technological advancements, ultimately propelling economic development.

3. Social Inclusion

Higher education reforms that address the chasm of inequality in access to education are the vanguards of social inclusion. By implementing measures to ensure that underrepresented and marginalized

communities have equal access to higher education, these reforms dismantle barriers that perpetuate societal disparities. They herald a more equitable society, where talent and potential are not constrained by socio-economic status or background. The ripple effect of such reforms extends to reduced inequality, increased social cohesion, and the creation of a more harmonious and just society.

4. Global Recognition

The international recognition of a nation's higher education system is an invaluable asset. Higher education reforms that elevate the quality and global standing of institutions draw attention from international students and scholars. This influx of diverse talent enriches the academic landscape and fosters cross-cultural interactions, promoting a global perspective and intercultural understanding. Moreover, international collaborations with renowned institutions worldwide lead to knowledge exchange, joint research endeavors, and advancements that transcend borders, further enhancing a nation's reputation on the global stage.

5. Innovation and Research

Investment in research and innovation is the cornerstone of progress in the modern world. Higher education reforms that channel resources into research initiatives yield breakthroughs with far-reaching implications. These breakthroughs can drive technological advancements, revolutionize healthcare through medical research, and address pressing societal issues such as climate change and public health crises. By prioritizing research and innovation, nations not only position themselves at the forefront of progress but also contribute to the betterment of humanity as a whole.

6. Cultural Enrichment

The higher education environment, marked by its diversity and vibrancy, plays a pivotal role in cultural enrichment. Reforms that prioritize inclusivity and diversity on campuses create a melting pot of ideas, perspectives, and traditions. This dynamic exchange fosters cross-cultural interactions, tolerance, and mutual understanding. The result is a more enriched cultural landscape, where individuals from various backgrounds come together to learn from one another, transcending borders and fostering a global community that celebrates diversity and promotes unity in a multicultural world.

Conclusion

Higher education reforms serve as the linchpin that not only complements but also propels national education policies, making them a vital driver of progress, prosperity, and social development within a nation. These reforms address critical dimensions, including accessibility, quality, relevance, and governance, imbuing

higher education with the transformative power to uplift individuals and propel societies forward. First and foremost, higher education reforms signify a commitment to democratizing knowledge and opportunity. By addressing issues of access, these reforms break down barriers, ensuring that higher education is no longer a privilege of the few but a right of all. They encompass initiatives such as financial aid programs, scholarships, and inclusive policies that level the playing field. Consequently, students from diverse backgrounds can aspire to higher education, transcending socio-economic constraints and enabling the harnessing of their full potential.

Quality assurance stands as another cornerstone of higher education reforms. They are the driving force behind ensuring that the education imparted is not just accessible but also of the highest caliber. These reforms encompass continuous improvement in teaching methodologies, rigorous faculty development programs, and stringent accreditation processes. By demanding excellence, they guarantee that every student receives an education that is not just academically robust but also equips them with the critical thinking skills, creativity, and adaptability essential for thriving in a dynamic world. Furthermore, higher education reforms extend their reach into curricular relevance, acknowledging the fluidity of society and the job market. They advocate for the alignment of academic programs with contemporary needs, fostering a seamless transition from the classroom to the workplace. These reforms spur universities to offer programs that are attuned to industry demands, promoting a culture of innovation, entrepreneurship, and lifelong learning.

Governance and accountability constitute yet another pivotal facet of higher education reforms. They aim to enhance the transparency and efficacy of institutional management, fostering trust among stakeholders. By streamlining administrative processes, reducing bureaucracy, and implementing robust oversight mechanisms, these reforms ensure that higher education institutions operate with integrity and accountability. Consequently, public confidence in the education sector is bolstered, enhancing the overall effectiveness of education policies. The multifaceted benefits of these reforms extend beyond individual empowerment. Nations that prioritize and effectively implement higher education reforms position themselves advantageously in the ever-evolving global knowledge economy. They produce a highly skilled and adaptable workforce that attracts investments, stimulates innovation, and catalyzes economic growth. Moreover, they create an environment conducive to research and innovation, yielding breakthroughs that drive technological advancements, improve healthcare, and address pressing societal challenges.

In parallel, higher education reforms also contribute to fostering a more inclusive and cohesive society. By reducing disparities in access and promoting diversity,

these reforms diminish inequality and lay the foundation for a fairer, more equitable nation. They cultivate a culture of tolerance, understanding, and cross-cultural interactions, enriching the social fabric. In conclusion, higher education reforms are not just integral to national education policies but serve as the beating heart of progress and development. They empower individuals to reach their full potential, drive economic growth, and foster a more inclusive and enlightened society. Nations that prioritize and enact effective higher education reforms are better equipped to thrive in the global arena, ensuring a brighter future for their citizens and contributing to the betterment of humanity as a whole.

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INNOVATIONS IN CURRICULUM DESIGN: A FOCUS ON NATIONAL EDUCATION POLICY

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Abstract

The National Education Policy (NEP) serves as a guiding framework for educational reform in many countries, and recent revisions have highlighted the need for innovative curriculum design. This abstract provides an overview of the role of curriculum design in driving educational innovation within the context of the NEP. It explores key features of innovative curriculum design, including interdisciplinary learning, critical thinking, digital literacy, inclusivity, and assessment reform. The benefits of such innovations, such as increased relevance, engagement, and workforce preparedness, are discussed. Challenges, including resistance to change and resource limitations, are also acknowledged. Looking ahead, the prospects for innovative curriculum design appear promising, with emerging technologies offering new opportunities for personalized learning experiences. This abstract underscores the importance of sustained commitment from policymakers, educators, and stakeholders in realizing the potential of innovative curriculum design to prepare students for a rapidly changing world.

Keywords: *Curriculum Design, Innovation in Education, National Education Policy, Interdisciplinary Learning, Digital Literacy*

Introduction

Curriculum design stands as a dynamic and continuously evolving facet of the education sector, inherently responsive to the evolving needs of students, society, and the workforce. As societies advance, and educational paradigms shift, the imperative for curriculum design to adapt and remain relevant becomes increasingly evident. In many countries, the National Education Policy (NEP) emerges as a pivotal guiding framework, steering the course of educational reforms. Recent revisions to the NEP have notably underscored the paramount importance of fostering innovative curriculum design, signaling a resounding call to revamp and rejuvenate educational practices to align with the demands of the 21st century. This essay delves into the multifaceted role of curriculum design in catalyzing educational innovation, all within the overarching context of the NEP. It embarks on a comprehensive journey to uncover the essence of curriculum design in a rapidly evolving educational landscape. It lays bare the potential benefits that these innovative approaches to curriculum design offer, acknowledges the complex

challenges that they encounter, and ultimately envisions the future prospects and transformative possibilities that lie ahead.

Curriculum design, as a dynamic endeavor, is tasked with the monumental responsibility of crafting educational blueprints that resonate with the ever-shifting tides of societal, technological, and economic change. In this context, the NEP emerges as a crucial guiding star that illuminates the path towards educational reforms that are not only comprehensive but also forward-looking. Recent iterations of the NEP have reaffirmed the centrality of innovative curriculum design, casting a spotlight on the urgency to reimagine and rejuvenate educational paradigms in the face of contemporary challenges. Innovations in curriculum design within the purview of the NEP are marked by several defining characteristics. These encompass interdisciplinary learning, which encourages students to explore the intricate interplay between various subjects, fostering a holistic comprehension of real-world complexities. Furthermore, the NEP champions the cultivation of critical thinking and problem-solving skills, thus empowering students to analyze, synthesize, and apply their knowledge to multifaceted challenges. Digital literacy, an indispensable competence in the digital age, is intricately woven into the fabric of these innovative curricula, equipping students not only as adept users of technology but also as creators and innovators in their right. The NEP advances the cause of inclusivity and diversity, advocating for educational curricula that accommodate the diverse needs, backgrounds, and perspectives of all students, thus sowing the seeds of empathy, cultural competence, and social harmony. Moreover, it instigates a paradigm shift in assessment practices, steering away from rote memorization and high-stakes examinations towards continuous evaluation, portfolio assessments, and project-based assessments, providing a more nuanced and holistic understanding of students' abilities and potential.

The benefits of innovative curriculum design, as driven by the NEP, are indeed manifold. Firstly, these innovative approaches breathe new life into education by ensuring its relevance to students' lives and future careers. By fostering more engaging and interactive learning experiences, they reignite the flames of curiosity, motivating students to take an active role in their educational journey. Furthermore, they prepare students more effectively for the demands of the contemporary workforce by cultivating interdisciplinary skills, critical thinking, and digital literacy. These skill sets, coupled with inclusive curricula, help reduce educational disparities and promote a fairer and more inclusive society. Finally, a well-rounded and innovative education system enhances a nation's global competitiveness by producing a skilled and adaptable workforce capable of navigating the complex challenges and opportunities of the 21st century. Nonetheless, the path to implementing innovative curriculum designs is not devoid of challenges. The inertia

of traditional educational systems, resistance to change, and concerns about resource limitations pose formidable hurdles. To surmount these challenges, a sustained commitment from policymakers, educators, and stakeholders is indispensable. It necessitates an environment that values experimentation, flexibility, and adaptability. Moreover, it calls for investment in teacher training and professional development to empower educators to facilitate these innovative learning experiences effectively. Adequate resources, both in terms of technology and infrastructure, are imperative to support these innovations fully. Looking forward, the prospects for innovative curriculum design appear promising. As education systems continue to adapt to the realities of the 21st century, innovative curricula will play an increasingly central role in preparing students for a rapidly changing world. The integration of emerging technologies, such as artificial intelligence, virtual reality, and personalized learning platforms, holds the potential to revolutionize curriculum delivery and create even more engaging and personalized learning experiences. These technologies can adapt to individual student needs, providing tailored educational journeys that cater to diverse learning styles and paces. Thus, curriculum design stands at the epicenter of educational innovation, and the National Education Policy serves as a guiding compass in this transformative journey. Innovative curriculum design is not merely an educational reform; it represents a profound reimagining of the educational experience, one that aligns with the needs of contemporary society and the future workforce. While challenges undoubtedly exist, the potential benefits are profound, promising a more relevant, engaging, and inclusive education system. This endeavor requires unwavering commitment, investment, and adaptability from all stakeholders. As we venture forward, we embark on an odyssey that holds the promise of equipping future generations with the knowledge, skills, and competencies required to thrive in an ever-evolving global landscape.

The National Education Policy and Curriculum Design

The National Education Policy (NEP) is frequently likened to a nation's educational blueprint, serving as the guiding compass that charts the course of its educational system. Over recent years, a noticeable trend has emerged across various countries—substantial revisions and overhauls of their respective NEPs. These revisions reflect a collective recognition within the global education community that the traditional curricula and pedagogical approaches that have long prevailed may no longer be adequate. The rationale underpinning these revisions is the imperative to reorient education to meet the multifaceted demands of the 21st century, where rapid societal, technological, and economic transformations are the norm rather than the exception. The NEP, as a policy framework, is instrumental in

molding the landscape of curriculum design. It provides the overarching vision and strategic direction for the education system, offering the guidelines and principles that educators and policymakers must heed. In essence, it sets the stage upon which the drama of educational reform unfolds. Recent revisions to NEPs worldwide have been characterized by a profound and visionary shift—a shift that underscores the need for innovative curriculum design and pedagogical strategies. These revisions are rooted in the understanding that the traditional, siloed approaches to education are ill-equipped to prepare students for the complex, interdependent, and fast-paced realities of the modern world.

Innovations in Curriculum Design under the Nep are Characterized by Several Key Features:

1. Interdisciplinary Learning

A cornerstone principle of the National Education Policy (NEP) is the promotion of interdisciplinary learning—a pedagogical paradigm shift that heralds a transformative approach to education. This innovative strategy exhorts students to embark on a journey that transcends the boundaries of traditional subject silos, enabling them to uncover rich connections between disparate fields of knowledge. The ultimate aim? To cultivate in students a holistic understanding of complex real-world challenges, equipping them with the intellectual agility and adaptability required to navigate the multifaceted demands of the modern workforce. The NEP's steadfast commitment to interdisciplinary learning challenges the conventional paradigms of education where subjects are often compartmentalized, rendering knowledge fragmented and disconnected from its real-world applications. This groundbreaking approach embraces the interplay between various disciplines, acknowledging that many of the most pressing challenges confronting society do not neatly fit within the confines of a single academic domain. Interdisciplinary learning, at its core, encourages students to embark on intellectual journeys that transcend disciplinary boundaries. It invites them to explore the rich tapestry of connections that exist between subjects, enabling them to draw insights, perspectives, and methodologies from diverse fields. For instance, a student studying environmental issues may integrate concepts from biology, economics, sociology, and policy studies to devise comprehensive solutions for sustainability. This not only enriches their understanding but also empowers them to think critically, synthesize information, and innovate—a skill set crucial in today's complex world. Moreover, interdisciplinary learning promotes a profound shift in the educational paradigm—from rote memorization to a quest for deeper understanding. It prompts students to ask probing questions, challenge

assumptions, and engage in hands-on exploration. It fosters an environment where the emphasis shifts from "what to think" to "how to think," nurturing the development of crucial cognitive skills such as critical thinking, problem-solving, and creativity. Crucially, this approach mirrors the realities of the modern workforce. In a world characterized by rapid technological advancements and interconnected global challenges, professionals are often called upon to grapple with issues that transcend disciplinary boundaries. Interdisciplinary learning equips students with the versatility and adaptability essential for success in a workforce that increasingly values employees who can synthesize knowledge, collaborate across fields, and offer innovative solutions. The benefits of interdisciplinary learning are indeed manifold. Beyond enhancing students' cognitive abilities and problem-solving skills, it enriches their learning experience, making education more engaging and relevant. It ignites their curiosity and motivation, as they recognize the intrinsic value of what they are learning and its potential to effect positive change. Furthermore, interdisciplinary learning nurtures a culture of collaboration, fostering the exchange of ideas among students with diverse backgrounds and interests. It encourages them to appreciate the multifaceted nature of real-world challenges and the need for multifaceted solutions—a perspective that will serve them well in their future careers. However, implementing interdisciplinary learning is not without its challenges. It requires educators to rethink and redesign curricula, collaborating across departments and disciplines. It necessitates a commitment to professional development, equipping teachers with the pedagogical strategies and tools needed to facilitate interdisciplinary experiences effectively. It also calls for resource allocation to support innovative teaching methods, such as project-based learning and experiential opportunities. Thus, the National Education Policy's advocacy for interdisciplinary learning represents a transformative leap in the field of education. By encouraging students to explore the interconnections between subjects and fostering a holistic understanding of complex problems, interdisciplinary learning equips them with the skills and mindset needed for success in the modern workforce. While challenges exist, the benefits are profound, promising a more engaged, adaptable, and innovative generation prepared to tackle the intricate challenges of our interconnected world. As we embrace this paradigm shift, it is essential for educators, policymakers, and stakeholders to work collaboratively to realize the full potential of interdisciplinary learning in education.

2. Critical Thinking and Problem Solving

The National Education Policy (NEP) stands as a resounding testament to the recognition that education in the 21st century must transcend the mere acquisition of facts and figures. One of its pivotal cornerstones is the profound emphasis it places on nurturing critical thinking and problem-solving skills within the education ecosystem. In a world characterized by intricate challenges, rapid technological advancements, and the ever-evolving dynamics of the global landscape, these skills are not mere luxuries but essential competencies that define an individual's readiness for the complexities of modern life. Within the ambit of the NEP, curriculum design takes center stage in orchestrating a transformational shift. It reimagines the educational landscape, departing from the conventional paradigms of rote memorization and standardized testing. Instead, it champions the design of curricula that propel students into the heart of authentic, real-world challenges. In this dynamic learning environment, students are not passive recipients of information but active participants in their own intellectual and practical growth. Critical thinking, as endorsed by the NEP, is the cornerstone of this pedagogical transformation. It demands that students engage in cognitive processes that go beyond the mere regurgitation of facts. They are encouraged to question assumptions, analyze information from multiple perspectives, and discern patterns and connections within complex data. Critical thinkers become adept at discerning credible sources from misinformation, a skill that is increasingly vital in the era of information overload. Simultaneously, problem-solving takes on a central role in curriculum design. Students are presented with real-world challenges that require the application of knowledge and skills acquired in various subjects. They must navigate ambiguity, consider diverse viewpoints, and synthesize information to devise innovative solutions. This experiential approach equips students with the ability to confront novel problems with confidence and creativity—a vital competency in a world where challenges seldom come with straightforward solutions. Through these educational innovations, the NEP propels students from the realms of passive memorization into the terrain of active, critical engagement with the world around them. It not only enhances their cognitive abilities but also imbues them with a deep-seated sense of agency and empowerment. Students are no longer mere recipients of knowledge; they become knowledge creators and problem solvers—a transformation that has profound implications for their future roles as citizens, professionals, and innovators. Moreover, the emphasis on critical thinking and problem solving aligns closely with the needs of the modern workforce. In today's rapidly changing job market, employers seek individuals who can navigate ambiguity, adapt to new situations, and offer creative solutions

to complex challenges. The NEP, by prioritizing these skills, enhances students' employability and positions them as assets to employers and society at large. However, the journey toward fostering critical thinking and problem-solving skills is not without its challenges. It necessitates a paradigm shift in teaching practices, moving away from traditional lectures and exams toward more student-centered, inquiry-based approaches. This transformation requires dedicated teacher training and professional development, equipping educators with the pedagogical strategies and tools to facilitate critical thinking and problem-solving effectively. Furthermore, the assessment of these skills presents a unique challenge. Traditional high-stakes exams are often ill-suited to measure the depth and breadth of critical thinking and problem-solving abilities. The NEP encourages a reevaluation of assessment practices, advocating for methods such as project-based assessments and portfolios that offer a more holistic view of students' capabilities. Thus, the National Education Policy's unwavering commitment to fostering critical thinking and problem-solving skills heralds a transformative era in education. By refocusing curriculum design on real-world challenges and experiential learning, it equips students with the competencies essential for success in the complex and dynamic landscape of the 21st century. While challenges exist in implementing these changes, the benefits are profound, positioning students as agile thinkers, innovators, and adaptable problem solvers who can navigate the complexities of the modern world with confidence and creativity. As we embrace this pedagogical transformation, the collaboration of educators, policymakers, and stakeholders is essential in ensuring the full realization of these skills in education.

3. Digital Literacy

In an era defined by the relentless advance of technology, digital literacy has transcended the realm of convenience to become an essential skill. Recognizing this pivotal shift, the National Education Policy (NEP) stands as a torchbearer of innovation, weaving digital literacy seamlessly into the fabric of its curriculum design. In doing so, it seeks not merely to produce proficient users of technology but to nurture a generation of individuals capable of harnessing digital tools as powerful instruments for creative problem-solving and effective communication. The digital landscape has irrevocably reshaped the way we live, work, and learn. In this fast-paced environment, digital literacy is the key that unlocks the doors to participation, productivity, and empowerment. The NEP, with its visionary outlook, endeavors to ensure that every student is not just equipped with the technical skills needed to navigate this digital world but is also primed to be a discerning and innovative user of technology. Under the purview of the NEP, curriculum design places a significant emphasis on

technology-based learning tools and resources. This approach fundamentally transforms the educational experience, making it more dynamic, interactive, and future-ready. It envisages a classroom where students are not passive recipients of knowledge but active co-creators of their learning journey, utilizing technology as a conduit for exploration, discovery, and expression.

One of the primary objectives of integrating technology into curriculum design is to equip students with proficiency in using a wide array of digital tools and platforms. They are taught how to navigate digital interfaces, employ software applications, and harness online resources effectively. This foundational digital literacy empowers students to engage with the digital world confidently, ensuring they are not left behind in an increasingly technology-driven society. However, the NEP goes beyond mere technical proficiency; it aspires to foster a deep understanding of the creative potential of technology. In this innovative learning environment, students are encouraged to leverage digital tools for creative problem-solving. They are tasked with real-world challenges that demand the application of digital skills to devise innovative solutions. This experiential learning not only enhances their problem-solving abilities but also nurtures an entrepreneurial mindset, preparing them to be catalysts of innovation in various fields. Furthermore, digital literacy within the NEP encompasses effective communication. In today's interconnected world, the ability to convey ideas, collaborate with others, and engage in meaningful dialogues through digital channels is indispensable. Students are taught to use technology as a medium for clear and persuasive communication, equipping them with a vital skill set that extends beyond academic contexts into the professional world. While the integration of technology in education brings forth immense opportunities, it is not without its challenges. Adequate infrastructure, including reliable internet access and access to digital devices, is imperative to ensure equitable access to digital learning resources. The NEP recognizes the importance of addressing these infrastructure disparities and advocates for inclusive digital education.

Moreover, educators themselves require training and professional development to effectively leverage technology for teaching. Continuous support and resources are vital to ensure that teachers can adapt to the evolving digital landscape and confidently guide students in their digital literacy journey. Thus, the National Education Policy's proactive stance on digital literacy represents a paradigm shift in education. By seamlessly incorporating technology-based learning tools and resources into curriculum design, it equips students with the skills and mindset needed to excel in a digital world. Beyond technical proficiency, the NEP fosters creative problem-solving, effective communication,

and an entrepreneurial spirit. While challenges exist in ensuring equitable access and teacher preparedness, the benefits are profound, positioning students to thrive in a digital age defined by innovation, connectivity, and opportunity. As we embrace this digital revolution in education, collaboration among educators, policymakers, and stakeholders is paramount to realize the full potential of digital literacy within the NEP.

4. Inclusivity and Diversity

The National Education Policy (NEP) stands as a resolute advocate for inclusive and diverse education—a transformative approach that recognizes the unique needs, backgrounds, and experiences of all students. In an increasingly interconnected and multicultural world, the NEP leads the charge in reshaping curriculum design to ensure that education is not only accessible to all but also enriched by a vibrant tapestry of perspectives and cultures. This visionary perspective extends far beyond the boundaries of traditional education, aiming to create an inclusive learning environment where diversity is celebrated, empathy is cultivated, and cultural competence is fostered. Inclusivity, within the framework of the NEP, represents a fundamental shift in educational philosophy. It envisions a classroom where every student, regardless of their abilities, socioeconomic status, cultural background, or any other characteristic, is welcomed and valued as an integral part of the learning community. The NEP recognizes that traditional educational systems, which often adhere to a one-size-fits-all model, fail to meet the diverse needs of students. Thus, curriculum design becomes a dynamic instrument for adaptation, accommodating the individual learning styles, paces, and requirements of students. One of the primary tenets of an inclusive and diverse curriculum design is the incorporation of a broader range of perspectives and experiences. This approach transcends the confines of textbooks to introduce students to a rich tapestry of voices and narratives from around the world. It ensures that the curriculum reflects the diversity of the global community, offering students the opportunity to explore different cultures, histories, and worldviews. This not only enriches their understanding of the world but also broadens their horizons, fostering a sense of curiosity and open-mindedness.

Moreover, an inclusive curriculum design strives to engender empathy among learners. By exposing students to diverse perspectives and experiences, it encourages them to see the world through others' eyes. This experiential learning transcends the theoretical and immerses students in the lived experiences of people from various backgrounds. It nurtures a sense of compassion, tolerance, and understanding, imbuing students with the capacity to connect with others on a deeper level. Cultural competence emerges as a cornerstone of inclusive and

diverse education under the NEP. It underscores the importance of equipping students with the ability to navigate and thrive in a multicultural world. Curriculum design is not limited to the transmission of knowledge but encompasses the cultivation of skills, attitudes, and behaviors that enable students to interact respectfully and effectively in a culturally diverse society. This competency goes beyond mere tolerance; it encourages active engagement, appreciation, and collaboration among individuals from different cultural backgrounds. While the vision of an inclusive and diverse education system is undeniably transformative, its realization is not without challenges. Curriculum design must be flexible and adaptable to cater to the diverse learning needs of students. It necessitates a commitment to teacher training and professional development to ensure that educators are equipped with the pedagogical strategies and tools needed to foster an inclusive learning environment. Moreover, resource allocation is vital to provide students with access to materials, experiences, and opportunities that reflect a diverse and inclusive perspective. Thus, the National Education Policy's unwavering advocacy for inclusive and diverse education reflects a visionary approach to learning. By reshaping curriculum design to accommodate diverse needs, incorporate a multitude of perspectives, foster empathy, and cultivate cultural competence, it seeks to create a dynamic and inclusive learning environment where every student can thrive. While challenges persist, the benefits are profound, positioning students as global citizens who are not only academically competent but also compassionate and culturally aware. As we embark on this transformative journey, collaboration among educators, policymakers, and stakeholders is pivotal to realize the full potential of inclusive and diverse education within the NEP.

5. Assessment Reform

The National Education Policy (NEP) sets forth a visionary approach to assessment practices – an approach that heralds a profound transformation in the way students' progress and abilities are gauged. In recognition of the limitations of traditional assessment methods, such as rote memorization and high-stakes examinations, the NEP advocates for a paradigm shift. It advocates for a diversified and dynamic assessment landscape that encompasses continuous evaluation, portfolio assessments, and project-based assessments, with the aim of providing a holistic and comprehensive understanding of a student's capabilities and potential. Traditional assessment methods, typified by rote memorization and high-stakes examinations, have long been criticized for their narrow focus on memorized facts and the ability to reproduce information under exam conditions. The NEP acknowledges that such assessments often fail to capture the

depth and breadth of a student's understanding, creativity, and problem-solving abilities. Consequently, curriculum design under the NEP is accompanied by a reevaluation of assessment practices to align them with the multifaceted goals of modern education. Continuous evaluation stands at the forefront of this assessment revolution. It envisions a learning environment where assessment is an ongoing, integral component of the educational journey. Rather than relying solely on summative assessments at the end of an academic period, continuous evaluation ensures that students are assessed consistently throughout their learning process. This method offers several advantages: it provides real-time feedback to students, identifies learning gaps early on, and allows educators to adapt their teaching strategies accordingly. It transforms assessment from a mere judgment of knowledge acquisition into a dynamic tool for enhancing learning outcomes.

Portfolio assessments constitute another pillar of the NEP's assessment framework. In this approach, students curate a collection of their work over time, showcasing their achievements, progress, and reflections. Portfolios offer a multifaceted view of a student's development, encompassing not only academic achievements but also creative endeavors, critical reflections, and personal growth. They provide a narrative of a student's educational journey, allowing educators to gain insight into the depth of their understanding and the evolution of their skills and competencies. Project-based assessments represent a tangible departure from traditional examination formats. In project-based learning, students engage in hands-on, real-world projects that require them to apply their knowledge and skills to solve complex problems or create meaningful artifacts. These assessments demand critical thinking, problem-solving, creativity, and collaboration—skills that are invaluable in the modern workforce. By assessing students based on their ability to navigate authentic challenges, project-based assessments not only provide a more accurate measure of their readiness for the real world but also nurture skills that are highly transferable and essential for success. The benefits of this diversified assessment landscape are profound. Firstly, it aligns assessment practices with the broader goals of education, emphasizing not just the acquisition of knowledge but the development of critical skills and competencies. Secondly, it reduces the undue pressure associated with high-stakes examinations, fostering a more conducive and less stressful learning environment. Thirdly, it promotes a growth mindset, encouraging students to view assessment as an opportunity for improvement rather than a judgment of their worth. Nonetheless, the transition to these innovative assessment methods is not without its challenges. Educators require training and professional development to effectively implement continuous evaluation, portfolio

assessments, and project-based assessments. Furthermore, adapting assessment practices to accommodate diverse learning styles and needs necessitates a flexible and adaptable approach. Thus, the National Education Policy's advocacy for diversified assessment practices signifies a transformative leap in the field of education. By emphasizing continuous evaluation, portfolio assessments, and project-based assessments, it aligns assessment with the broader goals of education, reduces stress, and fosters a growth-oriented mindset. While challenges exist, the benefits are profound, positioning students as active learners and critical thinkers, ready to navigate the complexities of the modern world with confidence and creativity. As we embrace this assessment revolution, collaboration among educators, policymakers, and stakeholders is paramount to realize the full potential of these innovative assessment practices within the NEP.

Benefits of Innovative Curriculum Design

1. Relevance

Innovative curricula, as championed by the National Education Policy (NEP), set the stage for education that is profoundly relevant. By closely aligning educational content and experiences with the ever-evolving demands of the modern world, these curricula bridge the gap between theory and practice. They enable students to see the immediate relevance of what they are learning to their lives and future careers. This relevance not only motivates students but also empowers them with knowledge and skills that can be readily applied in real-world contexts. Consequently, education becomes a dynamic and meaningful journey, fostering a lifelong love for learning.

2. Engagement

A cornerstone of innovative curricula within the NEP is their inherent capacity to ignite the flames of curiosity and engagement. These curricula leverage creative and interactive learning experiences that transcend the boundaries of traditional pedagogy. Students are no longer passive recipients of information but active participants in their educational journey. Whether through hands-on experiments, collaborative projects, or immersive technology-enhanced learning, these experiences kindle a sense of excitement and exploration. The result is an education that not only imparts knowledge but also nurtures critical thinking, problem-solving, and creativity—a transformative approach that propels students toward becoming lifelong learners and active contributors to society.

3. Preparation for the Workforce

In an era marked by rapid technological advancements and an ever-changing job market, innovative curricula emerge as a lifeline for students preparing to enter the workforce. Within the framework of the NEP, interdisciplinary skills take

center stage. Students are encouraged to explore the interconnectedness of knowledge, transcending the boundaries of traditional subject silos. Critical thinking and problem-solving become second nature, honed through real-world challenges and project-based learning. Digital literacy, a foundational pillar, equips students with not just the ability to use technology but also the capability to harness it as a tool for innovation and communication. The result is a generation of graduates who are not only well-prepared for the complexities of the modern workforce but who also possess the adaptability and resilience needed to thrive in an ever-changing professional landscape.

4. Diversity and Inclusion

Innovative curricula under the NEP are the embodiment of inclusivity and diversity. They are designed to accommodate the diverse needs, backgrounds, and perspectives of students. These curricula move beyond mere tolerance to actively celebrate the richness of diversity. By incorporating a broad range of perspectives, cultures, and voices, they foster a sense of empathy and cultural competence among learners. This transformative approach goes beyond the classroom, preparing students to navigate a multicultural world with respect, open-mindedness, and a deep appreciation for the multiplicity of human experiences. In this way, innovative curricula become a catalyst for creating a more equitable and harmonious society.

5. Global Competitiveness

At the heart of innovative curricula within the NEP lies the pursuit of global competitiveness. A well-rounded education system that places emphasis on interdisciplinary learning, critical thinking, digital literacy, and inclusive practices not only equips a nation's workforce with advanced skills but also enhances its adaptability and resilience. As a result, the nation becomes an attractive destination for foreign investors and multinational corporations, drawn by the promise of a skilled, adaptable, and innovative workforce. This influx of investment can lead to increased foreign direct investment (FDI), economic development, and a heightened global standing. In essence, innovative education propels a nation toward greater global competitiveness, opening doors to economic growth and prosperity on the international stage.

Challenges and Future Prospects

Embracing innovative curriculum designs in alignment with the National Education Policy (NEP) brings forth a multitude of advantages. However, as with any transformative endeavor, this shift in educational paradigms is not without its share of challenges. These challenges encompass resistance to change ingrained within traditional educational systems, the imperative need for comprehensive

teacher training and ongoing professional development, and the availability of essential resources and technology. Overcoming these hurdles demands unwavering commitment and collaboration from policymakers, educators, and stakeholders alike. One of the foremost challenges in implementing innovative curriculum designs is the resistance emanating from deeply entrenched traditional educational systems. These systems often rely on age-old pedagogical methods and rigid structures that are resistant to change. The introduction of interdisciplinary learning, continuous assessment, and technology-driven education can encounter resistance from those who are comfortable with the status quo. Addressing this challenge necessitates not only clear communication of the benefits of innovation but also a commitment to gradually phasing in changes, allowing for a smooth transition and acceptance.. The success of innovative curriculum designs hinges significantly on the capacity and preparedness of educators. To effectively implement these new approaches, teachers require comprehensive training and ongoing professional development. They need to adapt their teaching methodologies, embrace technology, and cultivate the skills necessary to facilitate project-based learning, continuous assessment, and other innovative techniques. This investment in educator readiness is essential to ensure that the transformational potential of innovative curricula is fully realized.

Access to essential resources and technology can pose a formidable challenge, particularly in regions with limited infrastructure or economic disparities. Innovative curriculum designs often rely on digital tools, interactive learning materials, and diverse resources. Ensuring equitable access to these resources is paramount to prevent the exacerbation of educational inequalities. Policymakers must allocate funding for technology integration, provide access to digital devices, and ensure reliable internet connectivity to bridge the digital divide and create an inclusive learning environment. Despite these challenges, the future prospects for innovative curriculum design appear promising. As education systems continue to evolve in response to the realities of the 21st century, innovative curricula will play an increasingly central role in preparing students for a rapidly changing world. Moreover, the integration of emerging technologies, such as artificial intelligence, augmented reality, and virtual reality, holds immense potential to revolutionize curriculum delivery. The advent of artificial intelligence, for instance, can enable personalized learning experiences, tailoring education to individual students' needs and learning styles. Virtual reality can transport students to immersive learning environments, providing hands-on experiences that were previously inconceivable. Such technological advancements promise to make education more engaging, interactive, and effective. In conclusion, while the challenges of implementing innovative curriculum designs aligned with the NEP are real and substantial, their potential benefits are equally profound. As educators, policymakers, and

stakeholders work collaboratively to address these challenges, the future of education appears bright. The integration of emerging technologies and a steadfast commitment to innovative approaches position education systems to equip students with the skills, knowledge, and adaptability needed to thrive in an ever-changing world. In this dynamic educational landscape, innovative curriculum designs will continue to evolve, ensuring that learners are well-prepared for the challenges and opportunities of the 21st century.

Conclusion

Innovations in curriculum design, catalyzed by the forward-thinking National Education Policy (NEP), signify a seismic shift in the landscape of education. These innovative approaches are not merely cosmetic adjustments but represent a fundamental reimagining of how knowledge is imparted and how learners are prepared to navigate the complexities of the modern world. While their implementation is not without challenges, the potential benefits are nothing short of transformative, promising a more relevant, engaging, and inclusive education system that equips students with the skills, knowledge, and competencies essential for success in an ever-evolving global landscape. As we set forth on this transformative educational journey, the commitment and collaborative efforts of all stakeholders, from policymakers and educators to parents and students, are indispensable to ensure that these innovative curriculum designs are not only effectively implemented but also continually refined to meet the dynamic needs of future generations. At the heart of these innovative curriculum designs is a resolute commitment to relevance. They bridge the chasm between traditional pedagogical approaches and the multifaceted demands of the modern world. These designs respond to the pressing question: "How can education be tailored to meet the evolving needs of students' lives and future careers?" By doing so, they ensure that education is not a static exercise in memorization but a dynamic journey that students can see as immediately applicable to their lives. The result is education that is inherently more engaging and motivating, as students recognize the real-world significance of what they are learning.

Engagement is another cornerstone of these innovative designs. They harness the power of creativity, interactivity, and experiential learning to transform students into active participants in their own educational journeys. These designs liberate students from the passive role of knowledge recipients, propelling them into the realm of critical thinkers, problem solvers, and lifelong learners. Whether through project-based learning, collaborative initiatives, or immersive technology-enhanced experiences, students are empowered to explore, question, and create. The educational landscape becomes a place where curiosity thrives, igniting a lifelong

passion for learning. Crucially, these innovative curriculum designs extend their influence beyond the classroom, positioning students as prepared and adaptable participants in the workforce of the future. They champion interdisciplinary skills that transcend traditional subject boundaries, nurturing the versatility needed to thrive in a rapidly changing job market. Critical thinking, problem-solving, digital literacy, and a host of other competencies become integral components of education, equipping students with the resilience and adaptability needed for success. Inclusivity and diversity also feature prominently in these innovative designs. They not only acknowledge the unique needs and backgrounds of students but actively celebrate the richness of diversity. By incorporating a multitude of perspectives, cultures, and voices, these designs foster a sense of empathy and cultural competence among learners. In doing so, they contribute to the creation of a more equitable and harmonious society. Looking to the future, the prospects for innovative curriculum design are promising. As education systems continue to evolve to meet the demands of the 21st century, these designs will play a central role in preparing students for a rapidly changing world. Moreover, the integration of emerging technologies, such as artificial intelligence, virtual reality, and personalized learning platforms, holds the potential to further revolutionize curriculum delivery. These technologies promise to make education even more engaging, personalized, and effective, aligning it with the digital age and the evolving needs of learners. In conclusion, while the journey of implementing innovative curriculum designs aligned with the NEP presents its share of challenges, their transformative potential is undeniable. They hold the promise of a more relevant, engaging, and inclusive education system that equips students with the skills, knowledge, and adaptability needed to thrive in the modern world. As we navigate this transformative path, it is essential for all stakeholders to collaborate and invest their collective efforts to ensure the effective implementation and continual refinement of these innovative curriculum designs. In doing so, we pave the way for a brighter educational future, one where learners are not just recipients of knowledge but architects of their own success in an ever-evolving global landscape.

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PROMOTING LIFELONG LEARNING IN THE NATIONAL EDUCATION POLICY AGENDA

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Abstract:

In an era marked by rapid technological advancements and evolving economic landscapes, the concept of lifelong learning has gained paramount importance. Lifelong learning goes beyond traditional education, emphasizing continuous skill development and personal growth throughout one's life. This abstract explores the significance of integrating lifelong learning into the national education policy agenda and its profound implications for individuals and society. By embracing lifelong learning, education policies can empower citizens to adapt to change, close skills gaps, enhance employability, and foster a culture of continuous improvement. This abstract provides a succinct overview of the relevance and implications of promoting lifelong learning within national education policies, highlighting the transformative potential it holds for individuals and nations in an ever-changing world.

Keywords: *Lifelong Learning, National Education Policy, Education Agenda, Continuous Skill Development, Educational Transformation*

Introduction

Lifelong learning, an intrinsic part of human development, is the perpetual process of acquiring knowledge, skills, and competencies throughout an individual's life journey. In a world characterized by relentless change and innovation, the value of lifelong learning has assumed unprecedented significance. It transcends the confines of formal education, encompassing a dynamic philosophy that encourages individuals to embrace a continual quest for knowledge, adapt to evolving circumstances, and actively contribute to their personal development and the broader advancement of society. The contemporary landscape is defined by rapid technological advancements, economic shifts, and societal transformations. The careers of today may no longer exist tomorrow, and the skills demanded by the job market are in constant flux. This reality underscores the vital role of lifelong learning as a means of staying relevant and competitive in an environment where standing still is akin to falling behind. In essence, lifelong learning equips individuals with the intellectual and practical agility to not only weather these changes but also to thrive in a state of perpetual evolution.

Furthermore, the concept of lifelong learning extends beyond the realm of individual development. It has profound implications for societal progress. As

individuals engage in continuous learning, they not only enhance their own capabilities but also contribute to the collective knowledge and innovative potential of society as a whole. This accumulation of knowledge and innovation forms the bedrock upon which advancements in various fields are built, driving progress, and prosperity. Given the transformative potential of lifelong learning, its integration into the national education policy agenda is no longer a matter of choice but an urgent necessity. The significance of this integration extends across multiple dimensions, each of which holds profound implications for individuals and society.

Firstly, the infusion of lifelong learning principles into national education policies serves to reorient the educational landscape. It necessitates a shift away from conventional, time-bound learning models towards more flexible and adaptive systems. Educational institutions must recognize that learning does not end with a degree but continues throughout one's life. Lifelong learning policies encourage institutions to create learning environments that accommodate learners of all ages, supporting their evolving needs and aspirations. Moreover, the integration of lifelong learning requires education policies to prioritize accessibility and inclusivity. Lifelong learning opportunities should be available to all, regardless of age, background, or socioeconomic status. This inclusivity involves offering affordable and flexible learning options, such as adult education programs, online courses, and workplace training, to ensure that every individual has the opportunity to participate in the lifelong learning journey.

To implement lifelong learning effectively, teacher professional development becomes paramount. Educators are the custodians of knowledge transmission, and they must be equipped with the pedagogical skills and mindsets necessary to facilitate lifelong learning experiences. Lifelong learning also entails that educators themselves engage in continuous learning to stay current and model this behavior for their students. Furthermore, recognizing and accrediting prior learning experiences are essential elements of lifelong learning policies. Individuals bring diverse life experiences and skills to the learning process. National policies should establish mechanisms for evaluating and granting recognition to these experiences, allowing individuals to build upon their existing knowledge and skills.

Lastly, effective monitoring and evaluation mechanisms must be put in place to assess the impact of lifelong learning policies. Governments should regularly evaluate the outcomes of these policies in terms of employability, societal engagement, and economic growth. By continually assessing the effectiveness of lifelong learning initiatives, policymakers can make informed decisions and refine their approaches to better serve the needs of their citizens. Thus, lifelong learning is no longer an ideal but a necessity in our ever-changing world. Its integration into the national education policy agenda holds the key to individual empowerment and

societal progress. By embracing lifelong learning, individuals can adapt to the dynamic challenges of the modern era, enhance their employability, and contribute to the advancement of society. Policymakers must recognize the transformative potential of lifelong learning and prioritize its integration into education policies to secure a more prosperous and equitable future for all.

The Relevance of Lifelong Learning

1. Adaptation to a Changing World

The 21st century is characterized by relentless technological advancements and the constant evolution of economic landscapes. Jobs and industries that exist today may become obsolete tomorrow, while new opportunities emerge at an unprecedented pace. In this fast-paced environment, individuals must possess the agility and resilience to navigate these changes effectively. Lifelong learning, embedded within national education policies, equips individuals with the necessary tools and mindset to thrive amidst such dynamic transformations.

Lifelong learners develop a fundamental capacity to embrace change as an opportunity rather than a threat. They continuously acquire new knowledge and skills, enabling them to pivot and adapt to emerging demands in the job market. By promoting the concept of lifelong learning, national education policies actively prepare citizens to meet the challenges of a constantly shifting employment landscape, ensuring that they remain well-prepared and competitive throughout their careers. This adaptability not only enhances individual employability but also contributes to a nation's economic dynamism and global competitiveness.

2. Closing Skill Gaps

One persistent challenge in education and employment is the skill gap that often exists between what individuals learn in formal education settings and the practical skills demanded by the job market. National education policies that emphasize lifelong learning create vital mechanisms for individuals to continuously update and acquire new skills, thereby bridging these significant gaps.

Lifelong learning initiatives provide opportunities for individuals to stay current with industry trends, technologies, and emerging practices. By offering accessible, relevant, and up-to-date educational resources, these policies empower individuals to proactively address skill deficiencies and remain competitive in their chosen professions. Consequently, the individual benefits from improved employability, while the nation benefits from a more skilled and adaptable workforce, which, in turn, contributes to increased economic productivity and global competitiveness.

3. Enhancing Employability

Lifelong learning serves as a catalyst for enhancing employability by fostering a culture of continuous skill development. Individuals who embrace this ethos are more likely to exhibit attributes highly sought after in today's rapidly evolving job market. They tend to be adaptable, innovative, and capable of taking on diverse roles and responsibilities.

National education policies that prioritize lifelong learning actively support sustainable career development. They encourage individuals to view their professional journey as a continuum, where learning is not confined to the early years but extends throughout their working lives. Consequently, these policies reduce unemployment rates by ensuring that individuals possess the skills and adaptability needed to secure and maintain employment in an ever-changing labor landscape.

4. Empowering Citizens

Beyond its economic implications, lifelong learning is a powerful tool for empowering individuals to become active and informed citizens. Lifelong learners are better equipped with critical thinking, problem-solving, and decision-making skills. These attributes enable them to engage meaningfully in civic life and participate in the democratic process. Informed citizens who have undergone a lifelong learning journey are more likely to contribute to their communities and advocate for positive change. They possess the knowledge and skills needed to assess complex societal issues, propose informed solutions, and collaborate with others to effect meaningful transformation. Consequently, national education policies that promote lifelong learning foster a sense of civic responsibility and facilitate the emergence of engaged and proactive citizens who actively contribute to the overall well-being and progress of society.

5. Cultivating a Learning Society

A nation that prioritizes lifelong learning within its education policy agenda sets the stage for cultivating a vibrant and innovative learning society. This culture of continuous improvement extends well beyond the workplace, enriching every facet of society. It encourages individuals, organizations, and institutions to embrace research, innovation, and the development of new solutions to complex challenges. Lifelong learning policies stimulate a heightened sense of curiosity, exploration, and experimentation. They empower individuals to explore new horizons, acquire diverse perspectives, and generate innovative ideas that drive societal progress. Consequently, a nation that actively promotes lifelong learning not only enjoys economic competitiveness but also fosters a culture of intellectual and creative excellence that continuously pushes the boundaries of knowledge and innovation.

Thus, the integration of lifelong learning into national education policies carries profound implications for individuals and society as a whole. By equipping citizens with the adaptability to thrive in a changing world, closing skill gaps, enhancing employability, empowering informed citizens, and fostering a culture of continuous improvement and innovation, lifelong learning policies contribute to individual success and the advancement of nations. These policies are not just a response to contemporary challenges; they represent a visionary investment in a future where learning is a lifelong journey that enriches individuals and society at large.

Implications of Promoting Lifelong Learning

1. Education System Transformation

Integrating lifelong learning into national education policies represents a profound transformation of traditional education systems. It necessitates a fundamental shift away from the conventional, time-bound learning structures that have been the cornerstone of educational institutions for centuries. Instead, it calls for the adoption of more flexible, competency-based approaches that are better aligned with the evolving needs of learners. One key aspect of this transformation is the recognition and validation of informal and experiential learning. Lifelong learning policies acknowledge that individuals acquire knowledge and skills from a wide range of sources beyond formal classrooms. Therefore, they seek to provide pathways for individuals to gain recognized credentials based on their informal learning experiences. This recognition not only validates the expertise individuals accumulate through practical experiences but also encourages a holistic view of learning that transcends traditional boundaries.

Additionally, the shift towards competency-based education emphasizes the mastery of specific skills and knowledge rather than mere adherence to a prescribed curriculum. Learners progress at their own pace, ensuring that they attain a high level of proficiency in each competency before moving on. This individualized approach to learning not only enhances educational outcomes but also fosters a deeper understanding of subjects, promoting a lifelong love of learning.

2. Accessible Learning Opportunities

Ensuring that learning opportunities are accessible to all individuals, regardless of age, background, or socioeconomic status, is a cornerstone of national education policies promoting lifelong learning. These policies recognize that barriers to access can hinder the realization of lifelong learning ambitions and contribute to educational disparities. To address this challenge, lifelong learning

policies prioritize the provision of affordable, flexible, and inclusive learning options. Adult education programs, for example, are designed to cater to the unique needs of adult learners, offering flexible schedules and diverse course offerings. Online courses have emerged as a powerful tool for lifelong learning, allowing individuals to access educational resources from anywhere in the world. Additionally, workplace training programs bridge the gap between learning and practical application, ensuring that employees can continuously acquire skills relevant to their jobs.

Inclusivity is a central tenet of these policies. They aim to ensure that learners from all backgrounds, including those with disabilities or in underserved communities, have equal access to learning opportunities. Financial support mechanisms, scholarships, and subsidies may be part of these policies to mitigate financial barriers and create an equitable learning environment.

3. Teacher Professional Development

Educators play a pivotal role in fostering a culture of lifelong learning among students. National education policies that promote lifelong learning recognize the critical importance of teacher professional development in achieving this goal. Teachers are not only responsible for imparting knowledge but also for modeling lifelong learning behavior and creating an environment where students are encouraged to explore, question, and discover throughout their lives.

Lifelong learning policies prioritize the continuous professional development of teachers, equipping them with the skills, tools, and strategies to facilitate lifelong learning experiences effectively. These initiatives encompass various aspects, including pedagogical training, technology integration, and strategies for promoting critical thinking and problem-solving skills among students. Moreover, teachers themselves must be encouraged to engage in continuous learning. National policies can support this by providing opportunities for educators to upgrade their qualifications, participate in ongoing training, and collaborate with peers to share best practices. By nurturing a cadre of lifelong learners among educators, these policies create a ripple effect that positively impacts the learning culture within schools and educational institutions.

4. Recognition of Prior Learning

Lifelong learning policies recognize that individuals accumulate knowledge and skills from a multitude of sources throughout their lives. To harness the full potential of lifelong learning, these policies include mechanisms for recognizing and accrediting prior learning experiences. Recognition of prior learning involves assessing and validating the skills and knowledge individuals have acquired through work experience, volunteering, informal training, or self-

directed learning. This recognition may result in the awarding of formal credentials or credits, allowing individuals to build on their existing knowledge and skills efficiently. By acknowledging the value of prior learning, these policies reduce redundancy in education and training. Learners can bypass topics they have already mastered, focusing their efforts on areas where they require further development. This not only optimizes the learning journey but also encourages individuals to take ownership of their education and embrace a lifelong learning mindset.

5. Monitoring and Evaluation

Effective implementation of lifelong learning policies requires robust monitoring and evaluation mechanisms. Governments and educational authorities should regularly assess the impact of these policies on various dimensions, including employability, societal engagement, and economic growth. Monitoring and evaluation serve several vital functions. They allow policymakers to gauge the effectiveness of lifelong learning initiatives, identifying areas of success and areas that may require adjustment. This data-driven approach ensures that resources are allocated efficiently and that policies remain responsive to the evolving needs of learners and society. Moreover, it provides accountability and transparency, demonstrating to stakeholders the tangible benefits of lifelong learning policies. When citizens see the positive impact of these policies on employability, community engagement, and overall quality of life, they are more likely to support and participate in lifelong learning initiatives. Ultimately, monitoring and evaluation create a feedback loop that informs continuous improvement in lifelong learning policies, ensuring that they remain effective tools for personal and societal development.

Conclusion

Promoting lifelong learning within the national education policy agenda represents a visionary and transformative endeavor that transcends the confines of traditional education. It is a forward-looking response to the complex and dynamic realities of the 21st century, where change is the only constant and where individuals and nations must continuously adapt to thrive in an ever-evolving world. At its core, lifelong learning embodies the belief that education is not confined to the classroom or limited to a specific phase of life. It is a lifelong journey, a perpetual quest for knowledge, skills, and personal growth that spans across ages, careers, and circumstances. This philosophy of learning recognizes that the world is in a constant state of flux, driven by technological advancements, economic shifts, and societal transformations. Jobs and industries that exist today may become obsolete tomorrow, while new opportunities and challenges arise with astonishing frequency.

In this dynamic environment, the significance of lifelong learning becomes evident. It equips individuals with the intellectual and practical tools necessary to navigate these changes effectively. Lifelong learners develop a unique mindset characterized by adaptability, resilience, and a hunger for knowledge. They are not daunted by change; they embrace it as an opportunity for growth and self-improvement. By promoting this concept, national education policies actively prepare citizens to meet the demands of a dynamic job market, ensuring that they remain well-prepared and competitive throughout their careers. Moreover, lifelong learning enhances employability by fostering a culture of continuous skill development. Individuals who embrace this ethos are more likely to be adaptable, innovative, and capable of taking on diverse roles and responsibilities. They become highly sought-after employees in a rapidly evolving job market. National education policies that prioritize lifelong learning, in essence, support sustainable career development, reduce unemployment rates, and contribute to overall economic productivity and global competitiveness.

However, the impact of promoting lifelong learning extends far beyond the realms of employability and economic prosperity. It empowers citizens to become active and informed participants in society. Lifelong learners possess critical thinking, problem-solving, and decision-making skills that enable them to engage meaningfully in civic life. They are more likely to be well-informed and engaged in community initiatives, advocate for positive change, and contribute to the overall well-being of society. Furthermore, a nation that places lifelong learning at the heart of its education policy agenda fosters a culture of continuous improvement and innovation. This culture permeates every facet of society, extending beyond the workplace. It encourages research, innovation, and the development of new solutions to complex challenges, ultimately driving societal progress. In the face of the challenges and opportunities presented by the 21st century, integrating lifelong learning into education policies is not merely a choice; it is a strategic imperative for the betterment of individuals and society as a whole. It positions individuals to thrive in an era marked by rapid change and uncertainty. It empowers them to become adaptable, innovative, and engaged citizens who actively contribute to the betterment of their communities and the advancement of their nations. Furthermore, it creates a culture of intellectual and creative excellence that fuels innovation, fosters progress, and ensures that societies remain at the forefront of global development. In essence, promoting lifelong learning is not just a policy; it is a commitment to a brighter, more resilient, and ultimately more prosperous future for individuals and society as a whole.

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SUSTAINABLE DEVELOPMENT GOALS AND NATIONAL EDUCATION POLICY: A SYNERGISTIC APPROACH

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Abstract

This essay explores the dynamic relationship between the Sustainable Development Goals (SDGs) and the National Education Policy (NEP) in India. The SDGs, a global agenda adopted by the United Nations, encompass various facets of sustainable development, including education, gender equality, clean water, economic growth, and climate action. India's NEP, introduced in 2020, seeks to revolutionize the education system and aligns with several SDGs. This abstract provides a succinct overview of how the NEP and the SDGs synergize, emphasizing their potential to facilitate holistic and sustainable development in India. It highlights key areas of alignment, such as quality education, gender equality, clean water and sanitation, decent work and economic growth, sustainable communities, and climate action. By examining these intersections, this abstract underscores the essential role of education in achieving the SDGs and fostering a more equitable, prosperous, and environmentally conscious future for India.

Keywords: Sustainable Development Goals (SDGs), National Education Policy (NEP), Synergistic Approach, Education for Sustainable Development, Holistic Development in India

Introduction

The year 2015 marked a significant milestone in global efforts to address pressing challenges facing humanity. During this year, the United Nations, representing all of its member states, came together to adopt the Sustainable Development Goals (SDGs). These SDGs represent a collective and universal call to action, serving as a blueprint for a better future for our planet and its inhabitants. The overarching objective is to accomplish a remarkable transformation by the year 2030, one that encompasses ending poverty, safeguarding our environment, and fostering prosperity for every individual on Earth. The SDGs are not isolated or disjointed aspirations; rather, they form an intricate web of interconnected issues and ambitions. At their core, these goals encompass a diverse array of critical challenges. They embrace the noble pursuit of poverty alleviation, recognizing that eradicating poverty is fundamental to achieving sustainable development. Simultaneously, the SDGs call for an elevation of educational standards worldwide, emphasizing the significance of quality education as a cornerstone for societal advancement.

Gender equality is another essential component embedded within the SDGs. Recognizing the profound impact of gender disparities on human development, the goals seek to dismantle existing inequalities and empower women and girls globally. Furthermore, the SDGs espouse the imperative of environmental sustainability, acknowledging that our planet's health is intrinsically linked to our own well-being. In the Indian context, the year 2020 witnessed the unveiling of the National Education Policy (NEP). This comprehensive policy framework represents a landmark effort to revamp and modernize India's education system. The NEP aims to be a catalyst for change, fostering innovation and inclusivity across the nation's educational landscape. Its provisions are far-reaching, spanning from the universalization of early childhood education to the integration of vocational training into mainstream learning. What emerges is a fascinating and potent connection between the Sustainable Development Goals and the National Education Policy in India. This essay ventures into the heart of this synergistic relationship, shedding light on how the NEP can be harnessed as a tool to not only realize the SDGs but also amplify their impact. By employing a harmonized approach, where educational reforms align seamlessly with the broader objectives of sustainable development, India can hope to make substantial strides towards a future marked by greater equity, prosperity, and environmental stewardship. In sum, the Sustainable Development Goals are a universal clarion call for global betterment. In India, the National Education Policy provides the framework and impetus for transformative change. Recognizing the profound interconnectedness of these endeavors, this essay delves into the profound ways in which they complement each other, ultimately working in concert to facilitate sustainable development on both national and global scales.

I. Quality Education (SDG 4) and the NEP

Within the framework of the Sustainable Development Goals (SDGs), SDG 4 stands as a beacon, beckoning nations to prioritize and facilitate the provision of quality education for all. In an era where knowledge is paramount, SDG 4 serves as a powerful reminder of the transformative potential that lies within the realm of education. It is a clarion call to ensure that every individual, regardless of their background, enjoys access to education that is not only inclusive but also of the highest quality. In this grand educational endeavor, the National Education Policy (NEP) of India emerges as a natural ally and an embodiment of this lofty aspiration. The NEP, unveiled in 2020, aligns seamlessly with the principles and objectives laid out in SDG 4, forming a harmonious partnership that holds tremendous promise for the educational landscape in India.

One of the primary areas where the NEP resonates with SDG 4 is in its commitment to equitable access to education. SDG 4 underscores the importance of

ensuring that education reaches those on the margins of society, leaving no one behind. The NEP shares this vision by advocating for educational reforms that break down barriers to access. This commitment extends from the grassroots level, with the universalization of early childhood education, ensuring that the foundations of learning are laid for all, regardless of their socio-economic status or geographical location. Moreover, the NEP's emphasis on multidisciplinary learning aligns with the broader spirit of SDG 4. Education is not merely about acquiring knowledge in silos; it is about fostering holistic development and encouraging students to explore various fields of study. By nurturing critical thinking skills and encouraging a more holistic approach to education, the NEP equips students with the tools they need to thrive in an increasingly complex and interconnected world. Furthermore, the NEP recognizes the need for vocational training and skill development, which is pivotal for creating a workforce that is not only educated but also employable. This aspect of the NEP directly contributes to SDG 4's target of inclusive and equitable quality education by making quality education more accessible to marginalized communities. By providing vocational training opportunities alongside traditional academic pathways, the NEP empowers individuals with practical skills that can enhance their livelihoods and contribute to a more inclusive society.

Thus, the alignment between SDG 4 and the National Education Policy of India is evident in their shared commitment to providing quality education for all, regardless of background or circumstance. The NEP's dedication to equitable access, multidisciplinary learning, and vocational training resonates with the broader goals of SDG 4, ultimately striving for inclusive and equitable education. This synergy between a global vision and a national policy holds the potential to transform the educational landscape in India and contribute significantly to the broader global agenda of sustainable development through education.

II. Gender Equality (SDG 5) and the NEP

The principle of gender equality stands as a foundational pillar within the framework of sustainable development. It is not only a fundamental human right but also a critical driver of social and economic progress. In recognition of its paramount importance, SDG 5 was conceived, explicitly aiming to achieve gender parity and empower all women and girls across the globe. This goal underscores the significance of dismantling entrenched gender biases and ensuring that opportunities and rights are afforded to every individual, regardless of their gender. In the Indian context, the National Education Policy (NEP), introduced in 2020, emerges as a potent instrument to address and advance the principles enshrined in SDG 5. The NEP doesn't merely intersect with SDG 5; it converges with it, sharing a common purpose in the pursuit of gender equality. One of the primary

ways in which the NEP aligns with SDG 5 is through its advocacy for the removal of gender biases in educational materials. Discriminatory and stereotypical content in textbooks and curricula has long perpetuated gender inequalities. The NEP seeks to rectify this by fostering an inclusive and gender-sensitive learning environment. By doing so, it takes a critical step towards realizing SDG 5's objective of dismantling harmful stereotypes and biases.

Furthermore, the NEP champions the cause of gender-sensitive curricula. It acknowledges that educational content should not perpetuate gender inequalities but should instead promote a balanced and equitable understanding of the roles and contributions of individuals, irrespective of their gender. This approach resonates with SDG 5's broader vision of empowerment, as it empowers students to develop a more informed and egalitarian perspective. Crucially, the NEP also places a strong emphasis on encouraging the participation of girls in STEM (Science, Technology, Engineering, and Mathematics) subjects. Historically, there has been a gender gap in STEM fields, limiting opportunities for girls and women. By actively promoting and facilitating the inclusion of girls in STEM education, the NEP contributes directly to SDG 5's mission of empowering women and girls with the knowledge and skills needed for equal participation in society. In essence, the NEP serves as a critical instrument in reducing gender disparities in education, which, in turn, reinforces and amplifies the broader objectives of gender equality encapsulated in SDG 5. By advocating for inclusive, bias-free educational materials, gender-sensitive curricula, and increased participation of girls in traditionally male-dominated fields, the NEP not only advances the cause of gender equality within the sphere of education but also contributes substantially to the larger mission of empowering women and girls globally. In doing so, it aligns harmoniously with the global imperative set forth by SDG 5, fostering a more equitable and just society for all.

III. Clean Water and Sanitation (SDG 6) and the NEP

Ensuring access to clean water and adequate sanitation is not only a matter of convenience but a fundamental necessity for promoting healthy living and overall well-being. Recognizing this vital connection between basic amenities and human health, the National Education Policy (NEP) unveiled in 2020 underscores the paramount importance of fostering safe and hygienic educational environments within India's educational institutions. Under the NEP's visionary framework, schools are expected to go beyond imparting knowledge; they are also entrusted with the responsibility of providing clean drinking water and proper sanitation facilities. The alignment between the NEP's commitment to safe and hygienic educational spaces and the global mandate articulated in Sustainable Development Goal 6 (SDG 6) is not only conspicuous but also profoundly significant. SDG 6

embodies the collective commitment of nations to ensure the availability and sustainable management of water and sanitation for all, leaving no one behind.

The NEP's emphasis on clean drinking water and sanitation facilities in schools is a manifestation of a broader understanding that healthy learning environments are conducive to effective education. It recognizes that students cannot fully benefit from education if they are burdened by the challenges of inadequate water supply or unsanitary conditions. By ensuring access to clean drinking water, schools not only meet a basic human need but also create an environment where students can thrive physically, mentally, and academically. Moreover, the provision of proper sanitation facilities in schools carries multifaceted benefits. It not only promotes health and hygiene but also instills essential habits in students from a young age. By cultivating a culture of cleanliness and responsibility, the NEP contributes to the development of responsible citizens who understand the value of clean and sustainable practices.

The NEP's alignment with SDG 6 is not merely a reflection of shared objectives; it is a tangible commitment to translating global sustainability goals into actionable measures within the education sector. In doing so, the NEP reinforces the idea that education is not an isolated pursuit but an integral part of holistic human development. Clean water and sanitation are fundamental components of a healthy and dignified life, and by incorporating these principles into the educational sphere, the NEP aligns itself seamlessly with the global vision of SDG 6. In conclusion, the National Education Policy's recognition of the significance of clean water and sanitation within educational institutions is not only a testament to its commitment to creating an enriching learning environment but also a testament to its alignment with the Sustainable Development Goals, particularly SDG 6. By ensuring that schools provide clean drinking water and proper sanitation facilities, the NEP contributes to the broader mission of universal access to clean water and sanitation, ultimately fostering healthier communities and sustainable development for all.

IV. Decent Work and Economic Growth (SDG 8) and the NEP

Sustainable Development Goal 8 (SDG 8) heralds a noble vision for the global community—a vision of sustained, inclusive, and sustainable economic growth. At its core, SDG 8 calls for a world where full and productive employment is a reality, and where decent work opportunities abound for all. The pursuit of this goal is not just about economic prosperity but also about the equitable distribution of that prosperity. In the context of India, where economic growth and development are at the forefront of the national agenda, the National Education Policy (NEP) introduced in 2020 emerges as a potent instrument to realize the principles enshrined in SDG 8. The NEP is a comprehensive framework that seeks to transform the educational

landscape of the nation, and one of its key pillars is the focus on skill development and vocational education.

The synergy between SDG 8 and the NEP is evident in their shared emphasis on equipping individuals with the knowledge and skills needed to participate in the job market effectively. By prioritizing skill development, the NEP addresses a fundamental need in the current global economic landscape. It acknowledges that traditional academic knowledge is essential, but it alone is not sufficient to prepare individuals for the dynamic and diverse job market of the 21st century. One of the most remarkable aspects of the NEP is its commitment to vocational education, which aligns seamlessly with the vision of SDG 8. Vocational education equips students with practical skills and knowledge directly applicable to the workforce. This approach not only fosters employability but also encourages entrepreneurship and innovation, both of which are vital drivers of economic growth. Furthermore, the NEP's focus on multidisciplinary learning resonates with the broad spirit of SDG 8. It recognizes that in today's complex world, individuals need a diverse set of skills and knowledge to succeed in various sectors. By promoting multidisciplinary education, the NEP ensures that students develop a holistic skill set that is adaptable to a wide range of job opportunities. Moreover, the NEP's emphasis on experiential learning and internships connects education directly to the real world, offering students practical insights and hands-on experience. This approach fosters a deeper understanding of industry dynamics and facilitates a smoother transition into the workforce. Thus, the National Education Policy stands as a cornerstone in India's journey toward achieving SDG 8. By prioritizing skill development, vocational education, and multidisciplinary learning, the NEP ensures that students are not only well-educated but also well-prepared for the demands of the job market. In doing so, the NEP makes a substantial and direct contribution to the realization of SDG 8's targets of decent work and economic growth, ultimately fostering a society where individuals can secure meaningful and sustainable employment, and where economic growth is inclusive and sustainable.

V. Sustainable Cities and Communities (SDG 11) and the NEP

The National Education Policy (NEP), introduced in India in 2020, stands as a testament to the nation's commitment to not only fostering intellectual growth but also recognizing the pivotal role of sustainable practices and environmental consciousness in shaping a better future. The NEP's approach extends beyond the confines of traditional education; it permeates the physical spaces where learning occurs. This holistic perspective is particularly evident in the NEP's encouragement of educational institutions, from schools to higher education centers, to embrace and embody sustainability principles. One of the key facets of the NEP's environmental

consciousness is its advocacy for the adoption of sustainable practices within educational institutions. It acknowledges that educational campuses are more than just physical spaces; they are microcosms of society, and the values they espouse extend far beyond their boundaries. By promoting sustainability at the institutional level, the NEP contributes significantly to Sustainable Development Goal 11 (SDG 11), which seeks to make cities and human settlements inclusive, safe, resilient, and sustainable.

A fundamental aspect of this sustainable approach is waste management. The NEP underscores the importance of waste reduction, recycling, and responsible disposal within educational institutions. This not only instills environmentally responsible behaviors in students but also sets an example for the wider community. By reducing waste and adopting eco-friendly practices, institutions contribute to more sustainable and resilient urban environments, directly aligning with SDG 11's goal of promoting sustainability within cities and human settlements. Energy efficiency is another critical dimension of the NEP's sustainable education vision. By encouraging institutions to adopt energy-efficient technologies and practices, the NEP not only reduces operational costs but also reduces the carbon footprint of educational facilities. This emphasis on energy efficiency aligns with SDG 11's objective of creating sustainable and environmentally friendly urban environments.

Furthermore, the NEP envisions educational campuses as "green campuses," where sustainability principles are woven into the very fabric of the institution. Green campuses prioritize the use of renewable energy sources, maximize green spaces, and reduce environmental impact. By nurturing such green campuses, the NEP exemplifies its commitment to creating inclusive, safe, resilient, and sustainable environments for learning. Thus, the National Education Policy's recognition of the importance of sustainable practices and environmental consciousness extends far beyond the classroom. By encouraging educational institutions to embrace sustainability through waste management, energy efficiency, and green campuses, the NEP supports the broader objectives of SDG 11, fostering cities and human settlements that are not only inclusive and safe but also environmentally sustainable. Through these concerted efforts, the NEP reinforces the idea that education is not merely about knowledge transfer but also about instilling values and behaviors that can shape a more sustainable and resilient future for all.

VI. Climate Action (SDG 13) and the NEP

In an era where our planet faces unprecedented environmental challenges, taking decisive climate action is no longer a choice but a moral and existential imperative. The consequences of climate change are far-reaching, affecting not only the natural world but also human societies and economies. Recognizing this, Sustainable

Development Goal 13 (SDG 13) urges the global community to take urgent action to combat climate change and its impacts. In this critical context, the National Education Policy (NEP) of India emerges as a forward-looking and progressive instrument that recognizes the urgency of climate action. The NEP is not confined to conventional educational paradigms; it extends its vision to encompass environmental education, awareness, and the promotion of sustainable practices, echoing the clarion call of SDG 13.

Central to the NEP's alignment with SDG 13 is its commitment to environmental education. It acknowledges that educating the present and future generations about environmental issues is paramount for effecting meaningful change. By incorporating environmental education into curricula at all levels, the NEP empowers students with the knowledge and awareness needed to comprehend the complex web of ecological challenges that humanity faces. This aligns harmoniously with SDG 13's aim to raise awareness about climate change and its mitigation. Moreover, the NEP goes beyond theoretical knowledge; it emphasizes practical, eco-friendly practices within educational institutions. By setting an example of sustainability through waste reduction, energy efficiency, and responsible resource management, educational institutions contribute to the broader effort of reducing carbon footprints and minimizing environmental impact. These initiatives are in direct consonance with SDG 13's objective of mitigating the adverse effects of climate change. Additionally, the NEP nurtures environmental stewardship among students, instilling a sense of responsibility for the planet's well-being.

Through hands-on activities, conservation efforts, and community engagement, students are encouraged to take an active role in safeguarding the environment, which is a core tenet of SDG 13. Furthermore, the NEP recognizes the importance of sustainable practices in the design and management of educational campuses. "Green campuses" that utilize renewable energy sources, maximize green spaces, and prioritize eco-friendly infrastructure not only exemplify sustainable living but also reduce the carbon footprint of institutions. This aligns perfectly with SDG 13's mission of promoting urgent climate action at all levels of society. Thus, the National Education Policy of India, with its focus on environmental education, sustainable practices, and fostering environmental stewardship, epitomizes the essence of climate action as articulated in SDG 13. By incorporating these principles into the educational framework, the NEP reinforces the idea that education is a transformative force that can drive the urgent and collective efforts required to combat climate change. Through these measures, the NEP makes a significant contribution to building a sustainable and resilient future for both India and the global community, underscoring the profound interdependence between education and climate action.

Conclusion

The Sustainable Development Goals (SDGs) and the National Education Policy (NEP) are not isolated or parallel endeavors; rather, they are intricately woven threads of a single tapestry. Together, they form a comprehensive approach to sculpting a brighter and more equitable future for India. The NEP, in particular, stands as a dynamic catalyst for achieving the SDGs, acting as the cornerstone upon which the edifice of sustainable development is erected. At first glance, the SDGs may appear to be a set of global aspirations addressing a multitude of challenges, from poverty to climate change. Simultaneously, the NEP may seem like a national education reform effort aimed at modernizing India's learning landscape. However, a deeper examination reveals their profound interconnectedness and the pivotal role education plays in realizing the broader goals of sustainability. The NEP serves as the fertile soil from which the seeds of sustainable development sprout. It is not merely about imparting knowledge; it is about nurturing informed, empathetic, and environmentally conscious citizens who can grapple with the complexities of a rapidly changing world. It emphasizes equitable access to education, ensuring that no one is left behind in the quest for knowledge and empowerment.

Furthermore, the NEP champions quality education, pushing the boundaries of traditional learning to encompass multidisciplinary perspectives and critical thinking. It recognizes that sustainable development requires a cadre of thinkers who can solve complex problems, innovate, and adapt. By nurturing these skills, the NEP prepares students to confront the multifaceted challenges posed by sustainable development. The NEP's focus on gender equality is another manifestation of its alignment with the SDGs. It dismantles gender biases, promotes gender-sensitive curricula, and encourages female participation in STEM fields. In doing so, it contributes directly to SDG 5, advancing the cause of gender equality and empowering women and girls to become active participants in the journey toward sustainability. Moreover, the NEP addresses environmental consciousness, advocating for sustainable practices, waste management, energy efficiency, and green campuses within educational institutions. These principles are in harmony with the environmental sustainability goals embodied in SDG 11.

In essence, the NEP shapes a generation of learners who are not only equipped with knowledge but also imbued with values that align with the SDGs. It prepares them to be responsible stewards of the environment, champions of gender equality, and catalysts for inclusive, sustainable economic growth. By embracing this harmonized vision, India stands on the cusp of transformation. It can emerge as a global leader in both education and sustainable development, demonstrating that a nation's progress is inexorably linked to the education it provides. The NEP, as the linchpin in this synergy, underscores the vital role of education in realizing the

ambitious goals of sustainability. In embracing this interconnected approach, India charts a path toward a more equitable, prosperous, and sustainable future, setting an example for the world to follow. It is through the harmonious interplay of education and sustainability that India can navigate the complex challenges of the 21st century and shine as a beacon of progress for generations to come.

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TECHNOLOGY INTEGRATION IN NATIONAL EDUCATION POLICY: OPPORTUNITIES AND CHALLENGES

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Abstract

The rapid advancement of technology has transformed the educational landscape, prompting nations to incorporate technology integration into their National Education Policies (NEPs). This abstract provides an overview of the opportunities and challenges associated with technology integration within NEPs.

Keywords: *Technology Integration, National Education Policy, Opportunities, Challenges, Education Technology*

Introduction

The swift progression of technology has brought about profound changes in the realm of global education. It is no longer a choice but an imperative to infuse technology into the educational landscape in our contemporary digital era. As a result, numerous nations have embedded technology integration as a pivotal element within their National Education Policies (NEPs). This essay delves into the prospects and obstacles linked with the incorporation of technology into NEPs, highlighting the prospective advantages it offers to education while also underscoring the challenges that must be surmounted to harness its full potential.

Opportunities

1. Enhanced Learning Experiences

The incorporation of technology into education can offer students dynamic and immersive learning encounters. This integration encompasses a broad spectrum of tools, such as digital resources, multimedia content, and educational software, all of which serve to enhance the accessibility and enjoyment of complex subjects. These digital resources and technologies are particularly valuable as they can adapt to diverse learning styles, making education more inclusive and effective. Digital resources, including online textbooks, interactive simulations, and virtual laboratories, bring an interactive dimension to learning. They enable students to delve into subjects in ways that traditional paper-based resources cannot match. For instance, a biology student can virtually dissect a frog, gaining a

deeper understanding of anatomy, while a history enthusiast can explore ancient civilizations through interactive timelines and 3D reconstructions. These experiences engage students in a manner that fosters curiosity and critical thinking.

Multimedia content, such as educational videos, animations, and podcasts, also enrich the learning process. Visual and auditory elements can help clarify complex concepts, making them more digestible and memorable. For example, a physics lesson on electromagnetic waves can come alive through animated visualizations, aiding students in comprehending abstract phenomena. Similarly, historical events can be vividly portrayed through documentary-style videos, enabling students to grasp the context and significance of events. Educational software takes technology integration a step further by offering personalized learning experiences. Adaptive platforms can analyze a student's performance and tailor content to their individual strengths and weaknesses. For instance, a math program can provide additional practice problems in areas where a student struggles while offering advanced challenges for areas of proficiency. This adaptability ensures that students receive the right level of challenge and support, optimizing their learning outcomes. Furthermore, technology integration can transcend geographical boundaries and time constraints. Online learning platforms and virtual classrooms allow students to access educational resources and interact with instructors and peers from anywhere in the world, fostering global collaboration and cultural exchange.

Thus, technology integration in education has the potential to revolutionize the way students learn. By offering interactive and engaging learning experiences through digital resources, multimedia content, and educational software, it caters to diverse learning styles and promotes active participation. As technology continues to advance, its role in education will only become more significant, opening up new avenues for accessible and enjoyable learning for all.

2. Access to Global Knowledge

The internet serves as an expansive gateway that connects students to an immense treasure trove of information and knowledge originating from every corner of the globe. This interconnectedness, facilitated by technology, has far-reaching implications, particularly in leveling the educational playing field. It empowers students residing in remote and underserved areas with access to the same rich resources available to their urban counterparts, thereby mitigating educational disparities. The internet, with its vast array of websites, online libraries, academic databases, and educational platforms, has transformed the way students access information. Gone are the days when geography could be a limiting factor in one's quest for knowledge. Students in remote regions, often hampered by limited

access to traditional educational resources, now have the means to tap into the same vast wellspring of information that urban students enjoy.

This newfound accessibility is instrumental in closing the educational gap that has persisted for generations. In remote areas where physical libraries and educational institutions may be scarce, the internet serves as an equalizer. Students can explore subjects, conduct research, and access educational materials that were previously out of reach. Whether it's studying advanced mathematics, delving into world history, or exploring the latest scientific discoveries, the internet ensures that opportunities for learning are no longer confined to specific geographic locations. Moreover, the internet fosters collaborative learning and global connectivity. Students can participate in online forums, engage in virtual classrooms, and collaborate on projects with peers from different countries and cultures. This not only enhances their understanding of diverse perspectives but also prepares them for a globalized world where collaboration and cross-cultural communication are essential skills.

In addition to academic resources, the internet offers a plethora of educational tools and platforms that cater to various learning styles and needs. From interactive educational games that make learning fun to digital tutors that provide personalized assistance, technology-driven solutions are revolutionizing the way students acquire knowledge. Adaptive learning systems can assess individual strengths and weaknesses, tailoring content and exercises to optimize the learning experience for each student. However, it's important to acknowledge that the digital divide, characterized by unequal access to technology and the internet, still exists in many regions. Bridging this gap is crucial to ensure that all students, regardless of their location, can benefit from the educational opportunities that technology offers. Thus, the internet, coupled with technology, has transformed education into a more inclusive and equitable endeavor. It empowers students in remote and underserved areas by granting them access to the vast reservoir of information available online. This accessibility not only reduces educational disparities but also prepares students to thrive in an interconnected and knowledge-driven world. Efforts to bridge the digital divide will further enhance the transformative potential of technology in education.

3. Personalized Learning

Adaptive learning platforms and artificial intelligence-driven tools have ushered in a transformative era in education by customizing educational content to meet the unique needs and learning rhythms of individual students. This personalization not only enhances the educational experience but also holds the potential to maximize learning outcomes in profound ways. These innovative tools leverage the power of data and AI algorithms to analyze students' performance,

identify their strengths, weaknesses, and learning styles, and then dynamically adjust the content and pace of instruction accordingly. Here's how this personalization process works: Adaptive learning platforms create individualized learning paths for each student. For example, in a mathematics course, if a student excels in algebra but struggles with geometry, the platform will allocate more time and resources to geometry-related content and provide additional practice problems or resources in that area. Conversely, it will advance the student more quickly through topics they've mastered. When a student encounters challenges or misconceptions in their learning journey, AI-driven tools can immediately detect these issues and offer targeted remediation. If a student struggles with a specific math concept, the platform might provide additional explanations, examples, or interactive exercises until the concept is grasped.

Rather than relying on standardized tests or fixed assessments, these platforms use adaptive assessments that evolve as the student progresses. This ensures that students are consistently challenged at an appropriate level, preventing boredom or frustration. Adaptive systems can offer real-time feedback on students' performance, pinpointing areas where improvement is needed. This immediate feedback loop helps students monitor their progress and adjust their learning strategies accordingly. Educators also benefit from the wealth of data generated by these platforms. They can track students' progress, identify trends, and intervene when necessary to provide additional support or enrichment. One of the most significant advantages of personalization in education is its potential to improve learning outcomes. When students receive content tailored to their abilities and learning styles, they are more engaged and motivated to learn. This targeted approach minimizes frustration and enhances confidence, leading to a deeper understanding of the material.

Moreover, personalized learning can accommodate a wide range of student abilities within a single classroom, making education more inclusive. Students with different learning needs, backgrounds, and levels of proficiency can all progress at their own pace, ensuring that no one is left behind. However, it's essential to strike a balance between technology-driven personalization and the role of educators. While AI can provide valuable insights and assistance, the human touch in teaching remains irreplaceable for fostering critical thinking, creativity, and interpersonal skills. Thus, adaptive learning platforms and AI-driven tools have the potential to revolutionize education by tailoring content to individual students' needs and learning speeds. This personalized approach not only optimizes learning outcomes but also promotes inclusivity in education, accommodating diverse learners. By combining the strengths of technology with

the expertise of educators, we can create a dynamic and effective learning environment that caters to the unique needs of every student.

4. Teacher Professional Development

National Education Policies (NEPs) have the capacity to encompass comprehensive provisions aimed at elevating the educational landscape, and one crucial facet of this transformation involves equipping educators with the skills and knowledge needed to effectively integrate technology into their teaching practices. Such provisions not only enhance the quality of instruction but also serve as a means to empower teachers with essential digital literacy skills, ensuring they remain adept in the ever-evolving digital age. NEPs can allocate resources and strategies for ongoing professional development programs for teachers. These programs should encompass training on the integration of technology into pedagogy. Teachers can learn how to leverage digital tools, software, and online resources to engage students, facilitate active learning, and enhance subject understanding. Furthermore, they can explore innovative teaching methodologies that make use of technology, such as blended learning, flipped classrooms, and online collaborative projects.

In an era where technology permeates every aspect of society, educators must possess strong digital literacy skills. NEPs can include provisions for digital literacy training to ensure that teachers are not only proficient in using technology for teaching but also in navigating digital platforms, evaluating online information critically, and fostering responsible digital citizenship among students. To effectively integrate technology, teachers need access to the necessary tools and resources. NEPs can include initiatives to provide schools and educators with updated hardware, software licenses, and digital learning resources. Ensuring equitable access to technology is essential to bridge the digital divide among students and educators. Building a supportive network and communities of practice can foster collaboration among educators. NEPs can encourage the creation of teacher networks and online forums where educators can share best practices, innovative lesson plans, and troubleshooting tips related to technology integration. This collaborative environment can boost the confidence and competence of teachers in using technology effectively.

NEPs can establish systems for assessing the impact of technology integration on teaching and learning outcomes. Regular evaluations can help identify areas where further support and training are needed. Feedback mechanisms should involve both teachers and students to ensure that technology is enhancing the learning experience and addressing specific educational needs. NEPs can promote curriculum flexibility, allowing teachers the autonomy to adapt their teaching methods to suit the needs of their students and the evolving technological

landscape. This approach enables educators to harness the potential of technology while tailoring instruction to their unique classroom dynamics. Encouraging educational research and innovation in technology integration should be a key aspect of NEPs. Teachers should be encouraged and supported to explore new technologies and teaching approaches, with opportunities for piloting and evaluating innovative practices. Thus, NEPs have the capacity to be forward-thinking and comprehensive documents that recognize the pivotal role of technology in education. By including provisions for teacher training in effective technology integration, NEPs not only enhance the quality of instruction but also equip educators with vital digital literacy skills. This empowers teachers to navigate the digital age confidently, preparing students for success in an increasingly technology-driven world.

5. Efficient Administrative Systems

The integration of technology within educational institutions has the potential to revolutionize the administrative aspects of education, offering a myriad of benefits that encompass efficiency, resource optimization, and enhanced communication among stakeholders. By leveraging technology, educational institutions can streamline administrative tasks, leading to more effective management of their resources, timetables, and interactions with various stakeholders. Educational institutions, be they schools, colleges, or universities, often grapple with the efficient allocation of resources, including classrooms, equipment, and personnel. Technology can provide solutions through resource management systems that optimize scheduling, preventing conflicts and ensuring that facilities are used to their fullest capacity. This, in turn, maximizes the institution's investments and minimizes waste. Creating and managing timetables is a complex and time-consuming task. Technology can automate this process, taking into account various parameters such as teacher availability, student preferences, and classroom constraints. Automated timetabling not only reduces the burden on administrators but also results in more balanced and efficient schedules that benefit both students and faculty. Effective communication among students, teachers, parents, and administrators is vital for the smooth functioning of educational institutions. Technology facilitates seamless communication through digital platforms, email, and messaging apps. This connectivity allows stakeholders to stay informed about important updates, events, and academic progress in real time. Additionally, video conferencing and virtual meetings have become essential tools for remote collaboration, especially in times of crisis.

Educational institutions generate and handle vast amounts of data, from student records and attendance to financial information. Robust data management systems powered by technology ensure the security, accuracy, and accessibility of this

information. Data analytics tools can further provide valuable insights to inform decision-making processes. Administrative tasks like enrollment, grading, and payroll processing can be automated to a significant extent, reducing the administrative burden on staff. This frees up time for educators and administrators to focus on more strategic and value-added activities, such as curriculum development, student support, and institutional improvement initiatives. Technology aids in financial planning, budgeting, and tracking expenses. Financial management software allows educational institutions to maintain fiscal responsibility, monitor expenditures, and allocate resources effectively, ensuring financial stability and sustainability. Technology can bolster security measures within educational institutions, safeguarding sensitive data and ensuring the safety of students and staff. Access control systems, surveillance cameras, and cybersecurity protocols are integral components of modern educational security infrastructure. The advent of remote administrative tools has become particularly relevant in recent times. These tools allow administrators to manage educational institutions remotely, making it possible to respond swiftly to emergencies and adapt to changing circumstances, such as remote learning during a global pandemic. Thus, technology's impact on the administrative functions of educational institutions cannot be overstated. It has the capacity to optimize resource management, streamline timetables, enhance communication, improve data management, and increase administrative efficiency. By harnessing the potential of technology, educational institutions can create an environment that is more agile, responsive, and conducive to effective teaching and learning.

Challenges

1. Digital Divide

The digital divide, undoubtedly one of the most pressing challenges in contemporary education, underscores a stark disparity that threatens to widen existing inequalities in access to quality learning opportunities. This division becomes painfully evident when we consider that students hailing from marginalized backgrounds may find themselves without access to the necessary digital devices and reliable internet connectivity. This issue has profound implications for the equitable distribution of educational resources and has the potential to perpetuate and accentuate disparities in educational outcomes. At the heart of this challenge lies the undeniable fact that technology has become an integral part of the modern educational landscape. With the advent of digital textbooks, online learning platforms, and interactive educational resources, access to digital devices and the internet has transitioned from being a convenience to an educational necessity. These tools not only augment the traditional classroom

experience but also open doors to a world of knowledge that transcends geographical boundaries. Students equipped with digital resources can engage in self-directed learning, explore diverse subjects, and gain exposure to a global community of learners.

However, for students from marginalized backgrounds, this digital realm can remain frustratingly out of reach. Economic constraints often prevent families from acquiring the laptops, tablets, or smartphones required for their children's educational needs. Moreover, in an era where homework assignments, research projects, and communication with teachers increasingly rely on internet access, students without reliable connectivity may find themselves at a significant disadvantage. The digital divide, therefore, has the potential to exacerbate educational inequities, creating a situation where students from privileged backgrounds have access to a vast array of digital educational resources, while their less fortunate peers face barriers that hinder their academic progress. This divide is not only limited to disparities in access but also extends to digital literacy. Proficiency in navigating the digital landscape and using technology effectively has become a crucial life skill. Students who lack access to digital devices and the internet may also miss out on opportunities to develop these essential skills, which are increasingly demanded in the job market. Consequently, the digital divide threatens to create a future workforce with varying degrees of readiness to participate in an increasingly technology-driven economy. Addressing the digital divide is not just a matter of technological access; it is a matter of social justice and equal opportunity. It requires concerted efforts from governments, educational institutions, non-profit organizations, and the private sector to ensure that every student, regardless of their socio-economic background, has access to the digital tools and skills needed to succeed in the modern educational landscape. Bridging this divide is not just an educational imperative; it is a moral imperative that can help break the cycle of poverty and inequality, creating a fairer and more inclusive society.

2. Quality Control

The internet, often hailed as one of the most revolutionary inventions of the modern era, indeed possesses a dual nature, akin to a double-edged sword. On one edge, it offers unprecedented access to an immense repository of information, a treasure trove that spans a wide spectrum of knowledge, from historical archives to cutting-edge research. However, on the other edge, it also harbors a plethora of unreliable and sometimes blatantly false sources of information. Navigating this vast sea of data can be a daunting task, especially for students who are still honing their critical thinking and information literacy skills. Consequently, ensuring that students can discern reliable sources from misinformation is a challenge of

paramount importance in today's digital age. The ubiquity of the internet has revolutionized the way information is disseminated and consumed. It has democratized access to knowledge, breaking down geographical barriers and granting individuals the power to explore subjects of interest with unprecedented ease. Students can delve into virtually any topic, conduct research, and access a wealth of educational resources from the comfort of their homes. The internet has brought the world's collective knowledge to their fingertips, transforming the way they learn and engage with information.

However, this boundless access to information comes with a significant caveat: the internet's vastness also provides a fertile ground for misinformation, disinformation, and unreliable sources to proliferate. Anyone with an internet connection can publish content, regardless of its accuracy or credibility. This juxtaposition of credible and unreliable sources creates a critical challenge for students and educators alike. Teaching students how to discern reliable sources from misinformation is not merely an educational goal; it is a crucial life skill in the digital age. It empowers students to make informed decisions, critically evaluate information, and engage in meaningful discourse. The ability to distinguish between credible and unreliable sources is akin to a digital armor that safeguards them against manipulation, misinformation campaigns, and the perpetuation of false narratives. Thus, while the internet presents an incredible opportunity for learning and information access, it also poses the challenge of distinguishing credible sources from unreliable ones. Equipping students with the skills to navigate this digital landscape effectively is paramount. By fostering critical thinking, media literacy, and responsible digital citizenship, educators can empower students to make informed choices and engage with information in a discerning and responsible manner. This not only benefits their academic pursuits but also prepares them to be responsible and informed citizens in an increasingly digital world.

3. Teacher Resistance

Resistance to technology integration among educators can stem from various factors, including a lack of familiarity with digital tools and apprehensions about potential job displacement. National Education Policies (NEPs) play a pivotal role in shaping the educational landscape, and addressing these concerns through comprehensive training and support mechanisms is crucial to fostering a successful transition into a technology-enhanced educational environment. NEPs should allocate resources for comprehensive digital literacy training programs that cater to educators at all levels. These programs can cover a wide array of topics, from basic computer skills to advanced usage of educational technology tools. By building educators' confidence and competence in using technology effectively,

NEPs can mitigate the fear associated with the unfamiliar. Continuous professional development opportunities should be a cornerstone of NEPs. These programs should not only focus on technological proficiency but also on pedagogical strategies for integrating technology seamlessly into the classroom. Educators need guidance on how to use digital tools to enhance teaching and improve student outcomes. NEPs should emphasize that technology integration is not about replacing educators but rather about augmenting their capabilities. Digital tools can automate routine administrative tasks, allowing educators to focus more on personalized instruction, creativity, and student engagement. Ensuring educators understand this shift can alleviate concerns about job displacement.

Creating support networks and communities of practice can be invaluable in addressing resistance to technology integration. Educators should have opportunities to connect with peers who have successfully integrated technology into their teaching. These networks provide a platform for sharing best practices, troubleshooting challenges, and offering mutual support. NEPs can incentivize educators to embrace technology integration by recognizing and rewarding innovative practices. This can include grants for technology-enhanced classroom projects, awards for innovative teaching methods, or opportunities for educators to become technology ambassadors within their institutions. Recognizing that not all educators will adopt technology at the same pace, NEPs should allow for flexible implementation timelines. Educators should not feel pressured to adopt technology hastily but rather be encouraged to experiment and gradually integrate it into their teaching as they become more comfortable. NEPs should emphasize that technology integration is ultimately about enhancing the learning experience for students. When educators see the positive impact on student engagement, achievement, and preparedness for the digital world, they are more likely to embrace technology as a valuable tool in education.

Regular evaluation and feedback mechanisms should be integrated into technology integration initiatives. Educators should have opportunities to provide input on the effectiveness of the training and support they receive, ensuring that their evolving needs are met. NEPs should also address concerns related to the digital divide and ensure that all educators have access to the necessary resources and training. This includes providing devices, internet connectivity, and training opportunities to educators in underserved communities. Thus, addressing educators' resistance to technology integration is essential for the successful implementation of technology-enhanced education. NEPs must recognize these concerns and proactively provide the training, support, and incentives needed to empower educators to embrace technology as a valuable tool in their teaching arsenal. By fostering a culture of digital literacy, innovation, and student-centered

learning, NEPs can ensure that technology integration enhances rather than impedes the educational experience.

4. Privacy and Security

Safeguarding student data and maintaining cybersecurity in educational systems is crucial. Data breaches and privacy violations can have far-reaching consequences.

5. Equitable Access to Training

Ensuring equitable access to technology training for teachers across all regions, especially in remote or underserved areas, is a multifaceted challenge that has gained prominence in recent years. While technology integration in education has become increasingly vital, it has also accentuated disparities in training opportunities. Addressing this challenge is essential for promoting a fair and inclusive educational landscape that empowers all educators to effectively utilize technology in their teaching practices. Remote or underserved areas often face geographical challenges that impede access to technology training resources. Limited infrastructure, including internet connectivity and transportation options, can isolate educators in these regions, making it difficult to access training centers or participate in online courses.

Educational institutions in underserved areas may lack the financial resources to provide adequate technology training for their teachers. Budget constraints can hinder the procurement of training materials, software licenses, and the hiring of qualified trainers. Teachers in remote or underserved areas may experience digital literacy gaps. Some educators may not have the foundational technology skills necessary to engage in advanced training programs. Bridging these gaps is crucial before more specialized training can occur. Many teachers have demanding workloads and responsibilities outside the classroom. Finding the time to engage in technology training can be challenging, particularly for educators who need to balance teaching with family and community commitments. Effective technology training programs should be tailored to meet the specific needs and challenges of educators in various regions. What works for urban teachers may not be suitable for those in rural settings. Customizing training content and delivery methods is vital.

Thus, providing equitable access to technology training for teachers in all regions, particularly remote or underserved areas, is a complex challenge but a critical one for fostering inclusive and effective education. By addressing geographical disparities, resource constraints, and digital literacy gaps while customizing training programs to local contexts, education stakeholders can empower teachers with the knowledge and skills needed to harness the potential of technology for the benefit of all students, regardless of their geographical location.

Conclusion

Technology integration in National Education Policies presents a wealth of opportunities to enhance the quality and reach of education. It can empower students with personalized learning experiences, broaden access to knowledge, and streamline administrative processes. However, it also comes with significant challenges related to equity, quality control, teacher readiness, data security, and training access. For technology integration to succeed in NEPs, it must be approached with a comprehensive strategy that addresses these challenges. This includes initiatives to bridge the digital divide, ensure teacher preparedness, safeguard student data, and promote equitable access to training. When effectively managed, technology integration can usher in a new era of education that is more inclusive, accessible, and tailored to the needs of diverse learners in the digital age.

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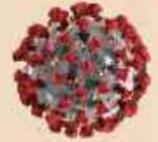
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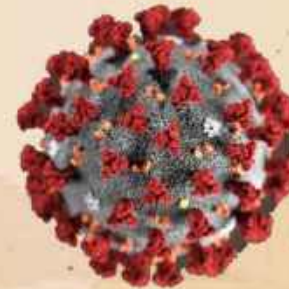


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MAPPING THE LIVELIHOOD VULNERABILITIES OF WOMEN INFORMAL WORKERS IN COIMBATORE DISTRICT DURING COVID – 19



Dr. B. Indira Priyadharshini



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DECLARATION AND CERTIFICATE

I hereby declare and certify that, the Short Duration Research Project entitled "**Mapping the Livelihood Vulnerabilities of Women Informal Workers in Coimbatore District During COVID - 19**"Sanction letter No.361 /ICSSR-SRC/ 2022 Dt.31.12.2023 is a bonafide record of research work carried out by me during the year 2022- 2023. Further certify that the work presented in the report is original and carried out according to the plan in the proposal and guidelines of the ICSSR, Southern Regional Centre, Hyderabad

Principal Investigator

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Chapter 1

INTRODUCTION AND DESIGN OF THE STUDY



Introduction

Unorganised sector constitutes a major part of work-force in the Indian economy. The informal economy employs about 86 per cent of the country's work force and 95 per cent of its women workers. About 50 per cent of the national product is accounted for by the unorganised economy. A high proportion of socially and economically underprivileged women of our society are concentrated in informal economic activities. Many of these women workers are primary earners for their families for sheer survival. Low income women workers, especially in the informal sector form one of the most vulnerable groups in the work force. The reasons for their vulnerability are: (a) irregular work, (b) low economic status, (c) little or no bargaining power, (d) lack of control over earnings, (e) need to balance paid work with child care and household work, (f) little or no access to institutional credit, training and information, and (g) lack of assets. These women find themselves vulnerable, caught between unorganised work and household responsibilities, and lacking access to support in the event of seasonal or life-cycle contingencies. Though they are contributing a lot to the income/saving of the family and to the GDP of the country, their contribution is not recognized. Sometimes they are subjected to many social evils like gender discrimination, domestic violence and sexual harassment at work-place. Despite the existing laws like, 'Prevention of Domestic Violence Act of 2005'; 'Sexual

Harassment Act of 2013'; 'Anti Dowry Act etc., they are subjected to different kinds of exploitation. Therefore, it is time to address their issues, evolve policy measures, initiate reforms and institutional changes for their emancipation and empowerment. While the pandemic has affected livelihoods across the social classes in India, the employment protection and social security of those in the informal sector, who constitute 86% of the workforce stands most affected, as they struggle to meet the basic necessities as well as the threat of infection (International Labour Organization, 2020). Though different groups of workers are going through similar constraints in terms of livelihood and social safety net, the women working in informal economy faced total or near unemployment and economic insecurities due to social distancing and lockdown restrictions. They remained mostly outside the picture of relief mechanisms in the country.

Statement of the Problem

The impact of the crisis and lockdown-associated measures differs depending on the sector. The largest sectors and sub-sectors in the informal economy are often those that are directly impacted by COVID-19 and associated measures to ensure physical distancing. Such measures affect access to markets, demand, imports and access to the raw materials and intermediate goods required for production, with direct consequences on the level of activity and consequent job or income reduction or losses. Heavily impacted sectors include the wholesale/retail trade sector, which accounts for one fourth of informal non-agricultural employment globally and one third in developing countries, where the majority of those employed in the sector are street vendors. COVID-19 has had a drastic impact on every field and walk of life. The long-

lasting impacts of this pandemic have changed the way businesses used to be conducted and will have a strong impact on business models as well. Review of research studies clearly indicates that numerous researchers have extensively analyzed the vulnerability, needs of workers in informal sector and the impact of COVID-19 on informal workers. Relatively less number of studies has been carried out in India. In the proposed area, none of the researchers made an attempt to identify the vulnerabilities of women informal workers, a significant vacuum exists in the proposed study area. In order to fill this vacuum, the study has been undertaken.

Objectives of the Study

The specific objectives of the study are:

- ✚ To analyse the socio- economic background of women working in informal sector
- ✚ To find out the nature of work and working condition of women
- ✚ To study the wage patterns and causes of discrimination in wages of women working in Informal sector
- ✚ To find out the challenges faced by the women working in the informal sectors during and after COVID-19 Pandemic Lockdown.
- ✚ Finally, to suggest ways for their betterment in future

Scope and Methodology

Empirical research design has been adopted. Primary data has been collected from women informal workers residing in Coimbatore District. Five specific informal sector groups namely, construction workers, street

vendors, waste-pickers, domestic workers and homeless persons have been considered for the study. Considering that a very limited database of informal sector workers exists, sample of 149 informal workers in 11 taluks of Coimbatore District has been chosen using snow-ball sampling technique. Interview schedule will be adopted to collect data from the women workers. Sources of the data have been collected getting help from the local panchayats and municipalities to approach the sample women workers. Later, data collected from primary sources has been carefully scrutinized and transcribed before the commencement of data tabulation and interpreted through statistical tools. Data collected has been analyzed using Percentage analysis and weighted average ranking method.

Significance of the Study

Probably the most disturbing scene of the informal workers plight in India became visible when because of lack of food, shelter, basic amenities and emotional support, many of the workers in the informal sector had no choice during the lockdown but to walk toward their hometowns. According to a report by the Centre for Monitoring Indian Economy (CMIE) in March 2020, the unemployment rate was 8.7 percent and it further worsened in April 2020. On account of being unorganized and self-employed, street vendors and their families often lack in any linkage to social security, welfare and assistance schemes and initiatives of the Government. This makes informal workers and their families vulnerable in difficult times or when they may require assistance for unforeseen expenses. The study findings will

provide new insights on the women working in informal economy in the proposed study area. The study results will be imperative in framing regulations and schemes which can benefit women workers in the future.

Limitations of the Study

The data collected is primary data, which is based on the questionnaire and hence the results would bear all the limitations of primary data. The data collected from the women informal workers residing in Coimbatore District. The findings are applicable only to the women informal workers residing in Coimbatore District. Hence care has to be exercised while extending this result to other areas.

Chapter Scheme

The report of the study is presented in four chapters:

-  First chapter deals with the introduction and design of the study
-  In the second chapter, reviews of similar study that were carried out in India and abroad are discussed
-  The third chapter deals with analysis and interpretation of the study
-  The last chapter summarizes the findings of the study. This apart, suggestions for the betterment of informal women workers are included.

Chapter 2

REVIEW OF LITERATURE



Introduction

This chapter attempts to bring out the important findings of the past studies on informal workers and their vulnerability during covid - 19. A number of authors and researchers have contributed a great deal of literature on the socio-economic conditions and problems faced by women informal workers. The studies conducted previously in the present research have been consulted thoroughly in order to find out the availability of data and other materials for operational purposes and to examine the research gap.

The following paragraph summarizes the results of the earlier studies.

Studies in India

Alam et al (2022) The study has found that the pandemic has multiplied the existing vulnerability of the floating workers on many fronts that include job losses, food crisis, shelter insecurity, education, social, physical and mental wellbeing. In response to the pandemic, the Government stimulus packages and Non-government Covid-19 initiatives lack the appropriate system, magnitude, and focus on protecting the floating workers in Bangladesh.

Gupta et al (2022) studied the impact of COVID-19 pandemic on work prospects and health care-seeking behavior of a vulnerable section of the society – the women domestic workers. A longitudinal analysis on 292 randomly

selected women domestic workers residing in slums of “Kalikapur” locality of Kolkata city, West Bengal (India). Data were collected using a predesigned and pretested schedule twice: in early-2020 (before severe impact of COVID-19) and mid-2020 (during the pandemic ravaging India). Paired *t*-test and McNemar's test were used to check for significant changes. They found that, 57.2% lost jobs partially while 2.7% were completely jobless in mid-2020; the average daily work-hour decreased by 25.7%. Their average monthly pay significantly reduced ($P < 0.05$); mean family income in mid-2020 was lesser as well, compared to earlier ($P < 0.05$). Compared to early-2020, 15.8% more participants were sole bread-winners for their families during COVID-19. Number of participants visiting health practitioners significantly reduced ($P < 0.05$) in mid-2020. Rise in over-the-counter medicine use ($P < 0.05$) and increased tendency to ignore symptoms ($P < 0.05$) during COVID-19 was noted. They conclude that COVID-19 pandemic has affected work prospects and health care-seeking behavior of women domestic workers negatively. Most of them faced wage reduction, many becoming sole-earners for their families. This necessitates continued formulation and implementation of strategies ensuring social benefits including healthcare. Awareness about affordable healthcare and ill-effects of bad practices like self-medication should also be built.

Nadia Singh and Areet Kaur (2022) five gender specific pathways through which the pandemic impacted the lives of women belonging to households in informal employment in Punjab. These comprise of (a) Poverty Related Stresses and Livelihood Challenges, (b) Heightened Food Insecurity, (c) Restrictions on Mobility, (d) Unwanted Pregnancies and disruption of routine health services, and (e) Social

Ostracization. Their findings also show that the income deprivations faced by women in informal employment were not uniform, and differed according to the respondent's educational profile and occupational entities. Some of these women were able to employ their training and previous work experience to seek alternative forms of employment in the lockdown period.

Radhika and Bhuvaneshwari (2022) suggested the development of an inclusive model for ensuring sustained livelihood patterns by creating job opportunities in the organized sector. This calls for structural reforms in the labor market to reduce the density of migration in search of employment and income and to create balanced regional development.

Renuga devi *et al* (2022) found that street vendors faced livelihood risks because of the legal, physical, and socio-cultural environment in which they work. Many street were forcibly removed from the streets by the local government authorities. This risk of displacement often increases in the context of elections, mega events, or efforts to beautify historic city centers. J

Tiwari (2022) The findings stressed a multilateral approach with government, labour welfare department, educational institutions, the employment sector, the health sector, NGOs, orphanage homes, and the policymakers in addressing their needs and assisting them to overcome the unprecedented crisis.

Ajith (2021). found that the covid19 treatment charges fixed by government is still unaffordable to majority of income range groups and only 5 percent have monthly family income to afford the five-day general ward treatment charges with normal medicines in private hospitals.

According to **Lakshmi Ratan et al (2021)** in India, women sub-contracted home workers are often dependent on male contractors or intermediaries for orders, payments, raw materials etc., and self-employed home-based workers are dependent on access to transport and markets.

Sandip Kumar Mishra (2021) suggests that the government must give the highest priority to the poor and informal workers so that their livelihoods are not threatened but at the same time, structural limitations must be addressed to make this marginalized section a source of strength rather than weakness in the Indian economy.

Shiney Chakraborty (2021) found that around 83 per cent of women respondents witnessed a severe income drop, while the sector-specific results indicate some interesting patterns. All the construction workers reported a loss of paid work, while 97 per cent of the street vendors said that they had no source of income during the lockdown.

Sumalatha (2021) found that about 57% domestic workers reported stigma and discrimination at workplace, and 40% worked without any safety measures. Incidence of domestic violence at home, increased work burden at home, issues in access to health care, etc., were reported.

Surbhi Kesar (2021) found that almost 80 per cent of households experienced a reduction in food intake, more than 60 per cent did not have enough money for a week's worth of essentials, and a third took a loan to cover expenses during the lockdown.

We also use a set of logistic regressions to identify how employment loss and reduction in food intake varied with individual and household-level characteristics.

Anandi & Deepa (2020) The COVID-19 virus, combined with the state measures to contain it through lockdowns, has

severely affected one of Chennai's indomitable informal workforces, the paid domestic workers. In the last three decades, Chennai has seen a phenomenal growth of paid domestic work along with the growth of other service sectors. With the pandemic, paid domestic workers are facing the crisis of employment and nonpayment of salary, in addition to the pre-existing social stigmas against them. Some of them are forced to go for work amidst the virus crisis, risking their life with no health security. Some employers have shrewdly dismissed these workers just before the lockdown and promised to take them back once the lockdown is eased.

Archi Gupta and Bhavya Gupta documented that Women Construction Workers, 87% reported complete loss of work and income due to the national lockdown imposed by the Central Government in March 2020 to control the spread of coronavirus infection (Figure 9). Only 22% reported a complete loss of income stating that they managed to find construction work from a different source during the later months of the lockdown.

Estupinan Xavier and Mohit Sharma (2020) estimated that 104 million and 69.4 million informally employed workers were at risk of job loss in Lockdown 1.0 and Lockdown 2.0 respectively. Informal workers lost more wages, 22.6 percent, than formal workers, 3.6 percent. Workers informally employed in unorganised sector suffered a wage loss, amounting to Rs. 635.53 billion, which is almost equivalent to annual union budget allotted for employment guarantee scheme MGNREGA in 2020-2021.

Kesar et al (2020) found a massive increase in unemployment, an equally dramatic fall in earnings among informal workers, large increases in food insecurity, depletion of savings and patchy coverage of relief measures.

Two-thirds of their respondents lost work. The few informal workers who were still employed during the lockdown experienced more than a fifty percent drop in their earnings. They also found that migrants and urban Muslims are significantly worse off with respect to employment and food security. Among employment categories, self-employed workers were more food secure. The Public Distribution System (PDS) system was seen to have the widest reach among social security measures. However, even under PDS, 16 percent of vulnerable urban households did not have access to government rations. Further, half of the respondents reported not receiving any cash transfers (state or central).

Rai Chowdhury (2020) found that 87 percent of the participants had their last day of active employment in the week before the sudden announcement of lockdown-I, only 3 percent had resumed work by the time this survey was conducted in May. Of the total, 28 percent reported termination of work during lockdown, and another 23 percent were uncertain of the status of their employment.

Sanjib Dutta (2020) A stretched economic downturn, both globally and nationally, will cause a substantial increase in unemployment, underemployment and in-work poverty and reduce earnings, profits and business competitiveness. While no up-to-date data on the Labor Force Survey is available, this report considers the potential impact of the crisis on businesses and workers' livelihoods and incomes: regular and irregular, protected and unprotected. Those most likely to lose their jobs and income are casual workers and the self-employed. About three quarters of employment in India are not regular, whether they are self-employed or casual workers. These workers suffer the consequences of both the immediate restrictions on circulation and the

consequent economic recession. The total is likely to increase even if those in regular employment lose their jobs due to the closure of the industry.

Saraswathi and Maheswari (2020) opines that Unemployment rate high significantly to 23.48 per cent in May compared to 8.75 per cent in March. The unemployment rate is also high during the lockdown the urban from 9.41 percent in March to 25.79 percent in May and the rural area from 8.44 percent in March to 22.48 percent in May. Urban unemployment rate higher compare to rural. Unemployment rate fell significantly to 10.99 per cent in Jun compared to 23.48 per cent in May, showing signs of improvement in the job scenario in the country and return to the pre-lockdown period, the Centre for Monitoring Indian Economy (CMIE) data suggests. The unemployment rate in urban areas for the month stood at 12.01 per cent, while it was recorded at 10.2 per cent in rural areas.

Shiney Chakraborty (2020) reveals that around 83% of women respondents witnessed a severe income drop, while the sector-specific results indicate some interesting patterns (Figure 3). All the construction workers reported a loss of paid work, while 97% of the street vendors opined that they had no source of income during the lockdown. During the personal interviews, women home-based workers mentioned that owing to the closure of factories, interruptions in supply chain, restrictions on transports carrying raw materials and payments withheld by subcontractors/employers even for the work that was already completed, they have not had any income in their household since mid-March. Women waste pickers stated the difficulties not only in collecting waste, owing to restrictions on movement, but also while segregating and selling the same as all shops were closed,

and they were forced to sell the waste at significantly reduced prices.

Shiney (2020) found that 69% of women mentioned an increase in prices as the major problem in accessing most of the essential items. 71% of respondents stated that they were spending out of their personal or household savings to manage the daily expenses in the absence of income. National Survey of Informal Workers conducted in May 2020, reveals that 78 per cent of the informal workforce had lost their livelihoods due to the lockdown, with 90 per cent urban unemployment and 72 per cent rural unemployment. (<https://theprint.in/>,2021)

Neog et al (2016) identified the presence of a sticky floor effect in both formal and informal employment. In case of caste-based discrimination, we find evidence of discrimination effect remaining stable and insignificant in informal employment whereas in formal employment wage gaps are seen to follow a glass ceiling effect. Our results highlight the need for better regulation of the informal labour market in India.

Kalpana Hiralal (2010) revealed that home based activity was largely undertaken by women plagued by poverty and unemployment. More than 60 per cent of the interviewees were between the age of 30-60 years. Around 80 per cent of the women were married and others were divorced. Of the 25 respondents, at least 18 were women headed households. One -half of the women had completed formal schooling. Women between the age group of 20-35 years completed 12 years of formal education.

In India, the National Commission for Enterprises in the Unorganized Sector (NCEUS) observed that informal

employment has been 98% in the agricultural sector, 75% in 2/12 industry, and 72% in services (**Sengupta et al., 2009**).

Studies Abroad

Guo (2022) We provide a first view of vulnerable informal economy after the blows from COVID-19, using transaction-level business data of around 80 million offline micro businesses (OMBs) owners from the largest Fintech company in China and employing machine learning method for causal inference. We find that the OMBs activities in China experienced an immediate and dramatic drop of 50% during the trough. The businesses had rebounded to around 80% of where they should be seven weeks after the COVID-19 outbreak, but had remained at this level until the end of our time window. We find a larger disruption to the OMBs in urban areas, the female merchants and the merchants who were not grown up in the places where they conducted businesses. We discuss the implications for policy support to the most vulnerable, and highlight the importance to take full advantage of digital development to follow up the informal economy.

Jahid Nur (2022) found that Female informal workers in Dhaka also used social capital during the pandemic, a long-standing practical coping strategy in Bangladesh. They borrowed loans from their neighbours and families, tried to re-enter the market with the help of their social networks, and provided mutual mental support to each other. Apart from social networks, these workers took loans from other sources to tackle their financial predicaments. Non-government organisations (NGOs) were a reliable source from which they could borrow easily. Local moneylenders, who charge high-interest rates, also were very active in providing loans as they

could be easily accessed during the lockdowns. For instance, a home-based restaurant cook took some loans from local moneylenders during the first days of the crisis.

Pham Tien Thanh and Pham Bao Duong (2022) found that women street vendors experienced a large reduction in business and consumption. The businesses of immigrant vendors suffered more adverse effects than those of local vendors. Also, the vendors selling in wet market areas incurred greater economic burdens than those selling near schools or recreation centers.

Swarna (2022) points out that about ninety percent of these workers faced an income and food expenditure drop during the lockdown. The effect was higher in males, particularly among the urban-centric and educated males engaged in services and sales.

Wasima & Rahman (2022) The respondents reported loss of employment, loss of income, food shortages, inability to pay rent, and inadequate social security coverage as the critical vulnerabilities

Dzawanda (2021) reveal that despite many involved in the informal sector having lost their means of survival during the COVID-19 lockdown, the government introduced additional restrictions on this sector, thus almost destroying it.

Lenshie (2021) argued that the COVID-19 pandemic and the accompanying lockdown devastated the informal economic activities of women in peri-urban areas due largely to lack of social protection programmes to support vulnerable populations.

Ronald (2021) The findings show that workers who had jobs in non-essential and informal sectors were significantly more likely to become unemployed. In contrast to developed

countries, having a job amenable to working from home is not correlated with job loss when controlling for informal status. This is consistent with the high level of labor market segmentation observed in Peru, where high-skilled occupations are disproportionately concentrated in the formal sector, which was also better targeted by policies aimed at supporting firms and job protection during the crisis. In addition, the findings show that women were more likely to lose their jobs because female-dominated sectors are more intensive in face-to-face interactions and thereby more affected by social distancing measures.

Researchers **Komin et al (2021)** found that IS workers experienced dramatic decreases in their monthly income, although the reduction varied across occupation and geographic region. To compensate for reduced income, IS workers tapped their savings and increased their debt. A Thai government programme to provide income support for workers during the shutdown reached less than half of IS workers.

Aleksandra Webb et al (2020) found that there are considerable short- and long-term implications of the pandemic for informal employment and the informal economy. This occurs against the background of unresolved tensions arising from informal workers' desire for more employment security and employers' striving for continued labour flexibility while transferring costs to government and workers. The COVID-19 pandemic might accelerate current trends and force new solutions to better protect basic work security while helping organisations to remain competitive. Government policies supporting work safety, income security, moves to formalisation of employment and fairness for informal employees are particularly important.

Malik, Sana, and Khansa Naeem (2020) observed that women constitute a major segment in Pakistan, who are affected by the COVID-19 in terms of their physical ailment, emotional response and impact vis a vis recovery. Under the present scenario of lockdown, sluggish economic activities, financial insecurities and health issues have increased the risk of trauma and mental illnesses. This is, however, least discussed in Pakistan's response to the pandemic. In reality, the disease is affecting women's lives, health (both mental and physical); and livelihoods. Despite representing half of the global population and significantly contributing to social and economic development, women continue to suffer from multidimensional disparities and gender-based violence more so in times of crisis.

Pitoyo et al (2020) found that most workers experienced a decline in incomes, both in agriculture (65 respondents) and non-agriculture (74 respondents). Informal workers also experienced a lot of lost incomes altogether (33.2 %). Only a few informal workers whose incomes are not decreasing or lost during pandemic (7.7 %)

Santos et al (2020) reveal that the withdrawal of informal workers decreases the productive capacity and leads to strong negative impacts on the economy, mainly in the service sectors. Most workers experienced a decline in incomes, both in agriculture (65 respondents) and non-agriculture (74 respondents). Informal workers also experienced a lot of lost incomes altogether (33.2 %). This is caused by the policy of limiting the intensity of human encounters to reduce the transmission rate of the virus spreading, thereby triggering disruptions to demand and supply. Only a few informal workers whose incomes are not decreasing or lost during pandemic (7.7 %).

Breman (2016) also find that the creation of informal household enterprises is the common resort for non-agricultural employment for those who lack education or who are geographically disadvantaged.

Benjamin and Mbaye (2015) point out the role of the urban informal sector in absorbing rural migrants. A notable characteristic of the informal sector is the strong female presence. 60% of working women in the developing world are in the informal economy.

Martha Alter Chen (2014) Of the total sample of home-based workers across the three study cities, 71 per cent are sub-contracted and 29 per cent are self-employed. In the Ahmedabad sample, all of the home-based workers are sub-contracted; in both the Bangkok and Lahore samples, around 56 per cent are sub-contracted. The majority of the self-employed are own-account workers, one third are employers, and a small percentage are unpaid contributing family workers or (only in Bangkok) members of cooperatives.

Agaya Benson and Masiga Asunza (2013) found that women domestic workers were generally hired to perform a wide range of duties such as laundry, ironing, caring for children, caring for the sick, mopping, dusting, washing toilets etc.

Ozguler (2012) conducted a survey on home based female workers in Turkey (Eskisehir). He found that 39.3 per cent home based female workers were between the ages of 40 and 49 and 72.6 per cent of them were married and 47.6 per cent of them studied up to primary school. The main duty of women was child care and domestic work. 73.8 per cent of home based female workers who were included in the scope of the study were engaged in handicrafts such as weaving baby shoes or socks, lace work and needle work. They had

chosen this type of work due to economic requirements. They wished to perform work such as handicrafts, which they were currently engaged in, at another location, rather than being engaged in wage earning job.

Chen et al (2006) in their paper entitled “Informality, Gender and Poverty:

A Global Picture” made an attempt to identify the main problems faced by unorganized sector workers. They opines that unorganized sector presented two knotty problems of social justice to policy makers. First, an increasingly large segment of the working population was being forced to live at the margin of survival. Second, given the availability of such cheap labour in the unorganized sector, employers were likely to divert more and more activities to such organizations.

Conclusion

Earlier studies focused on informal worker’s socio – economic profile alone. Few researchers abroad studied the challenges faced by informal women workers during covid-19. None of the researchers studied the vulnerabilities faced by women informal workers during covid-19 in the study area. In order to fill this gap, the present study was undertaken to examine the women informal worker’s socio economic profiles, nature of work and challenges faced by them during covid – 19 in Coimbatore district. Analysis and interpretation have been dealt in the next chapter.

Chapter 3

ANALYSIS AND INTERPRETATION



Introduction

This chapter deals with the Socio-Economic profile of the women informal workers, nature of work and working condition, migration, wage discrimination and impact of COVID 19 lockdown on their livelihood. This chapter presents the data analysis based on the responses received from the women street vendors.

Socio - Economic Profile of the Sample Women Informal Workers

The sample informal workers have been selected from different parts of Coimbatore district. Percentage analysis has been employed to analyze the data collected from the sample. The description about the social - economic profile of the sample women informal workers is as follows:

Table 3.1
Socio - Economic Profile of the
Sample Women Informal Workers

Factors	No. of Women Informal Worker	Percentage
Age		
Up to 20 years	26	17
21-30 years	67	45
31-40 years	34	23
41-50 years	12	8
Above 50 years	10	7

Mapping the Livelihood Vulnerabilities of Women Informal workers in Coimbatore District During Covid – 19

Factors	No. of Women Informal Worker	Percentage
Area of Residence		
Rural	66	44
Semi- Urban	50	34
Urban	33	22
Religion		
Hindu	91	61
Christian	41	28
Muslim	17	11
Others specify	-	-
Caste		
General	35	23
Scheduled Caste	37	25
Scheduled Tribe	10	7
Backward Class	57	38
Most Backward Class	10	7
Any other (specify)	-	-
Educational Qualification		
Illiterate	24	16
Secondary	62	42
Higher secondary	24	16
Graduation	24	16
Post-Graduation	15	10
Any other (specify)	-	-
Marital Status		
Married	76	51
Unmarried	70	47
Widow	0	0

Factors	No. of Women Informal Worker	Percentage
Divorced	3	2
Separated	-	-
Type of Family		
Joint	42	28
Nuclear	107	72
Number of Family Members		
Up to 3 members	48	32
4- 5 members	86	58
Above 5 members	15	10
Number of children in the family		
Nil	33	22
1to 3	90	60
Above 3	26	17
Type of Residence		
Own	54	36
Rental	88	59
Lease	7	5
Monthly Income (self)		
Up to 10,000	39	26
Rs.10,001-15,000	56	38
Above Rs.15,000	54	36
Family Income Per Month		
UptoRs.15,000	42	28
Rs.15,001 to Rs.20,000	63	42
Rs.20,000 to Rs.25,000	26	17
Above Rs. 25,000	18	12
Total	149	100

Age

Above table depicts that, out of 149 women informal workers, 26 (17 %) of the women informal workers belong to the age group of up to 20 years, 67 (45 %) of the women informal workers are between the age group 21-30 years, 34 (23 %) of the women informal workers are between the age group 31-40 years, 12 (8 %) of the women informal workers are between the age group 41-50 years and 10 (%) of the women informal workers are above 50 years.

Majority 67 (45 %) of the women informal workers are between the age group 21 - 30 years.

Area of Residence

From table 1, it is inferred that, out of 149 women informal workers, 66 (44 %) of the women informal workers are living in rural area, 50 (34 %) of the women informal workers are living in semi urban area and remaining 33 (22 %) of the women informal workers are living in urban area.

Majority 66 (44 %) of the women informal workers are living in rural area.

Religion

The above table discloses the religion of the women informal workers. It is observed that majority 91 (61 %) of the women informal workers are Hindu, 41 (28 %) of the women informal workers are Christian and 17 (11 %) of the women informal workers are Muslim.

Majority 91 (61 %) of the women informal workers belong to Hindu religion.

Caste

Out of 149 women informal workers, 35 (23 %) of the women informal workers belong to General Community, 37

(25 %) are Scheduled Caste, 10 (7%) are Scheduled Tribe, 57 (38 %) belong to Backward Class, and rest 10 (7 %) belong to Most Backward Class.

Majority 57 (38 %) of the women informal workers belong to Backward Class.

Education Status

The above table reveals that, out of total 149 women informal workers, (16%) of the women informal workers are Illiterate, (42%) of the women informal workers completed Secondary, (16 %) of the women informal workers have completed Higher secondary, (16 %) of the women informal workers have completed Graduation and only (10%) women informal workers have completed Post-Graduation.

It is found that most of (42%) of the women informal workers completed Secondary.

Marital Status

Out of 149 women informal workers, 76 (51 %) of the women informal workers are married, 73 (47 %) of the women informal workers are unmarried and 3 (2 %) of the women informal workers are divorced.

Majority (51%) of the women informal workers are married.

Type of Family

Table 3.1 discloses that, out of 149 women informal workers, 42 (28 %) of the women informal workers belong to joint family and only 107 (72 %) belong to nuclear family.

It is observed that 107 (72 %) of the women informal workers belong to nuclear family.

Size of Family

The above table represents the family size of the women informal workers, out of 149 women informal workers, 48(32 %) of the women informal workers family consists up to 3 members, 86 (58 %) of the women informal workers family consists of 4 - 5 members and 15(10 %) of the women informal workers family consists of more than 5 members.

Hence, it can be concluded that (58 %) of the women informal workers family consists of 4 - 5 members

Number of Children in the Family

Out of 149 women informal workers, (22 %) of the women informal workers do not have children, (60%) of the women informal workers have 1 to 3 children and (17 %) of the women informal workers have more than 3 children.

Majority (60 %) of the women informal workers have 1 to 3 children.

Type of Residence

The above table depicts that, 54(36 %) of the women informal workers reside in own house. 88(59 %) of the women informal workers reported live in rented house, and only 7(5 %) of the women informal workers live in leased house.

Majority 88 (59%) of the women informal workers live in rental house.

Monthly Income (Self)

The table discloses that, out of 149 women informal workers, 39(26 %) of the women informal workers monthly income ranges up to Rs10,000. 56 (38 %) of the women informal workers income ranges between Rs. 10,001 and Rs. 15,000 and 54 (36 %) of the women informal workers monthly income is above Rs. 15,000.

Majority (38 %) of the women informal workers income ranges between Rs. 10,001 and Rs. 15,000

Family Income Per Month

Family income wise classification debits that, 42 (28 %) of the women informal workers monthly family income is up to Rs. 15,000. 63 (42 %) of the women informal workers family income ranges between Rs. 15,001 and Rs. 20,000. 26 (17 %) of the women informal workers family income ranges between Rs. 20, 000 and Rs. 25,000, and (12 %) of the women informal workers family income is of above Rs. 25, 000.

Majority (42%) of the women informal workers family income ranges between Rs. 15,001 and Rs. 20,000.

Nature of Work and Working Condition of Women Informal Workers

The following table exhibits the nature of work and working conditions of women informal workers. It provides information on their occupations, nature of employment, working hours, workplace, salary frequency, savings habits, level of satisfaction, and more.

Table 3.2
Nature of Work and Working Condition of Women Workers

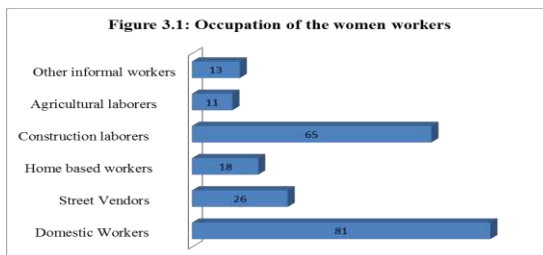
Factors	No. of Women Informal Worker	Percentage
Nature of work/Occupation		
Domestic Workers	81	54
Street Vendors	26	17
Home based workers	18	12
Construction laborers	65	44
Agricultural jobs	11	7
Other informal workers	13	9
Nature of Employment		
Regular full time	81	54
Regular part time	49	33
Seasonal	7	5
Contractual	12	8
Any other please specify	-	-
Working Hours in A Day		
Less than 3 hours	17	11
3 hours to 5 hours	47	32
5 hours to 8 hours	53	36
More than 8 hours	32	21
Mode of Transport		
On Foot	25	17
By Bus	66	44
By two wheelers	54	36
Company Vehicles	4	3
Any others specify	-	-

Factors	No. of Women Informal Worker	Percentage
Salary Frequency		
Daily	25	17
Weekly	51	34
Monthly	70	47
Fort-nightly	3	2
Mode of Savings		
Bank	51	34
Relative	54	36
Chits	16	11
Post office	8	5
Employer	4	3
Self	16	11
Work Satisfaction		
Income	50	34
Daily working hours	58	39
Number of holidays	22	15
Working condition	9	6
Regularity of payment	7	5
Development skill	1	1
Transportation system	2	1
Total	149	100

Nature of Work/Occupation

Figure 3.1 discloses that, out of the total women informal workers 149, 81(54 %) of the women informal workers are domestic workers, 26(17 %) of the women informal workers are street vendors, 18(12 %) of the women informal workers are home based workers, 65 (44 %) of the women informal

workers are construction laborers, 11(7 %) of the women informal workers are employed are agricultural laborers, and 65 (44 %) of the women workers involved other informal works.



More than half of the sample women 65 (44%) are domestic workers.

Reason for Joining the Job - Weighted Average Ranking Method

The weighted average formula is used to calculate the average value of a particular set of numbers with different levels of relevance. The relevance of each number is called its weight. The weights should be represented as a percentage of the total relevancy. Therefore, all weights should be equal to 100percentage of the women informal workers, or 1.

The table below presents the reasons for joining the job among women informal workers. The ranks are based on the weights given to each reason and the corresponding scores obtained.

Table 3.3
Reason for joining the job

IV	III	II	I	Rank	
				Weight	
5	6	7	8		
13	18	70	30	Family commitments/poverty	
65	108	490	240	No of women informal workers	score
21	27	13	8	No of women informal workers	score
105	162	91	64	Illiteracy (No education)	
33	17	4	10	No of women informal workers	Score
165	102	28	80	Relative working here	
17	13	10	19	No of women informal workers	score
85	78	70	152	Unable to find better job	
15	14	7	10	No of women informal workers	score
75	84	49	80	Compulsion (Parents/husband)	
15	20	16	20	No of women informal workers	score
75	120	112	160	To meet the day to day expenses	
15	21	16	18	No of women informal workers	score
75	126	112	144	Children education	
19	21	16	36	No of women informal workers	score
95	126	112	288	Medical expenses	

RANK	Average	Total	VIII	VII	VI	V
I	117.875	943	1	2	3	4
			6	6	2	4
			6	12	6	16
V	79.375	635	14	22	21	23
			14	44	63	92
VII	73.75	590	22	22	15	26
			22	44	45	104
VI	77.25	618	21	20	24	25
			21	40	72	100
VIII	70.25	562	25	17	29	32
			25	34	87	128
III	80.25	642	26	24	11	17
			26	48	33	68
IV	79.625	637	22	22	26	9
			22	44	78	36
II	95.125	761	13	15	19	10
			13	30	57	40

The reasons for taking the current position are categorized as follows: Family commitments/poverty, Illiteracy (No education), Relative working here, Unable to find better job, Compulsion (Parents/husband), to meet the day to day expenses, Children education and Medical expenses.

From the above table, out of 149 responses ranked 1st for Family commitments/ poverty, 2nd rank is given to Medical expenses, 3rd rank is given to meet the day to day expenses, 4th rank is given to Children education, 5th rank is given to Illiteracy (No education), 6th rank is given to Unable to find better job, 7th rank is given to Relative working here and 8th rank is given to Compulsion (Parents/husband).

Nature of Your Employment

It is evident from table 3.2 that, out of 149 women informal workers, 81(54 %) of the women informal workers have regular full-time employment, 49(33 %) of the women informal workers work regular part-time jobs, 7(5 %) of the women informal workers have seasonal employment, and 12 (8 %) of the women informal workers are engaged in contractual work.

Most of 81 (54 %) of the women informal workers have regular full-time employment.

Working Hours in a Day

It can be inferred from the above table that, out of 149 women informal workers, 17(11 %) of the women informal workers work less than 3 hours a day, 47(32 %) of the women informal workers work between 3 to 5 hours a day, 53(36 %) of the women informal workers work between 5 to 8 hours a day, and only 32(21 %) of the women informal workers work more than 8 hours a day.

One third 53(36 %) of the sample women informal workers work hours ranges from 5 to 8 hours a day.

Mode of Transport

Table 3.2 exhibit that, out of 149 women informal workers, 25(17%) of the women informal workers reach their workplace by foot, 66(44%) of the women informal workers use bus, 54(36%) of the women informal workers use two-wheelers, and only 4 (3%) of the women informal workers use company vehicles for transportation.

Most of (44 %) of the women informal workers use bus to reach their workplace.

Salary Frequency

Out of 149 women informal workers, 25(17 %) of the women informal workers receive their salary on a daily basis, 51(34 %) of the women informal workers receive their salary weekly, 70 (47 %) of the women informal workers receive their salary on a monthly basis, and only 3(2 %) of the women informal workers receive their salary every two weeks.

Most of 70 (47%) of the women informal workers receive their salary on a monthly basis.

Mode of Savings

The table explains that, 51(34 %) of the women informal workers keep their savings in banks, 54 (36 %) of the women informal workers keep their savings with relatives, 16(11 %) of the women informal workers invest in chit funds, 8(5%) of the women informal workers keep their savings in post offices, 4(3%) of the women informal workers keep their savings with their employer, and 16 (11%) of the women informal workers self-manage their savings.

Most of 54 (36 %) of the women informal workers keep their savings with relatives.

Satisfaction at Work

Table 3.2 reveals that, out of 149 women informal workers, 50(34 %) of the women informal workers expressed satisfaction with their income, 58(39 %) of the women informal workers are satisfied with their daily working hours, 22 (15 %) of the women informal workers are satisfied with the number of holidays they receive, 9 (6 %) of the women informal workers are satisfied with their working conditions.

Most of 58(39 %) of the women informal workers are satisfied with their daily working hours.

Wage Patterns & Causes of Discrimination

The following table discloses the wage patterns and causes of discrimination among women informal workers. It provides insights into their comfort level working with male workers, instances of fights with other women at the workplace, types of discrimination faced, basis of discrimination, membership in social organizations, and wage comparison with male workers.

Table 3.4
Wage Patterns & Causes of Discrimination

Factors	No. of Women Informal Worker	%age
Comfortable Working with Male Workers		
Yes	69	46
No	80	54

Fight Sometimes with other Working Women at Your working place		
Yes	40	27
No	109	73
Type of Discrimination During Work		
Yes	43	29
No	106	71
Kind of discrimination you face		
Gender Pay gaps	37	25
Increased working hour	39	26
Harassment	43	29
Desired employee benefits	30	20
Basis of discrimination		
Gender	36	24
Religion/ Caste	21	14
Education	26	17
Age	66	44
Member of any social organization (like women club, welfare society etc.)		
Yes	20	13
No	129	87
Compared to male workers whether your wages is low		
Yes	56	38
No	93	62
Total	149	100

Comfortable Working with Male Workers

It is found out that, out of 149 women informal workers, 69 (46 %) of the women informal workers stated that they are comfortable working with male workers, and 80 (54 %) of the

women informal workers stated that they are not comfortable working with male workers.

More than half of the 80(54 %) sample women informal workers stated that they are not comfortable working with male workers.

Conflict

Table 3.4 exhibits that, out of 149 women informal workers, 40(27%) of the women informal workers mentioned that they sometimes have conflicts with other women at their workplace, and 109 (73%) of the women informal workers reported not having any fights with other women at their workplace.

Most of 109 (73%) of the women informal workers reported not having any fights with other women at their workplace.

Type of Discrimination During Work

The table above explains that, out of 149 women informal workers, 43(29%) of the women informal workers experienced some form of discrimination during work, and 106 (71%) of the women informal workers stated that they did not face any discrimination during work.

Nearly one third 106 (71%) of the women informal workers stated that they did not face any discrimination during work.

Kind of Discrimination Faced

Table 3.4 depicts that, out of 149 women informal workers, 37(25%) of the women informal workers reported facing discrimination related to gender pay gaps, 39 (26%) of the women informal workers mentioned that their working hours compared with men, 43 (29 %) of the women informal workers experienced discrimination in the form of

harassment and 30(20%) of the women informal workers faced discrimination regarding desired employee benefits.

Most of 43 (29%) of the women informal workers faced discrimination in the form of harassment.

Basis of Discrimination

It is inferred that, out of 149 women informal workers, 36 (24%) of the women informal workers identified gender as the basis of discrimination, 21 (14 %) of the women informal workers reported facing discrimination based on religion or caste 26, (17 %) of the women informal workers experienced discrimination related to their level of education, 66(44 %) of the women informal workers mentioned facing discrimination based on their age and there is no information for other categories like Physical Appearance.

Most of 66 (44 %) of the women informal workers mentioned facing discrimination based on their age.

Social Organization (Like Women's Club, Welfare Society, Etc.)

Out of 149 women informal workers, 20 (13 %) of the women informal workers are members of social organizations, and 129 (87 %) of the women informal workers are not members of any social organization.

Most of 129 (87 %) of the women informal workers are not members of any social organization.

Wage Discrimination

It is evident from the table that, out of 149 women informal workers, 56 (38 %) of the respondent reported that their wages are lower than male workers and 93(62%) of the women informal workers stated that their wages are not lower compared to male workers. Most of 93 (62 %) of the

women informal workers stated that their wages are not lower compared to male workers.

Migration Pattern

The following table provides insights into migration patterns among women informal workers. It includes information on their migration status, whether they migrated with their family or alone, reason for migration and their desire to return to their native place.

Table 3.5
Migration Pattern

Factors	No. of Women Informal Worker	Percentage
Migrated From Native		
Yes	73	49
No	76	51
Migrated with Family or Alone		
With family	70	66
Alone	3	34
Reason for Migration from Native		
Lack of enough jobs in native place	9	12.5
Couldn't grow enough in the place where you were a farmer	10	13.7
Lack of adequate income	8	11
Large size of household	7	9.6
Small size of agricultural holding	7	9.6

Poor public services(such as water or roads)	6	8.2
Better work opportunities	6	8.2
It is our profession to migrate	5	6.8
Higher expected income	5	6.8
Employment	4	5.5
Drought/unable to continue farming/ Agriculture	3	4.1
Marriage/family movement	2	2.7
Family movement for better livelihood (Income)	1	1.3
Willingness to Return Native Place		
Yes	50	34
No	99	66
Total	149	100

Migrated from Native

Table above exhibits that, out of 149 women informal workers, 73 (49%) of the women informal workers have migrated from their native place and 76 (51 %) of the women informal workers have not migrated.

Most of 76(51%) of the women informal workers have not migrated.

Reason for Migration from Native

The above table discloses that, out of 73 women informal workers who have migrated from native, 9 (12.5%) of the women informal workers mentioned that they migrated due to a lack of sufficient job opportunities in their previous location, 10 (13.7 %) of the women informal workers reported that they migrated because they were unable to achieve

adequate growth or prosperity as farmers in their previous location, 8 (11 %) of the women informal workers cited a lack of sufficient income as a reason for migration, 7(9.6 %) of the women informal workers mentioned that they migrated due to having a large household that required additional income or resources. 7 (9.6 %) of the women informal workers reported that they migrated because their agricultural holdings were too small to sustain their livelihood, 6(8.2 %) of the women informal workers mentioned that they migrated due to the lack of adequate public services, such as water or roads, in their previous location, 6 (8.2 %) of the women informal workers migrated in search of better work opportunities in terms of job availability or income potential, 5(6.8 %) of the women informal workers mentioned that migration is a traditional or inherent aspect of their profession or occupation, 5 (6.8 %) of the women informal workers reported that they migrated in pursuit of higher expected income in their new location, 4(5.5 %) of the women informal workers mentioned that they migrated in search of employment opportunities, 3 (4.1 %) of the women informal workers reported that they migrated due to factors such as drought or the inability to sustain their livelihood through farming or agriculture, 2 (2.7 %) of the women informal workers migrated due to marriage or family-related reasons, and only 1 (1.3 %) of the women informal workers reported that their entire family migrated to improve their livelihood and income.

Most of 10 (13.7%) of the women informal workers reported that they migrated because they were unable to achieve adequate growth or prosperity as farmers in their previous location.

Migrated with your Family or Alone

It is found out that out of 149 women informal workers 70(96 %) of the women informal workers migrated with their family members, and remaining 3(4%) of the women informal workers migrated alone.

Most of 70(96 %) of the women informal workers migrated with their family members

Willingness to Return Native Place

It reveals that out of 149 women informal workers, 50 (34%) of the women informal workers expressed a desire to return to their native place, and 99(66 %) of the women informal workers stated that they are not willing to go back to their native place.

Most of 99(66 %) of the women informal workers stated that they are not willing to back to their native place.

Information about Covid-19

The table below presents data on the information on COVID-19 on women informal workers, including their personal and family members' exposure to the virus, medical expenses incurred, and whether their employers provided assistance in paying medical bills.

Table 3.6
Information about COVID 19

Factors	No. of Women Informal Worker	Percentage
Affected with covid-19		
Yes	129	87
No	20	13
Family members affected with covid - 19		

Factors	No. of Women Informal Worker	Percentage
Yes	122	82
No	27	18
Medical Expenses		
By savings	24	16
Borrowing from relatives / Friends	83	56
Borrowed from money lenders	42	28
Employer helped to pay medical expenses		
Yes	31	21
No	118	79
If yes, employer helped		
As freebie	3	10%
As Salary in advance	28	90%
Total	149	100

Affected with Covid-19

Out of the sample women informal workers, 129 (87 %) have been affected by Covid-19. 20 (13 %) of the women informal workers have not been affected by Covid-19 and More than one third (87 %) of the women informal workers have been affected by Covid-19.

Family Members Affected with Covid-19

It is inferred from the above table that, 122(82%) of the women informal workers reported that their family members have been affected by Covid-19 and 27 (18 %) of the women informal workers mentioned that their family members have not been affected by Covid-19.

More than three fourth of the 122 (82 %) women informal workers mentioned that their family members have been affected by Covid-19.

Medical Expenses

It can be inferred from the above table that, out of 149 women informal workers, 24 (16%) of the women informal workers stated that they covered their medical expenses using their savings, and 83(56%) of the women informal workers reported that they borrowed money from relatives or friends to pay for their medical expenses. 42(28%) of the women informal workers reported that they borrowed money from money lenders to pay for their medical expenses.

More than half (56%) of the women informal workers reported that they borrowed money from relatives or friends to pay for their medical expenses

Employer support

Table above depicts that, 31(21 %) of the women informal workers mentioned that their employer helped them in paying their medical expenses and 118(79 %) of the women informal workers did not receive any help from their employer for medical expenses.

Majority 118 (79%) of the women informal workers did not receive any help from their employer for medical expenses.

Kind of Support from Employer

Out of 31(21 %) of the women informal workers mentioned that their employer helped them in paying their medical expenses, 10% received it as freebie and the rest 90% received money as salary in advance.

Hence, it can be inferred that majority of the women workers received money from their employer as salary in advance.

Impact of Covid-19 and Livelihood

The following paragraphs depict the livelihood challenges faced by the women informal workers during covid-19 lockdown.

Table 3.7
Impact of Covid-19 and Livelihood

Factor	No. of Women Informal Worker	Percentage
Jobless /unemployed during pandemic		
Yes	92	62
No	57	38
Reason for Unemployment		
Employers terminated the service	16	17
Fear for own health	27	29
Social distancing impossible	09	10
Transportation restriction	40	44
Salary Paid During Pandemic		
Full salary	60	40
Half salary	69	46
No salary	20	13
Work load/salary paid during pandemic		
Reduced salary/ Increased workload	84	56
No change in salary/workload	65	44
Safety measures were provided in your workplace		
Complete safety measures	81	54
Partial safety measures	44	30

Factor	No. of Women Informal Worker	Percentage
No safety measures	24	16
Household Expenses		
Managing with reduced income	11	07
Relatives are supporting	45	30
Existing saving is used	30	20
Managing with borrowed money	45	30
Not affected much	18	12
Primary source of borrowing		
Relatives	53	36
Money lenders	78	52
Friends	9	6
Neighbors	9	6
Economical problems faced during Covid-19 Lockdown		
Debt increased	75	50
Food intake restricted	30	20
Lack of diversified food	9	6
Difficulty to pay rent	8	5
Shrunken savings	8	5
Selling personal assets	12	8
Financial insecurity	6	4
Increased job insecurity	1	1
You went to native during covid-19 lockdown		
Yes	39	26
No	110	74
Re-joined in the same work after covid-19 restriction		
Yes	100	67
No	49	33

Factor	No. of Women Informal Worker	Percentage
Mental health problems faced during covid-19		
Lack of confidence	38	25
Stress of anxiety	96	64
Social dysfunction	15	11
Total	149	100

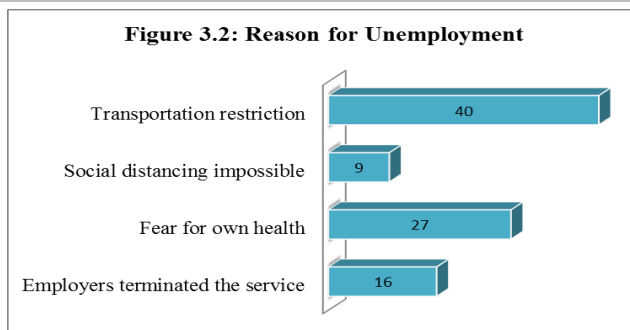
Jobless / Unemployed During The Pandemic

Above table depicts that, 92 (62%) of the women informal workers were jobless or unemployed during the pandemic and 57(38%) of the women informal workers were not jobless or unemployed during the pandemic.

More than half 92 (62%) of the women informal workers were not jobless or unemployed during the pandemic.

Reason for Unemployment

Out of 92 women informal workers who were jobless or unemployed during the pandemic, 16 (17%) of the women informal workers reported that their employers terminated their services during the pandemic, 27(29%) of the women informal workers mentioned that they were jobless or unemployed due to their fear for their own health, 9(10%) of the women informal workers faced job loss or unemployment because social distancing measures were not possible in their work environment, and 40 (44%) of the women informal workers cited transportation restrictions as a reason for their joblessness or unemployment.



Nearly one half of 40(44%) the women informal workers cited transportation restrictions as a reason for their joblessness or unemployment.

Salary Paid During the Pandemic

It inferred that, out of 149 women informal workers, 60 (40 %) of the women informal workers received their full salary during the pandemic, 69(46 %) of the women informal workers received half of their salary during the pandemic, and 20 (13 %) of the women informal workers did not receive any salary during the pandemic.

Most of 69 (46%) of the women informal workers received half of their salary during the pandemic

Workload/salary paid during the pandemic

It explained that out of 149 women informal workers, 84 (56%) of the women informal workers experienced a reduction in salary and an increase in workload during the pandemic, 65 (44%) of the women informal workers reported no change in salary or workload during the pandemic.

Most of 84 (56%) of the women informal workers experienced a reduction in salary and an increase in workload during the pandemic.

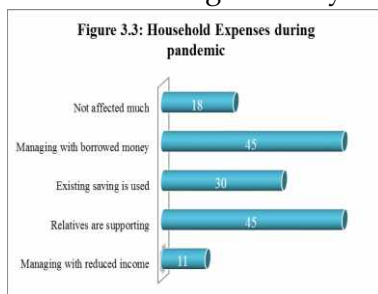
Safety Measures Were Provided in Your Workplace

Out of 149 women informal workers, 81 (54 %) of the women informal workers reported that complete safety measures were implemented in their workplace during the pandemic, 44(30 %) of the women informal workers experienced partial safety measures in their workplace and 24 (16 %) of the women informal workers reported that no safety measures were provided in their workplace.

Most of 81 (54%) of the women informal workers reported that complete safety measures were implemented in their workplace during the pandemic.

Household Expenses

It reveals that out of 149 women informal workers, 11(7%) of the women informal workers managed their household expenses with reduced income, 45 (30%) of the women informal workers received support from their relatives to manage their household expenses, 30 (20%) of the women informal workers utilized their existing savings to manage household expenses, 45(30%) of the women informal workers had to manage household expenses by borrowing money and 18 (12%) of the women informal workers reported that their household expenses were not significantly affected.



Most of 45(30%) of the women informal workers had to manage household expenses by borrowing money.

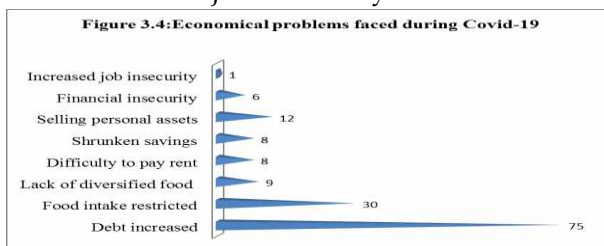
Source of Borrowing

It is found out that 53(36 %) of the women informal workers borrowed money from relatives, 78 (52%) of the women informal workers borrowed money from their neighbors, 9(6%) of the women informal workers borrowed money from friends, and 9(6%) of the women informal workers borrowed money from neighbors.

Most of 78 (52%) the women informal workers borrowed money from their Money lenders.

Economical Problems Faced During Covid-19

Below figure discloses that, out of 149 women informal workers, 75(50%) of the women informal workers experienced an increase in debt due to the pandemic, 30 (20%) of the women informal workers had restricted food intake during the pandemic, 9 (6%) of the women informal workers faced the issue of a lack of diversified food options, 8(5%) of the women informal workers had difficulties in paying their rent, 8 (5%) of the women informal workers experienced a depletion of their savings, 12 (8%) of the women informal workers had to sell their personal assets, 6 (4%) of the women informal workers faced financial insecurity, and 1(1%) of the women informal workers reported an increase in job insecurity.



Most of 75 (50%) of the women informal workers experienced an increase in debt due to the pandemic.

You Went to Native During Covid-19 Lockdown

Above table depicts that, out of 149 women informal workers, 39(26%) of the women informal workers went back to their native place during the COVID-19 lockdown, and 110 (74 %) of the women informal workers did not go back to their native place during the COVID-19 lockdown.

Most of 110 (74%) of the women informal workers did not go back to their native place during the COVID-19 lockdown

Re-joined in the same work after COVID-19 restrictions

It reveals that 100 (67%) of the women informal workers re-joined the same work after COVID-19 restrictions were lifted, and only 49 (33%) of the women informal workers did not re-join the same work after COVID-19 restrictions were lifted.

Majority of 100 (67%) of the women informal workers re-joined the same work after COVID-19 restrictions were lifted.

Mental health problems faced during covid-19

Table above provided represents the prevalence of three mental health problems during the COVID-19 pandemic: lack of confidence, stress of anxiety, and social dysfunction. The numbers next to each problem seem to indicate the percentage or frequency of individuals who have experienced these issues.

Lack of Confidence:

The data suggests that 38% of the population surveyed or considered in this context experienced a lack of confidence during the COVID-19 pandemic. This could be indicative of individuals feeling uncertain, doubtful, or insecure about themselves and their abilities. The pandemic and its associated challenges may have eroded people's self-esteem and belief in their capabilities.

Stress of Anxiety:

The data shows that 96% of the surveyed or considered population faced stress or anxiety during the COVID-19 pandemic. This high percentage reflects the significant impact the pandemic has had on people's mental well-being. The uncertainty surrounding the virus, health concerns, financial instability, social isolation, and other pandemic-related stressors have contributed to elevated levels of anxiety and stress.

Social Dysfunction:

The data indicates that 15% of the population surveyed or considered experienced social dysfunction during the COVID-19 pandemic. Social dysfunction refers to difficulties or challenges in maintaining healthy social relationships or engaging in typical social activities. The pandemic's restrictions on social gatherings, physical distancing measures, and increased isolation may have led to feelings of loneliness, disconnection, or strained social interactions.

Overall, these data points highlight the wide-ranging impact of the COVID-19 pandemic on mental health. The percentages suggest that a significant portion of the population experienced challenges related to lack of confidence, stress of anxiety, and social dysfunction. It's important to recognize and address these issues, as they can have long-lasting effects on individuals' well-being and quality of life. Seeking support from mental health professionals, practicing self-care, and connecting with supportive communities can be valuable strategies to cope with these challenges.

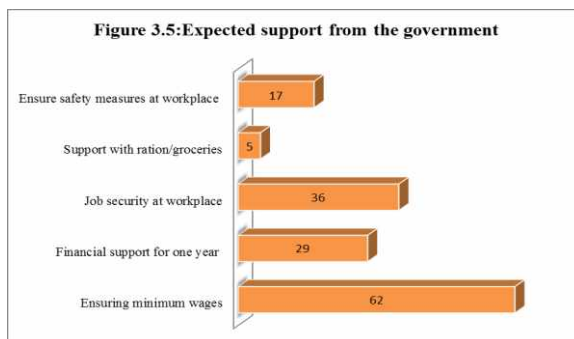
Expected Support from the Government

It determines that out of 149 women informal workers, 62 (42 %) of the women informal workers expected the government to ensure minimum wages, 29 (19 %) of the women informal workers expected financial support from the government for one year, 36 (24 %) of the women informal workers desired job security at their workplace with government support, 5 (3 %) of the women informal workers expected government support with ration/groceries, and 17 (11 %) of the women informal workers expected the government to ensure safety measures at the workplace.

Most of 62 (42%) of the women informal workers expected the government to ensure minimum wages.

Table 3.8
Expected Support from the Government

Factor	No. of Women Informal Worker	Percentage
Expected Support from Government		
Ensuring minimum wages	62	42
Financial support for one year	29	19
Job security at workplace	36	24
Support with ration/groceries	5	3
Ensure safety measures at workplace	17	11
Relief measures/support from state or central government		
Yes	39	26
No	110	74
Total	149	100



It is inferred that, out of 149 women informal workers, 39 (26 %) of the women informal workers went back to their native place during the COVID-19 lockdown, and 110 (74 %) of the women informal workers did not go back to their native place during the COVID-19 lockdown. Most of 110 (74 %) of the women informal workers did not go back to their native place during the COVID-19 lockdown.

Conclusion

The analysis and interpretation of the data collected from 149 women informal workers in the Coimbatore district shed light on the significant impact of COVID-19 on women informal workers. The study revealed that while a majority of participants and their families were affected by the virus, a notable percentage faced the direct consequences of the pandemic, emphasizing their vulnerability. Financially, the findings highlighted the reliance on money borrowed from money lenders and personal savings in managing medical expenses. Employment-wise, transportation restrictions played a substantial role in job loss or unemployment, indicating the disruption caused by mobility limitations. The study also highlighted the varying levels of employer and government support, with many participants receiving no

assistance for medical expenses and relying on salary advances. Safety measures in the workplace were found to be consistent.

The study also documented that COVID-19 lockdown has increased debt of the women in informal sector. The study further emphasized the expectations of this workforce from the government, including minimum wages, job security, and improved workplace safety. Overall, these findings call for targeted interventions and policy measures to address the specific needs and challenges faced by women informal workers, ultimately contributing to their resilience and well-being.

Summary of findings, suggestion and conclusion are dealt in the next chapter.

Chapter 4

SUMMARY OF FINDINGS, SUGGESTIONS AND CONCLUSION



Introduction

The COVID-19 epidemic has made women who Labor in the informal sector particularly vulnerable in terms of their means of subsistence. In Tamil Nadu, India, the Coimbatore area has seen substantial economic disruptions that have had an impact on the already precarious condition of women working in informal jobs. Due to supply chain disruptions, decreased economic activity, and job losses brought on by the epidemic and the ensuing lockdown measures, women working in the informal sector are now even more vulnerable to poverty. In the Coimbatore district, women who work informally contribute significantly to a variety of industries, including agriculture, manufacturing, construction, and services. However, legal recognition, social security, and Labor rights are frequently absent from their employment. Since women who Labor in the informal sector have limited access to support systems due to the epidemic, this increases their risk.

For the purpose of creating targeted interventions and policy solutions, it is essential to understand the unique difficulties experienced by women informal laborers in the Coimbatore area during the COVID-19 crisis. A summary of the study's findings is provided in this chapter. They highlight the numerous vulnerabilities faced by women working in the unorganized sector and offer suggestions for improving their resilience and general wellbeing.

This study seeks to advance knowledge and promote evidence-based policy interventions by examining the socio-economic effects of the pandemic on women informal workers, including income loss, restricted access to healthcare, increased care giving responsibilities, and a lack of social protection. The results will assist local stakeholders and act as a resource for politicians, scholars, and organizations pursuing inclusive and gender-responsive recovery efforts in the wake of the COVID-19 pandemic.

Methodology

Empirical research design has been adopted. Primary data has been collected from women informal workers residing in Coimbatore District. Five specific informal sector groups namely, construction workers, street vendors, waste-pickers, domestic workers and homeless persons have been considered for the study. Considering that a very limited database of informal sector workers exists, sample of 149 informal workers in 11 taluks of Coimbatore District has been chosen using snow-ball sampling technique. Interview schedule will be adopted to collect data from the women workers. Sources of the data have been collected getting help from the local panchayats and municipalities to approach the sample women workers. Later, data collected from primary sources has been carefully scrutinized and transcribed before the commencement of data tabulation and interpreted through statistical tools. Data collected has been analyzed using Percentage analysis and weighted average ranking method.

Summary of Findings

Socio Economic Profile of the Workers

The socio-economic profile of the women informal workers in the study reveals important information about their demographics and economic conditions. The majority of the women informal workers fall within the age group of 21-30 years, indicating a young workforce in the informal sector. Most women informal workers reside in rural areas, emphasizing the need for tailored interventions in these regions. In terms of education, a significant percentage completed secondary education. The women informal workers are primarily married and belong to nuclear families. Family sizes range from 4 to 5 members, and the majority have female children. Renting is the prevalent housing situation. Monthly incomes vary, with a significant proportion falling within the Rs. 10,001 to Rs. 20,000 range. Understanding these socio-economic factors is crucial for addressing the specific needs and vulnerabilities of women informal workers in Coimbatore district.

Nature of Work and Working Conditions

The nature and working conditions of women informal workers in Coimbatore district are diverse, reflecting different occupations and employment arrangements. The majority of women informal workers work as domestic workers, while street vending, work from home, construction labor, housekeeping, agricultural jobs, and sweeping are also prevalent occupations. Regular full-time employment is the most common employment status among the women informal workers. The majority of the workers work between 5 to 8 hours a day, with a significant portion working more than 8 hours. Buses are the primary mode of transportation for daily commutes. Monthly salary payments are the most

common, and savings are typically kept with relatives. Overall, while some women informal workers express satisfaction with their income and working hours, information about other aspects such as break time, employer behavior, skill development, and transportation is not available. Understanding the nature and working conditions of women informal workers is essential for identifying areas of improvement and formulating targeted interventions.

Wage Patterns & Causes of Discrimination

The wage patterns and causes of discrimination among women informal workers in Coimbatore district reveal several significant findings. A majority of women informal workers, 62%, stated that they do not face lower wages compared to male workers, while 38% reported experiencing lower wages. Discrimination in the form of gender pay gaps was identified by 25% of the women informal workers. Additionally, discrimination related to increased working hours, harassment, and desired employee benefits were reported by varying percentages of women informal workers. Age-based discrimination was prevalent, with 44% of women informal workers mentioning it as a form of discrimination they faced. Gender was identified as the basis of discrimination by 24% of women informal workers. Only 13% of women informal workers were members of social organizations, indicating limited social support. Understanding wage patterns and causes of discrimination is crucial for advocating for fair remuneration and addressing the underlying biases and inequalities faced by women informal workers.

Migration Pattern

The data provided represents the reasons and percentages of women informal workers who migrated from their previous locations. Out of the total 73 women informal workers, the following reasons and percentages were reported:

The majority of the women informal workers (13.7%) reported that they migrated because they were unable to achieve sufficient growth or prosperity as farmers in their previous location. Other significant factors include a lack of enough jobs, inadequate income, large household size, and small agricultural holdings. Additionally, some women mentioned poor public services, better work opportunities, traditional migration as part of their profession, the pursuit of higher expected income, and employment as reasons for their migration. A smaller proportion cited drought, marriage or family-related reasons, and family movement for better livelihood.

Impact of Covid-19 and Livelihood

The study revealed that while a majority of participants and their families were affected by the virus, a notable percentage faced the direct consequences of the pandemic, emphasizing their vulnerability. Financially, the findings highlighted the relied on money borrowed from money lenders and personal savings in managing medical expenses. Employment-wise, transportation restrictions played a substantial role in job loss or unemployment, indicating the disruption caused by mobility limitations. The study also highlighted the varying levels of employer and government support, with many participants receiving no assistance for medical expenses and relying on salary advances. Safety measures in the workplace were found to be consistent. The

study also documented that COVID-19 lockdown has increased debt of the women in informal sector. The data shows that 96% of the surveyed or considered population faced stress or anxiety during the COVID-19 pandemic. This high percentage reflects the significant impact the pandemic has had on people's mental well-being. The uncertainty surrounding the virus, health concerns, financial instability, social isolation, and other pandemic-related stressors have contributed to elevated levels of anxiety and stress. The study further emphasized the expectations of this workforce from the government, including minimum wages, job security, and improved workplace safety.

The findings of the study reflects the significant challenges faced by women informal workers during the COVID-19 pandemic, including joblessness, reduced salaries, increased workloads, limited safety measures, economic difficulties, and mental health issues.

Overall, these findings call for targeted interventions and policy measures to address the specific needs and challenges faced by women informal workers, ultimately contributing to their resilience and well-being.

Expected Support from the Government

Findings of the study pertains to factors and percentages related to the expected support from the government and the relief measures received by women informal workers. The majority of women informal workers had expectations from the government, with the most common expectation being the enforcement of minimum wages (41.6%). A significant portion also sought financial support for one year (19.5%) and job security at the workplace (24.2%). A smaller number expected support in the form of ration/groceries (3.4%) and

safety measures at the workplace (11.4%). However, only a minority of women informal workers (26.2%) reported received relief measures or support from the state or central government, while the majority (73.8%) did not receive such assistance.

Problems Encountered by Women Informal Workers

Women informal workers faced several challenges during the COVID-19 pandemic. Here are some problems they encountered:

Loss of Livelihood:

Many women informal workers, such as street vendors, domestic workers, and daily wage laborers, experienced a loss of income due to lockdowns, reduced economic activity, and job losses. This affected their ability to support themselves and their families.

Lack of social protection:

Informal workers often lack access to social protection measures, such as health insurance, paid sick leave, and unemployment benefits. This made them more vulnerable during the pandemic, as they had limited resources to cope with the health and economic impacts.

Unsafe Working Conditions:

Women in the informal sector often work in precarious and unregulated environments, which increased their risk of exposure to the virus. For instance, domestic workers faced challenges in maintaining physical distancing and ensuring hygiene measures in their workplaces.

Increased Care Burden:

With the closure of schools and daycare centers, women informal workers had to bear the additional responsibility of caregiving at home. Balancing work and care giving became a significant challenge, leading to decreased productivity and income.

Limited Access to Information and Resources:

Women in the informal sector may have limited access to reliable information about health guidelines, government support programs, and resources available during the pandemic. This hindered their ability to make informed decisions and access necessary support.

Suggestions

Strengthen Social Protection:

Governments should expand social protection measures to include informal workers, ensuring access to healthcare, income support, and unemployment benefits during crises.

Promote Financial Inclusion:

Provide financial services tailored to the needs of women informal workers, such as microfinance and savings programs, to enhance their financial resilience.

Improve Occupational Safety and Health:

Enhance safety regulations and promote awareness campaigns to educate women informal workers about health and hygiene practices in their workplaces. Provide personal protective equipment (PPE) and sanitary facilities where needed.

Support Childcare Services:

Establish or expand affordable and accessible childcare facilities to alleviate the burden on women informal workers, allowing them to continue working without compromising their children's well-being.

Enhance Access to Information:

Develop targeted communication strategies to ensure women informal workers are aware of government support programs, health guidelines, and available resources. Utilize local community networks, mobile technology, and trusted intermediaries to reach out to them effectively.

Foster Skill Development and Entrepreneurship:

Provide training programs and financial support for women informal workers to develop new skills, diversify their income sources, and transition into more resilient sectors.

Promote Social Dialogue and Inclusion:

Involve women informal workers and their organizations in decision-making processes to address their specific needs and concerns effectively. This can be done through participatory forums, trade unions, and collective bargaining.

Policy Implications

The study makes the following recommendations:

Governments should provide social protection and financial assistance to women informal workers.

They should also invest in training and skills development for women informal workers.

Employers should be encouraged to adopt flexible work arrangements and to provide paid sick leave to their employees.

Civil society organizations should work to raise awareness of the challenges faced by women informal workers and to advocate for their rights.

Conclusion

To summarize, the COVID-19 pandemic has highlighted the numerous challenges faced by women informal workers. From loss of livelihood and lack of social protection to unsafe working conditions and increased care burdens, these women have been disproportionately affected by the crisis. However, addressing these issues is crucial to promote gender equality, economic recovery, and social resilience. To support women informal workers, governments must prioritize strengthening social protection measures, promoting financial inclusion, and improving occupational safety and health standards. Additionally, providing accessible childcare services, enhancing access to information, and fostering skill development and entrepreneurship can empower these women to overcome the hurdles they face. As we strive for a more equitable and sustainable post-pandemic world, it is imperative that we prioritize the well-being and empowerment of women informal workers. By implementing comprehensive measures and supporting their economic and social rights, we can build a more resilient and inclusive society for all.

The study concludes that the pandemic has had a devastating impact on the livelihoods of women informal workers. However, there are a number of things that can be done to help these workers recover and to build back better.

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MAPPING THE LIVELIHOOD VULNERABILITIES OF WOMEN INFORMAL WORKERS IN COIMBATORE DISTRICT DURING COVID-19

INTERVIEW SCHEDULE



I Socio- Economic Profile

1.1 Age

- | | |
|-------------------|----------------|
| a) Below 20 years | b) 21-30 years |
| c) 31-40 years | d) 41-50 years |
| e) Above 50 years | |

1.2 Area of Residence

- | | |
|----------|---------------|
| a) Rural | b) Semi-urban |
| c) Urban | |

1.3 Religion

- | | |
|-----------|-------------------|
| a) Hindu | b) Christian |
| c) Muslim | d) Others specify |

1.4 Caste

- | | |
|------------------------|------------------------|
| a) General | b) Scheduled Caste |
| c) Scheduled Tribe | d) Backward Class |
| e) Most Backward Class | f) Any other (specify) |

1.5 Educational Qualification

- | | |
|---------------------|------------------------|
| a) Illiterate | b) Secondary |
| c) Higher secondary | d) Graduation |
| e) Post Graduation | f) Any other (specify) |

1.6 Marital Status

- | | |
|--------------|--------------|
| a) Married | b) Unmarried |
| c) Widow | d) Divorced |
| e) Separated | |

1.7 Type of family

- | | |
|----------|------------|
| a) Joint | b) Nuclear |
|----------|------------|

1.8 Number of Family members

- | | |
|--------------------|--------|
| a) up to 3 | b) 4-5 |
| c) Above 5 members | |

1.9 Number of children in the family

- | | |
|---------------|-----------------|
| a) Male _____ | b) Female _____ |
|---------------|-----------------|

1.10 Number of dependents in the family

- | | |
|------------|-----------|
| a) Nil | b) 1 to 3 |
| c) Above 3 | |

1.11 Type of Residence

- | | |
|----------|-----------|
| a) Own | b) Rental |
| c) Lease | |

1.12 Monthly income (self)

- | | |
|---------------------|---------------------|
| a) Less than 10,000 | b) Rs.10,001-15,000 |
| c) Above Rs.15,000 | |

1.13 Family income per month

- | | |
|---------------------------|---------------------------|
| a) Less than Rs.15,000 | b) Rs.15,001 to Rs.20,000 |
| c) Rs.20,000 to Rs.25,000 | d) Above Rs. 25,000 |

1.14 Any other sources of income, kindly specify _____

3.3 Rank the reasons for joining the current job from 1 to 7

S. No.	Reason	Rank
1	Family commitments/poverty	
2	Illiteracy (No education)	
3	Relative working here	
4	Unable to find better job	
5	Compulsion (Parents/husband)	
6	To meet the day to day expenses	
7	Children education	
8	Medical expenses	

3.4 What is your working hours in a day?

- a) Less than 3 hours b) 3 hours to 5 hours
c) 5 hours to 8 hours d) More than 8 hours

3.5 How do you go to your workplace

- a) On Foot b) By Bus
c) By two wheelers d) Company Vehicles
e) Any others specify _____

3.6 What is the salary frequency

- a) Daily b) Weekly
c) Monthly d) Fort-nightly

3.7 Where is your saving kept?

- a) Bank b) Relative
c) Chits d) Post office
e) Employer f) Self

3.8 To what extent are you satisfied with the following aspects of your work?

- i) Income
- ii) Daily working hours
- iii) Number of holidays
- iv) Working condition
- v) Break time
- vi) Regularity of payment
- vii) Behavior of employer
- viii) Development skill
- ix) Transportation system
- X) Other facilities (uniform, tea, coffee and food, insurance coverage)

IV. Wage Patterns & Causes of Discrimination

4.1 Do you feel comfortable working with male workers?

- a) Yes
- b) No

4.2 Do you fight sometimes with other working women at your working place?

- a) Yes
- b) No

4.3. Do you face any type of discrimination during work?

- a) Yes
- b) No

4.3.1 What kind of discrimination do you face?

- a) Gender Pay gaps
- b) Increased working hour
- c) Harassment
- d) Desired employee benefits

4.3.2 If yes, what is the basis of discrimination?

- a) Gender b) Religion/ Caste
c) Education d) Age
e) Physical Appearance f) Any other (specify) _____

4.4 Are you member of any social organization
(like women club, welfare society etc.) ?

- a) Yes b) No

4.5 When compared to male workers whether your wages is low?

- a) Yes b) No

V. Migration

5.1 Are you migrated?

- a) Yes b) No

5.2 If yes, have you migrated with your family or alone?

- a) With family b) Alone

5.3 What is the reason for migration from your native?

S. No.	Reason	Rank
i	Lack of enough jobs where you were earlier	
ii	Couldn't grow enough in the place where you were a farmer	
iii	Lack of adequate income	
iv	Large size of household	
v	Small size of agricultural holding	
vi	Poor public services (such as water or roads)	
vii	Better work opportunities	
viii	It is our profession to migrate	

ix	Higher expected income	
x	Employment	
xi	Drought/unable to continue farming/ Agriculture	
xii	Marriage/family movement	
xiii	Family movement for better livelihood (Income)	
Xiv	Others	

5.4 Do you want to go back to your native place

a) Yes

b) No

VI. Impact of covid-19 on Livelihood

6.1 Whether you are jobless /unemployed during pandemic?

a) Yes

b) No

6.2 If Yes what was the reasons?

i) Employers terminated the service

ii) Fear for own health

iii) Social distancing impossible

iv) Transportation restriction

☐

6.3 How was the salary paid during pandemic?

i) Full salary

ii) Half salary

iii) No salary

6.4 What was the work load/salary paid during pandemic?

i) Reduced salary/ Increased workload

ii) No change in salary/workload

6.5 Any additional supports by the employer during Pandemics?

- i) No reduction in pay
- ii) Work from home
- iii) Material (groceries) support
- iv) Transportation support
- v) Safety measures at work place
- vi) Medical expenses
- vii) No Support

6.6 What safety measures were provided in your workplace ?

- i) Complete safety measures
- ii) Partial safety measures
- iii) No safety measures

6.7 How did you manage the household Expenses?

- i) Managing with reduced income
- ii) Relatives are supporting
- iii) Existing saving is used
- iv) Managing with borrowed money
- v) Not affected much

6.7.1 If borrowed money, amount borrowed _____

6.7.2 Source of borrowing

- a) Relatives
- b) Money lender
- c) Friends
- d) Neighbors
- e) Others, please specify _____

6.8 Economical problems faced during covid-19

- i) Debt increased ☐
- ii) Food intake restricted ☐
- iii) Lack of diversified food ☐

- iv) Difficult to pay rent ☐
- v) Shrunk savings ☐
- vi) Selling personal assets ☐
- vii) Financial insecurity ☐
- viii) Increased job insecurity ☐
- ix) Marital relationship affected ☐
- 6.9 Expected support from government
- i) Ensuring minimum wages ☐
- ii) Financial support for one year ☐
- iii) Job security at workplace ☐
- iv) Support with ration/groceries ☐
- v) Ensure safety measures at workplace ☐

6.10 Whether you went to native during covid-19 lockdown?

- a) Yes
- b) No

6.11 Whether you have availed any of the relief measures/support from state or central government?

- a) Yes
- b) No

6.12 Whether you have re-joined in the same work after covid-19 restriction?

- a) Yes
- b) No

6.13 Mental health problems faced during covid-19

- a) Lack of confidence
- b) Stress of anxiety
- c) Social dysfunction

Suggestions

CHALLENGES AND PROBLEMS OF WOMEN EMPOWERMENT

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Abstract

Women empowerment refers to the process of empowering women and promoting gender equality to ensure that women have equal rights, opportunities and participation in various aspects of life. It involves empowering women economically, socially, politically and emotionally, so they can make their own choices, have control over their lives, and actively contribute to society. The perception of women empowerment recognizes that women, like men, are entitled to equal rights and opportunities and should not face discrimination based on their gender. women empowerment is essential for creating a more inclusive and equitable society. When women are empowered, they can contribute to economic growth, poverty reduction, improved education and enhanced overall well-being for communities and nations. it's not just about empowering women but also about transforming systems and structures to ensure gender equality and social justice.

Keywords: Education, Economic empowerment, Health and Reproductive rights, Political participation, Legal rights, Social and Cultural change.

Introduction

Women empowerment is a critical and transformative movement that aims to bring about gender equality and equal opportunities for women in all aspects of life. It acknowledges the historical and systemic discrimination and challenges that women have faced and advocates for their rights, agency and participation in decision-making processes. By empowering women economically, socially and politically, societies can benefit from the full potential and contributions of half of their population.

The benefits of women empowerment extend far beyond individual women. When women are empowered, they become agents of positive change in their families, communities and nations. They contribute to economic growth, poverty reduction and social development. Studies show that when women are given an equal say in decision making, communities are more likely to experience improved governance, peace and sustainable development.

However, challenges persist and the fight for women empowerment is an ongoing journey. Gender-based violence, unequal pay, and limited representation in leadership roles are just some of the issues that still need to be addressed. To achieve true women

ICT TOOLS FOR TEACHING AND LEARNING PROCESS

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Assistant Professor

Department of Commerce (E-Commerce)

NGM College, Pollachi.

Abstract

ICT is a broad term stands for Information Communication Technology. ICT tools for teaching and learning cover everything from digital infrastructures such as printers, computers, laptops, tablets, etc., to software tools such as Google Meet, Google Spreadsheets, etc. In traditional classrooms, a teacher's basic instructional tools for displaying information are chalkboards, multipurpose boards, bulletin boards and charts. But in today's modern scenario, tools of many professions are changing at an incredible rate and that education is no exception. The impact of technology has led to the increased use of computers for presenting information in many of today's classrooms. To make ICT teaching and learning more interactive, various platforms and tools have been created and updated over the period of time. Innovative ICT tools used in classroom teaching which helps teachers to integrate in their subject, for teaching-learning and assessment. There are numerous subject specific free of cost ICT tools available on online and offline platforms which can be used for teaching, learning and assessment. They are used by teachers to encourage participation and engage learning in their classrooms. ICT can also be used by teachers to promote collaborative work and creativity across a wide range of subjects. This study aims at highlighting the superiority of ICT tools for facilitating student learning, retention and attitudes.

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Literature Review

Pathak & Vyas, 2019 In the current period of education, E-Learning is the most recent type of information and communication technology (ICT) used to improve and expedite

CHALLENGES AND OPPORTUNITIES OF WOMEN ENTREPRENEURS

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Abstract

The educated Indian women have to go a long way to achieve equal rights and position because traditions are deep rooted in Indian society where the sociological set up has been a male dominated one. Despite all the social hurdles, Indian women stand tall from the rest of the crowd and are applauded for their achievements in their respective field. The transformation of social fabric of the Indian society, in terms of increased educational status of women and varied aspirations for better living, necessitated a change in the life style of Indian women. She has competed with man and successfully stood up with him in every walk of life and business is no exception for this. These women leaders are assertive, persuasive and willing to take risks. They managed to survive and succeed in this cut throat competition with their hard work, diligence and perseverance.

The present paper endeavors to study the concept of women entrepreneur –Reasons women become entrepreneurs –Reasons for slow progress of women entrepreneurs in India –Challenges faced by Women Entrepreneurs.

Keywords: Entrepreneurship, Women, Business, economic development, challenges

Introduction

Women entrepreneurs have been designated as the new engines for growth and the rising stars of the economies in developing countries to bring prosperity and welfare. Women Entrepreneurs may be defined as the women or a group of women who initiate, organize and operate a business enterprise. The Government of India has defined women entrepreneurs as—an enterprise owned and controlled by women having a minimum financial interest of 51 per cent of the capital and giving at least 51 per cent of the employment generated in the enterprise to women. The growth of the proportion of women entrepreneurs in developing countries has drawn the attention of both the academic and the development sector. Women entrepreneurs engaged in business due to push and pull factors which encourage women to have an independent occupation and stands on their own legs. A sense towards independent decision - making on their life and career is the motivational factor behind this urge. Under the influence of these factors the women entrepreneurs choose a profession as a challenge and as an urge to do something new. Such a situation is described as pull factors. While in push factors women engaged in business activities due to family compulsion and the responsibility is thrust upon them. The educated women do not want to limit their lives in the four



IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

Dr. M. Deepa



IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

Volume -1

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IMPLEMENTATION OF NEW EDUCATION POLICY ON THE HIGHER EDUCATION AND ITS OPPORTUNITIES

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Abstract

A holistic and multidisciplinary education would attempt to integrate the development of all human capacities - intellectual, aesthetic, social, physical, emotional, and moral. In the long run, such a comprehensive education will be the approach of all undergraduate programmes, including those in professional, technical, and vocational fields. Even engineering schools, such as IITs, will shift toward more holistic and multidisciplinary education that includes more arts and humanities. Students of the arts and humanities will strive to learn more science, and all will strive to include more vocational topics and soft skills. This paper will cover all the opportunities that can be achieved through the New Education Policy 2020. This paper also contains the highlights of the policy. Curricular structures that are imaginative and adaptable will allow for creative combinations of subjects to be studied, as well as many entry and departure points. The aim is to comprise all the good aspects of the policy which will be very beneficial for the upcoming generation education practices. The paper also holds the educational preparation of the teaching fraternity to look beyond the ancient method of teaching and need to be prepared for the forthcoming generation teaching methods.

Keywords: *New Education Policy, Holistic development, Multidisciplinary education, Higher education, Opportunities in NEP.*

Introduction:

The National Policy on Education (NPE) is a policy formulated by the Government of India to promote education amongst India's people. The policy covers elementary education to colleges in both rural and urban India. The first NPE was promulgated by the Government of India by Prime Minister Indira Gandhi in 1968, the second by Prime Minister Rajiv Gandhi in 1986, and the third by Prime Minister Narendra Modi in 2020.

The National Education Policy 2020 (NEP 2020), which was approved by the Union Cabinet of India on 29 July 2020, outlines the vision of India's new education system. The new policy replaces the previous National Policy on Education, 1986.

The policy is a comprehensive framework for elementary education to higher education as well as vocational training in both rural and urban India.

CHALLENGES AND OPPORTUNITIES OF NEP IN HIGHER EDUCATIONAL INSTITUTION

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Abstract

“Education is the most powerful weapon to be used to change the world. “Nelson Mandela Education is important for the economic and social development of nation. The weapon may proved to be harmful if it is misused. Due to proper interpretation and implementation of policies, the generations may be benefitted. It will result in strong economic and social development. The national policy in education ,1986 was replaced by New National Education Policy.[NEP 2020] National Education Policy is the holistic reform in the education across all levels stages of education in India. It made reforms in primary,secondary and higher education in single policy document .It is the evolution in the field of education in India. This study is based on secondary data, the available literature on the topic is referred. This paper aims at discussing challenges and opportunities in National Education policy 2020 with respect to higher education in India.

Keywords: *He is [higher educational institutes],NEP [National Education Policy],*

Introduction

Kothari Commission [1964-66] had recommended a 6 % allocation of GDP, National Education Policy,2020 is an evolution in the education field. It tried to increase access, equity, and inclusion as one of thekey changes. Internationalization of higher education is one of the aims in the NEP. NEP promoted more and more philanthropic activity in the education sector. NEP tries to imbibe that education is a concurrent subject. NEP suggested a „light but tight“ regulatory framework to ensure integrity, transparency, and resource efficiency of the educational system through audit and public disclosure while encouraging innovation and out-of-the-box ideas through autonomy, good governance, and empowerment.

National Education Policy 2020 : Major Principles

- Sensitizing teachers as well as parents to promote each student’s holistic development in both academic and non-academic spheres Multidisciplinary and a holistic education to ensure the unity and integrity of all knowledge disciplines
- Emphasis on conceptual understanding rather than rote learning and learning-for-exams

CHALLENGES AND PROBLEMS OF WOMEN EMPOWERMENT

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Abstract

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DIGITAL FINANCIAL INCLUSION IN INDIA - AN OVERVIEW

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Abstract

This article discusses what has been accomplished in the area of digital financial inclusion in India thus far, as well as how we may leverage modern technologies to develop a more inclusive society by using different digital drivers. This article outlines the different obstacle and challenges that remain in the way of attaining a digitally inclusive society. The development of E-commerce-enabled financial inclusion is discussed in this article. Policymakers and regulators have the opportunity to build a digital financial inclusion environment that promotes access and use of financial services in e-commerce markets.

Key words: Financial inclusion, E-commerce, Fintech, Payment Banks.

Introduction

The impact of digital finance on financial system reliability & stability is the main focus area of this study. Financial organizations, governments, and authorities are constantly promoting financial inclusion through digital media. However, despite these wide promoting initiatives, digital financial inclusion is not progressing as predicted or as it should be due to consumer ideology, which is one of the major roadblocks to the achievement of an e-commerce enabled economy or financial inclusion. This article sought to assess the various programs and initiatives and to what degree they have been successful, as well as to sort out some consumer ideology as barriers in the way of digital financial inclusion. The rise of e-commerce has resulted in an expansion in the number of digital financial services available to businesses and individuals. Services are increasingly being offered by non-profit organizations including electronic payments, credit financing, and insurance at the POS, this tendency known as E-commerce Enabling Financial Inclusion or Digital Financial Inclusion. The Government of India has always prioritized financial inclusion in its economic strategies. Initiatives like Jan Dhan, Aadhaar-Mobile, and Digital India have changed the game by ensuring that India's underbanked population has equal and economical access to financial services, hence lowering income disparity. While e-commerce has been quite successful in creating demand for digital financial goods and services for microenterprises and individuals at the bottom of the economic pyramid. Recent evolution in both the public and commercial sectors has fueled India's growth of digital financial inclusion. From

UNLOCKING POTENTIAL: HARNESSING AI FOR EFFECTIVE ENGLISH LANGUAGE TEACHING

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Abstract:

The integration of Artificial Intelligence (AI) in education has opened up new possibilities for language learning, particularly in the realm of teaching English as a second language (ESL). This article explores the potential of AI in enhancing English language teaching by providing personalized learning experiences, facilitating language acquisition, and supporting educators in their instructional practices. Through various AI-driven tools and platforms, students can engage in interactive language activities, receive tailored feedback, and access resources that cater to their individual learning needs. Moreover, AI assists teachers in assessing student progress, identifying areas for improvement, and designing targeted interventions. By harnessing the power of AI, educators can unlock the full potential of English language learners, fostering greater proficiency and confidence in communication.

Keywords: Artificial Intelligence, Learning, Individual, Activities, Educators.

Introduction:

English language teaching has undergone significant transformations in recent years, spurred by advancements in technology and the emergence of Artificial Intelligence (AI). With the increasing globalization and demand for English proficiency, educators are seeking innovative approaches to meet the diverse needs of learners. AI offers a promising solution, revolutionizing the way English is taught and learned in classrooms around the world. This article delves into the opportunities presented by AI in English language teaching, highlighting its capacity to personalize learning experiences, facilitate language acquisition, and support educators in their instructional practices.

Personalized Learning Experiences:

One of the most compelling aspects of AI in English language teaching is its ability to provide personalized learning experiences for students. AI-powered platforms analyze individual learning styles, preferences, and performance data to deliver tailored content and activities. For example, adaptive learning systems adjust the difficulty level of exercises based on students' proficiency levels, ensuring that they are appropriately challenged and supported throughout their language learning journey. Additionally, AI-driven virtual tutors offer real-time feedback and guidance, helping students improve their speaking, listening, reading, and writing skills in a supportive and interactive environment.

Facilitating Language Acquisition:

AI technologies play a crucial role in facilitating language acquisition by creating immersive and authentic learning experiences. Through natural language processing (NLP) and machine learning algorithms, AI platforms simulate real-world communication scenarios, allowing students to practice English in context. For instance, chatbots and voice recognition systems enable learners to engage in conversations, receive instant responses, and refine their language skills in meaningful contexts. Moreover, AI-driven language applications offer interactive lessons, multimedia resources, and gamified activities that motivate students to actively engage with the language and deepen their understanding of English language concepts.

Supporting Educators:

In addition to benefiting students, AI supports educators in their instructional practices by providing valuable insights and resources. AI-powered analytics tools analyze student performance data, identify learning patterns, and generate actionable recommendations for teachers. By leveraging this data-driven approach, educators can make informed decisions about curriculum design, lesson planning, and instructional strategies. Furthermore, AI assists teachers in assessing student progress, monitoring learning outcomes, and implementing targeted interventions to address individual needs. With AI-enabled support systems, educators can optimize their teaching practices, maximize student engagement, and enhance the overall effectiveness of English language instruction.

Conclusion:

The integration of AI has the potential to revolutionize English language teaching, offering personalized learning experiences, facilitating language acquisition, and supporting educators in their instructional practices. By harnessing the power of AI-driven technologies, educators can unlock the full potential of English language learners, enabling them to achieve greater proficiency and confidence in communication. As AI continues to evolve and improve, its role in English language teaching will become increasingly indispensable, shaping the future of language education in profound and transformative ways.

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and when they have a child his behavior changes too. She thinks that she cannot hold their relationship because she cannot accept her husband's changes. Hildegard as a woman thought to live a happy life with her husband and children but she faced a lack of care and love from her husband in a certain period. Psychologically she faces more pressure, though she has a lovable family, her husband loses interest in her when she seems older.

Roscoe Button

Roscoe, Benjamin's son, is no different than Roger Button when it comes to dealing with Benjamin's reverse aging. Just as Roger insisted that Benjamin dye his hair and dress like a boy, so Roscoe tries to make him wear fake whiskers and eyeglasses. Roscoe isn't just bothered by Benjamin's age, but by Benjamin's age relative to him. His father ought to be older than him, and Benjamin is breaking the rules by allowing himself to be younger. He is equally concerned with what is right or proper, which means Benjamin's age is wrong simply because it goes against the rules. Roscoe, like his mother, resents Benjamin's reverse aging and demands to stop it. When Roscoe's age surpasses his father's apparent age, he demands that Benjamin call him "Uncle" around the house. Roscoe refuses to take Benjamin to prep school and sign him up. Roscoe even asks that Benjamin wear fake whiskers and glasses to look older. Roscoe as a son could not see his father as younger than him. He is not able to face society as now he has become a gentleman, psychologically he is stressed with his father's reverse aging.

Benjamin Button

Benjamin Button is a protagonist of the play who was born old and his age is backwards in the course of his life. Here the researcher discusses about struggles of Benjamin Button, when he faces the society as in reverse aging process. At first, as a son of young man Roger Button, he felt very difficult to prove that he is the son of Roger Button. After the birth he faces no love from a single person. Everyone looks him as very different case. After days passed there are some loves from his father. He finds that his age is going reverse. And on his eighteen he went to Yale College for admission he was insulted by them because though he is eighteen in age, he looks like a man of fifty. Later he joined army, when he returns back to his family, he lost his interest with his wife who seems older than Benjamin. And decided to join same college in which he was rejected once. As days passed, he is still in reverse aging, he used to go kinder garden with his grandson. And he was asked to call his son as uncle, for this criticising society. Thus, Benjamin Button faces psychological pressure also spreads this to his family because of the society in his reverse aging.

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SPREAD OF PSYCHOLOGICAL PRESSURE IN FITZGERALD'S THE CURIOUS CASE OF BENJAMIN BUTTON

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Abstract:

The researcher here deals the topic of Spread of psychological pressure in Fitzgerald's "The Curious Case of Benjamin Button" with the question "Whether a man is happy in his reverse aging or not?". Psychological pressure handled by the four major characters Roger Button, Hildegard Moncrief, Roscoe Button, and the protagonist of the novella Benjamin Button in Fitzgerald's short story The Curious Case of Benjamin Button is analysed here by the researcher.

Keywords: Psychological, characters, protagonist, pressure, Analyze.

Roger Button

Roger Button is one of the major characters in the novella. He is a father of protagonist "Benjamin Button". Here, the researcher analysis about the psychological pressure that Roger Button went through, while knowing his firstborn baby is a 70-year-old man. When Mr. Roger Button's, the president of Roger Button & Co., Wholesale Hardware, began to run eagerly toward Dr Keene, to know about his firstborn baby. Dr Keene was irritated and tensed, asks Roger to see for himself and understand. Here Roger Button is curious about what really happened and what makes Dr Keene to be more tensed. When Doctor's words are rough, there Roger comes through his first pressure in the novella. After looking Doctor, Roger meets nurse in the hospital, she treated him with the terror face and she takes Roger to the new born baby. Roger lost his cool, while seeing his old baby, demanding Roger as his father. Roger argues with stress and later he is pushed to take the child to home. Roger Button is a good father for Benjamin. But as above mentioned, Roger cannot accept Benjamin's condition. When Benjamin grows up, he cannot even find the right clothes for his son. Though he tries to cheer up his son, he went through some pressure from his friends and society because of his reverse aging son.

Hildegard Moncrief

Hildegard Moncrief is Benjamin's wife. She married Benjamin because she liked the old man. She thinks that the old man can take responsibility what may happen. Yet, her family does not agree about the age differences between Hildegard and Benjamin. Benjamin felt himself on the verge of a proposal--with an effort he choked back the impulse. As a wife, Hildegard always tries to give some good things that she can do for his husband and her lovely children as a mother. She loves her husband because she does not want to be apart from her husband. The conflicts happen when Hildegard does not understand the personal change condition of her husband. Hildegard thinks that her husband's changes happen because he has another woman that he loves. She does not understand why the changes happen to her husband,

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DEGRADED SECTION OF SOCIETY IN DATTANI'S SEVEN STEPS AROUND THE FIRE

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Abstract:

Dattani's plays are an eye opener for the modernists who claim to have a developed society, whereas the weaker section still lies beneath. The term modern is superficial in nature and does not bring equality to the people impartially. The playwright leaves no stone unturned in changing the society as a whole. He tries to focus on the plight of the marginalized class in such a way so as to move the powerful to introduce favorable changes in the society. His choice of characters determines the success of the play. The overall picture of the society is demonstrated by the spoken words of the characters. The characters project the realistic picture of the world properly. Seven Steps Around the Fire. Dattani's selected play acts as an eye-opener for the modern generations to be sane human beings rather than insane. Society as a whole should be impartial even for its weakest section, only then it can be a living society.

Keywords: Society, plight, marginalized, impartial, insane.

Dattani is concerned about the neglected sections of the society for which he deals with a number of subjects focusing on the deteriorating condition of the society. The society shows as if they are treated equally but it's only on paper. Its weaker section still cries for some relief. He himself praises his characters and comments: "I also know that I have lot to say and am probably not saying it well enough. But my characters have a lot to say too, and they seem to be doing rather well at having their say. Every time a critic says something awful about my writing. I realise that they are pointing out something that I have wanted to say and have, as usual, been hopeless and unconvincing. Every time audiences have applauded, laughed, cried or simply offered their silence in response to some moment in the play. I am completely aware that it is my character that has done the work for me". (Dattani, Preface Dattani, being a problem playwright, does his job effectively. All of his plays target the problematic area and depict the blatant lie of development. Chaudhuri praises Dattani's art and says: "Dattani obviously seems to have a point to make to his audience. But rather than directly preach, the playwright dramatizes the People's performance on the stage with characters one begins to identify with, facing genuine, real life problems. The play, then, in a sense, is a plea for empathy and sensitivity to India's queer culture (51)

Seven steps around the fire is a wonderful play by Dattani that deals with the two worlds. Both the worlds live in a kind of illusion, one for its superiority and the other for its betterment. Their things fall apart when they collide with each other, devastating the latter one with a slight sense on the part of the first one even that does not make any

difference and the things go smoothly for them. Dattani prefers theatre more than any other genre of literature. He believes in theatre and says: "Audience need to make the effort. Unlike TV or cinema where the viewer doesn't have to contribute, theatre is a collective experience. In fact, at a moment of truth, you will find how people who don't know each other join in from all corners of the darkened hall to applaud and declare their appreciation of that important moment. And that's when you know a play works". (Nair) Oscar Wilde strongly feels the same. He says: "I regard the theatre as the greatest of all art forms, the most immediate way in which a human being can share with another the sense of what it is to be a human being". (Online)

Seven Steps Around the Fire was first broadcasted as Seven Circles Around the Fire by BBC Radio on 9th January 1999. The play's first performance has been on 6th August 1999 on stage at the Museum Theatre by MTC Production & The Madras Theatre, Chennai with Anuradha Ananth, Victor Paulraj, Kartik Iyer, Sourabh Ahuja, Sudhir Ahuja, P.C. Ramakrishna and Asim Sharma, directed by Mithran Devanesen. Later, it was named as „Seven Steps Around the Fire'. Dattani's selected play acts as an eye opener for the modern generations to be sane human beings rather than insane. The society as a whole should be impartial even for its weakest section, only then it can be a worth living society. The modern world does not belong to any one section of society but it is all together for the whole world including the weakest and disabled sections as well. But these days the power has taken over all the fields of society be it social, political, or personal, the capricious reign rules. Seven Steps Around the Fire deals with the inbuilt illusion of the characters who want to get positive response of every action of theirs. Dattani has used about ten characters in the play for the first time; he generally has 6-7 characters in his plays. All the characters contribute to the development of the play. Almost all the characters in the play are decisive in nature; they plan things on their own without having any prediction about the result of their actions.

The optimism in the play faces a big fall due to the prevailing haphazard system in the society. Dattani in Preface expresses the need of being a voice to the unvoiced. He feels that time needs someone to vocalize the voiceless sections of the society. He is quite confident that he is able to do the task. He states: "I am certain that my plays are a true reflection of my time, place and socio-economic background. I am hugely excited and curious to know what the future holds for me and my art in the new millennium in a country that has a myriad challenges to face politically, socially, artistically and culturally. Where does one begin? By ending this preface and carrying on with the business of holding a mirror up to society". (Dattani, xv) The central character of the play, Uma introduces the other characters through her interactions. Uma, who is the wife of Suresh, a superintendent of police, is working on her thesis for which she takes up Kamala's case as a study for research. She faces numerous problems while doing so as Kamala is a transgender who gets killed in mysterious circumstances. Even a constable does not understand the need of selecting Kamla's case. He says: MUNSWAMY. Madam, if you don't mind me saying, why is a lady from a respectable family like yourself...? There are so many other cases. All murder cases. Man killing wife, wife killing man's lover, brother killing brother. And that shelf is full of dowry cases. Shall I ask the peon to dust all those files? UMA. No. maybe some other time. I think this particular one is of interest to me at this time. (Dattani, 7) The play begins in a dramatic way,

and confuses the audience. The marriage mantras and terrible cries all together create a tense environment. The beginning results in more curiosity about the development and concluding scenes. The beginning of the play confirms about the upcoming dangerous events. "Sanskrit mantras fade in, the Ines chanted during a Hindu wedding. Fire.

The sound of the fire grows louder, drowning the mantras. A scream. The flames engulf the scream". (Dattani, 7) Uma's selfless efforts to find out the real culprit end in revealing the naked reality of the society. The whole play is a kind of a surprise for the readers as the concluding scene is a blow on the modern face of the society. When police has got a pressure from upwards to solve the murder mystery of Kamala, it takes Anarkali in to custody and close the file. She is brutally treated by the male prisoners. When Uma raises her voice against this, her husband asks her to stay away from legal matters. Uma investigates from Anarkali and Hijra boss about the background of Kamala, and supposed to be the responsible incidents for her murder. But she feels that reality is being hidden. She does not lose hope and tries to get to the main culprit. Munnaswamy, a constable helps Uma in her efforts to bring out the truth of Kamala's murder but he always asks her to stay away from transgender. Uma's husband Suresh does not like her too much involvement in Kamala's case. He asks her to take some other topic for her research but she disagrees to it.

Uma's various visits to the police station and her conversation depicts the fact that the society hates the transgender to the height of animosity and even its vice-versa. The society norms have parted the ways of two people. The straight consider them to be on the right path, the transgender fumes at it. The humiliation that they feel at the hands of society makes them stricter towards the straights. Uma. I would like to meet Anarkali. Where is she? Munswamy. Anarkali. come here. Anarkali. No! I don't want to meet any journalist. Munswamy. I will come inside and beat you up, you worthless pig! Anarkali. I am not in a mood. Uma. I am not a journalist. Anarkali. I don't care if you are the mother of all whores in Bangalore. I said I am not in the mood! (Dattani, 8) Munnaswamy has been taken from a real-life character. Generally, all people try to avoid transgender and police is to deal with them, they forget any ethics and misbehave like hell. His character throws light on the fact that the society still bows down before the powerful. Munnaswami: She! Of course, it will talk to you. We will beat it up if it does not. (Dattani,7) Suresh, a well-placed police officer, is a no exception in the case of the marginalized. When Uma interacts with him and discusses about transgender before him, he remarks filthy and tries to deviates from the path. Uma. Why do they put her in a male prison? Suresh. They are as strong as horses. Wear the purple one. Uma. I wore that last night. Suresh. Again. (Dattani, 9) He further says: Suresh. Good. Don't believe a word of anything it says. They are all liars. (Dattani, 9)

The play's tone is real and rough. It is Dattani's quality to describe the real in reel so artistically. The prolonged conversations between Uma and Anarkali and Munnaswamy reveal that no part of society easily accepts the other and this remains the unchallenged fact. It really poses difficulties for those who aim at doing something unconventional. Indian society has always been so closed and conservative; it's not an easy task to introduce changes in it. The very step towards the change generates criticism that even can be risky for one's life as well. Dattani's plays project the unconditional love for traditions and hatred for the transgender. The

society has itself made some legal and illegal notions and is mandatory for the young generation to follow them. The present play faces the same challenges and the targeted people meet with a terrible end only because the societal rites have not been followed. In fact, the rules and regulations are meant for the suppressed class, the privileged section of the society enjoys full freedom. Uma is projected as the sensitive social realistic class of the society who decides to unveil the truth behind Kamala's murder. She talks to Champa and plans for Anarkali's bail. Champa proves the innocence of Anarkali before Uma and clarifies that she can never even think of killing Kamala who she has always considered as her sister. Uma is not satisfied at the arrest of Anarkali for killing Kamala. She wants to find out the things on her own. She plans to visit the place where all transgenders reside. She reaches and tries to take out the reality out of Champa's mouth, but finds the innocence of Anarkali. After talking to Champa, she feels relieved as she understands the whole situation and decides to meet Mr. Sharma in this regard.

The conversation below throws light on the helplessness of Champa along with her rude behaviour. She does not accept help at once but goes for cross questioning. The conversation shows a line of segregation between the two worlds. Champa. What a question to ask! Uma. She-she did not kill Kamla, did she? Champa. Yes, yes. That won't suit you. No, she did not kill Kamla. They were sisters. UMA. If I gave you money, will you go to the court and get her release orders? CHAMPA. Did I come begging you—please give me money to save my daughter? Huh? UMA. (opens her bag). Here. CHAMPA. Aah, these old bones! How much is it? UMA. Enough for the bail amount and some more for your trouble. (Dattani, 24-25)

Dattani maintains coherence in his plays to present the social ills and its aftermaths.

When something wrong has taken place, how the other connected things be normalized. He divides the society into parts, one is with the wrong and the other is against the ill, but being a realistic play, the wrong wins in the end and proves the importance of power over moral in modern world. The realism is all about the projection of incidents as such. Realism deals with realistic depiction "Realism, in literature, is a manner and method of picturing life as it really is, untouched by idealism or romanticism. As a manner of writing, realism relies on the use of specific details to interpret life faithfully and objectively. In contrast to romance, this is concerned with the bizarre and psychological in its approach to character, presenting the individual rather than the type. Often, fate plays a major role in the action. Realism became prominent in the English novel with such writers as Daniel Defoe, Samuel Richardson, Henry Fielding, Tobias Smollett, Lawrence Sterne, Jane Austen, Charlotte Bronte, Anthony Trollope and William Makepeace Thackeray." (Coles dictionary, 163)

Uma's efforts of bringing out the reason and person behind the murder of Kamala get fulfilled and the truth comes out with a shriek. Uma. The photograph was what Mr. Sharma was after. A Polaroid picture that Subbu and Kamla had taken soon after their private wedding in some remote temple. . . A picture of Kamla as a beautiful bride smiling at Subbu with the wedding garland around him. The probably did not know that Kamla was not a woman. Of course Mr. Sharma couldn't have it—totally unacceptable. So he arranged to have Kamla burned to death. (Dattani, 41)

Seven Steps Around the Fire, being a problem play, deals with the problem of illusion. The characters live in their own world of illusion where they feel everything will be in their control. Uma feels that her interrogation like a police man will benefit someone legally but it's a sheer dream. Kamala and Anarkali are friends and their compatibility makes them famous. Kamala is a pretty young transgender, who is liked by all. Even she is nominated to be the head of Hijras. There are many who hate her but her behaviour wins their hearts. Subbu, the only son of Mr. Sharma who is a minister, comes across Kamala and starts loving her from the core of his heart. He plans to marry her, but all hell breaks loose when his father comes to know about his decision of marrying a transgender. On the very day of their marriage, he burns Kamala alive, leaving Subbu insane. The very sight and cries of dying Kamala has ruined the life of Subbu. Everything gets devastated by Mr. Sharma's barbaric act, but a photograph of Subbu and Kamal in garland is with Champa. Mr. Sharma often sends Salim, a rouge to collect the photo but in vain. Salim storms in, sending the bells tinkling wildly Champa. I told you not to show your face here! Salim. Shut up, you old bag! I told you to send me her things. Where is her trunk? Champa. Quiet, you fool! I have a guest here. A Memsaab. Madam, this is Salim. Do salaam to madam. Salim. Salaam.

Champa. Now go away. Salim. First give me her trunk. (Dattani, 26) Dattani's presentation of the facts remains remarkable till the end of the play. He depicts the sequential vents though follow flashback technique. The reading of the story does help in visualizing the scenes. Beena Agarwal believes that: His use of stage craft is extremely intricate and it makes the text echoing multiple connotations. For dramatic representation is neither a matter of the description nor of presentation but it is a matter of evocation. It is only with appropriate performance that the experience becomes vital. (30) She further says: Dattani's dramatic art is inspired by the mission to communicate profound meaning through his plays and, therefore, he exhibits keen awareness for the direction and stage performance of his own plays. His sensitive dramatic self is a fine synthesis of a dancer, director, actor, playwright, audience and commentator moving collectively towards a single direction. (Agarwal, 24) Dattani weaves a story in such a way so as to project the reality of the whole society. The main character and sensitive citizen of the country tries to punish the main culprit but forgets that money can buy everything. Uma's illusionary world does not make her think of the fact that the truth was known to all except her. She innocently reveals about Kamala's murder before her husband. She says:

Uma. Of course Mr. Sharma could not have it-totally unacceptable. So he arranged to have Kamla burned to death. But Salim had to tell him about the picture. Mr. Sharma simply had to have that picture. He sent Salim to threaten Anarkali and Champa. . . He did get the picture eventually. . . after losing his son. What a price to pay! And now he will be arrested and tried for murder. Suresh. I don't know. . . how do you know all this? Uma. I have my resources. (Dattani, 41)

Even after knowing a different story from Uma, Suresh does not change his attitude towards Mr. Sharma. He even does not suspect him of being the culprit, he rather respects him more. The modern society trusts the powerful ones rather than the common men. Suresh. Sir

that is the truth. I have my resources to verify all this. Of course, they are all sworn to secrecy so. . . And Mr. Sharma's gratitude will be expressed in ways that will be, I am sure, more than adequate. . . (Dattani, 41-42) Dattani's play reveals societal injustice done to the weaker section of the society. A certain ideology encourages such kind of narrow thoughts. The society as a whole plays its game and imposes unnecessary restrictions in the lives of people. A. Nicoll states that: "Many modern tragedies depend not on certain personalities presented in isolated surroundings, but on individuals placed in the midst of social powers from which they derive their joys and sorrows". (Nicoll, 97) The play is, no doubt, a world of illusion where all the characters believe in their own imaginary world. Subbu and Kamala thought that their marriage would bless them and the things would be accepted later but nothing like that happened and Kamala had to bear the pain of terrible death. Subbu also suffered due to his illusionary world. Mr. Sharma, after killing Kamala, hoped to marry his son to a girl of his choice, the planning failed and his son dies the same day of his marriage. Uma has her own vision. She believes that she is going to help the police by catching Kamala's killer, she does not realize the fact the truth was in veil, it came as a surprise for her only. Jeremy Mortimer states: "But it's Uma, a post-graduate student of sociology, who is the sleuth in this relationship, and using rather unconventional means, she uncovers the truth behind a murder in the city's hijra community". (Preface) The play ends on a very concerning note. Uma gets to know that the moral foundation is weak and resultantly all such incidents can happen in future as well. Uma. They knew. Anarkali, Champa and all Hijra people knew who was behind the killing of Kamla. They have no voice. The case was hushed up and was not even reported in the newspapers. Champa was right. The police made no arrests. Subbu's suicide was written off as an accident. The photograph was destroyed. So were the lives of two young people.

The playwright's portrayal of the realities of the contemporary English society certainly lead us to conclude that all claims of amelioration of social injustice prove illusionary. There is something to declare and something else on what we call ground zero. The rich and well-off enjoy special place of security in society. There are solemn declarations of concern for the marginalized people but it's sheer hypocrisy. Dattani mocks this hypocritical approach of the English people. *Seven Steps around the Fire* also lashes at this dubious policy. There is no doubt that Dattani's plays are an appeal to the readers to amend their attitude towards these unfortunate people. There are characters from the weaker sections who show some grit in facing age-old tyranny of the powerful, but they too submit to the reality of power and wealth in the end. Uma also bends before this social reality. The plays depict this human psyche that is very difficult to change.

The present paper has made a sincere attempt to cover a wide range of social realities which find place in Dattani's play under scrutiny here. The research takes up the theme of psychological impact of basic human behavior. It explores the human trait of self-conceit as depicted in *Seven Steps around the Fire*. The research covers all important actors in the play. It evaluates their thought processes in the given situation. It has helped the researcher in holding all essential aspects in the play. The stated aim of the research paper here is to focus on the "world of illusion" through the solemn protestations and mean practices of the characters. So the paper confines its examination to the aspects that are relevant to the said task. It is

necessary to strictly adhere to the basic principle of regulated treatment of the theme. Those aspects that have no direct bearing on the stated subject have been carefully kept out of purview.

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EMANCIPATION OF WOMEN FOR ATTAINING SELF-IDENTITY AND SELF-ASSERTION IN ANITA NAIR'S MISTRESS

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Abstract:

Among the emerging women novelists in Indian Writing in English. Anita Nair holds a predominant place among other women writers who portrays the plight of the marginalized and oppressed women stifled by age old-traditions and dogmas. A woman is constantly reminded that she is grown up for a man whom she had to spend rest of her life. A woman's whole existence is considered in relation to a man. Like the feminist writer Mannu Bhandrai's women characters, Anita Nair's pictures the character Saadiya in Mistress reflects the dilemma of Indian women who are the victims standing at the crossroads of community and freedom, symbolized by 'home' and 'world' respectively unable to choose one above the other.

Keywords: Community, Freedom, Victim, Dogmas, Plight.

Anita Gosh observes:

With respect to Mannu Bhandari's women, if their ties with the community deny them freedom, then the process of leaving the community creates in them the fear of isolation. The act of breaking away from the communal conditioning becomes fraught with pain and frustration. Mannu Bhandari's writings depict the helplessness and confusion of women in their attempts to overcome the conflicts. (2)

Like Mannu Bhandari, Anita Nair has drawn the character of Saadiya to show how women are denied freedom as per the rules set by their community and how she is unable to shrug-off her emotional and psychological dependence on men, family and community. As quoted by Sunita Sinha, "Feminism is an attack upon social option, whenever it discriminates in its attitude towards man and woman". (21) Anita Nair through the character portrayal of Saadiya shows her concern for women who are denied basic freedom even at home, restricted within the strict framework of marginalization and oppression. As Prasanna Sree says, "Through the centuries, women in Hindu tradition are depicted as silent sufferers, they have given a secondary status both in family and society" (18). In the same way, over many years, the Islam looks upon women as inferior to men and has made women suffer under strict laws.

Saadiya is the youngest daughter born in a traditional Muslim family. Her father is very particular in keeping the womenfolk in Islamic tradition as he often says, "It is our duty to

safeguard the bloodline" (99). So it is the fate of women like Saadiya to be born and die in the same room. The four walls become their world:

Saadiya stared at the square of the blue over her head. Twenty feet by thirty feet. That was the measure of her sky, the peripheries of her life. She touched the grey walls of the terrace roof. Even if she stood a solid six feet and two inches high, making sure that she would never see what was not meant for her eyes, ensuring that she was not visible to anyone. Saadiya felt what was by not a familiar sense of despair. Would she like her sisters and every other woman born here, live and die hidden by these walls? Was there never to be away out from here? (99).

Saadiya cannot express her thoughts. She wants to cry out the discrimination that her religion their religion has drawn between men and women. She wants to tell her father what is right and wrong. She wants to break her throat to say "It isn't fair that you men get to go wherever you want, see and do whatever you like, and we are expected to be content with this patch of blue and this maze of alleys" (99). The more Saadiya questions about such restrictions the more she craves for freedom and attempts to breaks the rules. But violation of rules will end in violence against women. This is what is theresukt in Saadiya too. In the words of Neeru Tandon:

Violence against women has been accepted and even condoned throughout history. More than 2,000 years ago, Roman law, gave a man life and death authority over his wife. In the 18th century, English common law, gave a man permission to discipline his children and wife with a stick or whip no wider than his thumb. Feminists claim that men are more likely to use violence to keep their dominant position. While society claims to abhor violence, we often make heroes of men who are aggressive (140).

These words are true with Saadiya's strict father. Breaking the rules when she steps out and goes to the common alley where men would walk, she knows that her father would be furious. As she expects, the furious father, takes violence as the weapon to discipline his daughter. Patriarchy overflows through his veins and says he is the man of the family. This makes him too violent to press a very hot iron rod on her calves twice. Moreover, he wants him to be the hero of his family who could keep up its honour, by disciplining his girls this way:

You feel the need to break rules. This is my Saadiya; good girl. The next time you feel the need to break your reins, remember how your flesh melted This is the lesson for you as much as it is for me, that is unwise to give girls even a little rope. That it isn't in women to understand the nuances of freedom. And if I have left you unpunished, I may risk the honour of my family (130).

Here Anita Nair reveals the gender discrimination marked by religion. It is obvious through Saadiya's story that women in Arabipatnam are not allowed to go out of the four walls even for education. There is no reference of girls being sent to school. Moreover, they were fully covered with black dress all over their body except their eyes: "She took away the bold fold of the cloth that covered her face and flung it on her shoulder" (101). But men enjoyed

endless freedom. Women seldom saw the sea though they lived close to it. These questions arise in Saadiya's mind:

Though we live close to it, we don't get to see it ever. All the men in Arabipatnam went to beach every day, like they went to mosque. It was a part of their routine. We were allowed out, perhaps once a year. At other times, we knew the sea existed only when the breeze set in at early noon, bringing into our homes a whiff of salt and on hot days a brackish odour, part fish, part decay, part mystery (138).

Women pursue freedom by rebelling against the religious code. The rules are likely to be broken as the situations trigger the urge to cross the line. So, Saadiya breaks the religious code. The rules are likely to be broken as the situations trigger the urge to cross the line. So Saadiya breaks the religious code, crossing the line set by it. Her father expels her from their society in order to keep up the honour of his position in the religious circle. Saadiya craves for a new world of freedom and that is why she leaves her home and goes with Sethu, a man who is not of her religion. She expects total freedom, in the sense that it allows her to follow that freedom her religion and inculcating its rituals on her child after marriage. When this is denied by Sethu her husband, she thinks of her past in her father's house. She breaks the shackles of traditional conventions and comes out, but unfortunately, she is unable to come out of it fully. She stands at the crossroad of ancestry and life and the end chooses death as the only solution to the problem. She drowns herself in the sea, "not to feel so torn between my ancestry and my life as it is now. The body washed up three days later. A bloated Saadiya..." (228). Neeru Tandon has this to say by way of comment on the attitude of Saadiya, "By remaining free, women hoped to retain not only their independence, but those rights that, in spite of some change, they still lost on marriage" (126).

In the feminist concept of the 'New Woman,' she challenges the traditional notions and is essentially a woman of awareness of her inferior status in the family and society. She tries to bring it up in her best of efforts. She chooses to rebel against the accepted rules and regulations formed by the society. In the words of Neeru Tandon:

Her protest is not for equality but for the right to be acknowledged as an individual-capable for intelligence and feeling. She does not look for freedom outside the house, but within too. She is new in the dimension of time being a rebel against the general current of patriarchal society.

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WEAVING SURREALISM AND REALISM IN AIMEE BENDER'S THE PARTICULAR SADNESS OF LEMON CAKE

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Abstract:

Aimee Bender is an American novelist and short story writer, known for her surreal stories and characters. She writes about the lives of ordinary people. But she's known for gently folding in surrealistic elements into her stories which require her characters to deal with the consequences of shifting realities. This strategy is best illustrated in Bender's second novel with Bildungsroman effect, *The Particular Sadness of Lemon Cake*. This is a novel about the hidden discontents of the American nuclear family as the familial unhappiness is revealed not through specific conflict but through a supernatural plot device whereby each member of the family has been endowed with a special power. The daughter and protagonist of the novel are able to read food and to determine the emotional state of the person who prepared it. Also, her brother has the ability to disappear into inanimate objects. Thus, the sadness, disappointment, and desperation that afflict this family become manifest, at least to readers, although not so directly for the family itself, except the daughter, who otherwise undergoes her journey of maturation more or less quietly.

This paper is titled *WEAVING SURREALISM AND REALISM IN AIMEE BENDER'S THE PARTICULAR SADNESS OF LEMON CAKE*. It brings out the dynamic nature of foods in fictional texts. Food as a chronicler of human condition which speaks about the emotional disconnection of individual human suffering portrayed by food. Food as a mean of identity formation presents the voice of food, the interaction of food and feelings also reveals the role of food in media and the idea that food has been used in art and literature.

Keywords: Familial unhappiness, Supernatural plot, Human suffering, Portrayed in food.

Aimee Bender (born June 28, 1969) is an American novelist and short story writer, known for her surreal stories and characters. She is a 2011 recipient of the Alex Awards. She won the Southern California Independent Booksellers Association Award for the best fiction. Also had written six novels including *The Particular Sadness of the Lemon Cake* which also appeared on The New York Times Best seller lists. She was born to a Jewish family; Bender received her undergraduate degree from the University of California at San Diego and a Master of fine arts from the creative writing MFA program at University of California at Irvine. While at UCI read with Judith Grossman and Geoffrey Wolf. She received Arts Bridge scholarships and worked with mentor Keith Fowler. She currently teaches creative writing at the University of Southern California where she served as director of USC PhD in creative writing and literature from 2012 to 2015.

On the eve of her ninth birthday, unassuming Rose Edelstein, a girl at the periphery of schoolyard games and her distracted parents' attention, bites into her mother's homemade

lemon-chocolate cake and discovers she has a magical gift: she can taste her mother's emotions in the cake. She discovers this gift to her horror, for her mother—her cheerful, good-with-crafts, can-do mother—tastes of despair and desperation. Suddenly, and for the rest of her life, food becomes a peril and a threat to Rose.

The Particular Sadness of Lemon Cake features a family in which three people are seriously depressed and one is traumatized by their depression. And yet there's an almost trendy tone, a lightness of being, a blinding glare. It is, for this reader, a quality that is associated with novels set in Southern California. It's this centuries version of noir, or maybe it's the opposite of noir, void of sentiment and high drama, bleached clean of mystery and even metaphor, it's about daily life that is increasingly impossible to navigate yet moving always forward. Sometimes the misguided efforts to shield children from pain and troubles please them to suffer alone. For Rose it is unbearable. She lives in a family where everyone thinks that everything is always fine. Nobody talks about anything. No one acknowledges pain. Joseph was also in some kind of trouble where he wanted to be alone. Only Rose finds that something is wrong with him. He spends all his time alone in his room. She has only one friend, George. He is so terribly alone. He is a genius, which is what his mother, the queen of Denial says. He's deep, he just needs his space - and then he doesn't get into any colleges. Life quietly spirals into the aloneness from which there can be no return. "The world had matched what he'd dreamed up" (TPLSC), Rose explains, and he settled himself inside what they'd made.

Joseph's choice to align himself with factory furniture comes to gloss Rose's long dalliance with factory food. If Joseph's allowing the assertion of the chair over him, like the chair was dispelling him, or absorbing him, at first scenes the opposite of Rose's ingestion of Oreos and Doritos to keep herself alive, Bender is quick to establish a deeper parallelism arranging Rose. A refusal of engagement and empathy is, figuratively for Rose but for Joseph literally, dehumanizing. And the victim of the dehumanization is not the other who is pushed away or frozen out, but he surprises emotion in the first place. Later Bender understood this point when Rose learned from her father that skills like her run in her paternal line, that her grandfather could smell people's emotion in much the way that Rose tastes them leading him to take refuge behind a cloth mask when out shopping. Her father, to have a lunch he has never dad to investigate as he could do something special for people in hospitals. This revelation leads her to suspect that Joseph's aggressive insularity might result not from maladjustment or misanthropy but rather from a sensitivity towards others misery than dwarfs her own.

All three men elect to shield themselves from both knowledge of and interaction with strangers - Rose's father refusing even to set foot in a hospital, Joseph obviously making the most radical refusal of all. Rose, by virtue of the particular contours of her sensitivity, has such options. It's effectively on the strait of Joseph cautionary tale and interspersed with it and Rose begins to alter her course. The suffering may not end but Rose found a way to live and accept it. Bender uses realism to portray human sufferings, she utilized the medium of food in order to portray the misery of the characters in this novel. That gets to know about the suffering of others and cannot help it but feel miserable for them as they are unable to help them in effective ways. The other medium used by Bender is furniture, as she tried to portray the lack of sense of identity in the individuals living in this modern world. Another instant when Rose

discovered was her magical skill, she needed disappointment at every step of this discovery; that is, the emptiness in the cake can represent the vacancy in the existence of people in the contemporary world. Other works also have used human suffering- loneliness as themes like in *the girl in the flammable skirt*, it is a collection of short stories in that a short story, *call my Name* follows an unnamed narrator. She is from a wealthy family and she enjoys pursuing men romantically. One day, she wore a luxurious dress and ridden in a Subway car. She starts a conversation with the man and follows him to his apartment. She asks to come up to his apartment, but she is frustrated when she does not want to have sex with him, she struggles with loneliness and he decides to completely watch TV with him for the time being. Loneliness made her to think wrongly but then she realized the need is she wants someone to be there.

In another story named *Loser* follows a teenage boy whose parents accidentally died when swimming. He grieves for his parents and feels very lonely. He discovers that he has the power to sense the location of lost objects. He occasionally helps people with his powers, she even locates a kidnapped child. Many people praise him for this heroic act, but still, he feels lonely and he still grieves for his parents. The story could be found slightly a match to her novel *The Particular Sadness of Lemon Cake*. Singular mix of surrealism, musical prose, and kindly felt emotion. Bender once again proves herself to be a masterful Chronicler of human condition. In one her interview she was asked about the theme that she was merged with her another story *Tiger Mending* if the interviewer asked after *Willful Creatures*, she would have asked about the short story *Loser* theme also.

"Interviewer: There was an echo in "Tiger Mending" of *The Particular Sadness of Lemon Cake* in the importance placed on things made by human hands. You have that lovely scene where the seamstress is concerned about the intentions she is sewing into the tiger, and the comment about people being more depressed after eating Burger King, which was funny because it's the opposite of how Rose responds to fast food in *Lemon Cake*. Bender: I wrote "Tiger Mending" many, many years before *Lemon Cake*, and it's funny how themes reemerge without any planning. When I was looking back at "Tiger Mending" and putting it in the book, I had that same thought reverberations about what's homemade and what's machine-made, and when is it good and when is it bad" (Rumpus 3).

In Aimee Bender's short stories, her purpose is not a parody or reproduction of fairytale archetypes but her appropriate fairy tale motifs and structural patterns to explore how humans negotiate pairs and incomprehensible worlds. "Aimee Bender may be leading figure to the next generation" (Carney1). Rose as a child and preteen through the emotional information of the adult world she perceives in her food is complex and overwhelming, so she quotes by consuming primarily factory packaged and processed foods. When describing the food, she prefers to buy and eat, she frequently uses the phrase food made by no one, she favors brands that Pride themselves on machine production, so the frozen enchiladas test blank.

Bender implements food as a character conveying messages and unveiling the secret by standing for the unspoken words of the mother in the novel. Thus, the voiceless mother can be heard through a food voice that expresses her hidden feelings and thoughts. It is pointed out that, "while sometimes the food voice is loud and clear, in many instances, that voice is

unheard, droned out in a din of louder messages or simply not received as carrying the power of communication" (Long 119). However, the protagonist of the novel is Rose but there is other two important characters as well, Rose's mother Lane and her brother Joseph. But the character of mother and daughter is more related to food and emotion.

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ANTAGONISM OF EXILE IN JEAN RHY'S WIDE SARGASSO SEA

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Abstract:

Antagonism means an active hostility or opposition between two groups. Jean Rhys has widely focused on the theme of antagonism in all her works. She is a contemporary British author. Jean Rhys's novels mostly focus on the female survival and her bitter quest of identity. The female characters in her novels are mostly marginalized in western patriarchal society and exiled by both culturally and sexually. The problem of cultural displacement and shaky sense of one's own identity have been the main concern of this novel. *Wide Sargasso Sea* is divided into three parts. The first part is told in heroines' own words. In the second part describes by the words of Mr. Rochester. He told about his arrival in the West Indies, his marriage. Antoinette is Rochester's mad wife. In these scenes are happened in England and she writes from the attic room of Thorn field hall. Antoinette became mad because her father died when she was too young. Antoinette's childhood life is filled with lonely, poverty, anxiety and fear. Their house was burned by the slaves. After their house was destroyed and her younger brother was died in the fire accident, her mother becomes crazy. Antoinette's step father arranged marriage for her. Mr. Rochester is the suitor for Antoinette, selected by her father. But both them did not have any interest in their marriage. Third part is telling about Antoinette's madness and she was lives in the attic. Finally, her madness roughly collapsed, and she sets fire to the house and ended her life.

Keywords: Childhood, Accident, Slaves, Madness, Fear, Anxiety.

Antagonism means an active hostility or opposition between two groups. Jean Rhys has widely focused on the theme of antagonism in all her works. She is a contemporary British author. Jean Rhys's novels mostly focus on the female survival and her bitter quest of identity. The female characters in her novels are mostly marginalized in western patriarchal society and exiled by both culturally and sexually. They are often tragic heroines. Her major works are *The Left Bank* (1927), *Pastures* (1928), *After Leaving Mr. Mechanize* (1930), and *Good Morning, Midnight* (1939). The publication of *Wide Sargasso Sea* in 1966 ended an almost total silence. The book won the Royal Society of Literature Award and WH Smith literary Award.

Antagonism denotes the multiple exile of the heroine Antoinette. Because she was born in Jamaica, and got married and moved to another place of Coulibri. Finally she was arrested by her husband in the attic of thorn field in England. So she could not adopt this exile of moving from one country to another country. In her childhood was very difficult and hard to live. She did not get love from her parents. She was a lonely girl had no friend at all. The people around her were all hostile to her for her special identity.

Wide Sargasso Sea is divided into three parts. The first part is told in heroine's own words. In the second part describes by the words of Mr. Rochester. He told about his arrival in the West Indies, his marriage. Antoinette is Rochester's mad wife. In these scenes are happened in England and she writes from the attic room of Thornfield Hall. Antoinette became mad because her father died when she was too young. Antoinette's childhood life is filled with lonely, poverty, anxiety and fear. Their house was burned by the slaves. After their house was destroyed and her younger brother was died in the fire accident, her mother becomes crazy. Antoinette's step father arranged marriage for her. Mr. Rochester is the suitor for Antoinette, selected by her father. But both of them did not have any interest in their marriage. Third part tells about Antoinette's madness and she was lives in the attic. Finally her madness roughly collapsed, and she sets fire to the house and ended her life.

The problem of cultural displacement and shaky sense of one's own identity have been the main concern of this novel. As Britain began colonizing the West Indies and other Caribbean islands, identity within the British Empire became nebulous. *Wide Sargasso Sea* is Jean Rhys's most problematic novel. Because it tells about the author's own psychological problems. Her inner conflict is completely reflected in all her heroines. With them, Jean Rhys shared the Caribbean origins and the difficult integration into British society.

The conflict between blacks and whites, men and women, colonized and colonialist is main concern in this novel. These are the forces that struggle within the mind of Antoinette. The significance of the outer tension represented in this novel is heightened in the light impact of the psyche of the protagonist. Antoinette alienated from the black people of the islands. In fact she does not belong anywhere. She is rejected by the both blacks and whites population in the West Indies. She does not find her own community and considered those of mixed races as inferior to themselves. As a white Creole, Antoinette becomes a double outsider. She was called as a "white nigger" and "white cockroach" by the peoples of the blacks.

A white cockroach. That's me. That's what they (the blacks) call all of us who were here before their own people in Africa sold them to the Slave traders. And I've heard English women call us white niggers. So Between you I often wonder who I am and where is my country and Where do I belong and why was I ever born at all" (WSS, 64)

These two phrases express the Antoinette's struggle to live between the two cultures. Antoinette tries to mingle with the peoples of black but they won't accept her. She was contempt by both of them and is thus forced to see herself as "other". She says very pathetically that "who I am and where is my country". It expresses her feelings of "in-between's" and 'otherness'

Antoinette tries to mingle with the people of blacks. But she cannot share her feelings with any other person. Because she has no friends except the person of Christophine. Christophine was the old nurse and like a good friend of Antoinette, she introduces the girl named Tia. She belongs to the black community. Antoinette was immensely happy and shared her feelings with Tia. She tells her desire to mingle with the people like her, and they played with each other. Antoinette thought that she wore the dress of Tia and her garments look like

the black community. Antoinette metaphorically becomes Tia by using her garments. She longing to be like Tia, to take on her cultural identity through the re-dressing, it represents a form of release from her own misery caused by her lack of identity. But this happiness is not stable to Antoinette, because her mother scolded and wants to change the new dress. But nothing likes fit to Antoinette. Her mother told her that do not believe the black people, because Antoinette's family was slave owning and they treated blacks very pathetically. Like her mother's words they were sets fire including Tia as part of the black mob in coulibri, Antoinette's family estate.

"Then, not so far off. I saw Tia and her mother and I ran to her, for she was all that was left of my life as it had been. We had eaten the same food, slept side by side, bathed in the same river. As I ran, I thought, I will live with Tia and I will be like her. Not to leave coulibri. Not to go. When I was close I saw the jagged stone in her hand but I didn't see her throw it. I did not feel it either, only something wet, running down my face. I looked at her and I saw her face crumble up she began to cry. We started at each other, blood on my face, tears on hers. It was as if I saw myself. Like in a looking glass." (WSS, 38)

The second point is description from the point of view by Mr. Rochester, who is the husband of Antoinette. He was an English man he came to coulibri to flourish his business. But soon he is selected by Antoinette's step father Mr. Mason to the suitor for Antoinette. But both of them were not interested to getting married. But Mr. Rochester finally accepted his proposal for the money of thirty pounds. He does not have any care to Antoinette, after their marriage they were moved to Dominica. There he leaves Antoinette and went for his official matters. She feels very lonely and wanted some care from her husband. But her desire is not fulfilled and her mental state was unbalanced. She could not adopt the Dominica's culture also.

The most significant emergence of unwanted passions inside Rochester takes the shape of the forbidden, as well as irresistible desire he feels of his wife. Mr. Rochester married Antoinette for her money and does not love her. He considers her to belong to him and she is therefore not allowed to leave him and love someone else.

"I tell you she loves no one, anyone. I could not touch her. Excepting as the hurricane will touch that tree-and break it. You say I did? No, that was love's fierce plays. Now I'll do it. She'll not laugh in the sun again. She'll not dress up and smile at herself in that damnable looking-glass. So pleased, so satisfied. Vain, silly creature. Made for loving? Yes, but she'll have no lover, for I don't want her and she'll see no other." (WSS, 107)

In part three is very shortest part of the novel. It tells about from the perspective of Antoinette that her feelings of loneliness and alienated life. Her husband lock Antoinette in the attic of "Thorn field" hall and it was called the "Great House". She was now separated from the Christophine also and moved from Dominica to England. She first refuses to believe that she is in England. She no longer envisions England as a fantasy. She described England as a "they tell me I am in England but I don't believe them Cardboard world where everything is colored brown or dark red or yellow that has no light in it" (WSS, 148)

There she met Grace Poole the servant who is appointed by her husband. He was the only person in the house to share her feelings and protect her. Antoinette was passionately admitted herself into Grace Poole, he also makes the empty promises to her for only he happiness. He has own family and life so he lightly make a distance from Antoinette. Antoinett is clearly mad and has little understanding of how much time she has been confined. Antoinett wants to moves from this house, so waited for the correct situation. When Rochester and Grace Poole was went outside her step brother Richard entered into the house. She suddenly attack him with a stolen knife and come outside of the house. She sets fire in the house and escap from there. At last she has the identity of her own from the outside.

Key to abbreviation:

WSS- *Wide Sargasso Sea*

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THE IMPACT OF AI ON ENGLISH LANGUAGE PEDAGOGY: PERSPECTIVES FROM EDUCATORS AND LEARNERS

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Abstract:

This article explores the impact of artificial intelligence (AI) on English language pedagogy, presenting perspectives from both educators and learners. AI technologies are revolutionizing language education by providing personalized learning experiences, automating routine tasks, and offering instant feedback to learners. Educators view AI as a valuable tool for optimizing instructional practices, while learners perceive it as a convenient resource for flexible and accessible language learning. Despite challenges such as ensuring algorithm accuracy and addressing privacy concerns, the opportunities afforded by AI in English language pedagogy are vast. By embracing AI responsibly and collaboratively, educators and learners can enhance the language learning experience and achieve greater proficiency and fluency.

Keywords: Fluency, Proficiency, Feedback, Experience, Educators, Learners.

Introduction:

In recent years, the integration of artificial intelligence (AI) into education has significantly transformed teaching and learning practices. Among the various disciplines benefiting from AI, English language pedagogy stands out as a domain witnessing profound changes. This article explores the multifaceted impact of AI on English language teaching, examining perspectives from both educators and learners.

AI in English Language Pedagogy:

AI technologies are revolutionizing English language pedagogy by offering personalized learning experiences, automating routine tasks, and providing instant feedback to learners. AI-powered language learning platforms utilize natural language processing (NLP) algorithms to analyze learners' language proficiency levels, identify areas for improvement, and deliver tailored learning materials. Moreover, AI-driven chatbots and virtual tutors engage learners in interactive conversations, enhancing their speaking and listening skills in a simulated environment.

Perspectives from Educators:

Educators view AI as a valuable tool for optimizing instructional practices and addressing diverse learning needs. AI algorithms can assist teachers in designing customized lesson plans, tracking students' progress, and identifying gaps in their language proficiency. Additionally, AI-enabled assessment tools streamline the grading process and provide insights into students'

performance, enabling teachers to offer targeted interventions and support. While some educator's express concerns about AI replacing human teachers, many recognize its potential to augment teaching effectiveness and promote student engagement.

Perspectives from Learners:

Learners perceive AI as a convenient and accessible resource for language learning, offering flexibility in terms of pace and content. AI-powered language learning applications provide learners with instant access to interactive exercises, multimedia resources, and real-time feedback, enabling them to practice and improve their language skills anytime, anywhere. Moreover, AI-driven virtual tutors offer individualized support and encouragement, fostering a sense of autonomy and self-efficacy among learners. However, some learners express reservations about the impersonal nature of AI tutors and emphasize the importance of human interaction in language acquisition.

Challenges and Opportunities:

While AI holds great promise for enhancing English language pedagogy, several challenges must be addressed to maximize its potential. These include ensuring the accuracy and reliability of AI algorithms, addressing privacy and data security concerns, and promoting digital literacy among educators and learners. Moreover, integrating AI into English language classrooms requires careful planning and professional development to ensure effective implementation and utilization. Nevertheless, the opportunities afforded by AI in English language pedagogy are vast, offering innovative solutions to age-old challenges and empowering educators and learners to achieve their language learning goals.

Conclusion:

The impact of AI on English language pedagogy is profound and multifaceted, with perspectives from educators and learners highlighting its transformative potential. While challenges exist, the opportunities afforded by AI for personalized learning, automated assessment, and enhanced teacher support are undeniable. By embracing AI technologies responsibly and collaboratively, educators and learners can harness their full potential to enrich the English language learning experience and foster greater proficiency and fluency.

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NATURAL LANGUAGE PROCESSING IN ENGLISH LANGUAGE TEACHING: LEVERAGING AI FOR IMPROVED UNDERSTANDING AND COMMUNICATION

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Abstract:

This article explores the transformative role of Natural Language Processing (NLP) in English Language Teaching (ELT), focusing on how AI-driven technologies can enhance understanding and communication among language learners. NLP techniques, including intelligent tutoring systems, automated assessment tools, interactive language learning platforms, and virtual language assistants, are discussed in detail, highlighting their applications and benefits in ELT. The abstract emphasizes the personalized learning experiences, enhanced engagement, immediate feedback, and improved language proficiency facilitated by NLP-powered applications. Additionally, it addresses challenges such as language understanding capabilities, biases in language models, and privacy concerns, while also suggesting future directions for research and development in this field. Overall, the article underscores the significance of NLP in revolutionizing ELT and shaping the future of language education.

Keywords: Intelligent, Feedback, Models, Proficiency, Future.

In recent years, the integration of Artificial Intelligence (AI) technologies into various aspects of education has shown immense promise. One area where AI, particularly Natural Language Processing (NLP), is making significant strides is in English Language Teaching (ELT). NLP, a subfield of AI, focuses on the interaction between computers and human language, enabling machines to understand, interpret, and generate human language in a way that is both meaningful and contextually relevant. Leveraging NLP in ELT holds great potential for enhancing understanding and communication among language learners. This article explores the applications of NLP in ELT and the benefits it offers to both educators and learners.

Natural Language Processing encompasses a range of techniques and algorithms that enable computers to analyze, understand, and generate human language. These techniques include parsing, sentiment analysis, machine translation, speech recognition, and language generation, among others. In the context of ELT, NLP technologies can be harnessed to develop intelligent tutoring systems, automated assessment tools, interactive language learning platforms, and virtual language assistants.

Applications of NLP in English Language Teaching

Intelligent Tutoring Systems: NLP-powered tutoring systems can provide personalized feedback and guidance to language learners based on their strengths and weaknesses. These systems analyze students' written and spoken language, identify errors, and

offer targeted suggestions for improvement. By adapting to each learner's pace and learning style, intelligent tutoring systems enhance the effectiveness of language instruction.

Automated Assessment Tools: NLP algorithms can automate the assessment of language proficiency by analyzing written essays, spoken responses, and comprehension exercises. These tools evaluate various linguistic aspects such as grammar, vocabulary usage, coherence, and fluency. By providing instant feedback and objective assessment, automated tools help learners track their progress and identify areas for improvement.

Interactive Language Learning Platforms: NLP-driven interactive platforms engage learners in communicative activities such as dialogue simulations, role-plays, and interactive exercises. These platforms leverage natural language understanding to interpret learners' input and provide contextually relevant responses. By simulating real-life communication scenarios, interactive platforms foster active participation and language practice.

Virtual Language Assistants: Virtual assistants powered by NLP technologies serve as conversational partners for language learners, offering support and guidance in real-time. These assistants can answer questions, provide explanations, and engage learners in interactive dialogue. By leveraging advanced language understanding capabilities, virtual assistants create immersive learning experiences and promote language acquisition.

Benefits of NLP in English Language Teaching:

The integration of NLP into ELT offers several benefits for both educators and learners:

Personalized Learning: NLP-powered systems adapt to each learner's needs, providing personalized feedback, instruction, and support.

Enhanced Engagement: Interactive and conversational NLP applications keep learners motivated and engaged in language learning activities.

Immediate Feedback: Automated assessment tools offer instant feedback, allowing learners to identify and correct errors in real-time.

Accessible Learning Resources: NLP-driven platforms provide access to a wide range of language learning materials and resources, catering to diverse learning preferences and needs.

Improved Language Proficiency: By facilitating meaningful language practice and interaction, NLP technologies help learners develop their language skills more effectively.

Challenges and Future Directions

Despite the numerous benefits of NLP in ELT, several challenges remain, including the need for robust language understanding capabilities, addressing biases in language models, and ensuring privacy and data security. Additionally, ongoing research and development are needed to further enhance the effectiveness and usability of NLP-powered applications for language teaching and learning.

In conclusion, Natural Language Processing holds immense potential for transforming English Language Teaching by providing innovative tools and technologies that enhance understanding and communication among language learners. By leveraging NLP, educators can create personalized, engaging, and effective learning experiences that empower learners to achieve their language learning goals. As NLP continues to advance, its integration into ELT will undoubtedly play a crucial role in shaping the future of language education.

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THREADS OF THOUGHT - I

Communication Skills

(B.Com., B.Sc., IT & BBM,,)

Semester - I & II



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THREADS OF THOUGHT - I

Communication Skills

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ENSEMBLE GRADIENT BOOSTING CLASSIFIER FOR TRAFFIC AWARE BIG DATA ANALYTICS

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ABSTRACT

Big data analytics is the process of huge amount of data created and collected in a geographically distributed manner. Groups of data stored and processed in a single datacenter is inefficient due to several limitations such as wider bandwidth, high traffic level, high storage capacity and more task completion time of big data processing. As the volume of data increases, it provides less efficient to handle large volume of data in a multiple datacenter with available resource utilization. A new optimization framework reduces the inter datacenter traffic of MapReduce jobs during geo-distributed big data. However, its needs to be utilize the optimal resources while reducing the traffic over geo-dispersed locations. In order to reduce the traffic occurrence level during the big data distribution in cloud environment, Resource Optimized Traffic Aware Gradient Boosting Classification (ROTAGBC) Technique is developed. In cloud, number of incoming tasks is send from the users. The task assigner assigns the priority to incoming tasks based on certain request parameters task size, starting time, finishing time, bandwidth, memory capacity. Based on priority level, Gradient Boosting Classification technique is applied to classify the tasks based on their priority level.

WAVELET-POISSON COMPRESSION: A NOVEL APPROACH FOR IMAGE CODING AND TRANSMISSION

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ABSTRACT

Image compression involves minimizing the size of a digital image file while striving to maintain its visual quality. This reduction is achieved by eliminating redundant or unnecessary information in the image. Therefore, image compression is crucial for various applications, including reducing storage space requirements, improving data transmission efficiency, and enhancing the user experience in multimedia applications. The current compression methods face significant challenges in improving the quality of the reconstructed image with minimum time and a higher compression ratio. A pioneering approach, termed Poisson Wavelet Quantized Piecewise Progressive Distributed

ANALYSIS OF HEART DISEASES DATASET USING NEURAL NETWORK APPROACH

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ABSTRACT

One of the important techniques of Data mining is Classification. Many real-world problems in various fields such as business, science, industry and medicine can be solved by using classification approach. Neural Networks have emerged as an important tool for classification. The advantages of Neural Networks help for efficient classification of given data. In this study a heart diseases dataset is analysed using Neural Network approach. To increase the efficiency of the classification process parallel approach is also adopted in the training phase.

Keywords: Data mining, Classification, Neural Networks, Parallelism, Heart Disease

1. INTRODUCTION

Data mining is the process of automating information (knowledge) discovery. Knowledge Discovery in Databases (KDD) is the process of getting high-level knowledge from low-level data. Data mining plays an important role in the KDD. Data mining is an interdisciplinary field.

Its main aim is to uncover relationships in data and to predict outcomes. Researchers are trying to find satisfactory solutions in a reasonable time through search techniques as many problems are difficult to be solved in a feasible time by analytically. Hence data mining got its importance. Data mining helps to extract patterns in the process of knowledge discovery in databases in which intelligent methods are applied. The emerging field of data mining promises to provide new techniques and intelligent tools which help the human to analyse and understand large bodies of data remains on difficult and unsolved problem. The common functions in current data mining practice include Classification, Regression, Clustering, Rule generation, Discovering association rules, summarization, dependency modelling, and sequence analysis. Classification is one of the important techniques of data mining. The input to the classification problem is a data-set called the training set having a

number of attributes. The attributes are either continuous or categorical. One of the categorical attributes is class label or the classifying attribute. The objective is to use the training set to build a model of the class label based on the other attributes such that the model can be used to classify new data not from the training data-set. Various data mining problems can be handled effectively by soft computing techniques. These techniques are fuzzy logic, neural networks, genetic algorithms and rough sets, which will lead to an intelligent, interpretable, low cost solution than traditional techniques.

Artificial Neural Network (ANN) is one of the most used data mining method to extract patterns in an intelligent and reliable way and has been greatly used to find models that describe data relationship [1-2]. In view of the above said significant characteristics of ANN, **Neural Network**

The technique is adopted in this study for data classification. Parallel processing is implemented at each node in different layers in the network.

Data mining techniques have been widely used in diagnostic and health care applications because of their predictive power. Data mining algorithms can learn from past examples in clinical data and model the oftentimes non-linear relationships between the independent and dependent variables. The resulting model represents formalized knowledge, which can often provide a good diagnostic opinion. In this study the neural network approach to generate efficient classification rules is proposed. To perform classification task of medical data, the neural network is trained using Back propagation algorithm. As the structure of neural network is convenient for parallel processing, the output at each neuron in different layers is calculated in parallel. The performance of the network is analyzed with various types of test data.

The overall organization of the paper is as follows. After the introduction fundamental issues of neural networks for classification are presented in Section 2. Section 3 presents the applications of neural networks in the medical field. In Section 4 a neural network approach to generate efficient classification rules is proposed and the performance of the network is analyzed.

2. Neural Networks

A Neural Network (NN) consists of many Processing Elements (PEs), loosely called “neurons”

and weighted interconnections among the PEs. Each PE performs a very simple computation, such as calculating a weighted sum of its input connections, and computes an output signal that is sent to other PEs. The training (mining) phase of a NN consists of adjusting the weights (realvalued numbers) of the interconnections, in order to produce the

desired output [5].

The Artificial Neural Network (ANN) is a technique that is commonly applied to solve datamining applications. Neural Network is a set of processing units when assembled in a closely

interconnected network, offers rich structure exhibiting some features of the biological neuralnetwork. The structure of neural network provides an opportunity to the user to implement

parallel concept at each layer level. Another significant characteristic of ANN is fault tolerance. ANNs are well suited in situations where information is noisy and uncertain. ANN are an information processing methodology that differs drastically from conventional methodologies in that it employ training by examples to solve problem rather than a fixed algorithm [3,4]. They can be divided into two types based on the training method: Supervised training and Unsupervised training. Networks that are supervised require the actual desired output for each input where as unsupervised networks does not require the desired output for each input.

A key feature of neural networks is an iterative learning process in which data cases are presented to the network one at a time, and the weights associated with the input values are adjusted each time [5]. After all cases are presented, the process often starts over again. During this learning phase, the network learns by adjusting the weights so as to be able to predict the correct class label of input samples. Once a network has been structured for a particular application, that network is ready to be trained. To start this process, the initial weights are chosen randomly. Then the training or learning, begins. The most popular neural network algorithm is back-propagation algorithm. Although many types of neural networks can be used for classification purposes [6], the focus is on the feedforward multilayer networks or multilayer perceptron's which are the most widely studied and used neural network classifiers. The feedforward, back-propagation architecture was developed in the early 1970's. This back-propagation architecture is the most popular, effective, and easy-to-learn model for complex, multi-layered networks. Its greatest strength is in non-linear solutions to ill-defined problems. Training inputs are applied to the input layer of the network, and desired outputs are compared at the output layer. During the learning process, a forward sweep is made through the network, and the output of each element is computed layer by layer. The difference between the output of the final layer and the desired output is back-propagated to the previous layers, usually modified by the derivative of the transfer function, and the connection weights are normally adjusted. This process proceeds for the previous layers until the input layer is reached [7].

The advantages of Neural Networks for classification are:

- Neural Networks are more robust because of the weights
- The Neural Networks improves its performance by learning. This may continue even after the training set has been applied.
- The use of Neural Networks can be parallelized as specified above for better performance.
- There is a low error rate and thus a high degree of accuracy once the appropriate training has been performed.
- Neural Networks are more robust in noisy environment

3. NEURAL NETWORKS IN THE MEDICAL FIELD

Neural networks are known to produce highly accurate results in practical applications. Neural networks have been successfully applied to a variety of real world classification tasks in industry, business and science [8]. Also they have been applied to various areas of medicine, such as diagnostic aides, medicine, biochemical analysis, image analysis, and drug development. They are used in the analysis of medical images from a variety of imaging modalities. Applications in this area include tumor detection in ultra-sonograms, detection and classification of micro calcifications in mammograms, classification of chest x-rays, and tissue and vessel classification in Magnetic Resonance Images. Artificial neural networks provide a powerful tool to help doctors analyze, model, and make sense of complex clinical data across a broad range of medical applications [9-21].

As the volume of stored data increases, data mining techniques assume an important role in finding patterns and extracting knowledge to provide better patient care and effective diagnostic capabilities. Neural networks can be used to extract rules from a disease classification. From the rules system so discovered, we can predict if someone will have a particular stage of a particular disease.

4. EXPERIMENT - CLASSIFICATION OF HEART DISEASES DATASET

In this experiment the medical data related to Heart diseases is considered. This dataset was obtained from Cleveland database. This is publicly available dataset in the Internet. Cleveland dataset concerns classification of person into normal and abnormal person regarding heart diseases.

Data Representation:

Number of instances: 414.

Number of attributes : 13 and a class attribute

4 Class:

Class0: Normal Person.

Class1: first stroke

Class2: second stroke

Class3: end of life

Attribute Description :

Attribute Description Range

Age Age in years Continuous

Sex (1=male; 0=female) 0,1

Cp --Value 1:typical angina 1,2,3,4

--Value 2: atypical anginal

--Value 3: non-anginal pain

--Value 4: asymptotic

trestbps Resting blood pressure(in mm Hg) Continuous

chol Serum cholesterol in mg/dl Continuous

fbs (Fasting blood sugar .120mg/dl) 0,1

(1=true; 0=false)

restecg electrocardiography results 0,1,2

--Value 0: normal

--Value 1:having ST-T wave abnormality

(T wave inversions and/or ST

Elevation or depression of>0.05mV)

--Value 2:showing probable or definite left

ventricular Hypertrophy by Estes' criteria

Thalach Maximum heart rate achieved Continuous

Exang Exercise induced angina(1=yes;0=no) 0,1

Oldpeak ST depression induced by exercise

relative to rest Continuous

Slope The slope of the peak exercise

ST segment 1,2,3

Value 1: up sloping

Value 2: flat

Value 3:down sloping

Ca Number of major vessels (0-3)

Colored by fluoroscopy Continuous

Thal Normal, fixed defect, reversible defect 3,6,7

Linear Data Scaling

Here each value is converted into the range between 0 to 1 using the following formulae

$$\Delta = X_{\max} - X_{\min}$$

$$Y = \text{intercept } C = (X - X_{\min}) / \Delta$$

$$\text{Slope} = m = 1 / \Delta$$

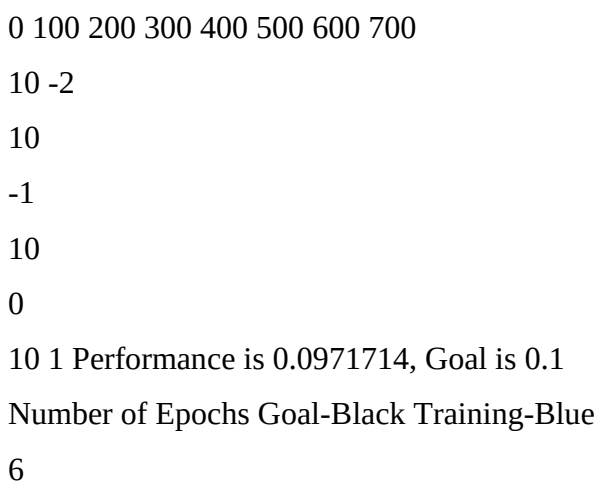
So we calculate Y for a given X as $Y = mX + C$.

4.1 Training the Neural Network

In this experiment the neural network is trained with Heart Diseases database by using feed forward neural network model and backpropagation learning algorithm with momentum and variable learning rate. The input layer of the network consists of 13 neurons to represent each

attribute as the database consists of 13 attributes. The number of classes are four: 0 – normal person, 1- first stroke, 2- second stroke and 3- end of life. The output layer consists two neurons to represent these four classes. The description of the backpropagation algorithm is specified in the above is used to train the neural network during the training process. Several neural networks are constructed with and without hidden layers, i.e, single and multi layer networks and trained with heart disease dataset. Relationship between the number of epochs and the sum of squares of errors during training process for various networks can be observed from the Figures 1-2.

Figure 1. Training the Single Layer Network with Heart Diseases Dataset



4.2 Performance of the Network

For testing the performance of the net various samples are collected as test data. The test data is given as the input to the trained network and the output of the net is calculated with the adjusted weights. The output of the net is compared with the target output to study the learning ability of the network for classifying the heart disease data. The results are tabulated in Table1.

Table 1: Experimental Results of Heart Diseases Dataset

Training

Samples Test Samples

Classification Efficiency

Single Layer Multi Layer

100 300 76% 82%

150 200 79.4% 83%

250 150 86.2% 89.3%

350 100 90.6% 94%

Conclusion

Classification is an important problem in the rapidly emerging field of data mining. Many problems in business, science, industry, and medicine can be treated as classification problems. Owing to the wide range of applicability of ANN and their ability to learn complex and nonlinear relationships including noisy or less precise information, neural networks are well suited to solve problems in biomedical engineering. In this study Neural network technique is adopted for classification of medical dataset. The experiment is conducted with heart disease dataset by considering the single and multilayer neural network modes. Backpropagation algorithm with momentum and variable learning rate is used to train the networks. To analyse performance of the network various test data are given as input to the network. Parallelism is implemented at each

0 100 200 300 400 500 600 700

10 -2

10 -1

10 0

10

1

10

2 Performance is 0.0907469, Goal is 0.1

Number of Epochs

Training-Blue

Goal-Black

neuron in all hidden and output layers to speed up the learning process. The experimental results proved that neural networks technique provides satisfactory results for the classification task.

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TRANSFORMATIVE SEARCH: ADVANCING WEB PAGE RE-RANKING WITH TRANSFORMER-POWERED DEEP LEARNING ALGORITHMS

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ABSTRACT

In the ever-evolving landscape of information retrieval, the quest for optimizing search results has taken a revolutionary turn with the integration of Transformer-based deep learning algorithms. This paper explores the paradigm shift in web page re-ranking, presenting a novel approach that leverages the transformative power of Transformers to enhance the efficiency and effectiveness of search engines. The methodology revolves around the utilization of state-of-the-art deep learning algorithms, specifically tailored to harness the capabilities of Transformers. The inherent ability of Transformers to capture intricate relationships within data is harnessed to refine the ranking of web pages, resulting in a more intelligent and context-aware search experience. The proposed system demonstrates superior performance in comparison to traditional re-ranking methods, showcasing its adaptability to diverse search queries and content types. It delves into the intricacies of the Transformer architecture, highlighting its role in extracting and contextualizing features crucial for accurate web page re-ranking. Moreover, this paper addresses the interpretability of the model, providing insights into the decision-making process of the Transformer-powered re-ranking system. Understanding how the algorithm discerns relevant content and assigns priority can be invaluable for both developers and end-users seeking transparency in search result presentation.

As the digital landscape continues to expand exponentially, the Transformer-based approach not only keeps pace but also sets a new standard for search engine optimization. The results presented in this paper underscore the efficacy of incorporating deep learning algorithms, driven by Transformer architectures, to refine the landscape of information retrieval, making search experiences more personalized, contextually aware, and ultimately, transformative.

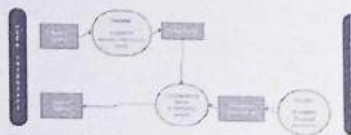
Keywords: Transformer, Deep Learning, Web Page re-ranking, Pre-trained Transformer models.

1. INTRODUCTION

In the digital age, the accessibility and relevance of information are paramount, with web search engines serving as the gateway to an ever-expanding repository of knowledge. As the volume of online content continues to soar, the need for efficient and accurate web page ranking becomes increasingly crucial to provide users with meaningful and relevant results. Traditional methods of web page ranking, often reliant on static features, face challenges in capturing

the dynamic and context-dependent nature of user queries and content. This paper introduces a paradigm shift in web page re-ranking through the incorporation of transformer-based deep learning algorithms. Transformers, originally designed for natural language processing tasks, have demonstrated unparalleled success in capturing intricate semantic relationships within textual data. Adapting these models to the realm of web page ranking promises to revolutionize the way search engines prioritize and present search results. The motivation for this

research stems from the limitations of existing ranking techniques. Traditional algorithms may struggle to discern the subtle nuances and context-specific meanings embedded in the vast array of web content. In contrast, transformer-based models, such as BERT and GPT, leverage attention mechanisms to process information in a contextually aware manner, making them well-suited for tasks that require understanding the intricacies of language and content. To address these challenges, the work study explores the integration of transformer-based deep learning algorithms into the web page re-ranking process. By employing pre-trained transformer models and fine-tuning them on large-scale datasets, we aim to enhance the contextual understanding of web content and user intent. This approach allows the model to dynamically adapt to the evolving landscape of online information, providing users with more relevant and personalized search results. Throughout this paper, it is presented the experimental results comparing the performance of the work proposed transformer-based re-ranking model against traditional methods. It delves into the interpretability of the model's decision-making process, shedding light on the factors influencing the re-ranking decisions. The insights gained from this research not only contribute to the advancement of web page ranking techniques but also offer a deeper understanding of the transformative potential that transformer-based deep learning algorithms bring to the field of information retrieval.



2. LITERATURE REVIEW

"BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding" (Devlin et al., 2018): This seminal work introduces BERT, a transformer-based model pre-trained on vast amounts of textual data. Its success in capturing contextualized word representations has influenced various applications, including natural language processing and information retrieval. "Attention Is All You Need" (Vaswani et al., 2017): Vaswani et al. propose the transformer architecture, emphasizing self-attention mechanisms. This foundational paper has catalyzed a paradigm shift in deep learning, fostering the development of models with improved sequence processing capabilities. "BERT for Question Answering" (Yao et al., 2018): Yao et al. extend BERT's application to question answering tasks. This paper is relevant to the work study as it showcases BERT's adaptability to diverse tasks, encouraging exploration of its potential in web page re-ranking. "XLNet: Generalized Autoregressive Pretraining for Language Understanding" (Yang et al., 2019): XLNet introduces an autoregressive pre-training method, addressing limitations in BERT's bidirectionality. This paper contributes to the discussion on transformer variations, offering insights into potential enhancements for web page re-ranking. "GPT-3: Language Models are Few-Shot Learners" (Brown et al., 2020): OpenAI's GPT-3 represents a milestone in large-scale language models. Its ability to perform diverse tasks with few-shot learning raises intriguing possibilities for transformer-based models in information retrieval tasks. "Enhanced Language Representation with Informative Entities" (Sun et al., 2019): Sun et al. present ERNIE, a model designed to capture entity-level information. This paper is relevant as it explores ways to enhance language representation.

It could impact the understanding of web page content. "Post-Training for Review Reading Comprehension and Aspect - based Sentiment Analysis" (Liu et al., 2019): Liu et al. extend BERT's capabilities to review reading comprehension and sentiment analysis. Understanding sentiment nuances is crucial for re-ranking web pages based on user preferences, making this work pertinent to the study. "Fine-Tuning Pretrained Language Models: Weight Initializations, Data Orders, and Early Stopping" (Raffel et al., 2019): Raffele et al. investigate fine-tuning strategies for pretrained language models. This paper informs the work approach to adapting transformer models for webpage re-ranking through careful parameter adjustments. "BERTopic: Leveraging BERT and c-TF-IDF to create topics from textual data" (Kovacs, 2020): This work explores topic modelling using BERT and c-TF-IDF. Understanding how BERT can contribute to topic identification is pertinent to the work objective of improving content relevance in web page re-ranking. "Enhancing Diversity in Ranking using BERT-based Models" (Zaragoza et al., 2021): Zaragoza et al. address the challenge of diversity in ranking using BERT-based models. This paper

contributes insights into potential considerations for improving diversity in the work re-ranking approach. "Beyond Accuracy: Behavioural Testing of NLP models with Checklist" (Ribeiro et al., 2020): Ribeiro et al. propose Checklist for behavioural testing of NLP models. Considering ethical implications and biases is essential in the work study, and this work informs The work approach to model evaluation. "Understanding and Improving Transformer from a Multi-Particle Dynamic System Point of View" (Li et al., 2020): Li et al. provide a unique perspective on transformers as dynamic systems. This paper contributes to the work understanding of the internal dynamics of transformers, which can impact their performance in web page re-ranking

"BERT for Coreference Resolution: Baselines and Analysis" (Lee et al., 2018): Lee et al. extend BERT to coreference resolution, highlighting its ability to capture relationships. This is relevant to the work study as it hints at BERT's potential for understanding complex relationships within web page content. "Ranking with Recursive Neural Networks and its Extension to Image Retrieval" (Socher et al., 2010): Socher et al. introduce recursive neural networks for ranking. Although an earlier work, it provides a foundational understanding of the challenges and opportunities in ranking tasks, informing the work comparative analysis. "Learning Deep Structured Semantic Models for Web Search using Clickthrough Data" (Guo et al., 2016): Guo et al. present a model for web search using clickthrough data. This paper is relevant to the study as it explores learning deep structured models, providing insights into user behaviour that can inform re-ranking decisions. "Neural Ranking Models with Weak Supervision" (Hofstätter et al., 2019): Hofstätter et al. address weak supervision in neural ranking models. This work is pertinent to The work study as it explores strategies for model training in scenarios where labelled data is limited, aligning with challenges in web page re-ranking datasets

3. Methodology

The methodology employed in this study, "Transforming Search: Enhancing Web Page Re-Ranking with Transformer-Based Deep Learning Algorithms," involves a systematic approach to harnessing the power of transformer-based models for web page re-ranking. The following steps outline the key components of The work methodology:

Dataset Acquisition: Selection of Diverse

Datasets: Curate a diverse set of web page datasets that encompasses various domains, genres, and content types. This diversity ensures the robustness and adaptability of the model across different contexts.

Pre-processing and Tokenization:

Cleaning and Standardization: Perform data cleaning to remove noise and irrelevant information. Standardize the format of web pages to ensure consistency across the dataset.

Tokenization: Utilize tokenization techniques to break down textual content into meaningful units, preparing the data for input into the transformer-based model.

Selection of Transformer-Based Model:

Choice of Pre-trained Model: Select a transformer-based model suitable for web page re-ranking, such as BERT, GPT, or a variant that has demonstrated effectiveness in capturing contextualized information.

Fine-tuning: Adaptation to Web Page Re-Ranking Task: Fine-tune the selected pre-trained model on the curated web page datasets. This process involves adjusting model parameters to align with the specific nuances and characteristics of web content and user search queries.

Feature Extraction: Contextual Feature Extraction: Leverage the trained transformer model to extract contextual features from the web page content. The model's attention mechanisms capture relationships between words, enabling a nuanced understanding of the content.

Re-ranking Mechanism: Development of Re-ranking Algorithm: Implement a re-ranking mechanism that utilizes the extracted contextual features to dynamically adjust the ranking of web pages based on user queries. This algorithm aims to enhance the relevance and accuracy of search results.

Model Evaluation:

Performance Metrics: Employ standard performance metrics such as precision, recall, and F1 score to evaluate the effectiveness of the proposed re-ranking model.

Comparison with Baselines: Compare the performance of the transformer-based re-ranking model against traditional methods to highlight improvements in accuracy and relevance.

Interpretability Analysis:

Visualization of Attention Maps: Explore the interpretability of the model by visualizing attention maps. This analysis provides insights into the specific regions of the web page content that influence re-ranking decisions.

Robustness Testing:

Scenario -based Testing : Assess the robustness of the model through scenario -based testing, simulating various user query scenarios and evaluating the model's performance under different conditions.

Ethical Considerations:

Bias Assessment: Conduct a thorough examination of potential biases in the model's predictions, addressing any issues related to fairness and transparency.

User Privacy: Implement measures to ensure user privacy, especially when dealing with sensitive information in web page content. By meticulously following these steps, The work methodology aims to provide a comprehensive framework for integrating transformer-based deep learning algorithms into the web page re-ranking process, ultimately transforming the landscape of online information retrieval.

The methodology for "Transforming Search: Enhancing Web Page Re-Ranking with Transformer-Based Deep Learning Algorithms" involves a structured and iterative process. A visual representation of the methodology is presented in the accompanying diagram.

Dataset Acquisition: Diverse Web Page Datasets: Collect diverse web page datasets encompassing various domains, genres, and content types. Pre-processing: Clean and standardize the datasets to remove noise and ensure uniformity.

Pre-processing and Tokenization:

Data Cleaning: Remove irrelevant information and perform standardization. **Tokenization:** Break down textual content into meaningful units using tokenization techniques. **Transformer-Based Model Selection:** Choose Pre-trained Model: Select a transformer-based model suitable for web page re-ranking (e.g., BERT, GPT) based on its pre-trained capabilities. **Fine-tuning:** Model Adaptation: Fine-tune the chosen model on the web page datasets, adjusting parameters for the specific characteristics of web content and user queries. **Feature Extraction:** Contextual Feature Extraction: Utilize the trained model to extract contextual features from web page content. **Re-ranking Mechanism:** Algorithm Development: Implement a re-ranking algorithm leveraging the contextual features to dynamically adjust page rankings based on user queries. **Model Evaluation:** Performance Metrics: Evaluate the model's performance using precision, recall, F1 score, etc. **Baseline Comparison:** Compare performance against traditional methods. **Interpretability Analysis:** Attention Maps Visualization: Explore interpretability by visualizing attention maps, highlighting key regions influencing re-ranking decisions. **Robustness Testing:** Scenario-based Testing: Assess model robustness through scenario-based testing under diverse conditions. **User Privacy Measures:** Implement privacy measures for sensitive web page content. **Ethical Considerations:** Bias Assessment: Conduct a thorough bias analysis to ensure fairness. **User Privacy:** Implement privacy measures for sensitive web page content.

Iterative Refinement: Feedback Loop: Incorporate insights from evaluations and user feedback into iterative model refinement.

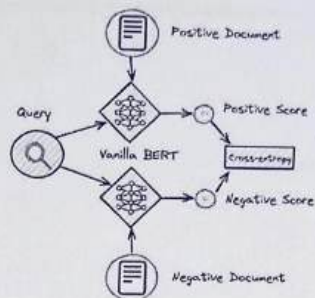


Fig: 1.2 BERT Training Model

4. EXPERIMENTS AND RESULTS

The performance of the proposed transformer-based deep learning algorithm is evaluated in this section based on the user test queries which extracted the related web pages. The performance of the transformer-based deep learning algorithm is compared with the existing ranking method named Page Rank [Page, L., et.al., 1999]. The performance metrics namely accuracy, precision, recall, f-measure, iterations and time are used for comparison. The comparisons are made in the topic, Academic dom The sample user search query pag shown in table 1.3.

		Page Rank							
		From Page _i							
To Page _j	Webpage _i	UR1	UR2	UR3	UR4	UR5	UR6	UR7	UR8
	UR1	1	1	1	1	0	0	1	0
	UR2	0	1	1	1	0	1	0	0
	UR3	0	0	1	1	1	0	0	1
	UR4	0	0	0	1	0	0	1	0
	UR5	0	0	0	0	1	0	0	0
	UR6	0	1	0	0	0	0	1	0
	UR7	0	0	1	0	1	0	0	0
	UR8	1	0	0	0	0	0	1	0
	UR9	0	0	0	0	0	1	0	0
Sum Page _i		2	3	4	4	1	4	2	1

Table 1.1 Page Rank for Academic Domain Related SRs

The table 1.1 gives the page rank of the links from page y to Page i (i.e.) UR1, UR2, UR3, UR4....UR10. The Page

[illegible]

Table 1.3: The Query and Recommendations

	Domain Keyw ords/ Query	Recommen dations
C1	Datamining	Datamining Coursera
		What is Datamining ?
		Application s of Datamining
		datamining Examples
		datamining tutorial
C2	Database Management System	What is DBMS
		DBMS definition
		DBMS examples
		types of database managemen
C3	Cloud Computing	IBM cloud computing
		Cloud computing definition
		Images for Cloud computing
		Examples for cloud

C4	Biometrics	computing
		cloud
		computing services
		advantagesof cloud computing
		Biometrics Meaning
		types of biometrics
		biometrics fingerprint
		biometrics security
		biometrics examples
		biometric authentication
C5	Compiler optimization	Compiler Optimizations
		Optimizations option
		Advanced Compiler Optimization
		code optimization on compiler design
		principal source code for compiler design
		Logical programming language
		Logical Programming in artificialint elligence
	examples	

transformation search algorithm works both on the most time spent on the URLs as well as the number of clicks done by the user on that URL. As on the table it is interesting to find the number 1 Rank is given to the URL₃ by the Page Rank algorithm, to URL₆ by transformation search algorithm Rank, to URL₇ the Query Q₁. It is worked on manually also by checking whether the web contents are relevant to the query. The URL are checked manually also and is verified that the content in the URL ranked by the transformation search algorithm had ranked the most relevant page than the improved existing PRA.

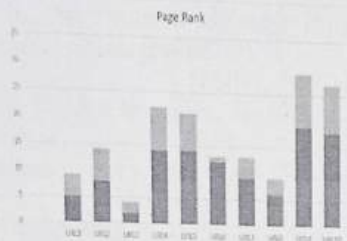


Figure 1.3 Comparisons of Page-Rank, and Transforming Search Algorithm (TSA) against Time Spenton the URL.

The table 1.3 gives recommendations for the search query thus personalising the proposed system. It can be found that in academic oriented keyword classical mechanics we get the recommendation as Classical Mechanics – Physics, Classical Mechanics Vs Quantum Mechanics, Classical Mechanics books, classical mechanics pdf classical mechanics taylor etc... These recommendations will be updated as per the query given by the user changes.

CONCLUSION

This research work provides a detailed explanation about the optimized PageRank algorithm. The transformation Search Algorithm are incorporated with the famous

PageRank Algorithm to form the proposed approaches. The evaluation results prove that the proposed Transformation Search Algorithm PageRank achieves higher performance than the Bee PageRank and the existingPageRank and it is better suited for the personalized web page recommendation systems. Page Rank gives the better result but when optimised with Bee Colony and Cuckoo Search optimization , it gives the bestresult.

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Remember to tailor your literature review to the specific focus and requirements of your research. Additionally, explore recent publications and conference proceedings for the latest advancements in the field of deep learning for page ranking

EMERGING TECHNOLOGIES FOR TRANSFORMING TEACHING AND LEARNING

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Abstract

The landscape of education is undergoing a profound transformation due to the rapid advancement of Information and Communication Technologies (ICT). These emerging technologies have the potential to revolutionize teaching and learning methodologies, fostering more personalized, engaging, and effective educational experiences. This paper explores some of the most promising ICT technologies and their implications for reshaping education. From Artificial Intelligence (AI) and Virtual Reality (VR) to Gamification and Learning Analytics, each technology's unique contributions to the educational sphere are examined.

Artificial Intelligence (AI) is revolutionizing the way students learn by providing personalized learning pathways. AI-powered educational tools can analyze individual learning patterns, identify strengths and weaknesses, and offer tailor-made content and assessments. Virtual Reality (VR) and Augmented Reality (AR) create immersive and interactive learning environments, enabling students to explore virtual worlds and conduct simulated experiments. Gamification, through its use of game elements, motivates and engages learners, making the learning process enjoyable and rewarding.

Internet of Things (IoT) devices in smart classrooms streamline administrative tasks and enable data-driven decision-making for educators. Blockchain technology ensures data security and transparency, particularly in credentialing and certification processes. Mobile Learning (m-Learning) enables flexible access to educational content anytime and anywhere, empowering learners with continuous access to knowledge.

Collaborative tools facilitate group projects and peer-to-peer learning, promoting critical thinking and teamwork skills. Learning Analytics, with its data-driven insights, helps educators identify areas of improvement and provide timely support to struggling students. Cloud Computing enhances accessibility to educational resources and facilitates seamless collaboration.

While these emerging technologies hold great potential for transforming education, their successful integration requires addressing challenges such as digital equity, data privacy, and teacher professional development. Striking a balance between technological innovation and preserving the human connection in education is vital. By harnessing the power of ICT responsibly, educators and learners can collaboratively create dynamic and inclusive learning environments, equipping students with the skills they need to thrive in the digital age.

Keywords: Artificial Intelligence, Virtual Reality, Information and Communication Technologies (ICT), Augmented Reality, Internet of Things (IoT)

Introduction

In recent years, the world has witnessed rapid advancements in Information and Communication Technologies (ICT). These innovations have profoundly impacted various sectors, and education is no exception. As traditional teaching methods are gradually being supplemented and transformed, educators and learners are exploring the potential of

emerging ICT technologies to enhance the teaching and learning experience. This paper explores some of the most promising ICT technologies that are reshaping the education landscape and their potential implications for future educational practices.

1. Artificial Intelligence (AI) in Education

AI is revolutionizing the education sector by offering personalized learning experiences to students. With the ability to analyze vast amounts of data, AI-powered educational tools can identify individual strengths and weaknesses, adapt content to meet specific learning needs, and provide real-time feedback. AI-driven virtual tutors and chatbots are becoming more prevalent, helping students with queries and guiding them through their learning journey. Moreover, AI-based assessment systems can accurately evaluate student performance, enabling educators to tailor their instruction accordingly.

2. Virtual and Augmented Reality (VR/AR)

Virtual and augmented reality technologies have opened up new possibilities for experiential learning. By immersing students in interactive and simulated environments, VR/AR can facilitate a deeper understanding of complex subjects. From exploring historical events to conducting virtual science experiments, these technologies bring abstract concepts to life and make learning more engaging and memorable. Additionally, VR/AR can support remote learning, allowing students to collaborate in virtual classrooms and access resources from anywhere in the world.

3. Gamification

Gamification is leveraging game elements, such as rewards, points, and challenges, in educational contexts. By integrating playful elements into the learning process, gamification can enhance student motivation, engagement, and retention. Students are encouraged to progress through levels, earning rewards and recognition along the way. Gamified learning platforms transform traditional content into interactive and enjoyable experiences, making education more enjoyable and fostering a sense of accomplishment among students.

4. Internet of Things (IoT)

The Internet of Things offers the potential to create smart, connected learning environments. IoT-enabled devices can automate routine tasks, such as attendance tracking and classroom management, freeing up educators to focus on teaching. Smart classrooms equipped with IoT devices can also collect data on student behavior, interactions, and preferences, providing insights to optimize the learning process. Moreover, wearable IoT devices can monitor students' physiological responses to learning, helping educators adjust their instructional strategies accordingly.

5. Blockchain in Education

Blockchain technology ensures data security, integrity, and transparency. In the context of education, blockchain can revolutionize credentialing and certification processes.

Academic records, certificates, and diplomas can be securely stored on a decentralized ledger, eliminating the risk of fraudulent credentials. This not only simplifies the verification process for employers and academic institutions but also empowers students to have greater control over their educational achievements.

6. Mobile Learning (m-Learning)

With the widespread adoption of smartphones and tablets, mobile learning has gained significant traction. Mobile apps and platforms enable learners to access educational content on-the-go, fostering a culture of continuous learning. Whether it's watching educational videos during a commute or completing quizzes during breaks, m-Learning provides flexibility and accessibility, making education more inclusive and learner-centric.

7. Collaborative Tools

Collaborative tools and platforms facilitate group projects and peer-to-peer learning, promoting active engagement and social interaction. Online collaboration spaces enable students to work together on assignments, share ideas, and provide feedback to one another, regardless of their physical location. This fosters teamwork, communication, and critical thinking skills, all of which are essential for success in the 21st-century workforce.

8. Learning Analytics

Learning analytics involves the collection and analysis of data on students' learning behaviors and performance. By leveraging this data, educators can gain valuable insights into student progress, identify areas of improvement, and adapt instructional strategies accordingly. Learning analytics can also help detect early signs of academic struggle, enabling timely intervention to support struggling students and improve overall learning outcomes.

9. Cloud Computing

Cloud-based services have transformed the way educational resources are stored, accessed, and shared. Cloud computing offers scalability, cost-effectiveness, and ease of collaboration. Educational materials can be uploaded to the cloud, making them accessible to students and educators from any device with an internet connection. Cloud-based learning management systems (LMS) facilitate seamless course administration, communication, and grading.

10. Natural Language Processing (NLP)

NLP technology enables computers to understand and process human language. In the realm of education, NLP can be used for language learning, automated essay grading, and language translation. Language learning apps with NLP capabilities can provide personalized language lessons; while automated essay grading systems can save educators valuable time and ensure fair and consistent assessment.

Conclusion

Emerging ICT technologies have the potential to revolutionize education by personalizing learning experiences, fostering engagement, and improving learning outcomes. While these technologies offer exciting opportunities, their successful integration into educational practices depends on various factors, including infrastructure, teacher training, data privacy, and ethical considerations. As we continue to explore and adopt these technologies, it is essential to strike a balance between innovation and maintaining the human connection that is at the heart of education. By harnessing the power of ICT in a thoughtful and responsible manner, we can create a more inclusive, dynamic, and effective learning ecosystem for generations to come.

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Security Requirements And Challenges Of 6G Technologies And Applications

R.SRIVIDHYA

Guide By

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Abstract:

6G is anticipated to be enforced around the time 2030. It'll offer a significant experience for everyone by enabling hyperactive- connectivity between people and everything. In addition, it's anticipated to extend mobile communication possibilities where earlier generations couldn't have developed. These include forthcoming and current technologies similar aspost-quantum cryptography, artificial intelligence(AI), machine literacy(ML), enhanced edge computing, molecular communication, THz, visible light communication(VLC), and distributed tally(DL) technologies similar as blockchain. This paper provides perceptivity into the critical problems and difficulties related to the security, sequestration, and trust issues of 6G networks. also, the standard technologies and security challenges per each technology are clarified. This paper introduces the 6G security armature and advancements over the 5G armature. We also introduce the security issues and challenges of the 6G physical layer.

Keywords: 6G security, privacy, new challenges, security architecture, security threats, physical layer security, AI/ML security

INTRODUCTION:

Sixth generation(6G) wireless network technology is predicted to offer advanced content, lower energy consumption, comprehensive spectral, and cost-effectiveness with advanced security(1). 6G networks will meet these conditions by planting new technologies analogous as multiple accesses, waveform design, channel rendering schemes, network slicing, numerous antenna technologies, and pall edge computing. 6G affects four significant future changes(2). First, it offers an integrated air –

ground – space – ocean communication network by planting terrestrial and non-terrestrial networks(3). Second, new radio bands will meliorate network business capacity and data speed, including millimeter- swell(mm- swell),sub-6 GHz, terahertz(THz), and optical dispatches. Third, 6G will enable a new generation of intelligent operations and services using artificial intelligence(AI) and big data technologies in response to the massive datasets generated by eclectic networks with different communication scripts, wide bandwidths, a advanced number of antennas, and new 6G operations ' conditions(4). Fourth, network security and insulation must be strengthened and enhanced for 6G technologies and operations(5). This paper presents the 6G security trends and challenges of other forthcoming technologies and operations. Data processing, trouble discovery, business analysis, and data encryption are considered the most critical issues in 6G networks. The security issues due to massive business processing can be answered using decentralized security systems, in which the business can be handled roundly and locally. 6G use cases put stricter security conditions than 5G use cases,(6). The Internet of Everything(IoE), with a wide variety of capabilities and services, will make it more challenging to operate and install distributed AI, insulation, and security results. The high mobility conditions of the new connected bias make them change their connected networks and bear services from other networks, performing in security complications and insulation problems. For the Enhanced Ultra- Reliable and Low quiescence Communication(ERLLC) services, the end to end quiescence in 6G should be dropped to a numerous μ s. also, 6G will need a ten- time increase in network energy effectiveness over 5G and a hundred- time increase over 4G(7). It's predicted to allow truly low- power transmissions for limited resource bias. Advanced and active operation technologies for high mobility will enable rapid-fire- fire movement at 1000 km per hour. To guarantee the quality of the

Network and Data Communications

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First Edition

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A STUDY OF SOLVING DECISION MAKING PROBLEM USING SOFT SET THEORY

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ABSTRACT

In this paper, the authors delve into the application of soft set theory as a robust framework for addressing uncertainty in the realm of Investment Decision Making. Soft set theory is a mathematical paradigm that adeptly handles imprecise and vague information, offering a valuable tool for decision-makers navigating complex financial landscapes. The paper likely explores how this theoretical approach is practically implemented, leveraging various mathematical tools to enhance the decision-making process. This application of soft set theory may involve optimizing investment strategies through the use of mathematical techniques such as optimization algorithms, probability modeling, and statistical analysis. By incorporating these tools, the paper aims to provide a more nuanced understanding of the inherent uncertainties in investment decisions and proposes a method for making informed choices amidst such complexity. The integration of soft set theory and mathematical tools showcases a holistic approach to Investment Decision Making, acknowledging and addressing the multifaceted nature of financial decision environments. This research contributes to the broader field of financial modeling by demonstrating the adaptability and efficacy of soft set theory in real-world investment scenarios. Overall, the paper contributes to the ongoing discourse on advancing decision-making methodologies in finance through the incorporation of innovative mathematical frameworks.

1.,INTRODUCTION

The Process of selecting the best from the list of alternatives or choices available for selection is called Decision Making. The decision may be day-to-day decision or a sensitive one it will create a great impact to the organization or society. It will be difficult to make decision when we have so many choices. The decision-making method requires a systematic procedure to define parameters. Parameters are necessary to make the final decision. The predefined parameters are not enough to solve the real-life problems. For this

reason, there must be provisions to add more parameters to the existing set that may be either new or generated by processing of existing ones. Decision-Making is daily activity in today's world. Different parameters and their values will lead us in making the right decision. The process of decision making involves series of activities to get the right decision from the available listed data. The decision required for purchasing a new house in a particular area was always a difficult task for people. The theories like probability, fuzzy set, rough set have tried to solve these problems by using it expanded tools for dealing with uncertainties. But all these



SEPERATION AXIOMS ON SOFT MULTI TOPOLOGICAL SPACES

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ABSTRACT

This paper presents the concept of soft multi separation axiom namely soft multi T_0 -space and soft multi T_1 -space via open soft multi sets and investigate their accompanying characteristics.

AMS Subject Classification: 03E70, 54A05, 54B05, 54A10

Keywords: Soft multiset, soft multi topology, soft multi T_0 -space and soft multi T_1 -space.

1 Introduction

In 2013, Babitha and John [1] acquainted the concept of soft multi sets as an amalgamation of soft sets and multisets that can be used to solve real life problems in many fields. Moreover, the soft multi topology and its basic properties was given in [2]. The same authors initiated the concept connectedness in soft multi topological spaces. In 2015, Deniz Tokat et al. [4] acquainted the idea of soft multi continuous functions and also soft multi semi continuous by using soft multi function. Then El-Sheikh et al. introduced the concept of generalization of open soft multisets and mappings in soft multi topological space. The concepts compact soft multi spaces and semi compact soft multi spaces were introduced by Ismail Osmanoglu et al. in [5]. In 2020, Muhammed Riaz et al. [8] gave the properties of soft multi topological spaces and also some real life applications. Then V. Inthumathi et al. [6] acquainted the concept of

generalized semi open soft multisets and operators in soft multi topological spaces.

The separation axioms are about the use of topological means to distinguish disjoint open set and distinct point. In this paper, we acquaint and discuss the concept of separation axioms in soft multi topological space namely soft multi T_0 -space and soft multi T_1 -space over an initial universe with fixed set of parameters by using open soft multisets and soft multipoints defined in [6].

2 Preliminaries

Throughout this paper SMTS denotes the soft multi topological spaces, smset denotes soft multiset.

Definition 2.1. [3] Let M be an universal mset, L be a set of parameters and $I \subseteq L$. Then, an ordered pair (S, I) is called a smset where S is mapping given by $S: I \rightarrow P^*(M)$; $P^*(M)$ is the power set of a mset M .



PHARMACOGNOSTICAL EVALUATION AND PHYTOCHEMICAL PROFILING OF IMPORTANT PLANT SPECIES *ZIZHYPHUS OENOPLIA* L.

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ABSTRACT

The present paper deals with determine the quality parameters and also to authenticate the species free from adulteration, the present study was carried out on pharmacognostically and phytochemically on three important medicinal plants available in this area *Ziziphus oenoplia* L. belongs to family Rhamnaceae. The pharmacognostical work includes the parameters such as morphological observations including root length, shoot length, no. of lateral roots, internodes length and leaf surface area were observed and tabulated. The anatomical parameters viz., transverse section of the study plant was observed with the treatment of various chemicals and solvents. Similarly the powder studies were also carried out. Finally the qualitative phytochemical studies were carried out to know the presence some basic secondary metabolites in the extract. The extracts exhibited the presence of important phytochemicals viz., Alkaloids, Tannins, Saponins, Oils, Steroids and Terpenoids. Further the anatomical study and powder showed the characteristic colour change and physical changes determines the genuinity of the species.

Keywords: Phytochemicals, pharmacognosy, Alkaloids, *Zizhyphus oenoplia*

INTRODUCTION

Medicinal plants are used by 80% of the world population for their basic health needs. India is the birth place of indigenous medicines such as Siddha, Ayurveda and Unani system. All those systems rely on medicinal plants. The medicinal plants a very importance place in day to day life of human beings through on the world from immemorial. The plants have become knowing or unknowingly become parts of the home remedial system. Hence the relationship with the plants was extended key and medicinal aspects. Traditional system of medicines was prepared from a single combination of more than one plant. The

efficacy of the drug depends upon the on quality of plant species, parts and biological property of medicinal plants which in turn depends upon the occurring as primary and secondary metabolites (Phuspa,2009). Intern, it is necessary to have detailed knowledge on medicinal plants used for preparedly a drug in every aspect of the medicinal plants are rich source of various chemical compounds present. Medicinal plants are still major parts of traditional medicinal systems in developing countries many infection disease are known to be treated with herbal remedies throughout the history of mankind. Even today plant materials continue to play a major role in primary health care as therapeutic remedies in many developing countries (Sukanya *et al.*, 2009). Medicinal plants which from backbone of traditional medicine have in the last few decades been the subject of very intense pharmacological studies. This has been brought about by the acknowledgement of the value of medicinal plant as potential source of new compounds of therapeutic values and as source of new compounds in drug development (Buduru Gowthami *et al.*, 2012)

The branch of pharmacology that deals with drugs in the form of crude or natural state of medicinal herbs or other plants for their original features is called pharmacognosy. It is also the study of medicines derived from natural sources, mainly from plants and deals with standardization, authentication and study of natural drugs.

Most of the research in pharmacognosy has been done in identifying controversial species of plants, authentication of commonly used traditional medicinal plants through organoleptic, anatomical, morphological, phytochemical and some physicochemical analysis. Recently the importance of pharmacognosy in taxonomic identification, pharmacognostic study includes parameters which help in identifying adulteration in dry powder and extract form also. The importance of the study in plants is gained because when the plant was dried and made into powder form, it loses its morphological identity and easily prone to adulteration. The study ensures plants identity, lays down standardization parameters which will help and prevents adulterations in dry powder form also. This is again necessary because once the plant is dried and made into powder form, it loses its morphological identity and easily prone to adulteration. Pharmacognostic studies ensure plant identity, lays down standardization parameters which will help and prevents adulterations. Such studies will help in authentication of the plants and ensures reproducible quality of herbal products which will lead to safety and efficacy of natural products. The pharmacognostic standardization parameters which are generally done are described below (Sumitra, 2014). The pharmacogonostic characters will be very specific to every

species, locality and environmental condition. The organoleptic study on the plants which will gives rise to reaction of live cells on various chemical treatments. Hence the study mainly gains its importance to know complete characters of the species and details of anatomical and powder level ingredients.

To determine the quality parameters and also to authenticate the species free from adulteration, the present study was carried out on pharmacognostically and phytochemically on three important medicinal plants available in this area *Ziziphus oenoplia* L. belongs to family Rhamnaceae respectively. Indeed these three plants belongs diverse families but inhabitates the similar soil and climatic conditions. The plants were very used for the various purposes in the villages. Commonly the indigenous people use these plants or allow the plants to grow as biofencing. The plants are doesn't need regular water supply and survive any type of soil. The artificial regeneration was poorly established but naturally the plants found The study plants are widely distributed in this area. The pharmacognostical work includes the parameters such as morphological observations including root length, shoot length, no. of lateral roots, internodes length and leaf surface area were observed and tabulated. The anatomical parameters viz., transverse section of the study plant was observed with the treatment of various chemicals and solvents. Similarly the powder studies were also carried out. Finally the qualitative phytochemical studies were carried out to know the presence some basic secondary metabolites in the extract.

MATERIALS AND METHODS

Collection of plant materials:

For the present study the plant species, *Ziziphus oenoplia* belong to family *Rhamnaceae* respectively were collected from nearby areas of Pollachi and Gobichettipalayam and preserved accordingly as the study to be carried out. The plants were collected and shade dried and finely powdered for the powder studies. The fresh plant specimens were stored in a proper fixative like FAA till the sections to be made.

Classification:

Description

The plant belongs to the Rhamnaceae family (Ber family). Common name is jackal jujube. It is a very thorny straggling shrub with rusty-velvety young branches with paired thorns. Scandent shrubs, thorns many, recurved, branchlets densely silky hairy. Leaves 4-6.5 x 2-3 cm, ovate, apex acuminate, base oblique, 3

or 4 ribbed, densely fulvous hairy, sessile or shortly petioled. Flowers 3 mm across, shortly pedicelled, 6-20 in axillary clusters; sepals triangular, hispid outside; petals clawed, concave, greenish yellow; disk flat, glabrous. Drupe 6 x 6 mm, globose, black.

Preparation of powder

The clean and healthy plants were collected. The materials were shade dried and powdered using pulverizer. The finely powdered plant materials were stored properly under proper condition.

Preparation of extract:

The two study plants material was collected separately and dried under shade. The well dried plant material was powdered using pulverizer. The finely powdered plant parts were used to take hot extract by using soxhlet apparatus.

Organoleptic studies:

Microscopic and macroscopic observations of the study plants were carried out like according to Saha *et al.*, 2011.

Microscopic analysis:

Free hand transverse sections leaf, stem, internode, root, petiole were cut and fixed in FAA and then dehydrated by employing graded series of ethyl alcohol and tertiary butyl alcohol. Kunle *et al.*, 2012.

Determination of Foaming index

Some plant materials when shaken with water cause persistent foam which may be attributed to the presence of saponins in that material. The foaming ability of an aqueous solution of plant materials and their extracts is measured in terms of foaming index WHO guidelines.

An accurate quantity of about 1g of the coarse plant material was weighed and transferred into an Erlenmeyer flask containing 100ml of boiling water. The flask was boiled at moderate heat for 30min. The solution was cooled and filtered into a 100ml volumetric flask and sufficient distilled water was added to dilute to volume. The solution was poured into ten stoppered test tubes in successive portions of 1ml, 2ml, etc. upto 10ml, and the volume of the liquid in each tube was adjusted with water upto 10ml. The tubes were then stoppered and shaken in a length wise motion for 15sec (two shakes/sec) and allowed to stand for 15min. The height of foam was measured. If the height of the foam in every tube was less

than 1cm the foaming index was less than 100. If a height of foam of 1cm was measured in any test tube, the volume of the plant material decoction in this tube (a) was used to determine the index. If the height of the foam was more than 1cm in every tube, the foaming index was over 1000. In this case, the determination was repeated using a new series dilution of the decoction in order to obtain a result. The foaming index was calculated by using the following formula $1000/A$ where A was the volume in ml of the decoction used for preparing the dilution in the tube where foaming to a height of 1cm was observed

Preliminary phytochemical analysis

The obtained extract was screened for the presence of phytochemical such as alkaloids, tannins, flavonoids, saponins, glycosides, saponins, terpenoids, phenol and oil.

a) Detection of alkaloids-Mayer's test (Sofowara *et al.*, 1993)

The mercuric chloride (1.36g) was dissolved in 60 ml of distilled water 5g of potassium iodide in 10 ml of water. The two solutions were mixed and diluted to 100 ml of dilute hydrochloric acid and 0.1 ml of Mayer's reagent was added. Formation of yellowish buff colored precipitate confirmed the presence of alkaloids.

b) Detection of Flavonoids-H₂SO₄ test (Harborne *et al.*, 1973)

0.5mg of plants was treated with few drops of H₂SO₄. Formation of orange colour indicates that the presence of flavonoids.

c) Detection of Glycosides- Kellar-killani test (Gokhale *et al.*, 2008)

0.5mg of plant extract was shaken with 1 ml of glacial acetic acid. A drop of ferric chloride and a drop of concentrated sulfuric acid were added. Green blue colour to upper layer and reddish brown colour at the junction of two layers indicates the presence of cardiac glycosides.

d) Detection of tannins-FeCl₃ test (Mace and Gorbach, 1963; Ciulci, 1994)

0.5mg of powder sample of each plant is boiled in 20 ml of distilled water in a test tube and filtered 0.1% FeCl₃ is added to the filtered samples and observed for brownish green or a blue black coloration which shows the presence of tannins.

e) Detection of saponins - Vigorous shaking test (Brain and Turner, 1975)

The extract (50 mg) is diluted with distilled water and made up 20 ml, the suspension is shaken in a graduated cylinder for 15 min. A two centimetre layer of foam indicates the presence of saponins.

f) Detection of Terpenoids - Salkowski s Test (Salkowski and Balish, 1987)

0.5mg of the extract of the leaves, flower and seeds was mixed with two ml of chloroform and H_2SO_4 (3 ml) was carefully added to form a layer. An appearance of reddish brown colour in the inner face was indicates that the presence of Terpenoids

g) Detection of phenol-Ferric chloride test (Harborne, 1973)

10 mg extract were treated with few drops of ferric chloride solution. Formation of bluish black colour indicates that the presence of phenol.

h) Detection of steroids (Ciulci, 1994)

Two ml of acetic anhydride was added to five mg of the extracts, with two ml of H_2SO_4 . The colour was changed from violet to blue or green in some samples indicates that the presence of steroids.

Table: 1 Showing the quantitative on morphological feature

S.No	Plants name	Stem Length (cm)	Leaf rachis Length (cm)	Single leaf Length (cm)	Petiole Length (cm)	Thorn Length (cm)
2	<i>Ziziphus oenoplia</i>	2	15	4.5	0.3	0.3

Table: 2. Showing the organoleptic characters of study species

S.No	Plant	Part	Colour	Odour	Taste	Texture
1	<i>Ziziphus oenoplia</i>	Stem	Brown	Characteristic	Bitter	Fine
		Leaf	Dark green	Characteristic	Bitter	Fine

Table:3 Showing the results of foaming test

S.No	Plant	Part	Foaming index (1cm)
3	<i>Ziziphus oenoplia</i>	Stem	<1
		Leaf	<1

<1 indicates the occurrence of persistent foam ability of the extract is below 1 cm

ENHANCING LEARNING AND ENGAGEMENT BY INTEGRATING ICT TOOLS IN BIOLOGICAL SCIENCE

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Abstract

The integration of Information and Communication Technology (ICT) tools in educational settings has revolutionized the way biological science is taught and learned. This article explores the various ICT tools that can be employed in biological science teaching to enhance students' learning experiences, foster critical thinking, and promote active engagement in the subject. Additionally, the article discusses the potential benefits and challenges associated with the implementation of these tools. Through an examination of relevant research studies and practical examples, this article emphasizes the importance of effectively utilizing ICT tools to nurture the next generation of biologists and scientific thinkers. This article explores the integration of Information and Communication Technology (ICT) tools in the field of Biological Science education. It highlights the benefits of incorporating ICT tools in the classroom, such as improving student engagement, enhancing data analysis skills, and fostering collaborative learning. The article also discusses some of the popular ICT tools used in biological science teaching, along with real-world examples of their successful implementation. The integration of ICT in education is seen as a promising approach to create a more dynamic and interactive learning environment for students pursuing biological science studies.

Keywords: ICT tools, Bioinformatics, Data bases, education

Introduction

As technology continues to shape our world, the field of education has embraced ICT tools to create dynamic and interactive learning environments. In the realm of biological science, incorporating these tools into teaching practices opens new avenues for educators to impart knowledge effectively and engage students in deeper explorations of living organisms and their intricate processes. The field of Biological Science is continuously evolving, with new discoveries and breakthroughs shaping our understanding of life (Johnson et al. 2019). As educators strive to provide students with the latest knowledge and skills, integrating ICT tools in the teaching process has emerged as an innovative and effective approach. ICT tools offer opportunities to engage students, facilitate interactive learning experiences, and empower them to explore complex biological concepts in practical and exciting ways.

ICT Tools in Biological Science Teaching

Virtual Laboratories and Simulations: Virtual labs and simulations offer an immersive experience for students to conduct experiments without the need for physical lab setups. This hands-on approach enables learners to explore complex biological phenomena, such as DNA replication and cellular processes, in a safe and interactive manner. Bioinformatics

Software which Introduces bioinformatics tools that allows students to analyze genetic sequences, perform phylogenetic analyses, and study protein structures (Gilani, et al, 2019). These tools provide valuable insights into molecular biology and genomics, encouraging students to think critically and develop problem-solving skills.

Interactive Multimedia Content: Interactive multimedia content, including videos, animations, and 3D models, makes abstract biological concepts more tangible and easier to comprehend. Such visual aids aid in visualizing complex processes and foster a deeper understanding of biological phenomena.

Online Collaborative Platforms: Virtual classrooms and collaboration platforms enable students to participate actively in group discussions, peer-to-peer learning, and scientific debates. This fosters a sense of community among learners and encourages knowledge-sharing beyond the boundaries of a traditional classroom.

Benefits of ICT Integration

Enhanced Learning Outcomes: By catering to different learning styles and preferences, ICT tools facilitate personalized learning experiences, leading to improved learning outcomes for diverse student populations. The Real-world Relevance using ICT tools bring real-world biological research and applications into the classroom, bridging the gap between theoretical knowledge and practical applications.

Student Engagement must be Interactive and dynamic learning environments promote student engagement, curiosity, and a deeper appreciation for the complexities of the natural world. The student assessment may improve ICT tools allow for formative and summative assessments that provide instant feedback, helping educators identify and address students' strengths and weaknesses effectively.

Benefits of ICT Tools in Biological Science Teaching

Enhanced Data Analysis enable students to analyze large datasets, such as genetic sequences and ecological data, using specialized software and online platforms. This allows students to develop critical data analysis skills, preparing them for future research and scientific careers.

Virtual Laboratories and Simulations by incorporating virtual laboratories and simulations, students can engage in hands-on experiments without the limitations of physical resources. They can manipulate variables, observe outcomes, and draw conclusions, promoting a deeper understanding of biological principles. Multimedia Educational Resources ICT tools offer access to multimedia resources, such as interactive textbooks, 3D models, and video lectures. These resources cater to diverse learning styles and foster a more immersive learning experience.

Collaboration and Global Connections: ICT tools enable students to collaborate with peers and researchers from different parts of the world. This promotes cross-cultural learning and exposes students to diverse perspectives in the biological sciences.

Important ICT Tools in Biological Science Teaching

BioInteractive (HHMI): Developed by the Howard Hughes Medical Institute, BioInteractive offers a vast collection of virtual labs, interactive activities, and multimedia resources for teaching various biological concepts, from molecular biology to ecology.

BLAST (Basic Local Alignment Search Tool): BLAST is a widely-used bioinformatics tool that allows students to compare genetic sequences and identify similarities among different organisms.

Foldit: Foldit is an online game that engages students in protein folding puzzles, contributing to real scientific research and fostering an understanding of protein structure and function.

Visible Body: Visible Body provides 3D anatomical models and animations, enabling students to explore the human body's intricate systems and structures in a dynamic and interactive manner.

Challenges and Considerations of using ICT Tools that ensuring equitable access to ICT tools and a reliable internet connection for all students remains a challenge, particularly in underserved areas (Smetana and Bell, 2012). Educators need adequate training to effectively integrate ICT tools into their teaching practices and maximize their benefits. Protecting students' personal information and ensuring data security are essential considerations when using online platforms and tools.

Conclusion

The incorporation of ICT tools in biological science teaching has the potential to revolutionize how students perceive and engage with the subject. By fostering interactive learning experiences, promoting critical thinking, and enabling access to cutting-edge research tools, educators can inspire the next generation of biologists and scientific leaders. Embracing these technologies responsibly and addressing associated challenges will pave the way for a more enriched and effective biological science education. The integration of ICT tools in biological science teaching has the potential to revolutionize the learning experience for students. Through enhanced data analysis, virtual simulations, and interactive resources, students can develop a deeper understanding of biological concepts and prepare for careers in scientific research. With ongoing advancements in technology, educators must continue to embrace and explore innovative ways to leverage ICT tools in their classrooms, ultimately fostering a new generation of skilled and passionate biological scientists.

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TANSCH



Oral - 175**Qualitative and quantitative analysis of the unexplored fern, *Thelypteris meeboldii* from Southern Western Ghats, Tamil Nadu**

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The present study was to screen the presence of phytochemicals in the petroleum ether, chloroform, ethyl acetate and methanol of fern *Thelypteris meeboldii* species by composed with qualitative and quantitative screening methods. In qualitative analysis, the presence of pharmacologically active phytochemicals such as alkaloids, flavonoids, glycosides, steroids, tannins, terpenoids, saponins, phenols, volatile oils and resins were screened. The methanol fern extract performed well to show positivity rather than other studied fern extracts. Methanol extract showed strong positivity for 6 phytochemicals out of 10 phytochemicals tested. In quantitative analysis, the important secondary metabolites such as total phenols, total tannins, total alkaloids, total flavonoids, total saponins and total terpenoids content were tested.

Keywords: phytochemicals, qualitative, quantitative, *Thelypteris meeboldii*, methanol.

TAXONOMIC SIGNIFICANCE ON MORPHOLOGICAL AND ANATOMICAL CHARACTERS OF *CARDIOSPERMUM HALICACABUM* L. AND *CARDIOSPERMUM CORINDUM* L. (SAPINDACEAE)

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ABSTRACT

The taxonomic significance on morpho/anatomical characters for the selected study species such as *Cardiospermum halicacabum* L. and *Cardiospermum corindum* L. has clearly explained and recorded with additional evidences. This study was mainly focused on their similarities and differences of morphological and anatomical characters observations between the species. The proper descriptions with prominent characters are discussed for the proper identification of closely related misidentified study species. In overall results the study species *Cardiospermum halicacabum* was morphologically distinguished from *C. corindum* by leaf, stem, internode, and fruit features. The anatomical characters of these two species were differentiated with some prominent characters. Especially for *Cardiospermum halicacabum* the presence of anamocytic type of stomata with diffused in number, stem pentagonal, having 5 short blunt ridges and the xylem vessels are diffused and small in size in root. Whereas in *C. corindum* it was observed dense anamocytic type of stomata, hexagonal stem having 6 short ridges and the xylem vessels in root are dense and large in size. These characters could be the additional taxonomic evidence than the available floras descriptions. It may help to proper identification of closely related allied plants and also it is an important tool in studying evolutionary history and ecological relationships between the species.

Keywords: morpho/anatomical, misidentified species, *Cardiospermum* sp., additional taxonomic evidence

INTRODUCTION

Plant identification refer to assigning a plant for a particular taxonomic group and ultimately to the species. Misidentification of closely related plant

species in certain groups of plants may be due in the lack of taxonomic information. This could be as a result of insufficient information on taxonomic characters and overlapping or superimposition of delimitation characters either between the genera or amongst species which is as a result of visible similarities and habits (Ibrahim *et al.*, 2015).

Comparative study of plant structure, morphology and anatomy has always been the backbone of plant systematics, which endeavors to elucidate plant diversity, phylogeny and evolution. The second half of the 20th century was a fascinating period in which systematics and structural studies benefited greatly from new techniques and methods (Endress *et al.*, 2000).

Macro/micro morphological features of leaves, stems, and roots have played important roles in plant taxonomy, especially at the generic and species levels. Studies in this field have attracted the attention of plant morphologists and systematics to resolve taxonomic conflicts in different groups of plants (Sonibare *et al.*, 2014). The foliar epidermal structure has been one of the most important taxonomic characters in biosystematics and most taxonomic studies are based on the studies of the leaf epidermis. In ultra-structures such as epidermal cells, stomata, and trichomes, their sizes, lengths, distribution, orientation, and frequency are the most significant characters in taxonomy as well as phylogeny (Albert and Sharma, 2013).

Anatomical data have been widely used as a taxonomic tool only after the nineteenth century. Anatomical studies have great implication for clarification of taxonomic, ecological and evolutionary relationships in higher ranks of classification. However, in some plant families, several anatomical traits are great value for application at both generic and sub- generic levels (Jones and Luchsinger, 1987). Auguste Mathieu is one of the pioneer taxonomists, who used features of wood anatomy in the taxonomic description of forest plants species in *Florae Forestiere*. Later, another taxonomist Solereder discussed the systematic value of anatomical structures in dicotyledons in his classic book ‘Systematics Anatomic der Dicotyledonen’.

Anatomical evidence is systematically useful in a number of ways that is (i) this taxonomic method can be well used in the identification of fragmented materials of biological specimens. (ii) The study of anatomical demonstrations is often useful when there is no use of morphologies in the early identification of herbarium materials. (iii) Anatomical data have proven to be very useful in detecting evolutionary trends and interrelationships of taxa at and above the species level and at higher taxonomic categories. They are very useful to determining relationships between different genera, species, families, orders and

other taxonomic categories. Also the anatomical features have played an important role in elucidation of phylogenetic relationships.

The species of *Cardiospermum* is large genus of tropical American herbaceous vines (Sapindaceae) having alternate biternate leaves, coarsely serrate leaflets, small white flowers and an inflated capsular fruit. In this genus approximately 14 species in the soapberry family. Mostly tropical or subtropical, with a few genera extending to sub-temperate zones; 141 genera and about 1,900 species. Most genera of Sapindaceae are predominantly medium-sized to large emergent trees or erect shrubs, less often They are tendrilled lianas or understory palm-like tree lets, exceptionally sub-shrubs or scandent . Vast majority of Sapindaceae genera have trilocular fruits, although many also have bilocular, unilocular, or sometimes quadrilocular fruits. (Sapindaceae Juss. (1789), *Aceraceae* Juss. (1789), Hippocastanaceae. Rich. (1823). Pollen morphology of Sapindaceae holds promise for the recognition of taxa of this cosmopolitan family, which is well distributed in tropical regions and possesses great morphological diversity (Talita Kely Bellonzi, 2020).

Hence the present study was carried out on *Cardiospermum halicacabum* L. and *Cardiospermum corindum* L. were selected to provide the proper taxonomical evidence through morpho/anatomical observation. These additional key characters may fulfil the lacuna towards existing taxonomic description.

MATERIALS AND METHODS

Selection and collection of study plants

The selection of study plants based on lesser taxonomic evidence and commonly misidentifying closely related allied species such as *C. halicacabum* L. and *C. corindum* L. The materials of the plants were collected from Pollachi and surrounding areas, Coimbatore, Tamil Nadu. The Altitude lies under on 293 metres MSL, 10.660207 for Latitude and 76.996727 for Longitude.

Identification of plants

The study plants were identified with using Flora of Presidency of Madras (Gamble, 1935) and further the species were authenticated by Dr. P. Sathishkumar, Assistant Professor, PG department of Botany, NGM College, Pollachi, Coimbatore.

Morphological studies

The following vegetative, reproductive morphological characters was observed. Vegetative (micro/morpho) morphological characters like leaf, stem and root's shape, size, length, width and modifications of stem, leaf hairs, trichomes and glands etc. are observed and stomatal types were also identified in leaf.

The reproductive (micro/morpho) morphological characters like inflorescence, calyx, corolla, androecium and gynoecium with its size, shape and types etc. were observed. The fruit and seed ornamentation with their characters are also studied.

Anatomical studies

Preparation of plant materials:

The collected plant materials were washed with ethanol for removal of dust, dirt and biotic and abiotic substances from external factors.

Preparation of FAA and fixing process

The fixative was prepared by following ratio ethyl alcohol (95 %) 50 ml, Glacial acetic acid 2.5 ml, Formaldehyde 5.5 ml and distilled water 42 ml (Toji Thomas, 2004).

The healthy plant materials was collected separately like stem, leaf and root and stored immediately in FAA solution. After 24 hours, the fixed materials are stored in 50 % ethanol for further studies.

Sectioning process

Free hand sectioning of stem, petiole, leaf and root for selected study plant using razor blade the most transparent and thinnest cross sections was collected carefully and dehydrated with ethanol series (25 %, 50 %, 75 %, 95 % and absolute alcohol).

Staining process

The anatomical sections were stained with double staining method (Toji Thomas, 2004). The selected sectioning species were stained with Safranin for 3 min and washed with 75 % of ethanol for 1 min and stained with methyl blue for 1 min and washed with 90 % of ethanol.

Slide preparation

The sectioned thin slices were mounted in clean dry slides with 50 % glycerine and observed under compound microscope.

Epidermal and stomatal study

The freshly collected leaves were taken and peeled both abaxial and adaxial sides and it was stained with Safranin and mounted on slide for stomatal study. The leaf surface was observed their epidermal and stomatal characters under compound microscope.

RESULT AND DISCUSSION

The taxonomic significance on morpho/anatomical features for the selected study plant species such as *C. halicacabum* L. and *C. corindum* L. has clearly explained and recorded with additional evidences. This study was mainly focused on the similarities and differences of morphological characters

(vegetative and floral) and the anatomical features (leaf, petiole, stem and root) between the species (Figure. 1-10). The proper descriptions with prominent characters are discussed below for the proper identification of closely related misidentified study species.

Morphological studies

C. halicacabum L. - Annual, creaper, stem light green, frequently 5 angled, glabrous, fibrous; Internodes 4-7 cm. long; leaves opposite, biternate, triangular, compound, glabrous, acute tip, apically trifid, unevenly lobed leaf, veniation arise from mid vein and ends in the leaf margin. Mid vein prominent in adaxial, pulvinous leaf base. lamina bright green with a paler under surface, only the main veins raised, apex acuminate, margin incised-serrate, base attenuate; stipules 2 minute caducous scales. Leaf tip Sharp without mucornation; Inflorescence umbrellate cyme, 3 flowers 1 mature and 2 young buds. Inflorescence a reduced complex axillary corymbose thyrs, abortively 3-flowered; peduncle 4-9 cm. long, very sparsely puberulous, multi-bracteate, bract modified tendril on peduncle, flower zygomorphic, complete, white flowers, calyx 4 lobed, (2+2 unevenly sepal) pale green .sepals yellow-green, unequal, the outer $\pm$ round, 1 mm. diameter, the inner larger and ovate, 2-3 mm. long, 1-2 mm. wide; corolla 2 rows (4+4) (2 inner are yellow in colour. Petals white, cream, greenish or yellow, elliptic to obovate, 2-3 mm. long; appendages yellow at tip, hairy; disk of 2 curved elements 1 mm. long; stamens dorsiventral, ditheous, didenmous stamens 8 (4 long 4 short) filament hairs. Stamens free; filaments compressed, 2 mm long, hairy; anthers 0.5 mm long; pistil trifid, white, long triangular ovary, green in colour, trichomes present. pistillode present in male flower. Ovary obovoid, 2-3 mm long, hirsute; style short, pubescent; stigma 3-fid; staminodes 8 in the female flower; Fruit capsule, persistent calyx and stigma on fruit, hairy margin, dehiscing into 3 segments, separated by white papery septa axial placentation; Seeds globose, black, each carpels single seed totally bears 3 seeds, white heart shaped (hilum large) surface on their seed; Pollen triangular, triporate type (Figure.1, 3-9).

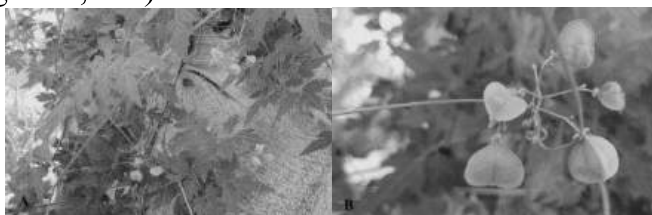


Figure 1. A. Habit of *Cardiospermum halicacabum* L. B. Twig with fruits

C. corindum L. - Annual, creaper, stem light green, slightly woody climber, densely puberulous; internodes 8 cm. long; bract modified into tendril,

apically trifid, opposite to leaves; leaves biternate, triangular leaf, glabrous, main leaflet stalk short, lower leaflet sessile, mostly densely velvety pubescent. Leaves pinnate to biternate; petiole 0.5–3(4.5) cm. long; rhachis 1–3 cm. long. Pulvinous leaf base. Leaf tip Sharp with mucornation. Mid vein prominent in adaxial, wide, acute to acuminate and apiculate at the apex, attenuate-decurrent to truncate or cordate at the base, crenate to serrate or deeply lobed. Lamina bright green with a paler under surface, only the main veins raised, apex acuminate, margin incised-serrate, base attenuate; stipules 2 minute caducous scales; Inflorescences corymbose to paniculate, axillary many-branched, numerous-flowered corymbose thyrses; peduncle 6 cm. long, pubescent, multibracteate; flower zygomorphic, complete, white flowers 4–6 mm. long, sepals unequal; outer broadly elliptic to $\pm$ round, 1.5–2 mm. long, 1.5 mm. wide, inner elliptic, 3–5.5 mm. long, 2–3 mm. wide. sepals with lateral ones c. 1 mm. long, anterior and posterior ones c. 3 mm. long, ovate, petals white or cream, elliptic, 4–6 mm. long, 2–3.5 mm. wide; petals 4–5 mm. long, 2 anterior ones ovate with small petaloid appendages, 2 posterior ones ovate bearing recurved appendages with clavate apices covered with patent hairs which cause them to cohere, stamens 8, with filaments 3–4 mm. long, pilose. Stamens with the filaments of the inner ones slightly shorter; filaments free; ovary 2–3 mm. long; style 0.5–1 mm. long; stigmas $\pm$ 0.5 mm. long. Ovary hirsute, trifid, white, long triangular ovary, green in colour, trichomes present. pistillode present in male flower. Fruit yellow-green (balloon like) turning greenish brown to reddish or dark brown, obtetrahedral, 1–3.5 cm. long, 1.8–4 cm. wide, dehiscent into 3 segments, at first densely puberulous or pubescent. Seeds black, globose, 5 mm. diameter, with a reniform or crescentic hilar area, 3–4 mm. wide. Seed 5 mm. in diam., reniform; Pollen spherical, triporate (Fig 2, 4-9).

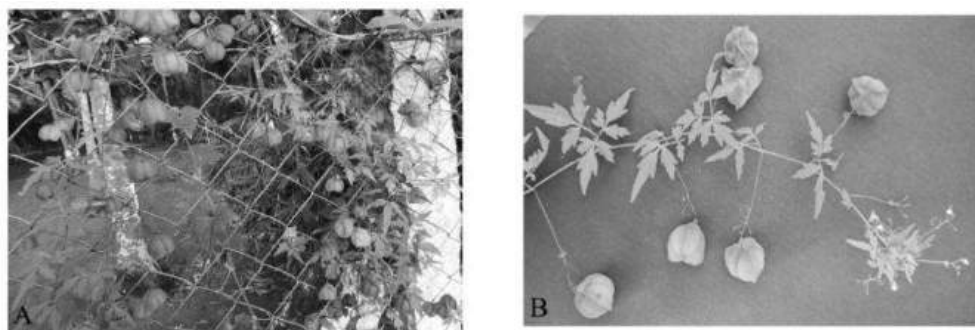


Figure 2. A. Habit of *Cardiospermum corindum* L., B. Twig with fruits

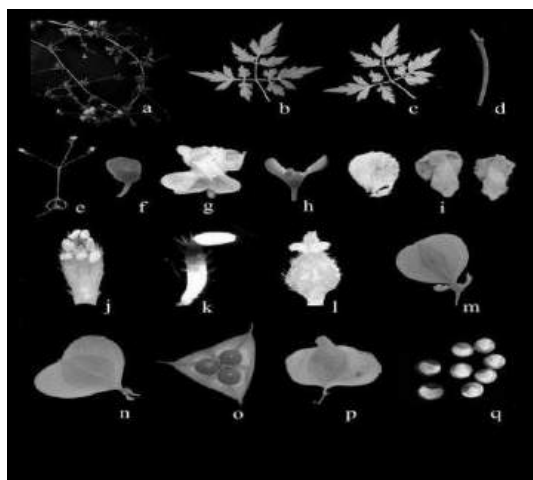


Figure 3. Morphological structures of *Cardiospermum halicacabum* L. – a) Habit, b) Adaxial leaf, c) Abaxial leaf, d) Stem, e) Inflorescence, f) Flower Bud, g) Flower, h) Calyx, i) Corolla, j) Androecium, k) Stamen, l) Gynoecium, m) Young fruit, n) Mature fruit, o) C.S of ovary, p) Fully matured fruit, q) Seeds.

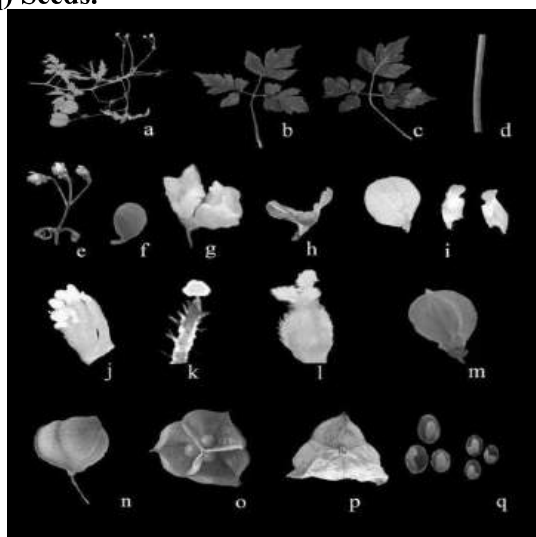


Figure 4. Morphological structures *Cardiospermum corindum* L. – a) Habit, b) Adaxial leaf, c) Abaxial leaf, d) Stem, e) Inflorescence, f) Flower Bud, g) Flower, h) Calyx, i) Corolla, j) Androecium, k) Stamen, l) Gynoecium, m) Young fruit, n) Mature fruit, o) C.S of ovary, p) Fully matured fruit, q) Seeds.

Anatomical studies

Cardiospermum halicacabum L.

Leaves: The adaxial part of midrib is thick and pyramid like and the abaxial part is semicircular with undulate outline. The midrib possesses thick, distinct epidermal layers of fairly large squarish, thick walled cells. The outer epidermis is single layer. The upper epidermis bears the unicellular trichomes. It

is cluster of angular collenchyma. The lower epidermis bears the 2-3 layer of angular parenchyma. The vascular bundles is very prominently found in central axis. The vascular bundles is collateral close type. In which wide circular thin walled xylem elements and a thick band of phloem elements (Figure 5).

Stomata: The anomocytic type of stomata, diffused in number. No specific subsidiary cells are seen. The guard cells are elliptical in shape (Figure 10).

Stem: The stem is pentagonal, having 5 short blunt ridges. The epidermal layer is small spindle shaped cells with cuticle. The ridges with large parenchyma tissues. Sclerenchyma is running around the stem. The vascular cylinder is angular in outline. The phloem surrounds the xylem. The xylem consists of wide and narrow vessels with xylem fibres. The pith is present at the centre, which consist of parenchyma cells (Figure 7).

Root: T.S. of the root shows circular margin with minute trichomes. The outermost layer is epidermis followed by cortex. Secondary cortex is made up of cluster of parenchyma cells. The vascular bundle is found below the cortex. The vascular bundle consists of xylem and phloem. The phloem surrounds the xylem. It is endarch type, where protoxylem faces the centre and metaxylem faces the periphery. The medullary rays are present between xylem and phloem. The xylem vessels are diffused and small in size (Figure 8).

Petiole: C.S. of the petiole is rhomboidal shaped, recurved downwards in abaxial side with presence of protruding structure on both sides. The abaxial side is U shaped. The outermost layer is epidermis, which consist of unicellular trichomes. The cortex is present below the epidermis, which is followed by sclerenchymatous. The vascular bundle is 6 in number collateral closed. The xylem is exarch in nature. The pith is at centre with cluster of cells (Figure 6).

***C. corindum* L.**

Leaves: The midrib's adaxial part pyramid like and the abaxial part is semicircular outline. The midrib possesses thick distinct epidermal layers of fairly large squarish thick walled cells. The epidermis is single layer. The upper epidermis bears unicellular trichomes. It is 4-5 layer angular collenchyma. The lower epidermis bears the 3 layer of angular parenchyma. The vascular bundles is very prominent found in central axis. The vascular bundles is collateral close type. In which wide circular thin walled xylem elements and thick band of phloem elements (Figure 5).

Stomata: The anomocytic type of stomata, dense in number. The guard cells are elliptical in shape. No specific subsidiary cells are seen (Figure 10).

Stem: The stem is hexagonal, having 6 short blunt ridges. The epidermal layer is spindle shaped cells with cuticle. The epidermis is followed by

sclerenchyma layer of cells. The vascular bundle phloem surrounds the xylem. Collenchyma cells are present in the ridge of epidermis. The pith is present at the centre, which is surrounded by vascular bundle and xylem vessels (Figure 7).

Root: T.S. of the root shows circular margin with minute trichomes. The outer most layers is epidermis followed by dense layer of cortex. The cortex which consist of xylem and phloem. Xylem is endarch, where protoxylem faces towards the centre and metaxylem faces towards the periphery. The xylem surrounds the phloem. The medullary rays are present between xylem and phloem. The xylem vessels are dense and large in size (Figure 8).

Petiole: C.S. of the petiole is rhomboidal shaped. The abaxial side is U shaped. The outer layer is epidermis which consists of minute trichomes. The vascular bundles are 6 in number, which is surrounded by pith. The vascular bundle consists of xylem and phloem. The xylem is exarch in condition. The pith is at center with cluster of cells (Figure 6).

According to the morpho/anatomical observation of both study species was found with most similar characters as consider being a closely related species. It is clearly indicates the evolutionary relationship between the species. In overall results the study species *Cardiospermum halicacabum* was morphologically differentiated with *C. corindum* by leaf, stem, internode and fruit characters. It is observed that stalked main leaflets, five angled stem, 4-7 cm internodal length, sharp leaf tip without mucronation, and small triangular ends on fruit in *C. halicacabum*; and sessile main leaflets, six angled stem, 8 cm long internode, sharp leaf tip with mucronation, large balloon shaped fruit in *C. corindum*. Also *Cardiospermum halicacabum* has non-inflated capsules that differ from the inflated capsules of *C. corindum*. This study was agreed with Stella and Maria, 2006, they found *Cardiospermum procumbens* and *C. pterocarpum* are closely related; they are basically distinguished by the leaf type, simple in the first species and compound in the second one; in addition to the characteristic domatium of *C. procumbens*. These species share the same habit, foliar structure and epidermal characters.

In anatomical features of these two species were differentiated with some prominent characters. Especially for *Cardiospermum halicacabum* the presence of anamocytic type of stomata with diffused in number, stem pentagonal, having 5 short blunt ridges and the xylem vessels are diffused and small in size in root. Whereas in *C. corindum* it was observed dense anamocytic type of stomata, hexagonal stem having 6 short ridges and the xylem vessels in root are dense and large in size. Based on this study the stomatal number variation is one of the environment dependant (Engineer *et al.*, 2014). Previous studies have shown that

stomatal density is negatively correlated to stomatal size or length (Franks & Beerling, 2006) and that stomatal characteristics are susceptible to environmental changes, such as light intensity, temperature, and water status. These evidence are identified additional characters for differentiate the study species properly.

CONCLUSIONS

The morpho/anatomical studies provide more additional characters for proper identification of plant species. The morphological characters of leaf size, shape and pattern, hairiness, petiole nature, stem features, inflorescence, fruit and seeds; the anatomical characters like stomatal characters, epidermal layers, mesophyll cells, vascular bundles arrangement, etc. are mostly used to differentiate for the selected study species. This could be the additional taxonomic evidence than the available floras descriptions. It may help to proper identification of closely related allied plants and also it is an important tool in studying evolutionary history and ecological relationships between the species.

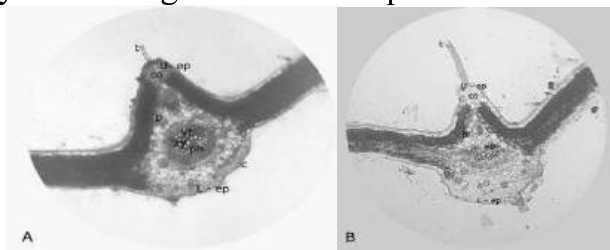


Figure 5. Cross section of the leaves. A. *Cardiospermum halicacabum* L. B. *Cardiospermum corindum* L. (U-ep: Upper epidermis, L-ep: Lower epidermis, c: Cuticle, co: collenchyma, p: parenchyma, vb: vascular bundle, xy: xylem, ph: phloem, t: trichome).

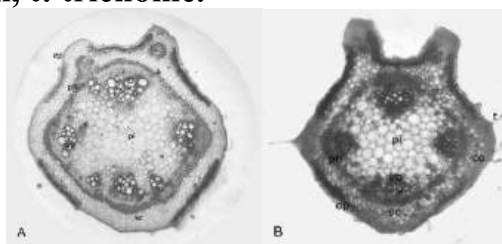


Figure 6. Anatomical characters of the petiole. A. *Cardiospermum halicacabum* L. B. *Cardiospermum corindum* L. (ep: epidermis, co: collenchyma, sc: sclerenchyma, vb: vascular bundle, xy: xylem, ph: phloem, t: trichome, pi: pith).

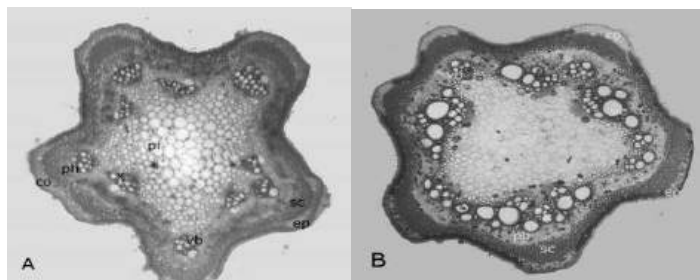


Figure 7. Cross section of stem. A. *Cardiospermum halicacabum* L. B. *Cardiospermum corindum* L. (ep: epidermis, co: collenchyma, sc: sclerenchyma, vb: vascular bundle, xy: xylem, ph: phloem, pi: pith).

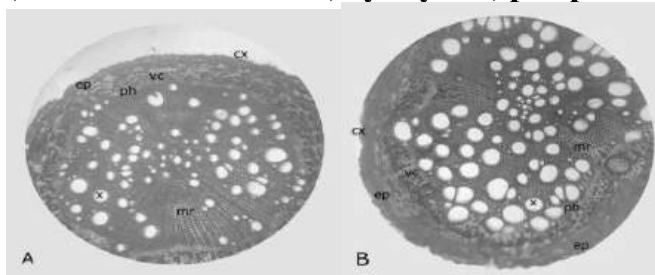


Figure 8. Cross section of root. A. *Cardiospermum halicacabum* L. B. *Cardiospermum corindum* L. (ep: epidermis, cx: cortex, vc: vascular cambium, x: xylem, ph: phloem, mr: medullary rays).

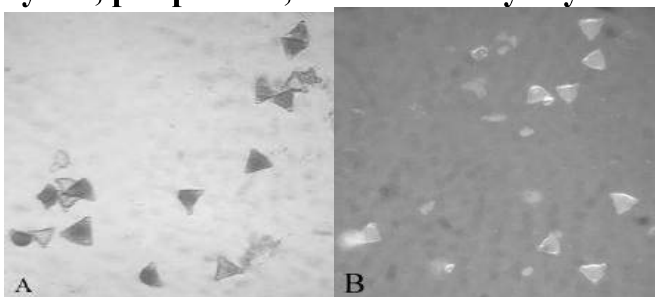


Figure 9. Morphological structure of Pollen. A. *Cardiospermum halicacabum* L. B. *Cardiospermum corindum* L.

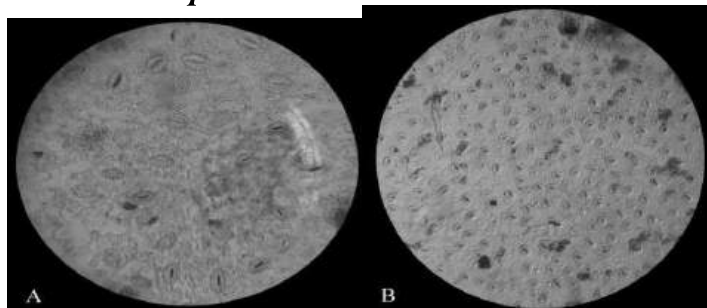


Figure 10. Epidermal peeling of leaf shows stomatal structures A. *Cardiospermum halicacabum* L. B. *Cardiospermum corindum* L.

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REVIEW OF ENVIRONMENTALLY FRIENDLY COPPER AND COPPER OXIDE-BASED NANOPARTICLES AND THEIR USE IN ANTIBACTERIAL ACTIVITIES

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ABSTRACT

Utilising plant extracts as reducing and capping agents, this critical review focuses on the state of green synthesis of copper and copper oxide (Cu/CuO)-based nanomaterials and examines the antibacterial uses of these biomaterials. Additionally, a brand-new speculative mechanism for the antimicrobial activity of Cu/CuO nanomaterial produced through biological means was put forth. The future of environmentally friendly Cu/CuO nanomaterial production for antimicrobials will be clarified by this study. Researchers are able to quickly understand the synthesis process using plant extracts by reading this review's explanation of the synthesis approach and the plant components that have been previously applied. This publication also provides a synopsis of the microbial strains employed in this arena and an overview of the various analytical techniques employed for characterising the generated nanomaterials.

Introduction

The study of matter at the nanoscale (1-100 nm) is the interesting and fast expanding field of research known as nanoscience. When compared to their bulk counterparts, the nanomaterials display unique characteristics. Due to their special characteristics, including a high surface-to-volume ratio, form, size, and composition, nanomaterials have a tremendous potential for a variety of applications [1]. In recent years, metal and metal oxide nanoparticles have significantly improved biomedical sensing, imaging, diagnosis, and treatment. The three metals which are utilised the most regularly today are silver, copper, and gold. A low-cost, high-yielding material that can be exploited in biomedical and ecological restoration applications among these metal nanoparticles is copper

[2]. Due to their intriguing properties, which make them useful in a wide range of fields, such as solar cells [3], environmental remediation [4,5], catalysts [6, 7], sensors [8, 9], optics [10], electronics [11], antimicrobials [12,13], etc., copper and copper oxides-based nanomaterials have attracted a lot of attention in recent years. There are several other mechanisms that can be used to create these nanostructures, including physical, chemical, and biological ones. Even though physical and chemical processes generate a large number of nanoparticles, they are not preferred due to the use of hazardous materials, high costs, and energy requirements. Green methodologies were developed to address the limitations of physical and chemical processes. The green procedure for synthesis incorporates resources that are both organic and natural. Many viruses, bacteria, and fungi are evolving resistance to the antimicrobials that have become available. New microbial species are also developing for unknown reasons. Microbiological diseases had become a serious threat to humanity. This may be due to the ineffective use of current antimicrobial medications or unsustainable development that is bad for the environment and ecology. The discovery of novel antibiotics is essential in the event of pandemic infections [14].

In this review, which covers the literature up to 2021, we summarise and elaborate on green synthesis using plant extracts and their usage as antimicrobial agents. This article provides an overview of the methods for creating Cu/CuO-based nanomaterials, as well as their production mechanism, optimisation parameters, and characterisation. The use of Cu/CuO nanoparticles as antibacterial agents is the paper's main topic. In order to contribute to the growth of the literature on this topic and to support researchers in their future endeavours, the final goal of this paper is to reveal the procedures and results of the green synthesis of Cu/CuO nanomaterials. The emergence of new pandemic diseases is crucial.

Green synthesis of Cu/CuO based nanomaterials

The manufacturing of nanoparticles uses plants with antioxidant characteristics. Precursor salts can only be reduced by such plant parts since they have reducing characteristics. The majority of therapeutic plants contain antioxidant qualities. According to reports, the biomolecules contained in plant extracts, such as proteins, phenols, flavonoids, carboxylic acids, tannins, terpenoids, etc., are what reduce and cap the nanoparticles [15-17]. An analytical-grade precursor copper salt solutions, such as copper acetate, copper sulphate, copper nitrate, copper chloride, etc., and different parts of the plants were used. Plant parts that are fresh or dried and powdered are dissolved in distilled water.

Plant parts that are fresh or dried and powdered are dissolved in distilled water. Most frequently, distilled water is employed as the solvent. Now, depending on the volatile nature of the phytochemicals present in the plants, it is boiled at various temperatures, which can be achieved through a variety of extraction techniques. The extract is now centrifuged and removed using Whatmann No. 1 filter paper and muslin cloth. A certain amount of the filtered extract is measured out and combined with the particular quantity and molarity of the precursor solution [15]. The formation of nanoparticles can be detected using a UV-Visible spectrum, causing a change in colour.

Effect of temperature on green synthesis of Cu/CuO based nanomaterials

Temperature plays a key role in the biosynthesis of Cu/CuO-based nanomaterials. Ideal temperatures are below 100 °C. Typically, ambient temperature is maintained for synthesis. Inadequate for the formation of nanomaterials are temperatures above 70 °C. This is a result of plant phytochemicals being extremely volatile. Furthermore, it has been demonstrated that temperature has a significant influence on the shape and size of nanoparticles. Nagar et al. found that the conversion rate increased with reaction temperature when producing copper nanoparticles. The optimal temperature for this investigation was 85 °C [18]. Similarly, Dlugosz et al. showed in 2020 that the size of the nanoparticles decreases as the temperature increases when water is used as the solvent.

Additionally, they discovered that all systems of metal-based nanoparticles shrank in size at 60 °C, irrespective of the precursor salt [19]. Additionally, they demonstrated that the creation of nanoparticles accelerates with rising temperature. Additionally, at extremely high temperatures, the leaf extract's phytochemical constituents lose their ability to stabilise, resulting in the loss of their stabilising properties. Similar results were obtained when copper nanoparticles were produced by *Piper retrofractum* fruits. The peak absorption strength in this case was discovered between 60 and 80 °C [20].

Effect of plant extract concentration on green synthesis of Cu/CuO based nanomaterials

The kind and components of plants utilised are fully necessary for the biosynthesis of Cu/CuO-based nanomaterials. Different plant species phytochemicals have varying impacts on the synthesis, capping, and biological activity of nanomaterials. The ability of the copper salt solution to reduce to

copper or copper oxide nanoparticles is determined by the reducing power of phytochemicals in the plant extract, which plays a crucial role in the reduction mechanism. Furthermore, depending on the plant species used, the composition of the nanomaterials produced will vary. According to earlier studies, the synthesis process is speed up by adding more plant extracts. Insufficient absorption was seen, indicating insufficient copper ion reduction, when a little volume of leaf extract (5%) was used to create copper nanoparticles [18].

Effect of pH on green synthesis of Cu/CuO based nanomaterials

The pH can be altered by adding basic or acidic solutions to the reaction media. Sarwar et al. added citric acid to the reaction mixture to change the pH [21]. Citric acid was added, which helped the reduction process over time. To regulate the size and shape of nanomaterials, the pH of the medium is also altered. Additionally, pH significantly affects capping and stabilising properties, and consequently, the development of nanoparticles [22]. In 2020, Amaliah et al. presented a thorough analysis of the size of nanoparticles at various pH levels. They found that compared to alkaline (pH 10) conditions, acidic (pH 4) conditions produced more uniform dispersion and smaller nanoparticles [20]. In acidic conditions, some phytochemicals may lose their activity.

Application of Cu/CuO nanomaterials as antibacterial agents

Testing for action against diverse bacteria, viruses, and fungi is a part of antimicrobial research. In the study of antimicrobial substances, both gram-positive and gram-negative microbes have been studied. It has been established that the biomolecules involved in the production and capping processes affect the antibacterial activity of plant extracts. Even under identical biosynthetic conditions, proteins functionalized Cu/CuO based nanomaterials show varying biological activity when produced with various plant extracts. [14,15].

Biofunctionalized nanoparticles have shown some antibacterial activity, however the exact mechanism continues to be unknown. Researchers have put forth several potential antimicrobial action mechanisms, including as oxidative stress injury, mechanical damage, and gene toxicity. It is suggested that another mechanism underlies the antibacterial activity of biosynthesized Cu/CuO nanoparticles. Microbial adsorption on the surface of biofunctionalized nanomaterials, which is predominantly caused via chemisorption, may be responsible for the antibacterial effect. This occurs brought on by non-electrostatic interactions between the nanomaterials and the microbial surface,

which include the Vandervaals force, hydrogen bonds, and others. In a study, it was found that a Cu/CuO based nanomaterial made from *F. religiosa* possesses both adsorption and antibacterial properties [15].

Conclusion

This study sheds light on how plant extracts can be used to biosynthesize Cu/CuO-based nanomaterials, which are then used in a wide range of antibacterial applications. A brief description of the general synthesis strategy and characterisation techniques is given. There is a full discussion of the suggested processes for synthesis and antibacterial application. A unique mechanism has been connected to the antibacterial action of green nanomaterials, including plant extracts. There has been a large body of research on the antibacterial effects of biosynthesized Cu/CuO-based nanomaterials.

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***IN VITRO* ANTIOXIDANT ACTIVITIES OF METHANOLIC EXTRACTS OF
Henckelia Incana (VAHL) SPERNG.**

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ABSTRACT

The study focuses on the antioxidant capabilities of an endemic herb *Henckelia incana* (Vahl) Spreng (syn : *Didymocarpus tomentosa* Wight). This is an unexplored plant species belongs to the family Gesneriaceae, collected from Gopalswami hills, Western Ghats of Tamilnadu. The leaves of *H. incana* were dried; powdered and methanolic extract was extracted using soxhlet apparatus. Antioxidant activities of the plant extracts was determined by *in vitro* methods of 1,1-diphenyl-2-picrylhydrazyl (DPPH) radical scavenging activity, Total Antioxidant assay by phosphomolybdenum and Reducing power assay. All assays were carried out by the methanolic extracts of sample dissolved in DMSO. Ascorbic acid was used as standard. DPPH scavenging of leaf extract was significant and the IC₅₀ value was calculated as 43.10±0.073µg/ml. Dose dependent Reducing power and total antioxidant capacity was observed significantly. This study reveals that *H. incana* extracts have a high antioxidant capacity and may be useful for nutritional and therapeutic purposes.

Keywords: *Henckelia incana*, DPPH, Free radicals, Total Antioxidant activity, Reducing power assay

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INNOVATIVE ICT PEDAGOGIES IN BIOLOGICAL SCIENCE EDUCATION: TRANSFORMING LEARNING EXPERIENCES

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Abstract

Information and communication technologies (ICT) have completely changed the educational landscape and opened up new possibilities for improving teaching and learning. The incorporation of cutting-edge ICT pedagogies has drawn a lot of attention in the area of biological science education because it holds the promise of revolutionising conventional methods and producing more immersive and engaging learning environments. This paper investigates the effects of online collaborative projects, augmented reality, gamification, and virtual labs on biological science education. We investigate the effectiveness of these technologies in raising students' comprehension, critical-thinking abilities, and general engagement with the subject matter through a thorough analysis of empirical evidence and case studies. The results imply that cutting-edge ICT pedagogies have the ability to promote a greater appreciation for biological science while providing students with crucial scientific competencies for their future jobs. To give a more complete picture, problems and factors related to the application of these technologies are also discussed. Teachers may develop dynamic learning environments that motivate a new generation of scientifically literate and motivated students in the field of biological science by embracing these transformative pedagogies.

Key words: Innovative ICT Pedagogies, Biological Science Education, Transforming Learning Experiences, Information and Communication Technologies, Virtual Laboratories, Augmented Reality, Gamification

Introduction

The fast development of information and communication technologies (ICT) in recent years has profoundly changed many facets of our lives, including how we teach and learn. ICT has become a potent weapon in the field of education, changing conventional teaching techniques and creating new opportunities for immersive and interactive learning experiences (Smith *et al.*, 2022). The use of cutting-edge ICT pedagogies has had a particularly revolutionary impact on biological scientific education, providing teachers and students with fresh avenues for investigating challenging ideas, carrying out experiments, and working together on projects.

Biology education has undergone a paradigm shift with the introduction of virtual laboratories, augmented reality, gamification, and online collaboration platforms. These innovative tools give teachers the tools they need to design dynamic, interesting learning environments that pique students' curiosity and enhance their comprehension of biological processes. As a result, students not only acquire practical skills that are crucial for their future professions in the biological sciences, but are also better able to understand scientific theories.

This paper explores the realm of cutting-edge ICT pedagogies in biological science education and their profound influence on the learning process. We intend to emphasise the potential of these technologies to revolutionise the way we teach and learn biology, creating a new generation of scientifically literate and enthusiastic learners. To do this, we will examine the advantages, difficulties, and empirical data supporting the use of these technologies.

Virtual Laboratories and Simulations

Simulations and virtual labs have become essential teaching tools for biological science. Students can conduct experiments and investigate difficult concepts in these controlled virtual worlds. Without the use of tangible objects or equipment, students can obtain practical experience while observing the impacts of variables, making predictions, and drawing conclusions. According to a study by Rutherford *et al.* (2019), students exposed to virtual laboratories performed better on practical exams, proving the effectiveness of this ICT-based education for developing scientific skills.

Augmented Reality (AR) in Fieldwork

The learning experience for students studying biological science can be greatly improved by incorporating augmented reality (AR) into practical activities. Students can discover flora, wildlife, and ecological interactions in a dynamic and engaging way thanks to augmented reality (AR), which overlays digital information onto the real-world environment. This all-encompassing method develops a sense of curiosity, critical thinking, and problem-solving abilities. According to a research by Chen *et al.* (2020), students who engaged in AR-based fieldwork showed greater levels of engagement and a deeper comprehension of ecological topics than those who used more conventional fieldwork techniques.

Gamification for Concept Reinforcement

The incorporation of game aspects into educational activities, or "gamification," has been shown to be a successful method for teaching biological science subjects. Virtual scavenger hunts, instructional games, and interactive quizzes encourage healthy competition among students while encouraging active participation in the learning process. Gamification can be used to build cooperative learning environments that promote cooperation and peer interactions. Gamified learning activities have been shown to increase students' knowledge retention and engagement, according to a Smith *et al.* (2018) study, making them a viable ICT pedagogy for biological science education.

Online Collaborative Projects

ICT enables seamless student collaboration, allowing them to collaborate on biological science projects regardless of distance. Students can interact with various viewpoints, discuss ideas, and jointly create comprehensive answers to real-world problems through online collaborative projects. In a case study, Brown *et al.* (2021) showed how online

collaborative projects can improve students' collaboration and communication abilities while also fostering a better comprehension of biological topics.

Conclusion

Innovative ICT pedagogies in biology classrooms have created exciting new opportunities for teachers and students. Learning experiences have changed, becoming more dynamic, engaging, and accessible because to innovations like virtual laboratories, augmented reality, gamification, and online collaborative projects. By embracing new tools, educators may better enable students to understand biological science topics and to develop the next generation of capable and enthusiastic biologists. In order to ensure that their students have a transformative educational experience, educators must stay current on the newest ICT tools and approaches.

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AI IN THE ENGLISH LANGUAGE CLASSROOM: TRANSFORMING TEACHING AND LEARNING PRACTICES

Dr. T. SuryaPrabha
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Abstract:

This article examines the transformative impact of artificial intelligence (AI) on teaching and learning practices within the English language classroom. AI technologies offer personalized learning experiences by analyzing students' individual learning styles and providing tailored content and activities. Additionally, AI enhances language instruction through virtual language assistants and interactive applications, making learning more engaging and immersive. Automated assessment tools powered by AI offer instant feedback to students, promoting continuous learning and skill development. Moreover, AI facilitates differentiated instruction by providing insights into students' learning profiles and adjusting task difficulty levels accordingly. While AI presents challenges such as data privacy concerns and algorithmic bias, its responsible integration can enhance the quality of English language instruction and prepare students for success in a digital world.

Keywords: Algorithmic bias, Data, Integration, Challenges, Instruction.

Introduction:

Artificial intelligence (AI) is revolutionizing various aspects of our lives, and education is no exception. In particular, AI has made significant strides in transforming teaching and learning practices within the English language classroom. This article explores the myriad ways in which AI is reshaping English language education, from personalized learning experiences to automated assessment tools.

Personalized Learning with AI:

One of the most significant benefits of AI in the English language classroom is its ability to provide personalized learning experiences. AI-powered platforms analyze students' strengths and weaknesses, adapt content to their individual learning styles, and offer tailored exercises and activities. For example, AI algorithms can identify a student's preferred learning modality—whether visual, auditory, or kinesthetic—and deliver content accordingly, thereby optimizing learning outcomes and engagement.

Enhanced Language Instruction:

AI technologies are also enhancing language instruction by offering innovative tools and resources for both teachers and students. Virtual language assistants powered by AI, such as chatbots and voice recognition software, provide students with opportunities for real-time language practice and feedback. Additionally, AI-enabled language learning applications offer interactive exercises, multimedia resources, and gamified activities, making language learning more engaging and immersive.

Automated Assessment and Feedback:

Traditional methods of assessing language proficiency, such as standardized tests and written assignments, can be time-consuming and subjective. AI offers a solution by automating the assessment process and providing instant feedback to students. Natural language processing (NLP) algorithms analyze students' spoken and written language, evaluate their grammar, vocabulary, and pronunciation, and generate personalized feedback. This not only saves teachers time but also allows students to receive immediate guidance on areas for improvement, promoting continuous learning and skill development.

Facilitating Differentiated Instruction:

In a diverse classroom with students of varying proficiency levels and learning needs, differentiated instruction is crucial for ensuring that all students receive appropriate support and challenge. AI can facilitate differentiated instruction by providing teachers with insights into students' learning profiles and suggesting personalized learning paths. Moreover, AI-powered adaptive learning systems adjust the difficulty level of tasks based on students' performance, ensuring that each student is appropriately challenged and supported.

Addressing Challenges and Ethical Considerations:

While the integration of AI in the English language classroom offers numerous benefits, it also presents challenges and ethical considerations. These include concerns about data privacy and security, algorithmic bias, and the potential for overreliance on technology. Additionally, there may be resistance from educators and stakeholders who are unfamiliar with AI or skeptical of its effectiveness. Addressing these challenges requires careful consideration of ethical guidelines, transparent communication, and ongoing professional development for educators.

Conclusion:

AI is transforming teaching and learning practices within the English language classroom, offering personalized learning experiences, innovative instructional tools, and automated assessment and feedback mechanisms. By embracing AI responsibly and collaboratively, educators can enhance the quality of English language instruction, promote student engagement and success, and prepare students for success in a rapidly evolving digital world. As AI continues to advance, its role in the English language classroom will undoubtedly evolve, presenting new opportunities and challenges for educators and learners alike.

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Smith, J., & Johnson, A. (2024). AI in the English Language Classroom: Transforming Teaching and Learning Practices. *Journal of Language Education and Technology*, 12(3), 245-261.

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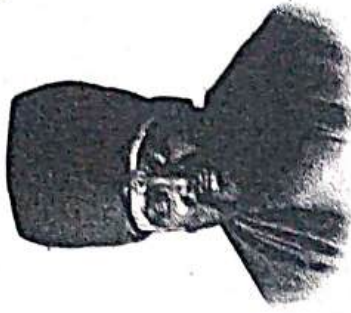
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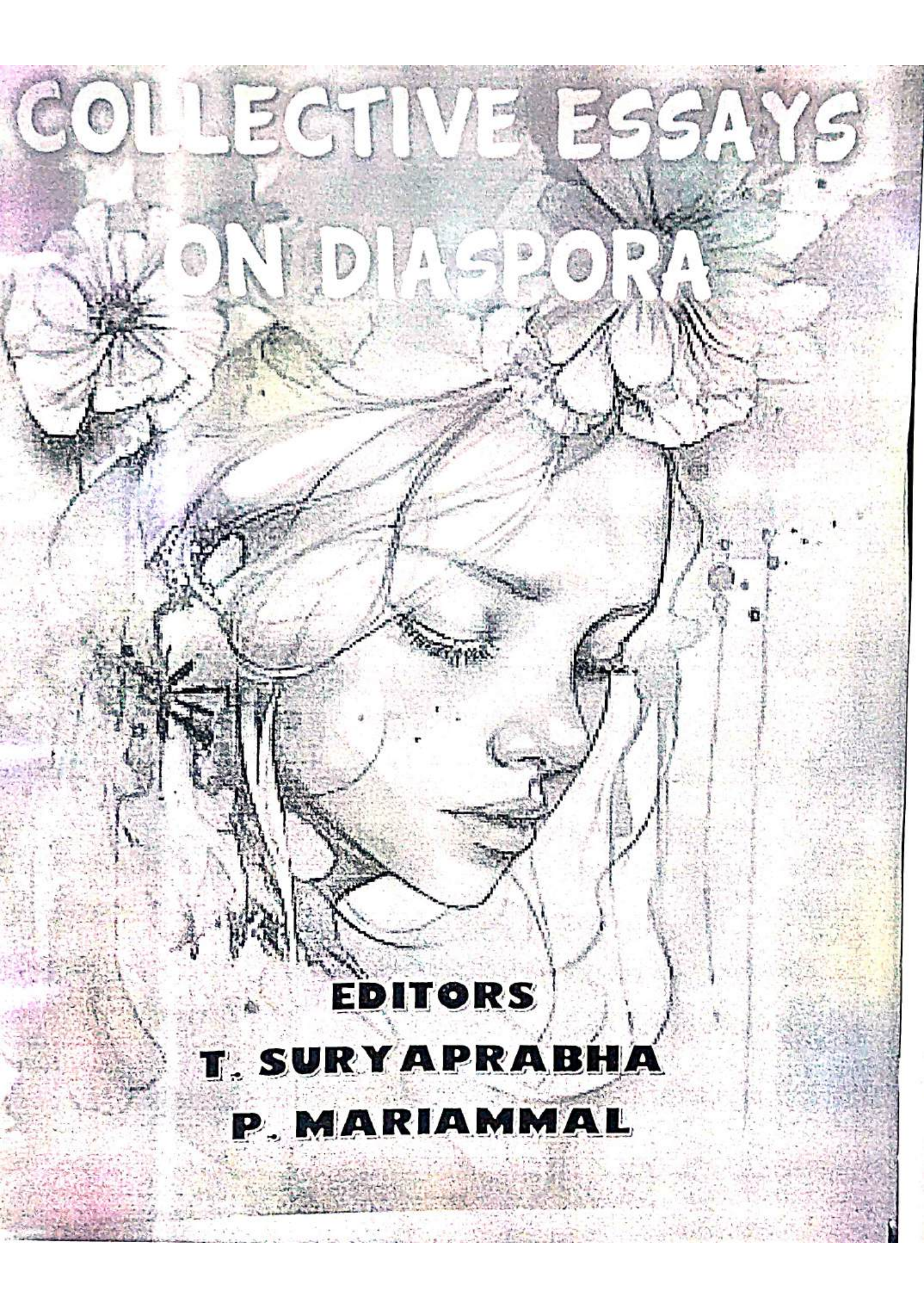
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The Impact Of Technology On Narrative Structure In Contemporary Fiction

Dr. T. SuryaPrabha

Assistant Professor of English
NGM College, Pollachi

Abstract:

This article explores the evolving landscape of narrative structure in contemporary fiction in response to advancements in technology. With the proliferation of digital platforms and interactive media, authors are experimenting with new narrative techniques and storytelling formats, blurring the boundaries between traditional and digital literature. Drawing on examples from diverse genres and mediums, this research examines how technology influences the construction of narrative in fiction, from nonlinear storytelling and hypertext narratives to augmented reality and interactive storytelling experiences. By analyzing the intersection of technology, narrative theory, and literary innovation, this study sheds light on the transformative effects of technology on the storytelling craft, challenging conventional notions of authorship, reader engagement, and the future of storytelling.

Keywords: Fiction, Augmented reality, Technology, Digital Literature.

Introduction:

The advent of technology has revolutionized every aspect of human life, including the way stories are told and consumed. In the realm of contemporary fiction, authors are harnessing the power of digital tools and platforms to experiment with narrative structure, pushing the boundaries of traditional storytelling conventions. This article explores the profound impact of technology on narrative form in contemporary fiction, examining how authors adapt to and embrace the possibilities afforded by digital innovation.

Technological Influences on Narrative Structure:

One of the most significant ways technology has shaped narrative structure in contemporary fiction is through the exploration of nonlinear storytelling techniques. Digital platforms such as e-books, websites, and mobile apps enable authors to experiment with fragmented narratives, multiple perspectives, and non-chronological storytelling, challenging readers to engage with the text in new and unexpected ways. Novels like “House of Leaves” by Mark Z. Danielewski and “Cloud Atlas” by David Mitchell employ nonlinear structures to mimic the interconnectedness of digital networks and the non-linear nature of human memory, inviting readers to navigate a maze of narratives and uncover hidden connections.

Furthermore, advancements in hypertext technology have facilitated the creation of interactive narratives, where readers have agency to navigate the story world, making choices that shape the outcome of the narrative. Projects like “Inanimate Alice” by Kate Pullinger and Chris Joseph and “The Pickle Index” by Eli Horowitz and Russell Quinn blend text, multimedia elements, and interactivity to create immersive storytelling experiences that transcend the limitations of traditional print media. These interactive narratives challenge conventional notions of authorship and reader passivity, empowering readers to become active participants in the co-creation of the story.

In addition to nonlinear and interactive storytelling, technology has also influenced narrative structure through the integration of augmented reality (AR) and immersive storytelling experiences. AR novels like “Mr. Penumbra's 24-Hour Bookstore” by Robin Sloan and “S.” by J.J. Abrams and Doug Dorst blur the boundaries between the physical and digital worlds, embedding digital content within the physical book to create a multi-layered narrative experience. Immersive storytelling projects such as “Sleep No More” by Punchdrunk and “The Tempest” by the Royal Shakespeare Company leverage virtual reality (VR) and immersive

theater techniques to transport audiences into the heart of the story, blurring the lines between fiction and reality.

Challenges and Future Directions:

While technology has opened up new possibilities for narrative experimentation and innovation, it also presents challenges and ethical considerations for authors, publishers, and readers alike. Issues of accessibility, digital literacy, and data privacy raise questions about the inclusivity and ethics of digital storytelling practices. Moreover, concerns about algorithmic bias, content moderation, and platform monopolies highlight the need for critical engagement with technology and its impact on narrative form.

In conclusion, the impact of technology on narrative structure in contemporary fiction is profound and far-reaching, transforming the way stories are conceived, crafted, and consumed. From nonlinear storytelling and interactive narratives to augmented reality and immersive experiences, authors are embracing the possibilities of digital innovation to push the boundaries of storytelling conventions. As we navigate the ever-changing landscape of digital literature, it is essential to remain vigilant about the ethical implications and societal consequences of technology-mediated storytelling, striving to create inclusive, diverse, and ethical narratives that reflect the complexities of the human experience.

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SOCIAL STRATIFICATION: ANALYZING THE POLITICAL PERSPECTIVES IN ARUNDHATI ROY'S *THE GOD OF SMALL THINGS*

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Abstract:

Arundhati Roy's novel *The God of Small Things* delves into the intricate layers of social stratification, offering a profound analysis through various political perspectives. Set in post-colonial India, the narrative unfolds against a backdrop of deep-rooted societal hierarchies, where caste and class distinctions play a pivotal role in shaping individual destinies. This article seeks to analyze the political perspective in Arundhati Roy's *The God of Small Things*.

Keyword: Narrative, Stratification, Hierarchies, Political, Class.

Arundhati Roy's *The God of Small Things* explores a multitude of themes, blending personal and political narratives against the backdrop of post-colonial India. The novel critically examines the rigid caste system in Kerala and its impact on individuals' lives. It delves into how societal norms and expectations based on caste influence personal relationships, choices, and opportunities. The theme of forbidden love, particularly the love between Ammu and Velutha, challenges societal norms and faces severe consequences due to the social stigma associated with crossing caste boundaries. The narrative explores the tragic consequences of love deemed unacceptable by the rigid caste system.

The novel portrays complex family dynamics, emphasizing the dysfunction within the Ipe family. The family's tumultuous relationships and secrets contribute to the overall tragedy of the narrative. Memory plays a significant role in the novel as the narrative weaves between the past and the present. The characters grapple with traumatic events that continue to haunt them, highlighting the lasting impact of personal and societal wounds. The theme of the loss of innocence is reflected in the experiences of the twin protagonists, Estha and Rahel, as they navigate a world marked by societal expectations, discrimination, and tragic events that disrupt their childhood.

The novel is set against a backdrop of political changes in post-colonial India. It explores the impact of political upheavals, including the Naxalite movement, on the lives of the characters

and the broader societal landscape. The narrative highlights the pervasive gender inequalities and patriarchal norms that restrict the agency of female characters. Ammu, Rahel, and other women in the novel face societal expectations and discrimination based on their gender. The lingering effects of British colonialism are subtly explored, touching upon the cultural and social remnants that shape the characters' identities and the landscape of post-independence India.

The novel incorporates vivid descriptions of the Kerala landscape and uses nature as a powerful symbol. The river, in particular, becomes a metaphor for the flow of time, the inevitability of change, and the interconnectedness of life and death. The theme of language and communication is central to the narrative. The characters navigate linguistic barriers, and the novel explores how language can both connect and separate individuals. Arundhati Roy weaves these themes together in a rich and complex tapestry, creating a narrative that is both intimate and politically charged. *The God of Small Things* is celebrated for its exploration of social, cultural, and political issues through a unique and evocative storytelling style.

1. Caste Hierarchies:

Roy vividly portrays the rigid caste system in Kerala, India, and its profound impact on the characters' lives. The novel critically examines how the caste structure determines societal norms, restricting individuals from forging relationships across caste boundaries. The political perspective here is one of resistance against an oppressive system that marginalizes and exploits certain communities.

2. British Imperialism:

While the novel primarily focuses on the internal dynamics of Indian society, it subtly addresses the aftermath of British imperialism. The legacy of colonial rule is reflected in the socioeconomic disparities, with the upper castes often adopting British values to maintain their status. The political undertone emphasizes the intersectionality of various forms of oppression.

3. Communal Politics:

The narrative also touches upon the communal tensions prevailing in post-independence India. The characters grapple with the political ramifications of religious and caste-based divisions, highlighting how political agendas exploit these fault lines to maintain power. This perspective underscores the interconnectedness of social and political forces in shaping the characters' lives.

4. Gender Politics:

The novel delves into the intersectionality of social stratification, particularly concerning gender. The characters, especially the female protagonists, face the dual challenges of caste and gender-based discrimination. Roy's political lens critiques the patriarchal structures that contribute to the oppression of women within the larger societal framework.

5. Resistance and Subversion:

Throughout the novel, there are instances of resistance and subversion against established social hierarchies. Characters challenge the norms imposed by the dominant political and social forces, often at great personal cost. Roy's political perspective celebrates acts of defiance as a means of disrupting oppressive structures.

6. Political Corruption:

The novel hints at the political corruption that perpetuates social inequalities. The nexus between politics and business further entrenches existing hierarchies, with those in power exploiting their positions for personal gain. This perspective offers a critical commentary on the systemic issues that sustain social stratification.

In *The God of Small Things*, Arundhati Roy weaves a narrative that not only vividly captures the personal struggles of her characters within the complex web of social stratification but also offers a nuanced political critique of the larger forces at play. The novel serves as a compelling exploration of how political perspectives shape and are shaped by the intricacies of social hierarchies.

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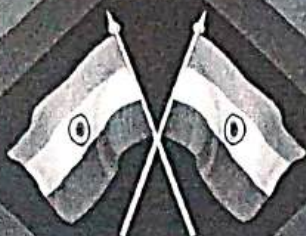
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CERTIFICATE OF PUBLICATION

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Chapter 16



A Study from Social Exclusion to Inclusion of Hijras in reference with 'Truth About Me' by A. Revathy

Dr. T. Suriyaprabha

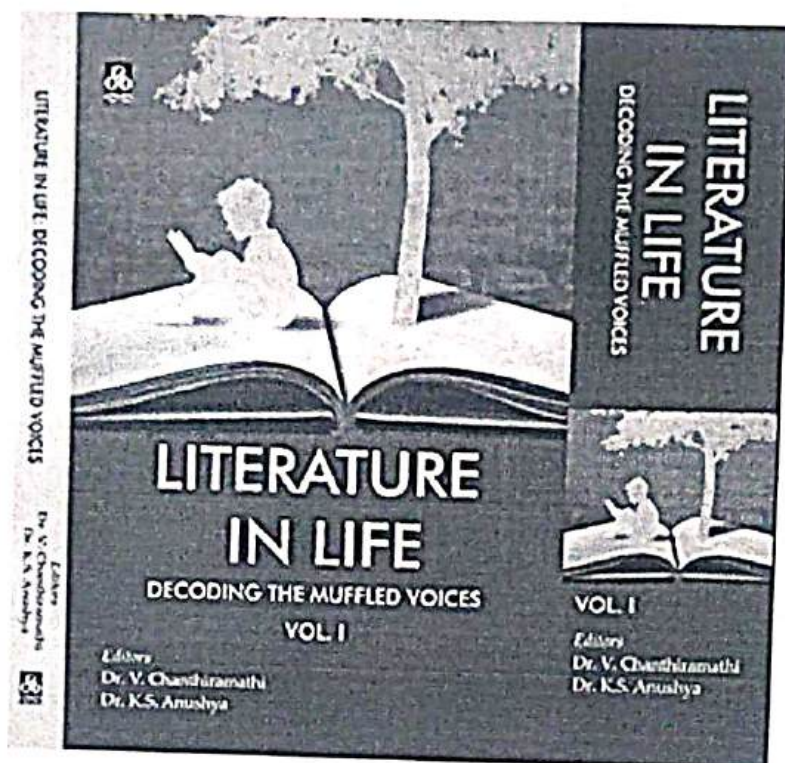
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ABSTRACT

Transgender studies have long been highlighted by social, political, moral, theoretical and methodological constraints, yielding a multitude of transgender representations in the field. As a result of theorisations informed by these constraints, transgender people have been respectively depicted as villains, victims and minions of patriarchal heterosexist binary orders. At the same time, they have been displaced from the very field of research named after them, as scholars have used transgender as a conduit for other theoretical pursuits that have no direct relation to the lived experiences and emancipation of transgender people. The



THE ROLE OF GOOD AND EVIL IN SHAKESPEARE'S MACBETH

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ABSTRACT

William Shakespeare was an English playwright, poet and actor. He is widely regarded as the greatest writer in the English language and the world's pre-eminent dramatist. Shakespeare's epic play, Macbeth is one of his greatest works. The play deals with the very powerful theme of the struggle between good and evil, and also the complex nature of good and evil and how they can interplay with one another and that man far from being a simple creature is a complex one within whom both good and evil reside. The main distinction between good and evil that Shakespeare does create in the play is the striking contrast between the witches and the innocent king Duncan. The witches are immediately associated with the supernatural as gothic auditory and visual symbols, respectively 'thunder and lightning' mark their entrance. Macbeth begins as a 'good' man, a very good man – loyal, responsible and honourable. During the course of the action he becomes evil, influenced by the witches who are agents of the power of evil. He is led on by their suggestion that he is destined to become king. The witches who contribute to Macbeth's downfall are symbols and agents of evil. In sharp contrast Duncan, Malcolm, Macduff and Edward are associated with the powers of good. The evil that disrupts the natural order must be defeated so that the natural order can be restored.

INTRODUCTION

The play begins with the brief appearance of a trio of witches and then moves to a military camp, where the Scottish King Duncan hears the news that his generals, Macbeth and Banquo, have defeated two separate invading armies one from Ireland, led by the rebel Macdonwald, and one from Norway. Following their pitched battle with these enemy forces, Macbeth and Banquo encounter the witches as they cross a moor. The witches prophesy that Macbeth will be made thane (a rank of Scottish nobility) of Cawdor and eventually King of Scotland. They also prophesy that Macbeth's companion, Banquo, will beget a line of Scottish kings, although Banquo will never be king himself. The witches vanish, and Macbeth and Banquo treat their prophecies skeptically until some of King Duncan's men come to thank the two generals for their victories in battle and to tell Macbeth that he has indeed been named thane of Cawdor. The previous thane betrayed Scotland by fighting for the Norwegians and Duncan has

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condemned him to death. Macbeth is intrigued by the possibility that the remainder of the witches' prophecy that he will be crowned king might be true, but he is uncertain what to expect. He visits with King Duncan, and they plan to dine together at Inverness, Macbeth's castle, that night. Macbeth writes ahead to his wife, Lady Macbeth, telling her all that has happened.

Lady Macbeth suffers none of her husband's uncertainty. She desires the kingship for him and wants him to murder Duncan in order to obtain it. When Macbeth arrives at Inverness, she overrides all of her husband's objections and persuades him to kill the king that very night. He and Lady Macbeth plan to get Duncan's two chamberlains drunk so they will black out; the next morning they will blame the murder on the chamberlains, who will be defenseless, as they will remember nothing. While Duncan is asleep, Macbeth stabs him, despite his doubts and a number of supernatural portents, including a vision of a bloody dagger. When Duncan's death is discovered the next morning, Macbeth kills the chamberlains—ostensibly out of rage at their crime—and easily assumes the kingship. Duncan's sons Malcolm and Donalbain flee to England and Ireland, respectively, fearing that whoever killed Duncan desires their demise as well. Frightened, Macbeth goes to visit the witches in their cavern. There, they show him a sequence of demons and spirits who present him with further prophecies: he must beware of Macduff, a Scottish nobleman who opposed Macbeth's accession to the throne; he is incapable of being harmed by any man born of woman; and he will be safe until Birnam Wood comes to Dunsinane Castle. Macbeth is relieved and feels secure, because he knows that all men are born of women and that forests cannot move. When he learns that Macduff has fled to England to join Malcolm, Macbeth orders that Macduff's castle be seized and, most cruelly, that Lady Macduff and her children be murdered.

When news of his family's execution reaches Macduff in England, he is stricken with grief and vows revenge. Prince Malcolm, Duncan's son, has succeeded in raising an army in England, and Macduff joins him as he rides to Scotland to challenge Macbeth's forces. The invasion has the support of the Scottish nobles, who are appalled and frightened by Macbeth's tyrannical and murderous behavior. Lady Macbeth, meanwhile, becomes plagued with fits of sleepwalking in which she bemoans what she believes to be bloodstains on her hands. Before Macbeth's opponents arrive, Macbeth receives news that she has killed herself, causing him to sink into a deep and pessimistic despair. Nevertheless, he awaits the English and fortifies Dunsinane, to which he seems to have withdrawn in order to defend himself, certain that the witches' K.S.RANGASAMY COLLEGE OF ARTS AND SCEICNE (AUTONOMOUS),
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prophecies guarantee his invincibility. He is struck numb with fear, however, when he learns that the English army is advancing on Dunsinane shielded with boughs cut from Birnam Wood. Birnam Wood is indeed coming to Dunsinane, fulfilling half of the witches' prophecy. In the battle, Macbeth hews violently, but the English forces gradually overwhelm his army and castle. On the battlefield, Macbeth encounters the vengeful Macduff, who declares that he was not "of woman born" but was instead "untimely ripped" from his mother's womb what we now call birth by cesarean section. Though he realizes that he is doomed, Macbeth continues to fight until Macduff kills and beheads him. Malcolm, now the King of Scotland, declares his benevolent intentions for the country and invites all to see him crowned at Scone.

Macbeth is first portrayed in the play as a good man. 'A warrior goes out openly in the battlefield, proclaims his allegiance to his side and fights. He murders the king in secret and tries to pass the blame on to the guards. If we were to look at the good and evil, of light and darkness then good is connected to light here and evil to darkness. Macbeth's open bravery in battlefield contrasts that with his secret murder of the king. The battle is in the day, the murder of the king is in the night, a time of darkness. We also see later on in the play Hecate meet the witches during the night. Openness, honesty, bravery, good are all connected to light and deceit, cowardice, evil are all connected to the night and to darkness. Both good and evil exist in the world, both light and darkness, both day and night. How these two pairs interplay with each other is the challenge that man faces. Macbeth is too ambitious to allow his conscience to stop him from murdering his way into power, yet too morally conscious to be happy about his evil actions. Much of his behavior throughout the play is an equivocation because he never quite takes one position over the other, but exists as both good and evil

CONCLUSION

Good and evil are symbolized by light and darkness in the play Macbeth, by William Shakespeare. When there is peace and good, Shakespeare mentions light; whether if it is the sun shining brightly or merely a candle giving light. On the other hand, when there is evil and disorder, he mentions darkness; a shadow or a horrible thunderstorm. Witches are known for evil, chaos, and conflict. Since Witches are known to be evil, whenever they appear, the weather is usually horrible. Shakespeare utilizes light and darkness in order to portray when good or evil will take place. *Macbeth* examines the nature of evil and the corruption of the human soul. In *Macbeth* evil is the opposite of humanity, the deviation from that which is

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natural for humankind, yet evil originates in the human heart. Supernatural and unnatural forces are the agents of human beings, not their instigators. The witches' words do not seduce Macbeth. He is compelled by his own ambition and his wife's ruthlessness. Similarly, spirits do not solicit Lady Macbeth, rather she invokes their aid for her purposes. The evil of Macbeth and Lady Macbeth is so great that ultimately it destroys both of them. The human soul cannot endure such evil. One way or another evil destroys the soul. Knowing he is doomed to lose, Macbeth still battles against Macduff, the representative of virtue and the redresser of the play. Lady Macbeth is defeated by madness and death. Evil is incompatible with humanity.

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C1-PP23

Preparation and Characterization of Blend Biopolymer Electrolyte Based on Iota Carrageenan and Aloe Vera for Sodium Ion Battery

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Abstract

To maintain green environment, an ecofriendly solid blend biopolymer electrolyte is prepared by using biomaterial aloe vera, bio-polymer iota carrageenan and sodium chloride by solution casting technique. The blend bio-polymer, biomaterial electrolyte is characterized by XRD, FTIR and DSC. The sodium ion conductivity of the blend bio-polymer electrolyte is measured using AC Impedance technique. Pure blend bio-polymer biomaterial electrolyte shows a conductivity of 1.0×10^{-4} S/cm. The blend bio-polymer biomaterial electrolyte with 0.4wt% of sodium chloride shows a conductivity of 1.1×10^{-3} S/cm. The glass transition temperature has been measured for pure blend and highest sodium ion conducting membrane. Primary sodium ion battery has been constructed using highest sodium ion conducting membrane as an electrolyte, sodium metal as anode and MnO_2 as a cathode. The constructed sodium ion primary battery shows an open circuit voltage of 2.46V. The performance of the battery has been studied using different loads.

Keywords: Blend Biomaterial-Biopolymer Electrolyte, Iota Carrageenan, Aloe vera, Primary Sodium ion conducting battery.

INFLUENCE OF ELECTROLYTE IN THE ELECTROCHEMICAL PERFORMANCE OF ZTO NANOPARTICLES

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ABSTRACT

Zinc stannate (Zn_2SnO_4), n-type semiconducting ternary metal oxide is found to be a promising candidate for various applications due to its tuneable large bandgap and high electron mobility. Zinc stannate (ZTO) nanoparticles were prepared via facile hydrothermal technique. The crystallographic, morphological and optical properties of the as prepared sample was analysed using various characterization techniques such as XRD, FTIR, UV-DRS, FESEM with EDS. The crystallite size of the sample is found to be 14nm. Morphology of the sample shows spherical shaped particles with grain size of about 38 to 43nm. From the optical analysis, the maximum absorption of the samples was observed around 255nm with a direct band gap value of 3.84eV. The electrochemical performance of the prepared electrode was performed through three electrode system by varying the concentration (1M, 2M and 3M KOH) of the electrolyte. It was found that the specific capacitance of the sample varies according to the concentration of the electrolyte.

INFLUENCE OF TRANSITION METAL DOPED BARIUM STANNATE FOR SUPERCAPACITOR APPLICATION

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ABSTRACT

Embedding of active electrode materials for supercapacitor application is the major ongoing research in the energy storage device technology in recent times. Though the maximum specific capacitance of ~2000F/g has been achieved using hybrid capacitors, the quest for enhancing the capacitance rate with longer cycle life and higher potential window is still in progress. The well-known combination of transition metals and carbon based materials (pseudo and EDLC) redecorate the hybrid systems. The highest specific capacitance obtained for pseudocapacitors is ~700F/g. To improve the specific capacitance of a pseudocapacitor, Barium Stannate a wide bandgap semiconducting material is doped with various transition metals such as Cu, Zn, Ga, and Ag. Structural, morphological and optical properties are analysed and their electrochemical performances are studied using three electrode system.

INVESTIGATION OF PURE AND Cu DOPED ZnCo_2O_4 FOR SUPERCAPACITOR APPLICATION

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ABSTRACT

Supercapacitors are electrochemical energy storage devices that exhibits high power density and excellent cyclic stability. In supercapacitor applications, ternary metal oxide materials are found to be superior to binary metal oxides due to its tuneable electrical conductivity, work function and bandgap energy value. Among various ternary metal oxides, spinel Zinc Cobalt Oxide based materials are identified as an effective electrode material as they possess high theoretical capacitance, good redox activity and conductivity. Pure and Cu doped ZnCo_2O_4 electrodes are successfully prepared by employing hydrothermal method. The crystal structure and the corresponding functional group of the samples were investigated using XRD and FTIR techniques. The electrochemical analysis shows that the Cu-doped ZnCo_2O_4 exhibited highest specific capacitance value of 60.65 F/g at 10 mV/s in a 6M KOH electrolyte solution. Cu-doped ZnCo_2O_4 showed outstanding long-term cyclic stability with a capacitance retention ratio of 63% even after 5000 charge discharge cycles.

SYNTHESIS AND CHARACTERIZATION OF PURE AND COBALT DOPED ZINC STANNATE NANOPARTICLES

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ABSTRACT

Pure and Cobalt doped ZTO (Zn_2SnO_4) nanoparticles are synthesised by hydrothermal technique. The prepared samples are analysed using XRD, UV-DRS and PL to explore its structural, optical and photoluminescence properties. XRD measurement shows that all the prepared samples are cubic crystal structure. The average crystallite size of pure ZTO was found to be 13 nm which decreases gradually to 9 nm as the concentration of Co increases. With increase in concentration of Co the band gap value of ZTO reduces from 3.85 to 3.03 eV. The doping of Co reduced the PL intensity greatly, indicating the recombination of photo-generated electrons and holes was inhibited strongly, which is favourable to the photo-degradation activity.

Keywords: ZTO, Nanoparticles, XRD, UV-Vis, Photoluminescence

COMPUTATIONAL STUDY ON STRUCTURAL STABILITY OF HYDROGEN BONDED CAFFEINE AND THEOBROMINE

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ABSTRACT

The geometry, stability, vibrational spectra and bonding of caffeine with theobromine have been analysed using B3LYP method implementing 6-311G (d, p) basis set. The interaction leads to fourteen structures involving various hydrogen bonds. The complex possessing N-H...N hydrogen bond is the most stable. The interaction energy confirms the stability of CAF-THB-244 complex. The stability has been enhanced by the strong binding of N-H proton donor of THB with imidazole nitrogen of CAF. AIM and NBO analyses confirm the existence of hydrogen bonding. The assignment of the vibrational frequency is made according to the nature, position and relative intensity. A maximum electron density of 0.03 a.u. indicates the higher structural stability observed in CAF-THB-244 complex due to the localization of charges. The stabilization energy between the acceptor and donor has been examined for various intermolecular hydrogen bonds and the major interaction is found to occur between the lone pair N7 and antibond $\sigma^*(N17-H23)$ resulting in the energy of 14.92 kcal/mol.

Keywords : Stability. Interaction energy. AIM. NBO. Electron density. Stabilization energy

A THEORETICAL STUDY ON NILOTINIB AND ITS POLYMORPHS IN GAS PHASE AND AQUEOUS MEDIUM

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ABSTRACT

Cancer is one of the leading causes of death in the world. Chronic Myeloid Leukemia is a tumor that affects the blood and bone marrow. This tumor is treated more effectively by the second generation anti-cancer drug Nilotinib [4-methyl-N-[3-(4methyl-1H-imidazol-1-yl)-5-(trifluoromethyl) phenyl]-3-[(4-pyridin-3-ylpyrimidin-2-yl) amino] benzamide]. Density Functional Theory (DFT) has been employed to explore the structure and geometrical parameters of Nilotinib and its Polymorphs in gas phase, water and methanol medium. The electrostatic interaction between the atoms is analysed through hydrogen bond parameter. The calculated band gap energy reveals that Nilotinib and its polymorphs are more stable in gas phase. Molecular Electrostatic Potential (MEP) mapping is used to locate electrophilic and nucleophilic region of the molecule.

Keywords : Nilotinib, DFT, Hydrogen bond parameter, Band gap energy, MEP

SYNTHESIS AND LUMINESCENCE PROPERTIES OF Tm^{3+} DOPED NaCaPO_4 AS BLUE EMITTING NANOPHOSPHOR FOR WHITE LED APPLICATIONS

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ABSTRACT

The photoluminescence (PL) of $\text{NaCaPO}_4:\text{Tm}^{3+}$ phosphor synthesized by coprecipitation method is the main focus of this work. The structural, photoluminescence properties were examined by X-ray diffraction and PL. The crystal structure is investigated by using the X-ray diffraction. The $\text{NaCaPO}_4:\text{Tm}^{3+}$ were synthesized by varying the content of Tm^{3+} to study the absorption and luminescence properties. The optimum concentration of Tm^{3+} and band gap of the $\text{NaCaPO}_4:\text{Tm}^{3+}$ is studied. The PL spectra under 358 nm excitation reveal the peak in the blue region. Further the critical energy transfer distance between Tm^{3+} ions which further suggested the multipolar interaction is the origin of the concentration quenching. The CIE chromaticity diagram shows the purity of the emitted color from the prepared samples. Further color rendering index and CCT is studied. The present phosphor emits in the intense blue region which shows the applicability of the phosphor in white light emitting device.

Keywords: Phosphor, Photoluminescence, Inorganic compounds, White light emission.

SYNTHESIS AND CHARACTERIZATION OF BARE AND IRON DOPED COBALT MAGNETITE NANO PARTICLES

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ABSTRACT

Currently, cobalt magnetite (CoMn_2O_4) nanoparticles are considered to be an attractive substitution for various applications such as energy storage and oxygen reduction reaction, because of their high reversible capacities and cost-effectiveness. The present work deals with the synthesis and characterization of CoMn_2O_4 nanoparticles and to study its nature while adding the dopant. The bare and Fe (2%, 4% and 6%) doped CoMn_2O_4 nanoparticles were prepared by simple co-precipitation method. The CoMn_2O_4 is a semiconductor transition metal, which is doped with Iron in different concentrations to enhance the physical properties. The prepared samples were characterized by various characterization techniques. XRD results reveals the prepared bare and Iron doped CoMn_2O_4 nanoparticles have cubic structure with unit cell parameters $a = b = c = 8.1880\text{\AA}$, $\alpha = \beta = \gamma = 90^\circ$. The average crystallite size of bare and doped samples is found to be $\sim 15\text{-}30\text{ nm}$. The intensity of crystallographic peaks of iron doped samples is found to decrease in comparison with ferrous free CoMn_2O_4 which is due to distortion of lattice. The bare CoMn_2O_4 nanoparticles show that the spherical morphology is randomly distributed on the skin area of the sample. In addition to that, small pores are visible on the sample. The SEM micrographs of 2%, 4% and 6% Fe doped CoMn_2O_4 nanoparticles shows the similar spherical morphology, but its particle size is reduced. As concentration of Fe increases on CoMn_2O_4 , the particle size decreases due to the smaller ionic radii of Fe^{2+} compared with Co^{2+} . From EDAX analysis, it seems the atomic weight percentage of Co and Mn in the Fe doped CoMn_2O_4 is reduced significantly with the increase in dopant concentration. FTIR result shows different functional groups and slight shift in wave numbers in the doped samples. The characterization result indicates the prepared material is suitable for applications in electrochemical devices, solar cell, luminescent devices, batteries, super capacitor, sensors etc.

EFFECT OF CALCINATION TEMPERATURE ON THE STRUCTURAL AND MAGNETIC STUDIES OF IRON OXIDE (Fe_2O_3) NANOPOWDERS

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ABSTRACT

The effect of calcination temperature on the synthesized Iron oxide ($\alpha\text{-Fe}_2\text{O}_3$) nanopowders (NPs) by co-precipitation method was studied. The prepared $\alpha\text{-Fe}_2\text{O}_3$ NPs are characterized using X-Ray Diffraction (XRD) analysis and Vibrating Sample Magnetometer (VSM). The powder X-ray diffraction results indicated the presence of $\alpha\text{-Fe}_2\text{O}_3$ NPs with hematite phase and the average crystallite size was found to be 25 to 30 nm. The magnetic properties of the nanoparticles were studied by Vibrating Sample Magnetometer (VSM) at room temperature. All the samples exhibited characteristic hysteresis loop and more importantly the sample calcined at 700°C attained the strong ferromagnetic behaviour of $\alpha\text{-Fe}_2\text{O}_3$ with magnetization (M_s) ~ 0.471 emu/g, Coercivity (H_c) ~ 355.66 Oe, Retentivity (M_r) ~ 0.043 emu/g. Hence, the obtained results confirmed that $\alpha\text{-Fe}_2\text{O}_3$ NPs are promising candidates for Magnetic Resonance Imaging (MRI) as the contrast agents, cell magnetic separation and hyperthermia applications.

Keywords: nanoparticles, iron oxide, hematite, magnetic properties, hyperthermia.

SYNTHESIS, CHARACTERIZATION OF IRON DOPED NICKEL SULPHIDE FOR SUPERCAPACITOR APPLICATIONS

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ABSTRACT

Metal sulphides such as NiS, CoS₂, FeS₂ and CuS have been used as capable electrode materials for pseudo capacitors due to their excellent electrochemical performance like good reversible capacity and synergetically high electrical conductivity. Among the above metal sulphides, Nickel Sulphide is an important one because of its different phases and various applications in the field of solar cells, batteries, supercapacitors etc. Fe-based sulphides is also an earth abundant and non-toxic element and non-noble candidates used for various applications as water splitting and other electronic devices. Comparing to binary metal sulphides, Metal Sulphides (MMSS) and hybrid metal sulphides have higher electrochemical capacitances and improved electrochemical properties. This work is focused on the synthesis and characterization of iron doped Nickel Sulphide nanoparticles as electrode material for supercapacitor applications. Iron doped Nickel Sulphide nanoparticles were prepared by simple co-precipitation method. The prepared samples were characterized by XRD, UV-VIS, FT-IR, SEM and electrochemical studies.

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ஈங்க இலக்கியத்தில் அறிவியல் சிந்தனைகள்



ஆசிரியர் குறிப்பு

முனைவர் த. கீதாஞ்சலி

பொள்ளாச்சி நல்லமுத்துக் கவுண்டர் மகாலிங்கம் கல்லூரியில் பதினைந்து ஆண்டுகளாக தமிழ்ப்பேராசிரியராக பணியாற்றி வருகிறார். பல்கலைக்கழக நிதிநல்கையுடன் குறுந்திட்ட ஆய்வினையும் இந்திய மொழிகளின் நடுவண் நிறுவனம் மற்றும் செம்மொழி மத்திய தமிழாய்வு நிறுவனத்தின் சார்பாக பயிலரங்குகள் மற்றும் கருத்தரங்குகள் நடத்தியுள்ளார். இதுவரைநான்கு முனைவர் பட்ட ஆய்வாளர்களும் ஐந்து ஆய்வியல் நிறைஞர் பட்ட ஆய்வாளர்களும் இவரது நெறியாளுகையின் கீழ் ஆய்வினை நிறைவு செய்துள்ளனர். ஒன்பது புத்தகங்கள் வெளியிட்டுள்ளார். இருபதுக்கும் மேற்பட்ட புத்தகங்களிலும் எம்பதுக்கும் மேற்பட்ட பன்னாடு மற்றும் தேசிய அளவிலான கருத்தரங்குகளிலும் ஆய்வுக்கட்டுரை சமர்ப்பித்துள்ளார்.

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தமிழ் உதவிப் பேராசிரியர்

இன்றைய சமூக சூழலில் மனிதன் இயந்திர மயமான வாழ்க்கையை வாழ்ந்து கொண்டிருப்பது எவராலும் மறுக்க முடியாததாகவே இருக்கின்றது. இயந்திர மயமான வாழ்க்கையில் நெறிதவறி வாழும் மனிதன் பல துன்பங்களுக்கு ஆளாகின்றான். அத்தகைய வாழ்க்கையை வாழ்ந்து கொண்டிருக்கின்ற மனிதனுக்கு அவனது வாழ்க்கை முறையினையும் சமுதாய ஒழுக்கங்களையும் எடுத்துக் கூறும் சிறப்பு வாய்ந்தவையாக அற இலக்கியங்கள் திகழ்கின்றன. இவ்விலக்கியங்கள் மனிதனை நல்வழிப்படுத்தி, ஒழுக்க உணர்வுடன் வாழ வழிவகை செய்கின்றன. இலக்கியங்கள் வாழ்வின் முறைப்படுத்த உதவும் வழிகாட்டிகளாகத் திகழ்கின்றன. அத்தகைய அற இலக்கிய நூல்களில் நான்மணிக்கடிகை தலைசிறந்து விளங்குகிறது.

நான்மணிக்கடிகை

பதினெண் கீழ்க்கணக்கு நூல்களுள் ஒன்று. இது ஒரு நீதிநூல், விளம்பிநாகனார் என்னும் புலவரால் இயற்றப்பட்ட இந்நூல் 101 பாடல்களைக் கொண்டுள்ளது. ஒவ்வொரு பாடலும் நான்கு அடிகளால் ஆனது. ஒவ்வொரு பாடலிலும் நான்கு மணியான கருத்துக்கள் சொல்லப்படுகின்றன. இதனாலேயே இது நான்கு வகை மணிகளால் ஆன ஆபரணம், நான்மணிக்கடிகை என்று அழைக்கப்படுகிறது. இவற்றில் இரண்டு பாடல்களை ஜி.யூ.போப் அவர்கள் ஆங்கிலத்தில் மொழிபெயர்த்துள்ளார்.

பதினெண் கீழ்க்கணக்கு நூல்களைத் தனிப்பாடல் ஒன்று பட்டியலிட்டுக் காட்டுகின்றது.

“நாலடி நான்மணி நானாற்பது ஐந்திணைமுப்
பால் கடுகங் கோவை பழமொழி-மாமூலம்
இன்னிலைய வாங் காஞ்சியுடன் ஏலாதி என்பவே
கைநிலை யுமாம் கீழ்க்கணக்கு”

அறம்

‘அறம்’ என்ற சொல்லுக்கு, “தருமம், புண்ணியம், இல்லறம், அறக்கடவுள்” (திருமகள் தமிழகராதி.ப58) என்று வ.த.இராமசுப்ரமணியம் பொருள் கூறுகிறார்.

அறிஞர் அ.த.பன்னீர்செல்வம், தமிழிலே பொதுவாகச் சொல்லப்படும் அறம் என்பதும், திருக்குறளில் சொல்லப்படும் அறம் என்பதும், மிக விரிந்த பொருளுடையது இன்னது என்று ஒரே சொற்களில் அடக்கிவிட முடியாது என்கிறார். சுருக்கமாகச் சொன்னால் அறம் என்பது நல்லவை செய்தல் என்பதாகும்.

கல்வி

நம் வாழ்வில் சிறந்த இடத்தையும் சிறப்பையும் தருவனவற்றில் ஒருவனுக்கு துணையாக இருப்பது கல்வியே என்கிறார், அறிஞர் அண்ணா.

கல்வி எப்படித் துணையாக நிற்கிறது? அது நெருப்பில் வேகாது. தண்ணீரால் அழியாது, திருடரால் களவாட முடியாது, பிறருக்குக் கொடுக்கக் கொடுக்கப் பெருகும் தன்மை உடையது. இவ்வளவு சிறப்புகளை உடைய கல்வி நிச்சயம் நமக்குத் துணையாக நிற்கும் என்று கல்வியின் சிறப்பைக் கூறுகிறார். மேலும்,

“கற்றான் தளரின் எழுந்திருக்கும் கல்லாத
பேதையான் வீழ்வானேல் கால்முறியும்”

(நான்.75)

தனக்கு தன்பம் வந்தபோது துணை நிற்பது கல்வி போல் வேறில்லை. தளர்ச்சியுற்ற காலத்தில் கற்றவர் முயன்று எழுகின்றனர். கல்லாதவர், கால் முறிந்தவர் போல் ஆகிவிடுகின்றனர் என்ற கருத்தையும் விளம்பிநாகனார் விளம்புகின்றார்.

கல்வி நம் வாழ்வில் இன்றியமையாதது என்பதனால்தான் வள்ளுவர்,

ஒருமைக்கண் தான்கற்ற கல்வி ஒருவற்கு
எழுமையும் ஏமாப்பு உடைத்து

(குறள்.398)

ஒரு பிறப்பில் தான் கற்ற கல்வி அப்பிறப்பிற்கு மட்டுமல்லாமல் ஏழு பிறப்பிற்கும் பயனுடையதாக அமையும் என்ற கருத்தை நம் வாழ்வில் உணர வேண்டும்.

மேலும், சமூகத்திற்கு கல்வி குறித்தான சிந்தனையை விவேகானந்தர் கூறுகையில்,

“கல்வி என்பது பண்பாட்டை உருவாக்குவதற்கான சமுதாயத்தை வளப்படுத்துவதற்கான ஒரு வழி, எந்த நாகரிகமும் மறையாமல் தொடர்வதற்குக் கல்வி ஆற்றலே முக்கிய காரணமாக இருந்து வந்துள்ளது”

என்ற இவரின் கல்விச் சிந்தனையை மனதில் கொண்டு, ‘கற்றோர் சென்ற இடமெல்லாம் சிறப்பு’ என்பதையும் மனதில் இருத்தி, கல்விகுறித்தான சிந்தனையோடு வாழ் என அன்புக் கட்டளையிடுகின்றது.

மக்களின் இயல்பு

தம் செயலாலும், தாம் செய்யும் தொழிலாலும் வேறுபட்டு இருக்கும் பல வகையான மக்களின் இயல்புகளைத் தொகுத்துரைக்கின்றது.

மலர் இருப்பதை அதன் மனத்தால் அறிகிறோம். அது போல் ஒருவன் செயல்திறனை அவன் சொல்லால் அறியலாம். ஒருவன் உள்ளக் குறிப்பை அவன் முகத்தால் அறியலாம் என்பதை,

“நாற்றம் உரைக்கும் மலர் உண்மை கூறிய
மாற்றம் உரைக்கும் வினைநலம் தூக்கின்
அகம் பொதிந்த தீமை மனம் உரைக்கும் முன்னம்
முகம் போல முன் உரைப்பது இல்”

(நான்.48)

இப்பாடலின் வழி அறியலாம்.

உழவு மாடு உடையவன் வேளாளன். எவரோடும் மாறுபடாது ஒற்றுமையுடன் வாழ்பவன் அந்தணன், நன்மை செய்யாதவன் துணையின்றி இருப்பான்; நற்குணங்களை உடையவன் இனிமையானவன் என்றும்,

பிறருக்குக் கொடுத்து உண்பவனே புகழ் உடையவன். கொடுப்பவன் கைப்பொருளைப் பறித்து உண்டவன் பேராசைக்காரன் (நான். 2) என்றெல்லாம் அறநோக்கில் மக்களின் இயல்புகளை வகைப்படுத்துவதைக் காணலாம்.

உயிர்க்கொலை

இவ்வுலகத்தில் ஒன்றை உருவாக்கலும் அழித்தலும் நம் கையில் இல்லை என்பதை உணர்ந்திருந்தாலே எவ்விதமான கொலை எண்ணமும் எவரிடமும் வந்திருக்காது. பிற உயிர்களுக்குத் தீங்கு செய்வதால் தனக்கு அதனால் துன்பமே வந்து சேரும் உண்பதற்காக உயிரினங்களை வளர்ப்பதும், விலைகொடுத்து மாமிசத்தை வாங்கி உண்பதும் பெரும் குற்றமே என்கிறது நான்மணி,

“அலைப்பான் பிறவுயிரை யாக்கலும் குற்றம்

.....

கொலைப்பானுங் குற்றமே யாம்”

(நான்.26)

வள்ளுவரும் உயிர்க்கொலை கூடாது என,

“கொல்லான் புலால் மறுத்தானைக் கைகூப்பி

எல்லா உயிரும் தொழும்”

(குறள்.260)

இக்குறள், குற்றம் செய்த மனத்தையே இரங்க வைக்கும். அப்பொழுதுதான் அறம் அங்கு நிற்கும். ஆம், ஒவ்வொரு கண்ணுக்கும் புலனாகாமல் இருக்கும் இரக்க குணமும் அறம் என உணர்த்துகின்றார்.

பின்பற்ற வேண்டியவை

தனிமனிதன் வாழ்வில் பின்பற்றவேண்டியவை எவை என்பதும், நீக்க வேண்டியவை எவை என்பது பற்றியும் எச்சரிக்கை செய்கிறது.

பிறர் செய்த தீமைகளுக்காக அவரை வெறுக்காமல் கோபப்படாமல் இருக்க வேண்டும். அவர் செய்த நன்மைகளை மறக்காமல் இருக்க வேண்டும் என்பதை

“கன்றாமை வேண்டும் கடிய பிறர் செய்த
நன்றியை நன்றாகக் கொளல் வேண்டும்”

(நான்.13)

இவ்வரிகள் விளக்குகின்றது.

இவ்வாறாக நான்மணிக்கடிகை பல அறக்கருத்துகளை முன் வைக்கின்றது. இக்கருத்தோடு நம் வாழ்கை எவ்வாறு பயனுள்ள வாழ்க்கையாக வாழ வேண்டும் என்பதற்கு சிறு விளக்கம்.

‘வாழை போல வாழ்வது வாழ்க்கை’ என்பார்கள். தனக்குப் பின் வாழை தன் சந்ததிகளைத் தன்காலடியில் செழுமையாக வளர்ப்பதில் தவறுவதே இல்லை.

“வாழையடி வாழையென வந்த திருக்கூட்டம்”

என்பது வள்ளற் பெருமானின் வாக்கு. வாழ்க்கையில் நாம் எப்படி வாழ வேண்டும் என்ற பண்பாட்டையும் வாழை நமக்குப் பேர்தித்து நிற்கிறது.

மக்களுக்குப் பயன்படாத பொருள்கள் ஒன்றுகூட வாழையினிடத்தில் இல்லை. தண்டு, பட்டை, நார், இலை, பூ, பிஞ்சு, காய், கனியாகிய தன் அத்தனை உறுப்புகளையும் மக்களின் பயன்பாட்டிற்குத் தந்து மகிழ்கிறது வாழை. அதுபோல நாம் பிறருக்கும் பயன்பட வாழ்வோம். தீமைகளை மறப்போம்! மண்ணிப்போம்!

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தமிழ் உதவிப் பேராசிரியர்

நாட்டுப்புற மக்களால் வழிவழியாக நம்பப்பட்டும் பாதுகாக்கப்பட்டும் வருகின்ற நம்பிக்கைகளே நாட்டுப்புற நம்பிக்கைகளாகும். பெரும்பாலான நம்பிக்கைகள் நாட்டுப்புற மக்களாலேயே உருவாக்கப்பட்டும் ஒரு தலைமுறையினரிடம் இருந்து அடுத்த தலைமுறையினருக்கு வழங்கப்பட்டும் வருகின்றன.

பிறப்பு முதல் இறப்பு வரையும், இறந்த பின்னும் நம்மோடும் நம் வாழ்வோடும் நம்பிக்கை என்பது பயணம் செய்கின்றதை கண்கூடாகக் காண்கிறோம். நம்பிக்கை குறித்து ஹெலன் ஜான்சன், “நம்பிக்கைகள் எழக் காரணமாயிருந்த நிகழ்ச்சிகள் உண்மையாகவோ, பொய்யாகவோ இருக்கலாம். ஆனால் நம்பிக்கை இருப்பது உண்மை அவை மெய்ப்பிக்கத் தக்கவை” என்கிறார்.

அறிவியல் தொழில்நுட்பம் நன்கு வளர்ந்துள்ள இக்காலகட்டத்திலும் மக்கள் இன்றும் பழைய நம்பிக்கைகளையும் சடங்குகளையும் பின்பற்றுகின்றனர் என்பது மறுக்க முடியாத உண்மையாகும். காரணம் பழைய நம்பிக்கையாக இருந்தாலும் நம் வாழ்வில் பல நன்மைகள் ஏற்பட வழிவகை செய்கிறது எனலாம். ஏராளமான நம்பிக்கைகளில் சிலவற்றை இக்கட்டுரையில் காண்போம்.

காலந்தோறும் நம்பிக்கைகள்:

நம்பிக்கை என்பதற்கு விசுவாசம், ஆணை, உண்மை, சத்தியம், நிசம், உறுதிப்பாடு என்று மதுரைத் தமிழ்ப் பேரகராதி பல்வேறு பொருளைத் தெரிவிக்கின்றது.

“நம்பிக்கைகள் பெரும்பாலும் அச்சவுணர்வின் அடிப்படையாகத் தோன்றியதாகக் காட்சியளித்தாலும் இயற்கைக்கு அப்பாற்பட்ட செயல்களை உணராத பொழுதும் மனித வாழ்வில் ஏற்படும் சில நிகழ்ச்சிகளுக்குக் காரணம் கற்பிக்க இயலாத பொழுதும் மனித மனமானது சிலவற்றைப் படைத்துக் காரணம் கற்பித்துக் கொள்கிறது. அவைகளே நம்பிக்கைகளாக உருவாகின்றன” என்கிறார் டாக்டர் சு. சக்திவேல் அவர்கள். மேலும், அமெரிக்கக் கலைக் களஞ்சியம், ஒரு பிரச்சனையின் மூலமாக நாம் தெரிந்து கொள்ளும் உண்மையை விரும்பி ஏற்றுக் கொள்ளாதலே பொதுவாக நம்பிக்கை எனப்படும். ஆனால் நுட்பமகவும், சமயரீதியாகவும் பார்க்கும் பொழுது ஒரு மனிதனின் மனத்திண்மையையும், விருப்பத்தையும் பொறுத்தே நம்பிக்கை அமைகிறது என விளக்கமளிக்கிறது.

நம்பிக்கைகளே மனித வாழ்வினை இயக்குகின்றன. தனிமனித நம்பிக்கை காலப் போக்கில் சமுதாய நம்பிக்கையாக மாற்றம் பெற்றுள்ளது.

‘நம்பினார் கெடுவதில்லை’ என்ற பொன்மொழிக்கு ஏற்ப நாட்டுப்புற நம்பிக்கைகள் மக்கள் மனதில் பதிந்திருப்பதை இன்றளவும் காணமுடிகின்றது.

இறை நம்பிக்கை:

தந்தையோடு கடைவீதிக்குச் செல்லும் குழந்தை தந்தையின் சுண்டுவிரணைப் பிடித்துக் கொள்கிறது. அந்த சின்ன ஒரு பற்றுதல் அக்குழந்தைக்கு அதிகமான நம்பிக்கையைத் தருகிறது. தந்தை தன்னைக் கைவிட்டாட்டார். தந்தை தன்னைப் பாதுகாத்துக் கொள்வார் என குழந்தை சந்தேகத்திற்கு இடமின்றி நம்புகிறது. தந்தை மீது அந்தக் குழந்தை வைக்கும் நம்பிக்கைக்குக் காரணம் என்ன? தந்தையின் சுண்டு விரலின் வலிமையா? இல்லை. குழந்தை தந்தையை அறிந்திருக்கிறது என்பது தான்.

அதே போல, தான் இறைவனிடம் நாம் வைக்கும் நம்பிக்கைக்கு "அவர் எப்படிப் பட்டவர்" என்பதை நாம் அறிந்து கொள்வதில் தான் அடங்கியிருக்கிறது. இறைவனின் தன்மைகளை முழுமையாக அறிந்து கொண்ட மூன்றோர்கள் இறைநம்பிக்கையுடன் வாழ்ந்தனர். அவ்வாறே நாமும் பின்பற்றுகிறோம்.

இறை நம்பிக்கை குறித்தான ஒரு கதை.

சீடன் ஒருவன், "குருவே! இறைநம்பிக்கை இல்லாமல் நம்மால் நேர்வழியில் செல்ல முடியாதா? என்று சந்தேகம் கேட்டான்.

"சமயம் வரும்போது சொல்கிறேன்" என்றார் குரு.

ஒரு நாள் அந்தச் சீடன், ஆசிரமப் பசுவை மேய்ச்சல் முடிந்து தொழுவத்தில் கட்டி வைக்க கூட்டிச் சென்றான். அச்சமயம் அங்கு வந்த குரு, "சீடனே, பசுவை நீ வருகிறாயா? அல்லது பசு உன்னுடன் வருகிறதா? பசுவை நீ ஒட்டுகிறாயா? பசு உன்னை அழைத்துச் செல்கிறதா? எனக் கேட்டார்.

குழம்பிய சீடன், "சுவாமி என்ன சொல்ல வருகிறீர்கள்" எனக் கேட்டான்.

இந்தப் பசுவை நீதானே பராமரிக்கிறாய்? இது உன் பேச்சைக் கேட்காதா? ஏன் கயிறு கட்டி இழுத்துச் செல்கிறாய்?

"கயிறை விட்டால் அது ஓடிவிடும்"

"அப்படியென்றால் பசு உன் கட்டுப்பாட்டில் இல்லையானே?" என்றார்.

"குருவே, பசு எனக்குப் பழக்கம் தான் பன்னிரண்டு வருடங்களாகப் பராமரிக்கிறேன். என்றாலும், அது எங்காவது ஓடி விடக்கூடாது என்பதால் அதைக் கயிறு கட்டி அழைத்து வருகிறேன்" என்றான்.

"உன்னைப் போலத்தான் இறைவனும், மனிதர்களாகிய நாம் கட்டுப்பாடு தளர்த்து, சீரழிந்து விடக்கூடாது என்பதற்காக, இறை நம்பிக்கை கொண்டு நம்மைக் கட்டுப்படுத்தி நேர்வழியில் செலுத்துகிறார் என்று அன்றைய கேள்விக்கு பதிலாகச் சொன்ன இக்கதை இறை நம்பிக்கைக்கு விளக்கம் தருகிறது.

இக்கதைக்கு வலுசேர்க்கும் வகையில் நீதி வெண்பா.

"சிவனே சிவனே சிவனேயென் பார்பின்
சிவனுமையாளோடும் திரிவன்:- சிவனருளால்
பெற்ற இளங்கன்றைப் பிரியாமல் பின்னோடிச்
சுற்று பசுப்போல் தொடர்ந்து."

பிறந்த கன்றொன்று பெற்ற தாயிடம் மிகுந்த பாசம் கொண்டாலும், துள்ளி விளையாடும் விளையாட்டால் தூரதூரமாகச் செல்லும். அப்போது பசு அதைப் பிரிந்து விடாமல் அதன் பின்னே தொடர்ந்து ஓடி அதைச் சுற்றி வரும். அதுபோல சிவனே? சிவனே என்று மனம் உருகிச் சொல்லுவார் பின்னே அச்சிவன் தன் பார்வையோடு அவர்களைச் சுற்றியே இருப்பார் என்கிறது.

மனிதனுடைய மனம் பலமற்ற கொடியைப் போன்றது, அதனால் தனித்து நிற்கவோ, செயல்படவோ இயலாது. அதற்கு பற்றிக்கொண்டு எழத் துணையாக இறைவனைக் கொண்டான். சடங்குகளையும் நம்பிக்கைகளையும் மனதில் கொண்டு இறை நம்பிக்கையோடு வாழ்வவனானான். அவ்வாறான நம்பிக்கையில் பலவற்றை நாம் பின்பற்றுகிறோம். அறிவியல் பூர்வமாக அதில் உண்மைகளும் அடங்கும்.

* கோயில்களில் நேர்மறை அதிர்வுகள் அதிகமாக இருப்பதும்,

* கோயிலின் மூலஸ்தானத்தில் பூமியின் அதிகபட்ச காந்த அலைகள் எழுவதாகவும் ஆய்வுகள் சொல்லுகின்றன. காந்த அலைகளும், நல்ல அதிர்வுகளும் ஒருவருக்கு நல்ல மனநிலையைக் கொடுக்கின்றது.

* கோயிலுக்குச் செல்கிறபோது, இறைவனை பார்த்தல், நல்ல இசை, மந்திரங்களைக் கேட்டல், கற்பூர தீபாராதனை போன்ற நல்ல வாசனையை நுகர்தல், பிரசாதத்தை ருசித்தல், நல்ல அதிர்வுகளை உணர்தல் என ஐந்து புலன்களும் தூண்டப்படுதல்.

* கோயில்களில் உள்ள ஆலய மணிக்குப் பின் பெரும் அறிவியல் இருப்பதாக சொல்லப்படுகிறது. மணி என்பது ஒரே ஒரு உலோகத்தால் ஆனது அல்ல. கேட்மியம், ஈயம், துத்தநாகம், தாமிரம், நிக்கல், குருமம் மற்றும் மங்கனம் என்ற பல உலோகத்தால் ஆனவை. இதிலிருந்து வரும் ஒசை மனித உடலுக்குள் ஊடுருவி மனதை அமைதி அடையச் செய்கிறது.

* தேங்காய் உடைக்கும் நிகழ்விலும் நம்பிக்கை நிலவுகிறது. கண் உள்ள மூடி நமக்கும். மற்றைய பகுதி அர்ச்சகருக்கும் என்ற வகையில் அதில் எவ்வித உடைசல் ஏற்படாது. கெட்டுப் போகாதும் இருப்பதே சிறப்பு என நம்புகிறோம்.

இதுபோன்ற பல அறிவியல் பூர்வமான நம்பிக்கையைப் பழக்கமாகக் கொண்டுள்ளோம்.

உணவு நம்பிக்கை:

உணவு என்பது ஓர் உயிரினத்திற்குத் தேவையான ஊட்டச்சத்து கிடைப்பதற்காக உண்ணப்படும் எந்தவொரு பொருளையும் குறிக்கும். மனிதனின் அடிப்படைத் தேவைகளில் ஒன்று உணவு. தமிழர் உணவு முறைகளில் பலவகையான நம்பிக்கைகள் உண்டு.

தமிழர் உணவு முறை குறித்து விக்கிப் பீடியாவில், “பசித்தபின் சாப்பிட வேண்டும். நாக்கால் ருசித்தபின் சாப்பிட வேண்டும். சீராகத் தூங்கிய பின் சாப்பிட வேண்டும். இரசாயன உணவைத் தவிர்த்து இயற்கை உணவை சாப்பிட வேண்டும், அளவோடு சாப்பிட வேண்டும், வயிற்றில் உணவு ஜீரணித்தப் பின் சாப்பிட வேண்டும், அளவோடு அமைதியுடனும் மகிழ்வுடனும் இருக்கும் போது சாப்பிட வேண்டும், கவலையின்றி சாப்பிட வேண்டும் என பட்டியலிடுகின்றது. இப்பட்டியலைச் சார்ந்தே நமது நம்பிக்கைகள் தொடர்கின்றன.

உணவியல் நிபுணர் தாரணி கிருஷ்ணன், “உணவு உண்ணும் நேரம், உடல் எடை, ஆரோக்கியம் ஆகியவற்றுக்கு நேரடித் தொடர்பு இருப்பதாகக் கூறுகிறார். இக்கருத்தையே வள்ளுவர்,

“மருந்தென வேண்டாவாம் யாக்கைக்கு அருந்தியது
அற்றது போற்றி உணின்”

(குறள் 942)

உண்ட உணவை செரிப்பதற்கான கால இடைவெளி தந்து உணவு உண்ணும் உடலுக்கு வேறு மருந்தே தேவையில்லை என்று சொல்வதால், உடலுக்கு மருந்து, ‘உணவு’தான் என்பதை உணர்த்துகின்றது.

உடலுக்குத் தேவையான உணவு ஆரோக்கியமானதாக இருக்க வேண்டும். அன்றைய உணவுகள் விவசாயிகளால் ஆரோக்கியமானதாக வழங்கப்பட்டது. சிறந்த தரமான உணவுப் பெருளின் வளர்ச்சிக்கு முளைப்பாரி போடும் நம்பிக்கை சான்றாகிறது.

முளைப்பாரி போடுதல்:

விவசாயிகள் பருவம் பார்த்து விவசாயம் செய்து அறுவடை செய்யும் நேரத்தில் முதலில் அடுத்த போகத்திற்கான தரமான விதைகளை வெயிலில் காய வைத்து பாதுகாப்பார்கள். பாதுகாத்த விதைகளை அடுத்த பருவத்தில் விதைப்பதற்கு முன் பன்னெடுங்கால வழக்கமாக இருந்திருக்கிறது. அப்படி நம் முன்னோர்கள் குழுவாகச் சேர்ந்து கூட்டு முயற்சியாகச் செய்தது தான் முளைப்பாரித் திருவிழாவாகும்.

முளைப்பாரி என்னும் அரிய தொழில்நுட்பத்தை இப்போதுள்ள விவசாயிகள் கண்டுகொள்ளாத காரணத்தால் இன்று பல ஆயிரம் பாரம்பரிய விதைகளை இழந்து விட்டோம். அதனால் மரபணு மாற்றம் பெற்ற வீரியம் இல்லாத விதைகளை வாங்குகின்ற அவலம்.

ஒவ்வொரு காய், கனி, பூக்களிலும் விதைகள் அவசியம். மறுசுழற்சிக்கு அவைதான் வித்தாகின்றன. ஆனால் இன்றைய காலகட்டங்களில், விதையில்லாத பழங்களும், காய்களுமே நமக்குப் பிடிக்கின்றது. பற்களுக்கு வேலையே இருக்கக்கூடாது என்று எதிர்பார்க்கின்றனர். விதைகளற்ற எவ்வித உணவுப் பொருளும் நமக்கு ஆரோக்கியம் தருவதில்லை.

பாரம்பரிய இயற்கை உணவு இல்லாமல் பலர் துன்பப்படுகின்றனர். உடம்பில் ஏற்படும் சில பல மாற்றங்களுக்கும் இதுவே காரணம். உணவியல் மாற்றமே மரபியல் மாற்றம். மரபியல் மாற்றத்தால் இனப்பெருக்க இன்மை ஏற்படுகிறது. உதாரணமாக, தற்போது பெருகி வரும் செயற்கை கருத்தரிப்பு மையம் ஆகும்.

பத்து குழந்தைகள் தவழ்ந்த வீட்டில் ஒரு குழந்தை தவழ எத்தனை வேண்டுதல்கள்... எண்ணிலடங்காதவை.

மழை பற்றிய நம்பிக்கை:

பருவ நிலைகள் மாறப் போவதை எறும்புகள், பூனைகள், விலங்குகள் உள்ளிட்ட உயிரினங்கள் உணர்ந்துகொண்டு அதற்கேற்ப செயல்படும். இவ்வுயிரினங்களின் செயல்பாடு களைப் பார்த்து அடுத்து என்ன நிகழும் என்று பழந்தமிழ் மக்கள் அறிந்து கொண்டனர். எறும்புகள் தங்களது முட்டைகளைக் கொண்டு மேட்டு நிலப்பகுதிக்குச் சென்றால் எறும்புகள் தங்களது முட்டைகளைத் தூக்கிக்கொண்டு படைபோலச் செல்வதைக் காண்கிறோம். எறும்புகள் தன் முட்டைகளைத் தூக்கிக்கொண்டு படைபோலச் செல்வதைக் காண்கிறோம். எறும்புகள் தன் முட்டைகளைத் தூக்கிக்கொண்டு படைபோலச் செல்வதைக் காண்கிறோம். எறும்புகள் தன் முட்டைகளைத் தூக்கிக்கொண்டு படைபோலச் செல்வதைக் காண்கிறோம். எறும்புகள் தன் முட்டைகளைத் தூக்கிக்கொண்டு படைபோலச் செல்வதைக் காண்கிறோம்.

பாதுகாக்கவே அவ்வாறு செய்கிறது. மழைவரும் என்பதை முன்கூட்டியே அறியும் ஆற்றலையும் கொண்டுள்ளது. மேலும் தட்டான்பூச்சி தாழப் பறப்பதும் தவளை சுத்துவதும் மழைவருவதற்கான அறிகுறி என்ற நம்பிக்கை அனைவரிடமும் உள்ளது. மழை நம்பிக்கை குறித்த பாடல்,

"அஞ்சாந்தேதி இடிச்சா ஆல செவுத்துமேல நெல் வெளையும்
ஆறாந்தேதி இடிச்சா ஆல இலை மேல நெல்வெளையும்
எட்டாந் தேதி இடிச்சா எட்டிப் பார்க்க ஒண்ணும் இல்ல
பத்தாந் தேதி இடிச்சா பாறை மேல நெல் வெளையும்"

(ஆல செவுத்துமேல - கரும்பு ஆலைக் கொட்டகையின் சுவற்றின் மீது) மேற்குறிப்பிட்ட நாட்களில் எட்டாந்தேதியைத் தவிர, பிற நாட்களில் இடிமின்னல் தோன்றினால் தான் அதிக அளவில் மழைவரும் என்றும் எட்டாந்தேதி இடித்தால் மழை பொய்க்கும் என்பதும் நம்பிக்கையாகும். மழை வருமா? வராதா? என்ற கேள்விக்கு இன்று விஞ்ஞானத்தின் பதிலுண்டு. அன்றைய மக்கள் 'வானம் பார்த்த பூமி'யாக மழைக்காலத்தை அனுபவத்தால் உணர்ந்தே பயிர் செய்தனர். பொதுவாக தமிழகத்தில் இரு பருவக்காற்று மழையைக் கொடுக்கும் என குறிப்பிடுவார்கள். வடகிழக்கு பருவக் காற்று, தென்மேற்கு பருவக் காற்று என்ற இரண்டு பருவக் காற்றும் நமக்கு மழைப்பொழிவைத் தரும் என கிராமப்புற மக்களின் நம்பிக்கையாகும். இந்த நம்பிக்கை அறிவியல் பூர்வமானது என்று நாம் நம்பும் வகையில் இயற்கை தூக்கணாங்குருவியைப் படைத்துள்ளது. ஆம் ஆற்றிவு உடைய நாம் அதன் விஞ்ஞான தொழில்நுட்பத்தைக் கண்டு தலைவணங்க வேண்டும். தூக்கணாங்குருவி தனது கூட்டை பருவமழைக்குத் தக்கவாறு பாதுகாப்பாக அமைக்கின்றது.

தென்மேற்குப் பருவக்காற்று வீசும் போது அதன் எதிர்திசையான வடகிழக்குப் பகுதியில் வாசலை அமைக்கும் தன்மையையும் இயற்கையின் குழலையும் தட்ப வெப்பத்தையும் உணர்ந்துள்ளது. மேலும் ஆட்காட்டி, அல்லது வானம்பாடிப் பறவை என்ற சொல்லுவார்கள். இந்தப் பறவை எந்தத் திசையை நோக்கி கூட்டமாக சத்தம் போட்டுச் செல்கின்றதோ அந்தத் திசையில பெருமழை பெய்கிறது; 'கடுங்காத்து மழையாகும்' என்ற பொன்மொழியும் மழைபற்றிய நம்பிக்கையை உணர்த்துகிறது.

கண்திருஷ்டி (அ) கண்படுதல்:

வாழ்வில், ஏதேனும் ஒரு நல்லது நடந்தாலும் கெட்டது நடந்தாலும் நம் வீட்டில் சொல்லும் விஷயம்... திருஷ்டி சுத்திப் போடுங்க... என்பதுதான். கெட்ட எண்ணங்களின் தாக்குதல்தான் கண் திருஷ்டி என்கிறார்கள். இதை கண்ணேறு என்றும் சொல்லுவார்கள்.

சில கண்களுக்குத் தீமை விளைவிக்கும் சக்தி உண்டு. அத்தகையோரின் கண்பட்டால் குழந்தைக்கு நோய்நொடி வரும் என அக்கால நாட்டுப்புற மக்கள் நம்பினர். எனவே தான் கல்லடி பட்டாலும், கண்ணடி படக்கூடாது என்ற பழமொழியை,

"கல்லீட்டிற்கு ஒதுங்கினாலும்
கண்ணீட்டிற்கு ஒதுங்க இயலாது"

என்ற வாக்கையும் பயன்படுத்துகிறார்கள்.

திருஷ்டிக்கண் படுதலிலிருந்து குழந்தைகளைக் காக்க, கண்ணாம்பும், மஞ்சளும் கொண்டு குழந்தைமேல் சுற்றிப் போடும் பழக்கத்தை,

"கண்ணான கண்ணார்க்கு கண்ணோக்கும் வாராமல்
கண்ணாம்பும் மஞ்சளும் சுற்றி எறி கண்ணார்க்கு"

என்ற இப்பாடல் கண்திருஷ்டிப் படுதலிலிருந்து தன்னைப் பாதுகாக்கும் முறையைக் கூறுகின்றது.

நம் வீட்டில் குழந்தைகளுக்குச் சூடம் சுற்றி வீட்டின் முன் எரிய விடும் பழக்கமும், வியாழன், ஞாயிறு அன்று வீட்டில் உள்ள அனைவரையும் வரமிளகாய், கடுகு, உப்பு போன்ற பொருள்களைப் படியில் எடுத்துக் கொண்டு அனைவரையும் சுற்றி நெருப்பில் போடும் பழக்கமும் இன்றளவும் பின்பற்றுகிறோம்.

கண் திருஷ்டி குறித்து பிரபல தத்துவ ஞானி

பிரான்சிஸ் பேகன், ஒருவருக்கு பொறாமை மேலிடும் போது முதலில் அது அவரது கண்களில் தான் வெளிப்படுகிறது என்கிறார். மனிதனின் கண்களிலிருந்து வெளிவரும் ஆற்றல் சில சமயங்களில் மிருகங்களை அல்லது குழந்தைகளைக் கூடக் கொல்லும் ஆற்றல் படைத்தது. சிலருக்கு இன்னும் அதிதமான ஆற்றல் கண் பார்வையினாலேயே சாபம் இட வல்லவர்கள் என்று திருஷ்டியை அறிவியல் ரீதியில் விளக்கம் அளித்த அறிஞர் ப்ரூடார்க் அவர்களின் கருத்து இங்கு ஏற்புடையது.

இதற்கு இன்னும் பயன்பாட்டில் உள்ள பல முறைகளைப் பட்டியலிடலாம்.

* திருஷ்டியிலிருந்து தன்னைக் காக்க, தாயத்துகளை அரைஞாண் கயிற்றில் ஆரம்பித்து, மணிக்கட்டு, கழுத்து போன்ற இடங்களிலெல்லாம் அணிந்து கொள்வது.

* கண்ணுக்கு அழகூட்டுவதற்காக மட்டும் தமிழ் மங்கையர் மையைத் தீட்டிக் கொள்ளவில்லை. தன்னைத் தீய பார்வையிலிருந்து காத்துக் கொள்வதற்காகவும் மையைத் தீட்டிக் கொள்கின்றனர். குழந்தைகளுக்கும் மை தீட்டும் தாய்மார் மறந்துவிடாமல் அதே மையினாலேயே குழந்தையின் கன்னத்தில் ஒரு திருஷ்டிப் பொட்டை வைக்க மறக்க மாட்டார்கள்.

* மணமக்கள் வீட்டிற்குள் நுழைவதற்கு முன்னர் அவர்களை வாசலிலேயே நிறுத்தி வைத்து வீட்டில் அவர்களுக்கு மிகவும் வேண்டியவர்கள், வயதானவர்கள் கற்பூரத்தை ஏற்றி அவர்களைச் சுற்றி திருஷ்டி கழிப்பது பழக்கம். மேலும் நவரத்தினங்களை அணியும் பழக்கமும் இவற்றைப் போக்க பயன்படுத்துகின்றனர்.

* உப்பு மனிதர்களை தீய திருஷ்டியிலிருந்து காக்கிறது என்பதையும் அது சற்று வெப்பப்படுத்தப்பட்டாலோ, அல்லது மேலே தெளிக்கப்பட்டாலோ அதன் சக்தி இன்னும் மிக அதிகமாகிறது என்பது நம்பிக்கை.

உப்பு, மஞ்சள் சிறந்த கிருமி நாசினி என்பது இன்றைய மக்கள் அனைவருக்கும் தெரிந்திருக்கக் கூடும். காரணம் கொரோனாவால் துன்பப்பட்டு பயந்து நாம் நம்பிக்கையில் பயன்படுத்திய பொருட்கள் ஏராளம். அவற்றுள் மிக முக்கியமானது உப்பு மஞ்சள், வேப்பிலை, துளசி இன்னும் பல உள்ளன.

தொண்டை கரகரப்பாக இருந்தால் உப்புநீர் கொப்பளிக்கிறோம், உப்பு மஞ்சள் நீரால் ஆவிபிடிக்கிறோம். பழங்களை உப்புநீரால் சுழவிப் பயன்படுத்துகிறோம். மஞ்சள் கட்டையை கல் உப்பினுள்ளே பல நாட்களுக்கு போட்டு வைத்திருப்பார்கள். குழந்தைகளின் வயிற்றுப் பிரச்சனைகளுக்கு அம் மஞ்சளை அரைத்துக் கொடுக்கும் வழக்கம் இன்றும் உண்டு.

இதுபோல பல நம்பிக்கைகள் அறிவியல் பூர்வமாக நம்பப்பட்டு பயன்பாட்டில் உள்ளதை மறுக்க முடியாது.

நம்பிக்கைகள் பல. நாட்டுப்புற மக்கள் நம்பும் ஒவ்வொன்றிலும் மனித வாழ்க்கை சிறக்கவும் இயற்கையோடு இயைந்து வாழும் முறையைக் கட்டிக்காட்டுவதும், உடல் நலம் பெறவும் வழிவகை செய்கிறது. 'நம்பிக்கையே பலம்' என்பதை மனதில் கொண்டு நாட்டுப்புற மக்கள் வாழ்கின்றனர்.

தமிழ்ச்சோலை

நான்காம் பருவம்



முனைவர் அ.மகபூ
தமிழ்த்துறை

நல்லமுத்துக்கவுண்டர் மகாலிங்கம் கல்லூரி (தன்னாட்சி)
பொள்ளாச்சி - 642 001



தமிழ்ச்சோலை

நான்காம் பருவம்

முனைவர் அ.மகபபூ

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தொகுப்புரை

காலத்தினால் தொன்மையானது, கருத்தின் செழுமையினால் செப்பமானது. பழந்தமிழ் செம்மையினையும், செம்மாந்த பெருநிலையினையும் தெள்ளத்தெளிய விளக்கிக்காட்டும் ஒப்பற்ற ஒளிவிளக்கமாவது நம் தாய்மொழியாம் தமிழ்மொழி தோன்றிய நாள் முதல் இந்நாள் வரையும் இனி வருங்காலத்தும், எழிலுடனும் ஏற்றமுடனும் திகழும் நம் செம்மொழியாம் தமிழ்மொழி.

இத்தகைய சிறப்புமிக்க நம் தமிழ்மொழியை வளரும் இளம்பருவ மாணவங்களுக்கு வழங்கும் வகையில் உயர்கல்வியை உயரிய நோக்கோடு பயிற்றுவிக்கும் கொங்குமண்டலத்தின் சிறப்புடன் விளங்கும் பொள்ளாச்சி “நல்லமுத்துக்கவுண்டர் மகாலிங்கம் கல்லூரியின்” தமிழ்த்துறையின் வாயிலாக “தமிழ்ச்சோலை” எனும் நான்காம் பருவத்திற்கான தொகுப்பு நூல் வெளியிடப்படுகிறது இந்நூலில் செய்யுட்பகுதி, உரைநடையில், கட்டுரைப்பகுதி, இலக்கணம், இலக்கிய வரலாற்றுப்பாடப்பகுதி, நாடகம், படைப்பாக்கம் எனப் பன்முகத் தன்மை கொண்ட ஓர் நூலாக வெளியிடப்படுகிறது.

இதில் முதலாவதாக இடம்பெற்றிருப்பது செய்யுட்பகுதியில் சங்க இலக்கியம் பதினெண்மேல்கணக்கில் நற்றிணை, குறுந்தொகை, ஐங்குறுநூறு, பதிற்றுப்பத்து, கலித்தொகை, அகநானூறு, புறநானூறு, முல்லைப்பாட்டு ஆகியவற்றில இருந்து சங்க வாழ்வியலை எடுத்துரைக்கும் வகையில் தேர்ந்தெடுக்கப்பட்ட பாடல்கள் வைக்கப்பட்டுள்ளன. மேலும் பதினெண்கீழ்க்கணக்கு நூல்களான நான்மணிக்கடிகை, திருக்குறள், திரிகடுகம், ஆசாரக்கோலை, பழமொழி நானூறு, சிறுபஞ்சமூலம், முதுமொழிக்காஞ்சி, ஏலாதி, இன்னிலை போன்ற அற நூல்களில் உள்ள அறக்கருத்துகளை இளம் கல்லூரி மாணவர்களுக்கு புகட்டும் வகையில் இப்பாடல்கள் வைக்கப்பட்டுள்ளன.

இரண்டாவதாக இடம்பெற்றிருக்கும் பகுதி உரைநடைப்பகுதி. இப்பகுதி தமிழ்த்துறைப் பேராசிரியர்களால் எழுதப்பட்ட பத்துறை சார்ந்த கட்டுரைகள் தொகுத்தளிக்கப்பட்டுள்ளன.

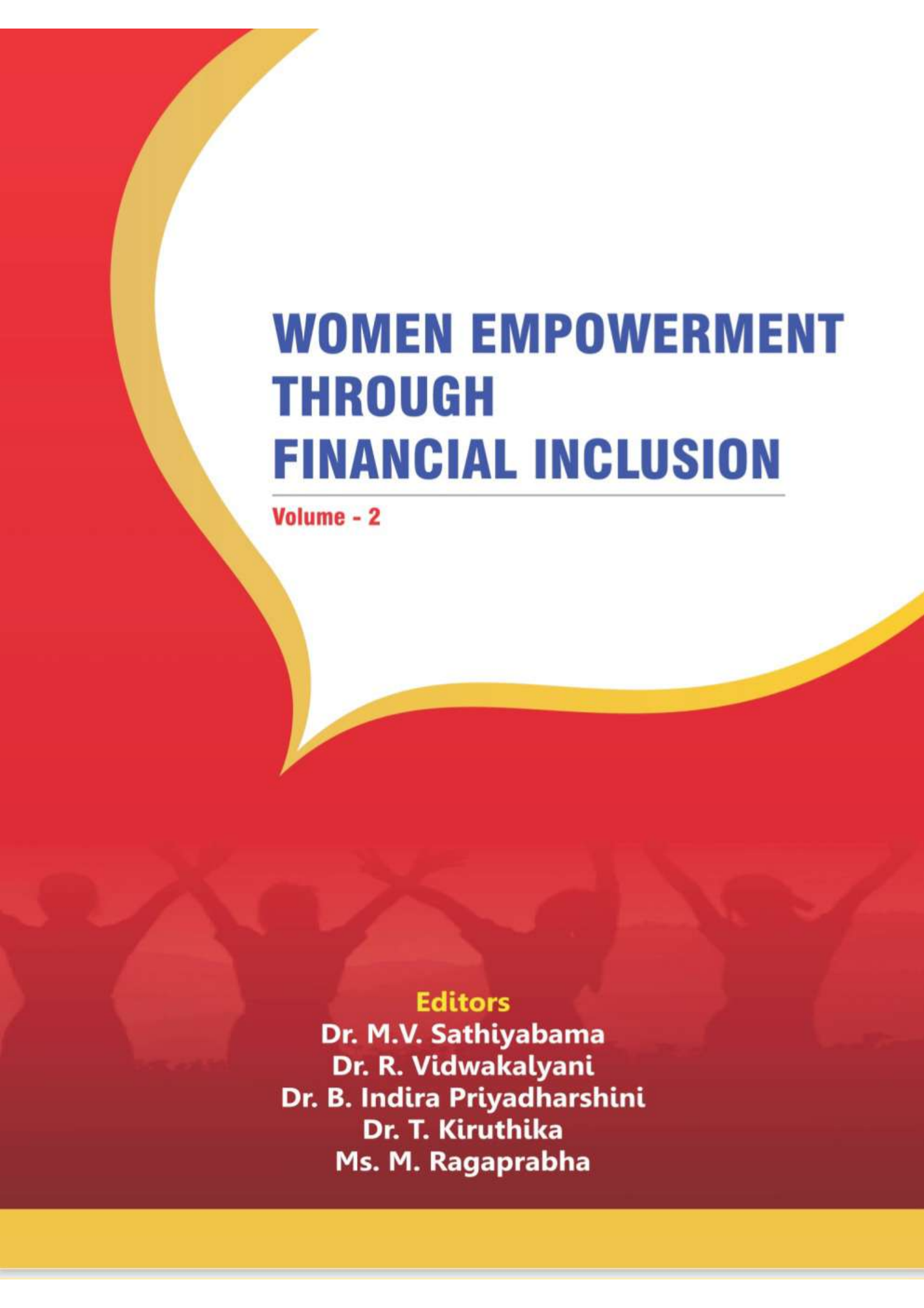
‘காரைக்காலம்மையார் கவிதைகள்’ என்னும் கட்டுரையில் பெண்பாற்கவிஞர்களின் சிறப்பினை சங்க முதல் பக்திவரையிலும் உள்ள பெண் கவிஞர்களையும், காரைக்காலம்மையாரின் கவிதைகளில் உள்ள, நாடக, காட்சிக்கவிதைகளைப் பற்றியும் கூறப்பட்டுள்ளது.

‘ஷெல்லியும் பாரதிதாசனும்’ என்னும் கட்டுரையில் இருபெருங்கவிஞர்களின் சமுதாயப் பணியை ஒப்பு நோக்கும் வகையில் அமைந்துள்ளது.

‘திருவாசகத்தின் மாணிக்கவாசகரின் பக்திநெறி’ என்னும் கட்டுரையில் ஆன்மிகத்தைப் பற்றியும், மாணிக்கவாசகரின் பிறப்பு முதல் அவர் நிகழ்த்திய அற்புதம் வரை எடுத்துரைக்கப்பட்டுள்ளது.

‘திருக்குறள் காட்டும் ஆளுமைத்திறன்’ எனும் கட்டுரையில் திருக்குறளில் உள்ள ஆளுமைத்திறன்களைப் பற்றிய செய்திகளை கவைபட எடுத்துரைக்கப்பட்டுள்ளது.

‘காலந்தோறும் பருவநிலை மாற்றங்கள் என்னும் கட்டுரையில் பருவநிலை அதற்கேற்ற தொழில்கள் குறித்தும் தற்போதைய நிலையில் ஏற்பட்ட மாற்றங்களின் விளைவுகள் பற்றியும் கூறப்பட்டுள்ளது.



WOMEN EMPOWERMENT THROUGH FINANCIAL INCLUSION

Volume - 2

Editors

Dr. M.V. Sathiyabama

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Dr. B. Indira Priyadharshini

Dr. T. Kiruthika

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WOMEN EMPOWERMENT IN INDIA AND ITS IMPORTANCE

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Abstract

Being a traditional patriarchal society, women have been given a secondary status which is reflected in the economic, social and political spheres. However, women equality and empowerment has always remained a priority area and has been taken utmost care by stake holders. The paper critically investigates the Indian status among other countries and tries to find out preparedness to achieve Sustainable development Goal -5 of the United Nations. The paper develops argument on the basis of secondary sources as review of existing literature published in journal, books, reports of various, NGOs, Government and international organisations and websites. The paper critically examines women empowerment in India, various models and dimensions. The paper discusses constitutional safe guards as well as plans and programmes by the government and their implementation, indicators of women empowerment.

Keywords: Women Empowerment; Gender Equality; Government

Introduction

Traditionally being a patriarchal society, women have secondary role to play in every household in India. However, issues related to welfare of women have always been a priority among policy makers since independence, though the path has witnessed repositioning with time and as per the requirement from the Fifth Five Year Plan (1974-78) onwards, there has been a remarkable shift in the approach to women's issues from welfare to development. India has also endorsed various global efforts as the the Mexico Plan of Action (1975), the Nairobi Forward Looking Strategies (1985), Convention on Elimination of All Forms of Discrimination Against Women (CEDAW) in 1993, the Beijing Declaration as well as the Platform for Action (1995) and the Outcome Document adopted by the UNGA Session on Gender Equality and Development and Peace for the 21st century. In this background, the paper discusses status of women empowerment in India and its status at the international spectrum with regard to achievement of

SDG Goal 5 of the United Nations by 2030. The plan of the study is as follows. The next section deals with the review of literature and discusses the concept of women empowerment with supportive models alongwith dimensions. Section 3 provides the research objectives and methodology of the study. Section 4 analyses various legislations and government programmes for women empowerment, variegated initiatives taken for women empowerment by different N.G.O.s and corporate sector, international comparison regarding status of women empowerment followed by Section 5 which provides suggestions to meet the challenges and path forward to move ahead.

Dimensions of Women Empowerment The Human Development Index was introduced for the first time by United Nations Development Program (UNDP) in 1990 to measure the socio economic progress of a nation. The 1995 report emphasised on empowering women as it was required for the overall human development. To study the statistics related to human development and the share of women, two indices were introduced namely Gender Development Index (GDI) that takes into account inequality in the achievements between women and men and Gender Empowerment Measure (GEM) which measures the extent to which a women has influence in decision-making in politics, in professional life and in organisations. The Women Empowerment Matrix (Wieringa, 1994) was contrived to map out the general gender issues at national level and to outline the contours of dimensions of empowerment and to demonstrate the interlinkages of gender issues related to specific issues like education, health and women labour. The women empowerment matrix is a tool to aid the researcher in getting an overview of the various levels of women subordination presented along with various spheres in which women subordination is acted out. The matrix can be used for raising awareness, planning, policy analysis and others.

Importance

Over the past decades, there has been a steady increase in women's empowerment. Women must possess self-worth, confidence, and freedom to choose their needs and requirements. Classifying the people based on gender is unreasonable and it is having no worth. Still, women are paid less, expected to cook and restricted by their family members. To overcome these situations and to have an independent role in society, women's empowerment is needed. Empowering women is the fundamental right of women. They can have equal rights to participate in education, society, economics and politics.

The Role of the Woman

In today's world, women play an important role in a variety of fields, from scientific development and literature to financing and fierce competition in the social and economic fabric of dependency and poverty. Effective women empowerment includes a much larger set of rules, including effective participation in different development programs, and encouraging them to be independent and self-confident, to meet the challenges of living in a patriarchal society with courage and self-respect. Individual reinforcement can only be achieved if the individual has the ability to make decisions alone.

Modern Woman

Modern women are aware of their rights and are able to make rational and educated decisions in all spheres of life. Including the continued struggle for the women empowerment in the social, political, economic and religious spheres. Because gender equality means that men and women in society have equal opportunities to reach the internationally agreed development goals. Modern women are not lost in the comfort areas of their homes. Today, women have become doctors, engineers, and scientists, and thus play an important role in society. They also enjoy the freedom of expression and expression without any restrictions. Most countries allow for a strong legal infrastructure that encourages and protects women from exploitation, such as dowry and marriage. The Government is constantly implementing legislation to raise awareness of its rights among women.

Family and Community

If women are strengthened through economic, social, religious and political power, they will be more confident and express their thoughts without fear of laughing and being more effective in their actions. This may be good for him and his family and community, because he will participate in decisions that affect all of the above, and his decisions will depend on what is appropriate for everyone, not just. Providing training and education and mentoring programs that teach young girls, young women, and older women how to enter and live with themselves will lead to a big change in our society that will affect the world. A woman who is satisfied with her identity and learning to love herself and work with other women without fear of losing or envious will promote economic growth and allow women to be more progressive and thus affect every aspect of her life.

Conclusion

Women Empowerment is not merely a slogan but a prerequisite for an optimal capacity for overall development of a family, society, nation and a sustainable world. The paper has covered about affirmative legislation, plans and programmes initiated by the Government, NGOs and Corporate sector through their Corporate Social Responsibility over a very large spectrum starting from the Indian constitution to development in the recent years. It has been reflected by improvement in achieving gender parity in the category of educational attainment, showing improvement in political participation but showing a declining trend in economic participation and opportunity as well as in health and survival segment. In terms of Health and Survival, it is worse even among SAARC countries. As we have a decade towards achieving the SDG Goals, the Government needs to focus on these two segments more to achieve gender parity. There is urgent need of reassessing India's affirmative actions, giving fresh impetus on empowering girls and women not only through conventional education but also hand holding for skill acquisition and providing them with equitable economic opportunity with providing them with fitting medical and healthcare.

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IMPACT OF DIGITAL LEARNING IN EDUCATION SECTOR : A PANDEMIC PERSPECTIVE

VOLUME - II

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DIGITAL INITIATIVES OF GOVERNMENT OF INDIA

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Abstract

Online learning, commonly referred to as e-learning, is the most effective approach and may significantly contribute to keeping people engaged and stress-free, particularly in pandemic or crisis situations. This is due to the fact that it is the most practical alternative, allowing teachers to teach from home using virtual classrooms and have access to all of the essential resources, making online sessions just as productive as in-person ones. This paper primarily focuses on the digital initiatives of Government of India, particularly those by the MHRD and UGC, the benefits of online learning, and practical steps to enhance online learning in India.

Keywords: Online Learning, Digital Initiatives, Benefits of online learning

Introduction

Online learning, also referred to as E-Learning, digital learning or electronic learning is acquisition of knowledge which takes place through electronic technologies and media. In other word, "learning that is enabled electronically". Typically, e-learning is conducted on the Internet, where students can access their learning materials online at any place and time. It is most often taking place in the form of online courses, online degree, or online programs. The COVID-19 pandemic has created the largest disruption of education system in history, affecting nearly 1.6 billion learners in more than 190 countries and all continents. Closures of schools and other learning spaces have impacted 94 per cent of world's student population, up to 99.50 per cent in low and lower middle countries (United Nation, 2020). It also states that, this crisis has stimulated innovation within the education sector. It is seen the innovative approaches to support education in this crisis of pandemic from radio and televisions to take-home packages. Distance learning solution were developed thank to quick responses by governments and other private partners all over the world supporting education continuity, including the Global Education Coalition covered by UNESCO.

Objectives of the Study

- ✓ To familiarize the e-learning initiatives by MHRD and UGC
- ✓ To disclose the benefits of online education in India
- ✓ To offer suitable suggestions to overcome the problem in e-learning.

Database and Methodology

The current investigation is supported by secondary information. Many websites, fresh internet articles, news, etc. were reviewed. This study output is the result of a review of papers from reputable national and international journals, websites, and issues that are related to them.

Digital Initiatives of Government of India

The following are noteworthy initiatives carried out by the Government of India and the University Grants Commission (UGC), in order to facilitate online learning in India, which are briefly mentioned in the section below.

(i) SWAYAM: The SWAYAM initiative was started by the Indian government in order to implement the three key tenets of the Education Policy, namely access, equity, and quality. All pupils, especially the most disadvantaged ones, will have access to the best teaching and learning tools through this initiative. SWAYAM hopes to close the digital divide between students who have benefited from the digital revolution so far and those who have not and have been excluded from the knowledge economy.

(ii) SWAYAM PRABHA: SWAYAM PRABHA is another project of the Ministry of Human Resource department, similar to SWAYAM. With DTH (Direct to home), they offer 34 educational channels nationwide on a round-the-clock basis. The channel covers secondary and higher education, as well as curriculum-based classes and support for students taking competitive exams. The INFLIBNET Centre and its uplinks channels from BISAG in Gandhinagar operate the web portal, and NPTEL, IITs, UGC, CEC, IGNOU, NCERT, and NIOS provide content for it.

(iii) NATIONAL ACADEMIEC DEPOSITORY: The National Academic Depository (NAD) is a project that aims to establish an online archive for academic awards like certificates, diplomas, degrees, and mark sheets. These awards can be safely digitized and stored on this platform, which is available twenty-four hours a day, seven days a week to academic institutions, boards, and eligibility assessment agencies. Academic awards can be easily retrieved and accessed quickly through NAD, and their legitimacy is guaranteed. Colleges and universities covered by NAD include Central, State, Deemed, and Private Universities, CBSE, and other State Boards.

(iv) NATIONAL DIGITAL LIBRARY OF INDIA: The National Digital Library of India (NDLI), supported and guided by the Ministry of Education, Government of India, through its National Mission on Education through Information and Communication Technology (NMEICT), is an online library of educational materials that goes beyond simple search and browsing capabilities. Learners can quickly locate the resources they require by using filtered and federated searching. Additionally, NDLI offers specialized services for particular user groups, such as services for researchers and general learners, services for students in high school and college preparing for exams, and services for job seekers.

(iv) E-SHODH SINDHU (eSS): The UGC-INFONET Digital Library Consortium, NLIST, and INDEST-AICTE Consortium were combined into one project called e-Shodh Sindhu by the Ministry of Education on the advice of an Expert Committee. About 10,000 primary, peer-reviewed

publications, as well as several bibliographic, citation, and factual databases from different publishers and aggregators, will be accessible both in real-time and in the past through the e-Shodh Sindhu. These tools will be made available to member institutions, including as universities, colleges, and technical schools with federal funding that are covered by the UGC Act's 12(B) and 2(f) sections.

(v) VIRTUAL LAB: The National Mission on Education through Information and Communication Technology (NMEICT), which is another initiative of the Ministry of Human Resource Development (MHRD), includes a consortium of twelve participating institutions, with IIT Delhi serving as the coordinating institution. This initiative is called Digital Lab. With a focus on remote experimentation, this project represents a substantial transformation in ICT-based education. For remote operation and observation, over 100 Virtual Labs with over 700 web-enabled experiments have been developed. The project aims to assist science and engineering college students and professors who lack access to top-notch lab facilities and equipment, high school students who may develop an interest in pursuing higher education, researchers from various institutions who can collaborate and share resources, and engineering colleges that can make use of the content and related teaching materials.

(vi) E-YANTHRA: E Yantra, a robotics-focused educational program created by the department of computer science and engineering at the Indian Institute of Technology, Bombay, is an IIT Bombay creation. The National Mission on Education through ICT (NMEICT) and the Ministry of Education of the Government of India support e-Yantra in its mission to improve the current engineering and robotics education systems globally and equip engineers with the skills necessary to use technology to address local challenges in a variety of fields, including agriculture, disaster management, defence, manufacturing, smart cities, home automation, and service industries.

(vii) Talk to a Teacher Program: It is a project of IIT Bombay, supported by MHRD under the national mission for ICT-based education (NMEICT). A few of the program's goals include showcasing the expertise of prominent professors, offering faculty and students top-notch engineering education, and assisting professionals in bringing up-to-date knowledge in their industry.

(viii) E-Acharya: The e-Acharya portal, developed under the National Mission for Education through ICT (NME-ICT), provides learners with an integrated platform to access various learning materials such as audio, video, and textual resources across eight subject categories, including Agriculture Science, Biological Science, Chemical Science, Physical Science, Medical and Health Sciences, Engineering and Technology, Social Sciences, and Arts and Humanities, all through a single interface. The website offers top-notch instructional materials from nationally renowned institutions.

(ix) E-Kalpa: FOSSEE, which is a part of the National Mission on Education through Information and Communication Technologies (ICT) under the Ministry of Education (MoE) in the Government of India, encourages the use of FLOSS tools in research and academia. Scilab, Python, eSim, Osdag, DWSIM, and other programs are among the projects that FOSSEE promotes.

(x) Vidwan: VIDWAN is a renowned database that features the bios of scientists, researchers, and professors who work in illustrious academic institutions and R&D organizations conducting

research and teaching in India. It provides important information regarding the experience, expertise, scholarly publications, background, contact details, researcher identity, and accomplishments of the experts. With funding support from the National Mission on Education through ICT, the Information and Library Network Centre (INFLIBNET) built and maintains the database (NME-ICT).

(xi) E-GYANKOSH: The Indira Gandhi National Open University (IGNOU) now provides all of its study resources online for students to access at www.egyankosh.ac.in, alleviating any inconvenience caused by late delivery of these materials. Instead of relying on DVDs and paper copies of study materials that could be delayed in some locations, this website gives students the option of learning online.

(xii) E-ePathshala: The ePathshala portal/app was created by CIET and NCERT and debuted in November 2015 with support from the Ministry of Human Resource Development. It offers educational resources for teachers, students, parents, researchers, and educators. It is available in English, Hindi, and Urdu and can be accessed online as well as through Google Play, the App Store, and Windows.

(xiii) SHODHGANGA: Indian theses can be found in Shodhganga. It was founded in 2011 and is currently maintained by INFLIBNET Centre, an independent inter-university center run by the Indian University Grants Commission (UGC). To act as a liaison between the University and the Center and to ensure that soft copies of PhD theses submitted to the University are submitted to Shodhganga in a timely manner, it is necessary to identify a senior academic from universities that have signed MoUs with the INFLIBNET Centre to serve as the University Coordinator. This individual will also be in charge of ensuring the accuracy and completeness of these soft copies.

(xiv) Global Initiative of Academic Networks (GIAN): The Global Initiative of Academic Networks (GIAN) in Higher Education, initiated by the Government of India through the Ministry of Human Resource Development, aims to enhance India's academic resources, accelerate quality reforms, and strengthen scientific and technological capabilities by tapping into the expertise of scientists, experts, and entrepreneurs. With the help of this program, prestigious Indian universities and colleges can cooperate with foreign academics to implement cutting-edge teaching strategies, improve research, make use of cutting-edge technology, and strengthen academic networks.

(xv) IMPRINT: IMPRINT is an innovative partnership between Pan-IIT and IISc that is funded by MHRD and aims to address key science and engineering issues that are essential for India's inclusive growth and self-sufficiency. Its twin duty involves creating cutting-edge engineering education guidelines and outlining a plan to tackle engineering problems. In line with its overarching mission, IMPRINT's main objective is to target research toward socially meaningful areas.

(xvi) SAKSHAT: The former president of India established the SAKSHAT One Stop Education Portal pilot project on October 30, 2006 with the intention of offering free possibilities for lifelong learning to students, instructors, and information seekers. The SAKSHAT curriculum was created by the Content Advisory Committee (CAC), which was composed of representatives from academic institutions including IGNOU, Delhi University, KVS, NVS, NIOS, NCERT, and top industry professionals.

Benefits of Online Learning

The following are the benefits of online learning in India.

(i) Around the clock: Everyone is trapped inside their homes during the COVID-19 phase, but education is not. As online learning is available to all students throughout this crucial time and is ongoing throughout, it is available around-the-clock.

(ii) Enhanced Comprehension: Students can benefit from the media in the form of audio, video, animation, blogs, professional assistance, etc. to help them understand concepts more clearly. One may readily access all papers, transcripts, live conversations, and training materials with the use of online education.

(iii) Time and Cost Effective: Online education is far more affordable than traditional education. It benefits students who cannot afford a traditional college education. You can learn wherever and whenever you choose. It also contributes to time savings.

(iv) Self-Paced: During the lockdown period, classroom instruction where everyone is taught together is not possible. With the help of technology, everyone may learn in the comfort of their own homes. This is a significant drawback of conventional schooling, and this trend addresses it.

(v) Added choice: There are numerous programs and courses offered on various websites, giving students more options. The only option available to students during this time-wasting period of COVID-19 is to use their time at home with the aid of digital media.

Practical Steps to enhance Online Learning

- ❖ Establish a dedicated study room to assist one to focus and reduce distractions in online learning.
- ❖ Use productivity tools and apps which help to manage their time, take notes, and keep organized.
- ❖ To keep focused during online classes and study sessions, turn off notifications, log out of social media, and minimize other distractions.
- ❖ To stay motivated, one has to remind his or her goals by themselves, discover ways to stay engaged in the topic, and celebrate the accomplishments as they do. Frequent breaks can also ease tension and improve focus.

Conclusion

The students of online learning face several challenges due to the struggle to complete adaptation to online courses and the lack of interaction between students and their tutors. E-learning technologies encourage student-centered learning and are easily adaptable during COVID-19 and other critical situations. For students, professors, educationalists, educational institutions, corporate trainers, and motivational speakers, this technology has many advantages over the traditional educational system. Provide teachers, students, and institutions with a variety of opportunities as well. With a constructivist learning environment with a digital touch, online education assists students in improving their knowledge and abilities, and as a result, the quality of education. This will also encourage people to stay at home and be

secure. In these times of epidemic growth, the online learning sector in India would undoubtedly benefit the country's educational system and economy in the coming years.

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REFORM, PERFORM AND TRANSFORM: A MANTRA FOR GOOD GOVERNANCE

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Abstract

“Navigating the Storm”. The term economic growth is defined as the process whereby the country’s real national and per capita income increases over a long period of time. The better indicator of economic growth is the rise in per capita income because it represents an increase in the general improvement of living conditions whereas economic progress is characterized as a consistent increase in society’s standard of living. Economic growth is just one aspect of economic development. The HDI (Human Development Index), the Gender Related Index, the literacy rate, etc. are all qualitative measures of economic development. According to Mr. Mittal, the CMD of Bharti Airtel, there are three main pillars supporting every nation-building process: the first is

government, sometimes referred to as political leadership; the second is civil society; and the third is business. The entrepreneur is crucial to economic growth in a number of ways, including wealth creation and sharing, job creation, balancing regional development, GDP and per capita income contribution, higher standard of life, etc. India will continue to have the world’s fastest-growing economy between 2021 and 2024, according to predictions from the World Bank, ADB, and IMF. The paper also finds that the industrial sector, which includes businesses and the secondary sector, recovered, growing by 11.8% in 2020–22 after contracting by 7% in 2020–21. The article addresses the economic aspects of business during the last few years, the contribution of various industries to the GDP, and an analysis of

certain important economic development indicators.

Key Words: *Indian Economy, GDP, Poverty, Unemployment.*

1. Introduction

PM Modi is making the rest of the world aware that India means business. India's economy continues to be among the most open in the world. Our improvements in the "Ease of Doing Business" rankings over the past few years are a result of the effort put forward by all parties. On May 26, 2022, Our Honorable Prime Minister Narendra Modi spoke at the India School of Business. India, according to him, is the G20 country with the fastest economic growth. India is the second-largest start-up ecosystem in the world and ranks second on the global retail index. He also repeated the phrase "reform, perform, change," which demonstrates the nation's sound governance. Today, it is the ease of doing business, the abolition of colonial rules, the reform of tax laws, the encouragement of entrepreneurship, and innovation that contribute to the achievement of 21st-century results. a novel approach to government reform that emphasizes the role of the populace in transforming bureaucracy. The universal principle of "Leave No One Behind" serves as the foundation for the global agenda for 2030. The implementation

and coordination of the SDGs, mapping their plans, and other tasks are given to NITI Aayog in its capacity as a think tank. Let's uphold the motto "Leave No One Behind in India" as a guideline.

2. Review of Literature

The next paragraphs cover past studies and papers that are related to the current topic.

Abhiman Das (1999) in his RBI article on the subject titled "Socio-Economic Development in India: A Regional Analysis," sets out to analyse interstate growth variability and pinpoint the causes of such variability that promote development. The analysis shows that socio-economic imbalance is a key feature of the states. Findings of inconsistencies include the need for education, access to food and healthcare, among other things. The federal system in India is highlighted by **Nirvikar Singh and Srinivasan (2006)** in their study titled "Federalism and Economic Development in India: An Assessment" in relation to potential future economic growth and development. In light of development-related factors, the article looks at federal institutions and significant federal system problems. The study concludes by noting how crucial it is

for India's federal system to function. In their **2017** research, **Anita Kumari and Sharma** looked at the relationship between India's physical and social infrastructure and economic progress. It examines the connection between physical and social infrastructure, as well as economic development, in India from 1995 to 2013. The outcome demonstrates a beneficial

relationship between social and economic infrastructure and economic growth. An investigation into the "Pattern of Regional Disparities in Socio-economic Development in India: District Level Analysis" was made by **Ramphul Ohlan (2013)**. The Wroclaw Taxonomic approach is used in the study to evaluate the socioeconomic disparities between the states of India. The findings indicate that there are significant differences between Indians according to their regions as well. A study on MSMEs' - Role in Propelling Economic Development of India and a Discussion on Current HR Issues in MSMEs' in India was conducted by **Ashu Katyal and Betsy Xaviour** in **2015**. The report discusses the contribution of SMEs to economic growth and their HR-related shortcomings. According to the data, the MSME sector generated 4.8% of GDP in the fourth quarter of 2012–13. Entrepreneurship and Economic Development in a Developing

Country: A Case Study of India was the subject of research by **Sierdjan Koster and Shailendra Kumar Rai** in **2008**. In the instance of India, the paper discusses the anticipated relationship between entrepreneurship and economic development. It would appear that improving entrepreneurial quality should be the key priority. An econometric study on the relationship between exports, foreign exchange, and MSMEs in India was undertaken by **Namita Rajput et al.** in **2012**. The goal is to emphasize the value of the MSME sector and its contribution to the Indian economy. After a thorough analysis, it will be necessary to increase the MSME's manufacturing capacity in order to sell their goods, increase exports, and build up foreign exchange reserves.

The research mentioned above make it easier to comprehend the importance of the current endeavour.

3. Research

h proble m

After 2014, there is a marked change in the economy. India has achieved "ease" for doing business thanks to the launch of the Make in India initiative, despite the fact that India was rated 37th out of 63 countries on the list. why India is still struggling in some

industries. What is the rationale behind the development parameters still being in the last bench?

The study's objectives are listed below.

1. To examine current business economic developments
2. To make clear how different industries contribute to the economy, and
3. To study of some important economic growth indicators

The current study, which examines a few economic variables on a micro level, Additionally, only qualitative and quantitative data that has been gathered from various sources has been used in the analysis. The secondary data used in this study was gathered from a variety of sources, including journals, government publications, and local, national, and worldwide media.

According to the Economic Survey 2021–22, the GDP is expected to expand by 8.0%–8.5% in 2022–2023 as the Indian economy recovers from the COVID pandemic. The industrial sector will experience a sharp rebound, growing by 11.8% in 2021–22 after contracting by 7% in 2020–21. Industry's contribution to GVA is now estimated at

28.2%. In order to mitigate the effects on the most vulnerable segments of society and the business sector in the face of severe problems, the Government of India chose a "Barbell Strategy" that incorporated a variety of safety-nets. India had become the third-largest startup ecosystem in the world as of August 29, 2022, with over 77,000 DPIIT-recognized startups dispersed across 656 districts. In the same time frame, these startups create more jobs than big businesses or enterprises in the same sector. According to the Ministry of Corporate Affairs (MCA), India has registered 1.67 lakh corporations for the fiscal year 2021–2022 - a staggering statistic (April–March). Maharashtra (31,107 firms) had the most registrations during FY 2021–2022 followed by Uttar Pradesh (16,969 companies), Delhi (16,323 companies), Karnataka (13,403 companies), and Tamil Nadu (11,020 companies). Business services had the most firms formed overall (44,168), followed by manufacturing (34,640), community, personal & social services (23,16 enterprises), and agricultural & related activities (13,387 companies). But the issue of whether corporate growth is reflected in India's GDP remains.

Generally speaking, India has six key industries that each play a different role in the nation's development. Iron and steel, textiles, jute, sugar, cement, and paper are among

them. An important part of economic growth is played by the iron and steel industry. India produced 9.97 MT of crude steel and 9.66 MT of finished steel in July 2022, respectively. The amount of finished steel produced in FY22 was 133.596 MT. The government had lowered the customs duty on stainless steel to 7.5% in order to help the MSME sector. Growth in investment, strategic alliances, entry into multinational corporations, technological innovation, etc. are notable trends in the steel sector. Between FY16 and FY20, the gross value added (GVA) of the construction

sector increased at current prices at a CAGR of 8.4%. 9.49 MT of finished steel were exported from India in FY21. The amount of finished steel exported in July 2022 was 3.80 lakh MT. Because the building sector consumes a lot of steel, its expansion will result in increased growth for the steel industry. Another industry with higher promise is the textile sector. By 2027, ready-to-wear exports from India are expected to reach \$30 billion with a CAGR of 12–13%. In 2019–20, the domestic textile and apparel market was worth \$150.5 billion. India exported \$41 billion worth of textiles in calendar year 2021, with a CAGR (2.7) little above the average for the world. From April 2016 to March 2021, the amount of FDI,

which includes nations like Japan, Mauritius, Italy, and Belgium, will also expand. An major agro-based business with more than 5 lakh workers is the sugar industry. India produced 35.8 million tonnes in the marketing year 2021–2022. In the marketing year 2022–2023, it is projected to reach 36.5 million tonnes. The top two sugar-producing states in India are once again Maharashtra and Uttar Pradesh. During the anticipated period, a CAGR of 5.2% is expected to be achieved by the Indian cane sugar market (2022–2027). Despite the current economic climate, the Indian cane sugar market projected production of 4,018 lakh tonnes in the years 2020–21. 7.7% more was produced than the 3,440 metric tonnes of the prior year.

Poverty a situation not having enough money to meet the basic needs including food, clothing and shelter. According to the state's Global Multidimensional Poverty Index 2022, India saw a drop in the percentage of its population living in poverty over a 15-year period between 2005 and 2021, from 415 million to 16.4%. Kerala is the poorest state and Bihar has the most poverty. Another criterion connected to poverty is the Global Hunger Index (GHI). According to The Food and Agriculture Organization of the United Nations (FAO), food deprivation, or undernourishment, is the habitual (or

chronic) consumption of insufficient calories to meet the minimum dietary energy requirements for an individual to live a healthy and productive life, given that individual's sex, age, stature, and level of physical activity. India falls below all of our neighbouring countries, including Pakistan, Bangladesh, and Nepal, with a ranking of 107 on the 2022 Global Hunger Index. India was

Indian Economy Pvt Ltd (CMIE), an impartial economic think tank, the jobless rate will be 8.3% in December 2022. According to a May 2022 report from the National Statistical Office (NSO), the unemployment rate in urban India dropped from 10.3% in the previous quarter to 8.7% in October-December 2021. India's nominal GDP per capita or GDP per capita at current prices is projected to be 145,679 in 2020–21 compared to 151,760 in 2019–20. GDP per capita for 2020–21 is 99,694 Indian rupees (at stable prices from 2011–12). IMF World Economic Outlook (April - 2021) estimates that India's nominal GDP per capita in 2021 will be \$2,191 at current prices.

1. Suggestions

- Publication of information is crucial because they are the ones who will use it.
- India currently exhibits some regional and other parametrical difference,

ranked 94th in 2020 and 101st out of 116 nations in 2021. The child wasting rate is 19.3%, which is the highest in the world for any nation. However, the GHI report was rejected by the parliament since it was found to be defective. The poorest indicator of economic progress in India is **unemployment**. According to Centre for Monitoring

which must be avoided.

- From an economic perspective, income inequality is a severe problem that needs attention, along with adequately accessible government programmes and initiatives.

2. Conclusion

Typically, firms are established to take advantage of market and business opportunities and to make a profit. Economic activity generation is only of minor significance. Social responsibility is crucial in this day and age in addition to profit maximization in order to maintain a firm. Corporate Social Responsibility is one of the regulations that are available to achieve the same. Increased GDP, revenue generation, utility and economic value creation, among other things, are all aspects of business' contribution to economic development. In the aforementioned study, India's stalling causes

such as outdated technology, high unemployment, low GDP, a low standard of living, etc. are discussed.

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INDIA MEANS BUSINESS - REFORM PERFORM & TRANSFORM



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TRAVEL AND TOURISM INDUSTRY'S IMPACT ON INDIA'S ECONOMIC DEVELOPMENT

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ABSTRACT

The largest and most varied sector of the global economy is travel and tourism, which also dominates India's service sector. The impact of tourism on rising employment and revenue from foreign exchange, the development in domestic sectors, and the rise of international collaboration have altered attitudes in many nations and had a significant impact on governments' decision-making processes. According to the most recent study by the World Travel and Tourism Council (WTTC), the sector's economic contribution to the country could increase by one per cent from 2019 levels to

over INR 15.9 trillion (USD 215 billion) in 2022. 53 million employment and \$512 billion in GDP contributions to India by 2029. By 2030, it is anticipated that India will contribute 250 billion dollars to the global economy through tourism, creating 137 million employments, earning 56 billion dollars in foreign exchange, and welcoming 25 million visitors from other countries. The paper aims to portray various types of tourism in India and its economic contribution and also discusses the legal aspect of tourism in India.

Keywords: *Travel and Tourism Industry, Service Sector, Economic growth, GDP.*

1. Introduction

"To travel is to feed the mind, humanise the soul, and rub off the rust of circumstance, to travel is to have nature's plan and her high work simplified, and her broad features of hill and dale, Mountain and flood, spread like a map at one's feet" - the words of Thomas Cook, who is credited with founding modern tourism. Words cannot adequately capture India's beauty. India is a nation with a wide variety of customs and cultures. The National Tourism Policy of 2002, which intends to promote training programmes in the hospitality and catering industries, was implemented as part of the tenth five-year plan (2002–2007). The eleventh five-year plan, which offers partnership between the public, private, and academic sectors, can be considered as the extended component of tourism. The tourism sector is impacted by COVID, just like other sectors. The tourism minister responded to a query from Lok Sabha members Ramesh Kaushik and Raju Bista by citing a NACER study that stated 14.5 million jobs were lost during the first quarter, 52 million in the second quarter, and 1.8 million in the third quarter. In the coming years, let's welcome the wisdom of light to the tourism sector.

2. Objectives of the study

- To explore different forms of tourism in India.

- To discuss the verifiable connections between India's tourism industry and economic growth.
- To comprehend the Indian tourism industry's legal aspects.

3. Literature Review

The paragraph that follows explores the earlier studies that were conducted in relation to the current topic.

Anushree Banerjee (2014) discloses that poor working conditions for employees, a lack of well-trained trainers, a lack of tourism training institutions, and a shortage of skilled personnel are the main obstacles preventing the tourism industry from experiencing strong economic growth. Another area of concern relates to the policies that might support employees in a positive work environment. According to **Ashish Nag (2013)**, the Ministry of Tourism in every nation looks for strategies to advance and expand travel within the nation. Any nation's tourism industry growth is susceptible to shifting economic situations. Few people prefer to travel when a nation is going through a difficult time or when someone's employment is in jeopardy. Tourism and hospitality have grown into important global economic sectors, according to Shalini N. Tripathi and Masood H. Siddiqui (2010), since expectations for how we utilise, our spare time have changed and taken on increased

significance. Despite the phenomenal growth in tourism, India's contribution to overall international tourist arrivals and revenue is fairly little. It is well known that India has a great deal of potential for the growth of tourism. **Ajeenkya DY Patil University's Hridaysh P. Deshpande (2020)** research revealed that the tourism industry is a significant social phenomenon in practically every civilization as a result of people's innate need to engage in novel and memorable experiences related to entertainment, education, and adventure. Additionally, a variety of causes, including sociocultural, religious, and commercial activity, drive tourism. One of the key elements that encourages tourism is the universal human desire to learn about unexplored regions of the world.

4. Data Base and Research Methodology

The present study is based on secondary data that has been made available by a number of agencies and organisations. The UNWTO, the Ministry of Tourism, the Ministry of Statistics and Program Implementation, newspapers, magazines, books, economic journals, the Internet, etc. are sources of data and information used in this study.

5. Types of Tourism in India

India is a diverse country in terms of its ecology, mythology, history, geographical

diversity in terms of mountains, plains, and plateaus, as well as the medicinal diversity that teaches us about the Science of Life (Ayurveda). Ecological tourism, pilgrimage tourism, historical tourism, adventure tourism, medical tourism, and future ayurveda tourism are just a few of the several types of tourism offered in India. Therefore, using the aforementioned characteristics, tourism in India could be broadly categorised.

(i) Leisure Tourism: Leisure time is time spent doing nothing but "free time." It's time to get things done that you wouldn't typically have time for in your daily life. A vacation with the following comprises leisure tourism:

- ❖ Relaxation: Sleep, relax, reading, walk on the beach, taking a scenic drive
- ❖ Sport activity: hiking, swimming, surfing, running
- ❖ Visit places of interest and local attractions: Visiting friends and relatives, Shopping for goods that will be used by the tourist.

(ii) Business Tourism: "Travel for business purposes" is the definition of business tourism. Three categories can be used to categorise business tourism: -

- ❖ Trading for goods to be resold on a wholesale basis.

- ❖ Conduct business transactions e.g., Visiting a client, contract negotiations.
- ❖ Attending a conference, exhibition or event associated with their business.

(iii) Ecological Tourism: Ecological tourism has grown in popularity in India as a result of the country's diverse flora and fauna as well as its stunning natural attractions. The Andaman and Nicobar Islands, Orissa, Meghalaya, the Malabar Coast, the Kaziranga and Jim Corbett wildlife sanctuaries, the mountain ranges in North India and the Hill Stations like Shimla, Kulu, Manali, and Ooty, the Kashmir Valley, the breath-taking beaches at Goa, the backwaters of Kerala, and much more are all a feast for nature lovers.

(iii) Pilgrimage Tourism: India is regarded as the Land of Gods and Goddesses and has a very rich mythological history. Being the most culturally advanced nation and the birthplace of several saints, artists, and philosophers, India has seen a significant increase in pilgrimage tourism from the dawn of time. Some of the popular tourist destinations related to pilgrimage tourism include Kedarnath, Badrinath, Amarnath, the Golden Temple in Amritsar, Dwarka, Dargahs and Masjids in Delhi and Ajmer, churches and temples in Goa.

(iv) Medical Tourism: In India, medical tourism is a growing industry. Many individuals believe that India is a superior alternative for medical purposes because of its affordable prices and effective medical facilities. The paper's study of medical tourism comes later.

(v) Ayurveda and Yoga Tourism: Ayurveda, which was created in 600 BC, could be referred to as the "Science of Life." Due to the forthcoming Ayurveda Tourism, India has seen an increase in visitors overall. The state of Kerala in South India is a well-liked Ayurveda tourism destination. Simple "yogasanas" and meditation, which refresh one's mind, body, and soul, are the exclusive focus of Indian yoga. In India, a lot of ashrams promote yoga tourism.

(vi) Adventure Tourism: India is one of the best countries for adventure tourism due to its diverse geography. India offers its visitors a variety of adventure activities, including mountaineering, skiing, trekking across the Himalayas, camel safaris in Rajasthan, river rafting down the Ganges in Rishikesh, rock climbing, wind rafting, and much more.

(vii) Sports Tourism: Traveling abroad to watch or take part in a sporting event is referred to as sports tourism. International sporting competitions like the Olympics, the World Cup (in sports including soccer, rugby,

and cricket), tennis, golf, and the Formula One Grand Prix are a few examples.

6. Indian Tourism and Economic Growth

New Delhi (India), October 19 (ANI): India plans to introduce "National Tourist Policy" 2022 this year with the goal of supplying a safe, innovative, responsive, and sustainable tourism sector in the country's inclusive development journey. On Wednesday, during his speech at the day-long national conference for tourist police held here in the capital, our honourable union tourism minister G. Kishan Reddy made a statement. India intends to present its country's and the world's tourism policies in 2022. As there has not yet been established in India any proper and comprehensive national tourist policy, Prime Minister Narendra Modi will spearhead the development of such a policy this year, according to Reddy. Between 2019 and 2028 in India, the sector is anticipated to increase at an average yearly growth rate of 10.35%. Compared to US\$28.9 billion in 2018, the Indian tourism and hospitality industry is predicted to generate US\$50.9 billion in visitor exports by 2028. Due to improved airport facilities and increased access to passports, the estimated \$20 billion Indian airline travel market is expected to quadruple in size by FY27. Approximately 2400 crores are allotted for

Indian tourism in the union budget for 2022–2023. There is an increase of 18.42 percent as compared to FY 2021–22. From 2020 to 2027, the medical tourism industry is anticipated to grow at a CAGR of 21.1%. Additionally, it is predicted that India's tourism industry will generate US\$ 125 billion by FY27. Additionally, the forecast indicates that over the next 10 years, the sector is expected to create more than 24 million jobs, or more than 2.4 million new positions yearly. The country's tourism industry will work to recover to the pre-pandemic level by mid-2024 and contribute USD 250 billion to the country's GDP by 2030, the Centre stated on Tuesday. The government has declared that by 2047, it aims to raise USD 1 trillion through the industry that was most adversely affected by the pandemic.

7. Tourism

Laws in India

1. The Passport (Entry into India) Act, 1920.
2. The Registration of Foreigners Act, 1939.
3. The Foreigners Act, 1946.

Even if it's not required to know these acts like the back of your hand, there are some

procedures that must be followed: Unless specifically stated differently in their visa, all foreign visitors must register with the Foreigner Regional Registration Office within 14 days (or 24 hours in the case of a tourist from Pakistan). This is possible right there in the airport. Visitors from outside India who are staying for 180 days or less are exempt from registering. A foreign national staying in a hotel or guesthouse is required to present his name, nationality, and identification documents, such as a passport or other form of photo identification, as well as his signature, pursuant to Section 14 of the Registration of Foreigners **Act**. Within 24 hours of the aforementioned arrival, the hotel or guest home administration must notify the police. Foreign nationalists must also keep copies of Forms C & F of the Registration of Foreigners Act in order to stay in a hotel. These can be downloaded from the internet or purchased from the Foreigners Registration Office. Foreign nationalists are not permitted to enter locations designated as protected areas or restricted regions unless they get a permit from the relevant authority. A compelling justification for visiting the specified locations must be provided in the request for such permission, which must be submitted at least eight weeks in advance.

8. Conclusion

According to the most recent study by the World Travel and Tourism Council

(WTTC), the sector's economic contribution to the country could increase by 1% from 2019 levels to over INR 15.9 trillion (USD 215 billion) in 2022. The World Economic Forum's most recent study, which evaluated 117 nations, produced the travel and tourism development index, which included India in its ranking in 2022. India dropped from 46th place in the overall rankings in 2019 to 54th place. 53 million employment and \$512 billion in GDP contributions to India by 2029. By 2030, it is anticipated that India will contribute 250 billion dollars to the global economy through tourism, creating 137 million employments, earning 56 billion dollars in foreign exchange. More than merely a business, tourism is. It's an approach to life. With over \$7 trillion in yearly revenue and 260 million employees, tourism is one of the major industries in the world. India's tourist industry has a bright future not just because of the country's diverse natural environment but also because of its rich cultural history. Different regions of the country are seeing an increase in tourism from both abroad and within India. If India invests a lot of effort in the tourism industry in the future, it will undoubtedly accomplish a significant goal by the year 2030.

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IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

Volume -1

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IMPACT OF NEP 2020 AMONG SCHOOL AND COLLEGE STUDENTS

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Abstract

The New Schooling Strategy 2020 plans to upset the instructive scene by giving a thorough system that takes special care of the different necessities of students and sets them up for the difficulties of the 21st hundred years. This theoretical gives an outline of the key targets, procedures, and anticipated results of the approach. The essential goal of the New Instruction Strategy 2020 is to guarantee comprehensive and impartial quality training for all, no matter what their financial foundation or geological area. It underscores the need to connect the current holes in access, value, and quality by advancing general youth care and training, patching up school framework, and carrying out creative educating learning rehearses. The policy acknowledges the significance of a comprehensive and multidisciplinary educational strategy. It encourages the mainstream curriculum to incorporate co-curricular activities, arts, sports, and vocational education, fostering the development of well-rounded individuals. Moreover, it advocates for the combination of innovation in schooling, establishing a carefully engaged learning climate that improves decisive reasoning, critical thinking, and imagination. The policy's recognition of the significance of education innovation and research is another crucial aspect. It intends to lay out a hearty examination biological system, encouraging cooperation between the scholarly community, industry, and different partners. This would empower the advancement of proof based rehearses, instructive innovations, and strategies that can address the developing requirements of students and society.

In conclusion, the New Education Policy 2020 is a radical vision for education that aims to establish a system that is inclusive, equitable, and empowering, preparing students for the opportunities and challenges of the 21st century. By zeroing in on all encompassing turn of events, coordination of innovation, limit building, exploration, and development, this strategy makes way for a more promising time to come for training.

Keywords: Education, Policy, vision, strategy, framework.

Introduction

The Indian government's New Training Strategy is alluded to as NEP. It was last altered in 1992 subsequent to being drafted in 1986. The Modi-drove BJP government promised in its political race proclamation to make another training strategy, or NEP, to achieve changes in the schooling area. The National Education Policy of India 2020 (NEP 2020), which was started by the Union Cabinet of India on 29 July 2020, outlines the vision of new education system of India. The new policy replaces the previous National Policy on Education, 1986. The policy is a

comprehensive framework for elementary education to higher as well as vocational training in both rural and urban India. The policy aims to transform India's education system by 2030. The strategy accommodates changes at all degrees of training from school to advanced education. NEP means to expand the emphasis on reinforcing educator preparing, transforming the current test framework, youth care and rebuilding the administrative system of instruction.

Objective of the Study

- To find the main aim of the policy
- To list out features of the policy
- To sort out the impact of policy among the school and college students

Main Aim of New Education Policy

There have been three education policies after India got its independence, the NEP 2020 being the newest addition to bring reform in the education sector. Therefore it becomes necessary to understand the aims of NEP 2020 from the exam's perspective.

The basic aim and objective of NEP 2020 are to make education universally accessible from primary to secondary level by the year 2030. It helps in building a relationship between the learner and society at large. Every child is special and has the right to get basic education, for which the government should make better provisions.

- **Early Childhood Care and Education:** The early child developmental stage encompasses physical, socio-emotional, and cognitive development between 0-8 years of age. As early education lays the foundation for education to be undertaken later in our lives and also plays a major part in the development of the cognitive capacity of an individual, so there has to be the provision of high-quality education Early Childhood Care Education (ECCE). Here attention needs to be laid on socially backward regions.
- **Foundation Literacy and Numeracy:** NEP 2020 envisions the attainment of Foundational Literacy and Numeracy by all learners up to 3rd grade.
- **Curtailling Drop-Outs Rates and Ensuring Universal Access to Education at All Levels:** This new education policy of 2020 has focused on two things:
 1. To lessen the drop-outs by ensuring proper infrastructure facilities.
 2. By providing appropriate training to the teachers.Also, to encourage students to continue their studies. The students are also monitored and facilitated with the proper educational environment. Also, the ones who had dropped out of school earlier are given adequate guidance to be on par with their peers.

- **Curriculum and Pedagogy in Schools:** Learning of any sort should be holistic, integrated, enjoyable, and engaging to hold the attention of any learners towards the subject matter. NEP 2020 is a policy that emphasizes understanding the topic rather than an evaluation of rote learning, and for that, experiential learning is promoted at all stages.
- **Equitable and Inclusive Education:** NEP 2020 policy stresses education accessibility to one and all and that all should be similarly looked upon. Students with special needs are also benefitted from this policy as several schemes are running under this policy that enables specially-abled students to be part of the education system. This aspect coincides with the SDG.
- **Efficient Resourcing and Effective Governance Through School Complexes:** The policy focuses on using teaching aids to make education in India pally with world-class standards. It also emphasizes proper governance of the educational institutions for which the teacher are provided with proper information and training time and again.
- **Standard Setting and Accreditation for School Education:** The policy envisions setting up the standard to be followed at all stages of education, including preschool to higher levels. This caters to the quality of infrastructure, the educational level of teachers, and the knowledge level of the students as well. This also helps in lesson assistance with adequate usage of teaching aids.
- **Technology in Education:** There has been a lot of development in the space of technology where the teaching aids are also getting developed along with the digitalization of classrooms where lectures are taken virtually, and attendance is also taken virtually.
- **Reimagining Vocational Education and Skill Building:** For holistic development, every student needs to work on his skills constantly, like-communication skills, presentation skills, etc. Vocational Training is also encouraged so that there is a better employment opportunities for people who do specific skill-based jobs.

Features of Nep 2020

The policy has a clear focus on offering quality and affordable education to all in the age group of 3 to 18 years.

- It marks a major shift from rote learning to multi-disciplinary, holistic education. The focus, therefore, will not be on how much information students can memorize & reproduce, but on how they can use the information to solve real-world problems.

- Importantly the NEP has a great focus on the development of critical 21st-century skills that would stand in good stead to the soon-to-be citizens of the world and will prepare them for the challenges & opportunities of the 21st century.
- It marks a transition from the 10+2 education structure to a 5+3+3+4 system.
- A new curriculum for early childhood care and education, referred to as ECCE, aims at providing high-quality education to children between the age of 3-6 that brings about their physical, social, emotional as well as cognitive development.
- The policy provides for an interdisciplinary college education that has flexible study plans.
- Enough & more reports have highlighted the employability gap in India where graduates lack the necessary skills to make them valuable to employers. The new policy, therefore, lays emphasis on vocational & technical education right from the school level so as to bridge the gap

Impact of Nep 2020 Among Students

- **Single Regulatory Body for Higher Education:** The NEP aims to establish Higher Education Commission of India which will be the single regulatory body except for legal and medical education.
- **Multiple Entry and Exit Programme:** There will be multiple entry and exit options for those who wish to leave the course in the middle. Their credits will be transferred through Academic Bank of Credits.
- **Tech- Based Option for Adult Learning Through Apps, TV Channels:** Quality technology-based options for adult learning such as apps, online courses/modules, satellite-based TV channels, online books, and ICT-equipped libraries and Adult Education Centres, etc. will be developed.
- **E-courses to be Available in Regional Languages:** Technology will be part of education planning, teaching, learning, assessment, teacher, school, and student training. The e-content to be available in regional languages, starting with 8 major languages – Kannada, Odia, Bengali among others to join the e-courses available in Hindi and English.
- **Foreign Universities to set-up Campuses in India:** World's top 100 foreign universities will be facilitated to operate in India through a new law. According to the HRD Ministry document, "such (foreign) universities will be given special dispensation regarding regulatory, governance, and content norms on par with other autonomous institutions of India." Whether you aspire to study at these universities in your home country or study abroad, please remember that an education loan in India can help finance your higher studies independently.

Conclusion

The new Public Schooling Strategy (NEP) 2020, is a decent strategy as it targets making the school system all encompassing, adaptable, multidisciplinary, adjusted to the requirements of the 21st hundred years and the 2030 Economical Improvement Objectives.

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Dr. R. Ramya

RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT

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PREFACE

Skill development is a key to improve employability and income-earning opportunities for women and for enhancing sustainable rural development and livelihoods. Empowerment is pure validation, a state of being in which we recognise and celebrate our own or someone else's potential. It means valuing abilities, goals and learning. It aids someone to feel appreciated, supported, and motivated. It gives someone the sense of control in their life and creates purpose.

Improved social skills, improved behaviour, increased academic accomplishment, increased self-esteem, and increased self-efficacy are all results of youth empowerment programs. They often face gender-based barriers to starting and growing their businesses, like discriminatory property, matrimonial and inheritance laws and/or cultural practices; lack of access to formal finance mechanisms; limited mobility and access to information and networks, etc.

This book is the outcome of the papers presented in the One Day National Level Seminar on "Rural Women Empowerment through Skill Development" Sponsored by Indian Council of Social Science Research, New Delhi held on 2nd August 2023 Organised by the PG Department of Commerce with (CA), Nallamuthu Gounder Mahalingam College, Pollachi. This book comprises of a spectrum of various topics presented in the seminar. Various authors have delivered credible and thoughtful chapters Promotion of women empowerment in the country by empowering them through Funding institutions for rural women empowerment. Academicians from various parts of the country highlighted Successful women skill development and their efforts. The potential beneficiaries are beyond academicians, students, women skill development and also policy makers across the nation.

We express our gratitude to the Indian Council of Social Science Research (ICSSR) for their Sponsorship to organize the national level seminar. We also thank the authors who wholeheartedly contributed chapters to the book.

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WOMEN ENTREPRENEURSHIP: ISSUES AND CHALLENGES

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Abstract

This abstract focuses on women entrepreneurship, highlighting the schemes available for women entrepreneurs and its benefit. It discusses the increasing participation of women in entrepreneurship and the factors contributing to this trend. It also acknowledges the obstacles that women face in the entrepreneurial landscape, including limited access to financing and networks, gender biases, work-life balance issues, and lack of representation and support. The abstract emphasizes the need for collective efforts to create an enabling environment for women entrepreneurs. It highlights the benefits of promoting women entrepreneurship, such as economic empowerment, job creation, innovation, and inspiration for future generations. Overall, the abstract underscores the issues and challenges of women entrepreneurship.

Keyword: women, Entrepreneurship, Empowerment.

Women Entrepreneurship: Introduction

Ladies business venture alludes to the dynamic support of ladies in beginning, making due, and maintaining their own organizations. It includes ladies assuming the job of a business person, utilizing their abilities, information, and assets to make and develop fruitful endeavors. This type of business is critical as it enables ladies monetarily as well as adds to the general turn of events and development of the general public.

Lately, there has been an observable expansion in the quantity of ladies wandering into business venture. This is because of different factors like changing cultural standards, expanded admittance to schooling and assets, and the acknowledgment of ladies' true capacity in the business world. Ladies business people offer a remarkable point of view and creative thoughts that might be of some value, adding to the enhancement and development of ventures.

Nonetheless, notwithstanding the headway made, ladies actually face different difficulties in the pioneering scene. Gender stereotypes and biases, issues with work-life balance, and a lack of representation and support are all examples of these obstacles. Defeating these impediments requires individual assurance as well as the

aggregate endeavors of society, government, and associations to establish an empowering climate for ladies business people to flourish.

The advantages of advancing ladies business are various. Not only does it result in women's economic empowerment and financial independence, but it also fosters job creation, new ideas, and economic expansion. Ladies business people additionally act as good examples, moving and persuading people in the future of ladies to seek after their enterprising dreams.

All in all, ladies business venture assumes an imperative part in cultivating financial turn of events, social advancement, and orientation uniformity. By empowering and supporting ladies to become business visionaries, we can open their maximum capacity and make a more comprehensive and prosperous society.

Objective of the Study

- To list out the schemes for women entrepreneurs in India
- To list out the benefit of the schemes
- To list the issues and challenges for women entrepreneurs in India

Schemes for Women Entrepreneurs in India

There are several schemes and initiatives in India specifically designed to support and empower women entrepreneurs. Here are some notable ones:

1. **Stand Up India Scheme:** This scheme aims to promote entrepreneurship among women, Scheduled Castes (SC), and Scheduled Tribes (ST) by providing loans between Rs. 10 lakh and Rs. 1 crore for setting up greenfield enterprises. It also offers handholding support and assistance in various aspects of business development.
2. **Annapurna Scheme:** This scheme provides financial assistance to women entrepreneurs engaged in the food catering business. Under this scheme, loans up to Rs. 50,000 are provided to set up or expand food catering units.
3. **Mahila Coir Yojana:** This scheme encourages women entrepreneurs to set up coir-based businesses. It offers financial assistance for the purchase of coir processing machines and equipment.
4. **Udyogini Scheme:** This scheme provides financial assistance to women entrepreneurs in the form of loans for setting up small-scale enterprises. It also offers training, skill development, and market linkages.
5. **Stree Shakti Package for Women Entrepreneurs:** This scheme is offered by various banks and provides special incentives to women-owned businesses. It includes lower interest rates on loans, collateral-free loans, and priority in loan processing.
6. **Mudra Yojana:** This initiative aims to provide financial assistance to micro and small enterprises, including women entrepreneurs. Under this scheme, loans up to Rs. 10 lakh can be availed without the requirement of collateral.

7. **Pradhan Mantri Employment Generation Programme (PMEGP):** This scheme promotes self-employment opportunities for women by providing financial assistance for setting up micro-enterprises. It offers subsidies on project costs and loans for eligible projects.

These are just a few examples of the schemes available in India to support women entrepreneurs. It is important for aspiring women entrepreneurs to research and explore these schemes to take advantage of the benefits and support they offer.

Benefit of the Schemes

The women entrepreneurs schemes in India provide several benefits to aspiring and existing women entrepreneurs. Some of the key benefits include:

1. **Financial Assistance:** These schemes offer financial assistance in the form of loans, subsidies, and grants. This helps women entrepreneurs overcome the challenge of limited access to capital and provides them with the necessary funds to start, expand, or diversify their businesses.
2. **Lower Interest Rates:** Many of these schemes provide loans at lower interest rates compared to regular commercial loans. This reduces the financial burden on women entrepreneurs and makes it more affordable for them to borrow and invest in their ventures.
3. **Collateral-Free Loans:** Some schemes offer collateral-free loans, eliminating the need for women entrepreneurs to provide assets as security. This is particularly beneficial for those who may not have valuable assets to pledge as collateral.
4. **Skill Development and Training:** Several schemes provide training and skill development programs to enhance the entrepreneurial capabilities of women. These programs equip them with the necessary knowledge, skills, and tools to effectively manage their businesses and navigate the challenges of entrepreneurship.
5. **Market Linkages:** Some schemes facilitate market linkages by connecting women entrepreneurs with potential customers, suppliers, and business networks. This helps them expand their customer base, access new markets, and increase their business opportunities.
6. **Handholding Support:** Many schemes offer handholding support, mentoring, and guidance to women entrepreneurs. This includes assistance in business planning, marketing strategies, financial management, and other aspects of business development. This support helps women entrepreneurs overcome challenges and make informed decisions.
7. **Recognition and Visibility:** The schemes often provide recognition and visibility to women entrepreneurs, showcasing their achievements and success stories. This not only boosts their confidence but also inspires and motivates other women to pursue entrepreneurship.

Overall, these schemes play a crucial role in empowering women entrepreneurs in India. They provide the necessary financial support, training, networking opportunities, and guidance to help women overcome barriers and succeed in their entrepreneurial endeavors. By promoting women entrepreneurship, these schemes contribute to economic growth, job creation, and gender equality in the country.

Issues and Challenges for Women Entrepreneurs in India

While there has been progress in advancing ladies business in India, ladies business people actually face a few issues and difficulties. A portion of the key ones include:

1. **Restricted Admittance to Back:** One of the significant difficulties for ladies business visionaries is restricted admittance to back. Due to a variety of factors, such as a lack of collateral, bias in lending practices, and inadequate financial literacy, they frequently encounter difficulties obtaining funding and loans.
2. **Stereotypes and sexism:** Ladies business people frequently face orientation predisposition and generalizations, both inside society and in the business climate. They might experience distrust, segregation, and bias, which can prevent their development and open doors.
3. **Support and networking are lacking:** Mentorship, business associations, and industry-specific networks are just a few of the resources available to women entrepreneurs. Their ability to obtain opportunities, knowledge, and resources may be hindered by this lack of support.
4. **Work-Life Balance:** Balancing work and personal responsibilities is a significant challenge for women entrepreneurs. They often face societal expectations and pressures related to family and household responsibilities, which can make it difficult to devote sufficient time and energy to their businesses.
5. **Limited Representation and Role Models:** The underrepresentation of women entrepreneurs in leadership positions and the lack of visible role models can be demotivating for aspiring women entrepreneurs. The absence of relatable and inspiring examples can make it challenging for women to envision their own success in entrepreneurship.
6. **Cultural and Social Barriers:** Cultural and social norms can pose challenges for women entrepreneurs, particularly in conservative and traditional communities. Societal expectations, restrictions, and biases can hinder their ability to start and run businesses.
7. **Lack of Training and Skill Development:** Women entrepreneurs often face a skills gap and limited access to training and skill development programs. Enhancing their entrepreneurial capabilities, business acumen, and technical skills is crucial for their success.

Addressing these challenges requires a multi-faceted approach involving government policies, financial institutions, educational institutions, and society as a whole. Providing increased access to finance, creating supportive ecosystems, promoting gender-neutral policies, offering training and mentorship programs, and challenging societal norms and biases are some of the steps that can help overcome these issues and empower women entrepreneurs in India.

Conclusion

Women now constitute a decisive force with which the future destiny of the world is inextricably blended. Its natural corollary is that it is most essential to help her throw away the fetters that an inequitable tradition has been using to suppress the enormous potential inherent in womanhood, lest universal peace and harmony should ever remain a distant dream. The best way to realize the man -woman equality and harmony, visualized in the most glorious document- Indian Constitution -is to bring her into the main- stream of economic activity by extending all possible assistance to help her latent capabilities in building up a progressive modern India. The study shows that the present institutional support system is inadequate to support the sustainable development of women entrepreneurship in the state.

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A STUDY ABOUT WOMEN'S EMPOWERMENT IN INDIA

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Abstract

Empowerment of girls is essentially the system of upliftment of monetary, social and political popularity of ladies, the historically underprivileged ones, within the society. it is the procedure of guarding them towards all varieties of violence. ladies empowerment involves the building up of a society, a political environment, wherein ladies can breathe with out the worry of oppression, exploitation, apprehension, discrimination and the overall feeling of persecution which goes with being a female in a historically male dominated shape. ladies constitute almost 50% of the sector's populace however India has proven disproportionate sex ratio whereby female's population has been relatively lower than adult males. As a ways as their social status is involved, they're now not handled as same to guys in all the places. in the Western societies, the women have got equal right and status with men in all walks of lifestyles. however gender disabilities and discriminations are observed in India even today. for that reason this paper will attention at the vicinity of ladies inside the society of India.

Keywords: Ladies Empowerment, schooling, Discrimination, Socio-financial repute.

Introduction

Girls constituted the key position inside the arch of Indian society. no doubt the Rig Vedic ladies in India enjoyed excessive fame in society and their situation changed into good. Even the ladies had been supplied possibility to achieve high intellectual and non secular standard. but from enjoying loose and esteemed positions in the Rig-Vedic society, ladies started being discriminated since the Later-Vedic length in schooling and different rights and facilities (Saravanakumar, 2016). Indian society doubts that we are in the midst of a brilliant revolution within the records of girls. The voice of women is increasingly more heard in Parliament, courts and within the streets. while girls within the West needed to fight for over a century to get a number of their primary rights, (Altekar,1983) like the right to vote, the constitution of India has given girls same rights with men from the start (Devandra,Kiran,1985). The historic and medieval status of women in cutting-edge Indian society regarding Equality, schooling, Marriage and own family existence, Race and Gender, faith and lifestyle is maintained or deteriorated.

At some stage in the Vedic Age wife became put in an esteemed function. She changed into considered as half of the person, his consider friend, accomplice in

solitude, father in advice and the relaxation in passing the barren region of lifestyles. The ladies had been furnished opportunity to gain excessive highbrow and non secular general. There had been many ladies Rishis at some point of this era. even though monogamy was usually not unusual, the richer phase of the society indulged in polygamy. there was no sati machine or early marriage. However from taking part in unfastened and esteemed positions inside the Rig-Vedic society, girls started out being discriminated since the Later-Vedic duration in education and other rights and centers. infant marriage, widow burning or sati, the purdah and polygamy further worsened the girls's role The Indian cultural way of life starts off evolved with the Vedas. it's miles commonly believed that the Vedic duration is spread over from 2000 BC to 500 B.C. Vedic women had monetary freedom. a few women have been engaged in coaching work. home turned into the location of manufacturing. Spinning and weaving of clothes have been done at domestic. women also helped their husbands in agricultural pastimes. The Medieval length (duration between 500 A.D to 1500 A.D) proved to be pretty disappointing for the Indian ladies, for their reputation similarly deteriorated all through this period. Medieval India changed into not ladies's age it is meant to be the 'dark age' for them.

The historical and medieval status of women in cutting-edge Indian society concerning Equality, training, Marriage and circle of relatives life, Race and Gender, religion and subculture is maintained or deteriorated. The RigVedic women in India enjoyed high status in society. The women were provided opportunity to attain excessive intellectual and religious popular. In Vedic India, ladies did now not revel in an inferior reputation instead they occupied an honorable place. they had enough rights within the social and the spiritual fields and constrained rights inside the financial and the political fields. They had been not handled as inferior or subordinate however equal to guys. we've commemorated our us of a as our Motherland "Bharat Mata" and our nationalism has grown up from the seed Mantra "Vande Mataram".

Objectives of the Study

- To have a look at the historical profile of Indian girls.
- To understand the want of women Empowerment.
- To have a look at the government Schemes for ladies Empowerment.
- To offer beneficial guidelines inside the mild of Findings.

Women Empowerment

Empowerment is set exchange, choice and electricity. it's miles a technique of alternate through which the individuals and businesses with very little power advantage the power and ability to make selections that have an effect on their lives. ladies empowerment is a degree of acquiring power for girls that allows you to recognize her rights and to carry out her responsibilities closer to oneself and others in a handiest way. according to k. Sayulu, G. Sardar & B.

Sridevi, (2005) “women empowerment is any system that offers more autonomy to ladies through the sharing of applicable facts and provision of manage over factors affecting their performance”.

Traits of Girls Empowerment

Women empowerment possesses certain traits. they may be the subsequent:

1. Women empowerment enables a extra diploma of self-self belief and a experience of independence amongst ladies.
2. Girls empowerment is a process of acquiring electricity for women which will understand her rights and to perform her duties toward oneself and others in a simplest manner.
3. Women empowerment allows girls to organise themselves to increase their self- reliance.
4. Ladies empowerment presents extra autonomy to girls.
5. Ladies empowerment means ladies’s manipulate over material assets, highbrow resources and ideology.
6. Girls empowerment abolishes all gender-based discriminations in all establishments and structures of society.
7. Women empowerment way participation of girls in policy and decision making method at domestic and public levels.
8. Empowerment of girls enables ladies to recognize their complete identification and powers in all spheres of existence.
9. Empowerment additionally manner equal popularity to girls. 10. girls empowerment happens within sociological, psychological, political, cultural, familial and monetary spheres and at diverse stages such as man or woman, institution and network.
10. Women empowerment is a system of creating awareness and ability building.

Importance of Women Empowerment

Women empowerment is a continuous and dynamic manner which allows girls to take an interest within the desire – making in all monetary, political and social procedures in most people and improves their capacities to change the shape and circumstance that preserve them hindered. The introduction of the 73rd amendment spoke to an exertion for women’s empowerment which become supported with the aid of the state and in which 33% seat in Panchayats and in places of work are saved for women. Reservation inside the Panchayats become considered as a noteworthy milestone at some stage in the time spent empowering girls in India. Empowerment of girls is crucial for maintaining economic development of the nation when 50 percent of the population contains of women. As Ex-President A.P.J.Abdul Kalam said that empowering girls is an crucial for creating a first rate united states of america, while women are empowered, society with balance is assured. women’s empowerment is important as their issues and their cost device lead to the

development of a decent own family, high-quality society and ultimately a first rate country. it has been acknowledged global that u . s . a .'s advancement is not thinkable without women's empowerment. the worldwide efforts in the direction of girls's empowerment have made a comparable scenario in India likewise wherein the empowerment of women has obtained priority at the country's development schedule. The year 2001 was proclaimed as ladies's Empowerment year, even though earlier plans dealt with simply welfare of women. The country wide policy for Empowerment of ladies become added in India in 2001. To actualize it successfully, a country wide Plan for motion for empowerment of girls become carried out at some stage in 2003-04. A coordinated method for ladies Empowerment with unequivocal goals, objectives and a term had been integrated in 10th 5 yr Plan (2002-07). since ladies empowerment depends no longer simplest on economic determinants but on social factors additionally, authorities of India has introduced fourth-three dimensional strategy of social empowerment, economic empowerment and provision for gender equality. The authorities has taken a few activities which includes projects and strategies to assure this present machine's success The protection of girls from domestic Violence Act, 2005, the Immoral site visitors Prevention Act, the Prenatal Diagnostic strategies change Act, 2003, Sati Prevention Act, the Hindu Succession Act, national Rural Employment assure Act. various plans actualized under The Ministry of ladies and infant development like Swayamsiddha, help for schooling and Employment software (STEP) and so forth., Rashtriya Mahila Kosh (affords small scale credit), Kishori Shakti Yojana, nutrients application for pre-adult young girls, are the couple of out of numerous means tried by way of the government to improve financial status and gender equality. running ladies lodgings and crèches have additionally been set up to help running girls in increasing financial strength and similarly their societal position. Strengthening felony system to cast off discrimination in opposition to girls and mainstreaming gender attitude in improvement process are the principle goals of the 11th five yr Plan. The imaginative and prescient for the 12th five 12 months Plan (2012-2017) is to guarantee improving the position and situation of women by way of addressing structural and institutional limitations in addition to strengthening gender mainstreaming.

Women Empowerment in India

Empowerment of girls could suggest equipping women to be economically independent, self-reliant, have wonderful esteem to allow them to face any hard scenario and that they should have the ability to take part in development activities. For the beneficiaries of the ladies, the authorities has been followed extraordinary schemes and packages i.e. the country wide credit Fund for ladies (1993), food and nutrients Board (FNB), facts and Mass education (IMF) and so forth.

The maximum wonderful development previous few years has been the growing involvement of girls inside the Panchayati Raj establishments. there are many elected

girls representatives at the village council stage. ladies are also regarding in human improvement troubles of toddler rearing, schooling, fitness, and gender parity. a lot of them have long gone into the making and advertising of quite a number cottage products-pickles, tailoring, embroidery and so forth. The monetary empowerment of women is being seemed these days as a sine-quo-non of development for a rustic; subsequently, the issue of economic empowerment of girls is of paramount significance to political thinkers, social thinkers and reformers.

Women Rights in India

The rule of thumb of equivalence popularity of ladies is cherished within the Indian constitution in its Preamble, fundamental Rights, essential duties and Directive concepts. The charter affords fairness to ladies, yet further enables the country to make provisions of nice discrimination in favour of ladies. some of the substantial articles are as according to the following

- Equality before law[Article 14]
- No Discrimination by state on grounds only of religion, race, caste, sex, place of birth or any of them[Article15(i)]
- Special provision by state in favour of Women and Children[Article 15(3)]
- Equality of opportunity in matters relating to employment [Article 16]
- Securing adequate means of livelihood for men and women equally [Article 39(a)]
- Equal pay for equal work[Article 39(d)]
- Promoting justice on basis of equal opportunity and to provide free legal aid[Article 39(A)] Renounce practices derogatory to women[Article 51(A)(e)]
- 1/3 reservation for women in panchayats[Article 243(D)] and in municipalities[Article 243(T)]
- Right to Property to Women[Article 300(a)]

Legislations

- Abolition of Sati Act,1829
- Special Marriage Act,1954
- Hindu Succession Act,1956
- Dowry Prohibition Act,1961
- Maternity Benefits Act, 1961
- Medical Termination of Pregnancy Act, 1971
- Domestic Violence Act,2005
- Sexual Harassment Bill, 2010(Ram, 2004)

Government Schemes for Women Empowerment

The Government programmes for women development began as early as 1954 in India but the actual participation began only in 1974. At present, the Government of

India has over 34 schemes for women operated by different department and ministries. Some of these are as follows;

1. Rastriya Mahila Kosh (RMK) 1992-1993
2. Mahila Samridhi Yojana (MSY) October, 1993.
3. Indira Mahila Yojana (IMY) 1995.
4. Women Entrepreneur Development programme given top priority in 1997-98.
5. Mahila Samakhya being implemented in about 9000 villages.
6. Swayasjdha.
7. Swa Shakti Group.
8. Support to Training and Employment Programme for Women(STEP).
9. Swalamban.
10. Crèches/ Day care centre for the children of working and ailing mother.
11. Hostels for working women.
12. Swadhar.
13. National Mission for Empowerment of Women.
14. Integrated Child Development Services (ICDS) (1975),
15. Rajiv Gandhi Scheme for Empowerment of Adolescence Girls (RGSEAG) (2010).
16. The Rajiv Gandhi National Crèche Scheme for Children of Working Mothers.
17. Integrated Child Protection scheme (ICPS) (2009-2010).
18. Dhanalakahmi (2008).
19. Short Stay Homes.
20. Ujjawala (2007).

Suggestions

1. Cognizance programmes want to be prepared for creating recognition amongst ladies specifically belonging to weaker sections approximately their rights.
2. The first and major precedence have to be given to the schooling of ladies, that is the grassroots trouble. as a result, training for women must be paid unique interest.
3. Strict implementation of Programmes and Acts ought to be there to scale back the mal-practices ordinary within the society.
4. Women ought to be allowed to work and ought to be furnished sufficient safety and support to paintings. They must be supplied with proper wages and work at par with men so that their reputе can be accelerated within the society.

Conclusion

Women empowerment refers to increasing the spiritual, political, social, educational, gender or economic strength of people and communities of girls. women's empowerment in India is heavily dependent on many different variables

that encompass geographical area (urban / rural) educational fame social reput (caste and class) and age. regulations on girls's empowerment exist at the country wide, country and local (Panchayat) tiers in many sectors, along with health, training, economic opportunities, gender based violence and political participation. The Empowerment of ladies has come to be one of the most important concerns of twenty first century not simplest at countrywide stage but also on the global level. authorities projects alone might not be enough to obtain this aim. Society need to take initiative to create a weather wherein there's no gender discrimination and women have full possibilities of self selection making and participating in social, political and financial life of the us of a with a experience of equality.

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WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT PROGRAMMES

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Abstract

Women's empowerment in India is heavily dependent on many different variables that include geographical location (urban/rural), educational status, social status (caste and class), and age. Policies on women's empowerment exist at the national, state, and local levels in many sectors, including health, education, economic opportunities, gender-based violence, and political participation. However, there are significant gaps between policy advancements and actual practice at the community level. Skills and knowledge are the engines of economic growth and social development of any country. Countries with higher and better levels of knowledge and skills respond more effectively and promptly to challenges and opportunities of globalization. India is in transition to a knowledge based economy and its competitive edge will be determined by the abilities of its people to create, share and use knowledge more effectively. This paper discuss about the impact of skill development on women empowerment and to sort out the challenges faced by women for the empowerment.

Keywords: Women, Empowerment, Skill, Challenges

Introduction

Women constitute about 48% of the total population of the country. According India's constitution, women are legal citizens of the country and have equal rights with men. Because of lack of acceptance from the male dominant society, Indian women suffer immensely. Women are responsible for baring children, yet they are malnourished and in poor health. Women are also overworked in the field and complete the all of the domestic work. Most Indian women are uneducated. Women comprise around 50% of the country's population, and a bulk of them stays economically dependent on each other without employment. In the age of feminism, a small portion of women in India are freed and can employ their free will and are permitted to carve out their lives the way they want. But there is a considerable division of the women in this nation who require optimistic support. There must be a focus on personality development, life skills, and the knowledge of the competitive and ever-changing environment. Through economic empowerment, the program tries to bring a positive change in the cultural and social life of women who have been facing historical injustice for ages. Our skill development training systems have

adapted to the pandemic, participated in the recovery, and has developed strategies to continue filling the relevant skill and job gaps in India.

Women Empowerment

India faces multifaceted challenges when it comes to ensuring women's participation in the labour force. While on one hand the government is undertaking continuous measures to ensure that girls have a higher rate of enrolment and minimum dropout rates in primary, secondary and higher education, there are still a huge number of women who hold degrees but still do not have jobs.

Ministry of Skill Development and Entrepreneurship has undertaken several initiatives to achieve women empowerment through skill development. Increase of women participation in workforce can give further boost to our economy and Skill India mission is committed to facilitate this through equipping our women with market relevant skills and lead them to a path of self-sufficiency through entrepreneurship. Following initiatives have been under taken to facilitate skill. Skills and knowledge are the motivating factors of the economic growth and community development of any country. They have become even more important in this increasing pace of globalization. India is among the young countries in the world with the proportion of the work force in the age group of 15-59 years growing steadily.

The Role of Skill Development in Women Empowerment

Rural women's restricted access to productive resources, educational levels and the pre-existing social norms concerning labour that is proper for women, tend to confine them to lower-paying, lower-status jobs with limited prospects for skill training and promotion, thus keeping them bound to their lower status. In many rural firms, widespread patterns of insecure employment and transitory and unstable contractual arrangements restrict employers from providing training to women. Rural women's vocational education and training are sometimes restricted to a small number of female-dominated areas, reinforcing their traditional roles and obligations. While such training improves their economic options, it limits their opportunities to gain from newer, non-traditional professions such as information and communication technology (ICT). Hence, proper skill training along with effective awareness generation campaigns become a prerequisite to bridge the gap between the options women have available to them and what they actually have the potential and inclination to take up.

Review of Literature

Hariharan. N (2021), had made a study entitled "A study on recent skill development and women empowerment forecasting 2021 - 2022 in India". The study concluded that the position of training in ability improvement and female empowerment have grown a lot.

Dinesh.P.T (2016), has made a study entitled, “Women skill development & Made in India opportunities and challenges”. The study had found that, there is a need to further develop HRD and training policy from gender perspective with understanding of local customs and tradition.

Sonam Prabakhar (2022), has made a study on, “Skill development program for women in India – Current status and future perspective”. The study had stated that the role of skill development programme in challenging women socio – economic status have paved a high way for the growth of women.

Rama Nag (2019), “Empowering Women through Skill Development and various Government Schemes”. The study has conclude that female workers in our country lose their traditional or acquired skills when they remain unemployed having requisite skill. So to join them in economic activities wage discrimination between male & female workers should be removed.

Objectives

- To know the impact of skill development on women empowerment
- To sort the skill development program provided by the government
- To list out the challenges faced by women to achieve skill development program

Research Methodology

The natures of the study is descriptive in nature. The data is based on secondary data which are collected from various websites and journals.

Impact of Skill Development

Skills development is critical in empowering women by providing them with the tools they need to navigate and flourish in a fast-changing society. Women can develop a wide range of technical and non-technical abilities with access to education and training, allowing them to participate effectively in various areas of society.

First and foremost, skill development opens doors to new opportunities. Women have historically faced several obstacles, including limited access to school and career prospects. Societies tear down these barriers by investing in women’s skill development, allowing women to engage actively in the labor market. Women become more competitive when they acquire new abilities, boosting their chances of obtaining better career opportunities and more significant income.

Women’s economic freedom is also enhanced by skill development. Women who learn marketable skills become financially self-sufficient, minimizing their reliance on others. This economic autonomy increases their decision-making ability and allows them to contribute to their households’ economic well-being actively. Investing in women’s economic empowerment has been demonstrated in studies to

have a multiplier impact, benefiting not only individual women but also their families and communities.

Skill Development Programs

Schemes & Initiatives through NSDC

- Pradhan Mantri Kaushal Vikas Yojana (PMKVY)
- Rozgar Mela
- Pradhan Mantri Kaushal Kendras (PMKK)
- Capacity Building Scheme
- Udaan
- School Initiatives and Higher Education
- India International Skill Centres (IISCs)
- Pre Departure Orientation Training (PDOT)

Schemes & Initiatives through DGT

- Craftsmen Training Scheme (CTS)
- Crafts Instructor Training Scheme (CITS)
- Apprenticeship Training under the Apprentices Act, 1961
- Advanced Vocational Training Scheme (AVTS)
- Vocational Training Programme For Women
- Schemes for Up gradation of it is
- Flexi MoUs
- STRIVE
- Initiatives in the North East and LWE Regions
- Trade Testing
- Current Initiatives in the DGT Landscape
- Dual System of Training (DST)
- Polytechnics

Schemes related to Entrepreneurship

- Pradhan Mantri 'YUVA' Yojana

Other Schemes and Initiatives

- Skill Loan Scheme
- Indian Institute of Skills (IISs)
- SANKALP
- Academic Equivalence to Vocational Qualifications
- Aspirational Districts
- Swachh Bharat Abhiyan
- Technology Initiatives

Challenges which Women Face to Achieve Skill Development Program

1. **Lack of Confidence:** Due to differential socialization social norms, morals in the family rural women lack confidence, support, and decision making powers needed for the growth of an entrepreneur. Decision making power related to business activities is less due to economic dependent and domination of male headed society.
2. **Dual Responsibility:** With the dual roles as, wife and mother women unable to manage the enterprise effectively because of lack of time, concentration and overburdened personal obligations
3. **Finance Problem:** There is no sufficient fund to execute enough programmes to meet numerous political and our rural areas. The multiplicity of schemes is not adequately listed nor is there networking among agencies. As a result, clients approaching one institution are not made aware of the best option for their requirements.
4. **Illiteracy among Rural Women:** The literacy rate of women in India is found at low level compared to male population. The rural women are ignorant of new technology or unskilled. They are often unable to do research & gain the necessary training. The uneducated rural women do not have the knowledge of measurement and basic accounting.
5. **Need of Training and Development:** Indian families and society provide training to a girl to make her as a good wife rather than to uplift her as an entrepreneur she is not allowed to develop network with other business men, which is considered as a sin and bad culture.
6. **Political Interference:** Most of the contracts awarded by the Agency went to loyalists and political lackeys of the political leaders. Projects locations are always influenced by political consideration and not where they are mostly needed by the poor.
7. **Un-Cooperative Attitudes of Implementing Authority:** This has become a serious constraint, of recent. Since most of these Contractors are Political Stall warts, they can hardly complete one single project given to them according to specification and design. The projects are either executed haphazardly or unduly delayed or absolutely abandoned on the pretext of "unavailability of funds".
8. **Insufficient Professional Personnel:** The Agency executed most of its Programmes through 'contractors due to paucity of personnel especially the highly skilled and professional staff like the Economists (only one), the Accountants (only two), the Statistician (only one), and the Lawyers (none) and others. Even the few monitoring staff available has no sufficient assets to use for projects monitoring which are running for the upliftment.
9. **Lack of infrastructure and widespread Corruption:** There are also the other problems for the rural women. Rural women lack training and advisory services on managerial and technical skills to solve production problems.

Here more than 70 percent of enterprises are micro- and small enterprises but their growth and the competitiveness is greatly challenged by a lack of business management.

Conclusion

Various governments both central and state have made several efforts to uplift women workers in the informal sector through several innovative programmes. However, it has not succeeded up to a satisfactory level due to many confronting issues and inhibitions. In order to unlock the full potential of women workforce in India, the need of the hour is to bring about an employment revolution along with a skill development revolution. The planners should focus on women specific policies for their effective participation in the employment market.

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PERSPECTIVE OF ICT TOOLS IN EDUCATION

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"UNLEASHING CREATIVE POTENTIAL: RECONNOITERING THE POWER OF BRAINSTORMING IN EDUCATION AND RESEARCH"

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Abstract

Unleashing creativity and ingenuity, brainstorming ignites a torrent of ideas and a symphony of perspectives in order to surmount intricate business or technical quandaries. This method cultivates unbridled ideation among participants, propelling them into the exhilarating realm of boundless possibilities. During collaborative brainstorming sessions, individuals spontaneously proffer their insights, as the collective energy crackles with a sense of urgency and inspiration. These ideas are then meticulously classified, assessed, and accorded a hierarchical arrangement, culminating in decisive determinations regarding their subsequent pursuit. Pedagogical approaches meander from traditional explanatory methods to avant-garde constructive teaching techniques. The selection of a fitting method can diverge depending on the course, subject, topic, and context. Studies reveal that the brainstorming method of teaching shines as exceedingly fitting for bridging the chasm between a learner's present stance and their coveted learning outcome. Remarkably potent at the primary education level, notably in language instruction, this method showcases amplified effectiveness. The purpose of this inquiry is to unravel the core of brainstorming, delve into its underlying philosophy within the realm of education, and explore its implementation through the utilization of brainstorming tools in research endeavors. The paper solely depends on various secondary data.

Keywords: Brain storming, Education, Tools, Research

Introduction

Brainstorming electrifies and collaborates, igniting a whirlwind of imaginative ideas and inventive solutions to diverse challenges. Rooted in the philosophy of liberating thought, brainstorming evokes an unbridled exchange of thoughts and concepts within a group's embrace. By suspending judgment and embracing a non-critical atmosphere, participants can embark on a journey through diverse perspectives, unorthodox viewpoints, and unexplored realms of creativity. Originally conceived by advertising visionary Alex Osborn and further refined by subsequent researchers, brainstorming has

permeated fields as varied as business, education, research, and problem-solving. This method empowers individuals to shatter conventional thought patterns, giving rise to fresh insights and visionary solutions to intricate problems.

Review of Literature

A literature review serves as a basis for knowledge on a particular subject, identifies areas of prior scholarship, uncovers contradictions and gaps in the research, supports the need for more research, shows how one work is related to other works, and situates one's own work within the body of existing literature. There are a lot of reviews on this subject, but only the most current and pertinent ones are chosen.

In their groundbreaking research paper entitled "Unleashing the Potential: The Brainstorming Revolution in Nurturing Mathematical Connection and Metacognition Skills among Pesantren Students" (2023), **RosidBahar, SudjiMunadi, and RadenRosnawati** plunge deep into the transformative power of the Brainstorming method within the educational realm. Their study ventures into uncharted territories, unraveling the untapped potential of the Brainstorming technique to invigorate students' Mathematical connection skills and unriddle the enigmatic correlation between these skills and metacognition. By meticulously scrutinizing a sample of 60 daring participants, the researchers unearth a plethora of revelatory findings. This research magnifies the indomitable force of Brainstorming in cultivating heightened learning outcomes and interweaving cognitive capabilities in the intricate tapestry of mathematics education. In a study conducted by **Virginia Cruz and Nicolas Gaudron** in 2010 they explored the use of ended objects, as a tool for brainstorming. They introduced the concept of HCL workshop ended object sessions, which proved to be quite promising. These objects allowed participants to engage with each other emotionally and sensorially leading to the generation of ideas that had not been previously explored within their research program. By creating a shared experience that went beyond language barriers the brainstorming sessions were able to transcend expert discussions and fostered exchanges among participants, from backgrounds. In 2016 **Rafidah Abd Karim** conducted a research study titled "Brainstorming approach and mind mapping, in writing activity". The study delved into the utilization of mind maps for generating, visualizing, structuring and categorizing ideas. By engaging in brainstorming exercises students can be guided to overcome challenges encountered during writing tasks. This paper examines the significance of brainstorming and mind mapping as approaches that assist students throughout their writing process. Additionally, it explores the integration of technology to facilitate brainstorming and mind mapping activities. Research conducted by **Binita Goswami et.al.** in 2017 they investigated the effectiveness of using brainstorming sessions as a teaching learning tool, for medical biochemistry students. The findings indicated that the students showed an understanding of concepts as demonstrated by improved scores in posttests and their ability to solve clinical problems during the brainstorming sessions. Moreover, the students expressed their contentment with the organization timing and discussion of problems, during these sessions. **Ida Bagus Nyoman Mantra et al., (2022)** conducted a

study entitled on “explored that the reading comprehensions of the students improved Significantly Therefore, the BARA (Brainstorming, Activating, Reinforcing, Applying) strategy is considered very effective for teaching reading comprehension. This study implies that teachers should consider using BARA strategy to improve students’ Reading comprehension.

Objective of the Study

- To understand the concept of brainstorming and Philosophy behind Use of Brainstorming Method in the Field of Education
- To Familiarise different types perspective tools for brainstorming.
- To explore usage of brainstorming tools inresearch.

Data Base and Research Methodology

This qualitative study is a secondary analysis of data collected from a variety of sources, including journals, articles, theses, magazines, books, and the internet.

Concept of Brainstorming and its Philosophy in the Field of Education

Advertising mogul Alex Osborn, celebrated for his groundbreaking 1953 masterpiece "Applied Imagination," spearheaded this technique, subsequently honed and expanded upon by a multitude of researchers from various domains, including academia. In the realm of instruction and acquisition, this approach subtly deviates from Osborn's original notion, seeking to reshape students' conventional learning methodologies into vibrant perspectives. Within the educational milieu, brainstorming engenders ingenious cogitation by provoking the serendipitous generation of ideas pertaining to the subject matter. In stark contrast to mundane classroom practices, this methodology nurtures a dynamic and emancipated mindset among learners. It facilitates the transition from familiar knowledge to uncharted territories and encourages students to showcase their erudition in front of their peers. Whether conducted within a solitary session or spanning several, this technique, necessitating only rudimentary supplies like chalk and a board, compels students to rupture established cognitive patterns and embark upon unexplored avenues of thought, particularly in contemporary cutting-edge classrooms. Delving into the intricate realm of language classes, the art of brainstorming emerges as an alluring and potent instrument. With its magnetic allure, it propels students towards mastery, transforming them into nimble and astute learners. Moreover, this vibrant activity bestows upon them a euphoric delight, saturating their souls with unbridled joy.

In a vast framework, the pedagogical strategy known as brainstorming in education entails provoking students to unleash a deluge of ideas, thoughts, expertise, and facts to tackle distinct predicaments, subjects, or dilemmas. In the conventional domain of language instruction, this approach unfurls as the instructor strides into the classroom and initiates a preliminary conversation, frequently employing inquiries. The culmination of this inaugural dialogue signals the commencement of the lesson's focal theme. Subsequently, the lesson advances through diverse phases encompassing the instructor's

exposition, student involvement, practice, extraction of significance, elucidations, and recapitulation. During the cognitive tempest technique, the instructor wields it throughout the complete pedagogical procedure via the subsequent measures.

Students sits around the round table

At the commencement, the professor commands the pupils to orchestrate their seating in a spiral or U-shaped formation. This arrangement may encompass an elliptical table or the chairs being harmoniously positioned. The seating disposition endeavors to guarantee that every student possesses a lucid line of sight towards each other, the whiteboard, and the instructor, thus fostering unmediated interaction and involvement.

Present the Specific Problem or Topic

Having established an optimal seating configuration, enabling every student to visually connect with their peers, the board, and the instructor, the subsequent phase entails unveiling the particular quandary, subject matter, or matter of concern in the form of an interrogative. This endeavor may be instigated by either the pedagogue or a pupil.

- **Clarification and explanation of the problem:**Before initiating the mind-melting session, the teacher bestows an elucidation of the enigma and tackles any inquiries the students might harbor concerning the forthcoming venture. For instance, when instructing about fruit appellations, the teacher might exclaim, "Beloved pupils, you are well-acquainted with myriad fruits. Kindly divulge the nomenclature of fruits in either your mother tongue or the desired lingua franca.
- **Brain storming starts:**After the intricate elucidation and dispelling of uncertainties, the mind-mapping session kicks off, endowing all students with the chance to vocalize their musings. Remarkably, students frequently showcase remarkable fervor when proffering their retorts to the presented predicament.
- **Drawing-out as many ideas as possible:**The utmost aim is to extract an abundance of ideas. Students must be granted abundant chance and time to ponder and retort as elaborately as they are able.
- **Record all the generated ideas:**Either the instructor or a learner should meticulously inscribe all the concepts on the blackboard, utilizing succinct keywords and phrases. This methodology has evidenced that exhibiting concepts on the board in full view of the learners nurtures a vibrant mental progression, thereby stimulating them to proffer supplementary notions.
- **Assessment of ideas:** Engaging with notions launches students into a realm of abstraction. The educator proceeds to ponder over each notion individually. Likewise, every entry in the catalog requires thorough examination, refinement, amplification, and all-encompassing dialogue. Ultimately, a definitive catalog is crafted on the chalkboard. This approach equips students with a conclusive inventory, which they subsequently transcribe into their notes for ensuing exercises.

6. Perspective tools for Brainstorming

- **Six thinking hats** - It was developed by Edward de Bono. Six thinking hats refers six different perspectives, allowing you to reduce bias in your brainstorming. It is especially useful when search ideas for research papers or projects. It functions as a team-based approach to brainstorming and problem solving that may be used to examine issues from many angles in order to find solutions that might otherwise go unnoticed.
- **Gap analysis** - A gap analysis helps to identify the gaps between the current performance and the expected performance. Gap analysis in education is the process of determining the difference between a child's current level of learning and where they ought to be at any particular point in their schooling. We call this a learning gap. A gap analysis template may be used to put strategies in place to help the kid catch up to where they need to be when a learning gap has been detected.
- **Concept map** - A concept map consists of data elements and information that allow you to visualize the data and information flow in your concept. Concept maps can be utilized to illustrate and comprehend the interrelationships between data in existing literature. Creating concept maps can be a helpful way to visualize the concept you are researching and studying. We can use sticky notes to create a type of mind map, or you can utilize one of the many online brainstorming tools available.
- **Reverse brainstorming canvas** - The reverse brainstorming canvas model is a powerful tool for problem-solving, especially when you need a new perspective. It helps to stimulate creative thinking and idea generation by looking at the issue from a different angle.
- **Problem statement** - Problem statement is the one of the most important brainstorming tools in research. A problem statement is a succinct and clear description of the issue that you are attempting to address in your research. This model assists you in breaking down the LARGE problem that you are attempting to solve into more manageable parts by posing specific questions.
- **SCAMPER** - SCAMPER is an acronym for seven creative problem-solving techniques: Substitute, Combine, Adapt, Modify, Put to Another Use, Eliminate, and Reverse. This method is known for being straightforward and easy to use. It is based on the concept that innovation is achieved by making changes to existing ideas and objects.
- **Mind mapping** - Mind mapping is a technique for visually organizing information around a central concept. It is similar to a tree, with related ideas branching out from the main point. This type of layout allows for the exploration of patterns and structure in a variety of materials, making it a useful tool for organizing thoughts, studying, and approaching projects.
- **Random word technique** - Random word brainstorming can be a great way to come up with creative solutions to your problems. This technique encourages you to think outside the box and explore ideas that you may not have considered

before. It can help you access the parts of your brain that are usually dormant, allowing you to come up with innovative solutions that are not limited by any structures or rules.

- **Provocation-Based Technique** - Techniques based on provocation involve asking difficult questions or making statements to encourage creative thinking and generate new ideas. These can be in the form of "What If?" questions, outlandish statements, or contradictory assumptions. Provocations break away from traditional thought processes and motivate people to think outside the box.
- **Analogies** - Analogies involve making connections between unrelated topics, scenarios, or areas. By taking the principles or qualities of one domain and applying them to another, new ideas and understandings can be created. Analogies motivate people to look at different angles and transfer knowledge from one situation to another.
- **Role playing** - Role play involves taking on different characters or identities related to the issue or task at hand. By embodying a different point of view, people can come up with ideas from that particular angle. Role play increases understanding, promotes creative thinking, and allows for the examination of various perspectives.
- **Round robin brainstorming** - Round-robin brainstorming is a structured approach to idea-sharing in which each person contributes one thought before passing it on to the next participant. This method ensures that everyone has an equal opportunity to contribute and that no one voice is more powerful than another. It also encourages a variety of perspectives and helps to generate a multitude of ideas in research and learning.

Brainstorming in Research

In the dominion of investigation, ideating serves as a vibrant and potent technique to nurture inventiveness and spawn a plethora of notions that greatly enrich diverse stages of the research process. Researchers convene to embark on untrammelled and boundless exploration of potential research topics, hypotheses, methodologies, and avant-garde approaches. This collaborative ideation process not only facilitates the refinement of research questions but also aids in the detection of potential hurdles and the formulation of imaginative resolutions to surmount them. Furthermore, ideating assumes a pivotal role in amplifying the configuration of research studies by inspiring collaboration and assimilating cross-disciplinary perspectives. Moreover, the act of ideating proves immeasurable in the interpretation of discoveries, the contemplation of constraints, and the conception of forthcoming research trajectories. By encouraging unreserved discourse and embracing diverse perspectives, ideating enhances the entire expedition of inquiry, propelling towards more profound revelations and resilient achievements. It nurtures a feeling of communal responsibility and involvement among investigators, empowering them to harness their collective expertise and exploits to propel the frontiers of knowledge and ingenuity. Ultimately, ideating acts as a catalyst for engendering novel concepts, igniting ingenuity, and guaranteeing that the research process remains vibrant and consequential.

Conclusion

To wrap up, our research had two primary aims: to unravel the essence of brainstorming and the underlying philosophy that propels its application in the realm of education, and to acquaint ourselves with a myriad of perspective tools that can be employed for brainstorming. Additionally, we sought to delve into the potential utilization of these brainstorming tools in the domain of research. Through our investigation, we have acquired a profound comprehension of the commanding potential of brainstorming as a dynamic technique that kindles the fires of creativity and begets a wealth of ideas. We have acknowledged its pivotal role in the research process, as it aids in refining research inquiries, unveiling potential hurdles, and devising groundbreaking approaches. Moreover, brainstorming has proven to be instrumental in enriching the design of research studies by fostering collaboration and eliciting cross-disciplinary perspectives.

In conclusion, this research has underscored the momentousness of brainstorming in the realm of education and its potential for elevating research endeavors. By embracing the philosophy that lies at the heart of brainstorming and harnessing the varied tools at our disposal, researchers can unleash their creativity, foster collaboration, and ultimately contribute to the advancement of knowledge in their respective fields.

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PREFACE

In an era where the global landscape is undergoing rapid and profound changes, the aspiration for global leadership demands a visionary and concerted effort. The seminar proceedings titled “Vision for Vishwa Guru India Initiatives for Global Leadership by 2047” stand as a testament to India's unwavering commitment to shaping a future that is not only transformative for its own citizens but also resonates across the international community.

As we approach the momentous milestone of 2047, which marks the centenary of India's independence, we find ourselves at a crossroads of possibilities and challenges. The concept of ‘Vishwa Guru’ encapsulates India's age-old tradition of disseminating knowledge, fostering dialogue, and illuminating the path for others. This compilation of seminar proceedings is a reflection of this tradition, a dialogue that transcends boundaries and invites scholars, students, and visionaries to collectively envision the path ahead. These proceedings offer a panoramic view of the discussions and insights shared by luminaries in various fields, touching upon a myriad of sub-themes. From discussions on the Role of Technology in NEP 2020 to explorations of Ease of Doing Business, the proceedings delve into crucial facets that shape India's global role.

We extend our heartfelt gratitude to the Indian Council of Social Science Research (ICSSR) for its invaluable support in bringing together these seminal discussions. Their unwavering commitment to advancing knowledge aligns seamlessly with the spirit of the Vishwa Guru India Initiatives. As we navigate the complexities of a rapidly evolving world, we hope that these initiatives serve as a source of inspiration, a catalyst for meaningful dialogues, and a blueprint for action.

We are indebted to the authors who have contributed their scholarly insights to this compilation. Their diverse perspectives and rigorous research have enriched the discourse on global leadership and India's role in shaping the global narrative. Each paper presented here is a testament to their dedication to knowledge dissemination and their belief in the power of ideas to drive positive change.

Together, let us embrace the spirit of ‘Vishwa Guru’ and pave the way for a brighter, more harmonious, and prosperous India.

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EXPERIENTIAL LEARNING AND SKILL DEVELOPMENT IN NATIONAL EDUCATIONAL POLICY 2020

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Abstract

Education is the key factor to increase the financial status of the persons. Not only it gives financial status then also it gives holistic knowledge to the persons. Education gives economic background, and knowledge-based attitude or behaviour. Then what society expect from the educated persons. Today students are leaders of the country in future. So, Education gives leadership qualities, Responsibilities to the society. This National Educational Policy 2020 helps to improve the students learning process or method to vary. Experiential Learning and skill development is one of the main objectives of NEP 2020. This article tries to show, NEP 2020 what wants to change the learning and technical knowledge of the students.

Keywords: Soft skill learning, Hard skill learning, Practical learning or Experiential learning.

Introduction

The National Education Policy (NEP) 2020 is a complete and transformative framework introduced in India with the aim of reforming the country's education system. Intended as a student-centric, holistic approach, the policy seeks to adoptive creativity, critical thinking, and problem-solving skills among students. NEP 2020 promotes for a elastic and multidisciplinary curriculum, mixing vocational education and experiential learning, while promoting technology-enabled education. It encourages early childhood education, underlines the training and professional development of teachers, and strives to bridge the gap between academic and vocational streams. The policy recognizes the importance of protective cultural and original knowledge while preparing students for the challenges of the 21st century, making education more inclusive, reasonable, and adaptive to the changing needs of learners and society.

Experiential Learning

Experiential learning, in the context of NEP 2020, is a student-centered method that boosts students to learn by doing, appealing in hands-on activities, and go through real-world situations. It is planned to move away from habit memorization and theoretical knowledge, and instead, focus on real-world applications and perilous thinking.

Following key features are includes in NEP 2020 for experiential learning to the students:

Skill-based Learning: Experiential learning aims to develop anextensive range of skills in students, including problem-solving, decision-making, communication, collaboration, and inventiveness, among others. This focus on subject expertise intended to make students better equipped for real-life challenges and employment opportunities.

Vocational Education: The NEP 2020 emphasizes the amalgamation of professional education into the mainstream curriculum. This enables students to advance practical skills and appropriate knowledge to various trades and industries, preparing them for the workforce.

Internships and Hands-on Training: The policy encourages schools and higher education institutions to provide prospects for students to engage in internships, apprenticeships, and other forms of hands-on training. This allows students to apply academic knowledge to real-world sceneries and improve valuable work experience to the students.

Project-Based Learning: Observed learning promotes project-based learning, where students work on real-life projects and solve reliable problems. This approach adopts perilous thinking, coordination, and practical application of knowledge.

Field Trips and Community Engagement: The NEP 2020 encourages schools to organize field trips and involve with the local community. These experiences enable students to understand the real-world situation of their studies and shape a deeper connection between the classroom and the world outside.

Integration of Co-curricular Activities: Experiential learning involves participating co-curricular activities such as sports, arts, and cultural programs into the education system. This encourages a well-versed growth of students and improves their learning experience.

It's worth noting that the implementation of NEP 2020 and its initiatives, including observed learning, may differ across different states and educational institutions in India. For the most current and detailed information on the status of experiential learning in NEP 2020, I recommend referring to official government sources or educational institutions' updates.

Skill Development

The term "skill" refers to the ability or proficiency acquired through practice, training, or experience to perform a specific task or activity effectively. Skills can be both physical and intangible, encompassing a extensive range of capabilities across various areas, including physical, reasoning, technical, social, and emotional areas.

Following some key points about skills in NEP 2020:

Learned Abilities: Skills are not innate; they are learned and developed over time. They result from a grouping of knowledge, practice, and experience.

Performance-Oriented: Skills are task-oriented and involve the capacity to carry out specific actions or achieve particular objectives.

Context-Dependent: Skills may be context-specific, meaning they can be more appropriate in certain situations or fields than others.

Transferable: Some skills are handy across different areas, allowing individuals to apply them in various contexts.

Improvable: With practice and continuous learning, individuals can advance their skills and increase their ability.

Skills can be broadly categorized into two types:

Hard Skills: These are specific, technical abilities that are easily measurable and often require formal education or training. Examples of hard skills include programming, accounting, graphic design, data analysis, and external verbal proficiency.

Soft Skills: Also known as "people skills" or "interpersonal skills," these are more subjective and are related to how individuals interact with others and handle various situations. Examples of soft skills contain communication, leadership, teamwork, problem-solving, adaptability, and emotional intelligence.

Both hard and soft skills are essential for personal and professional development, and a well-rounded individual typically holds a amalgamation of these skills. In the workplace, employers often seek candidates with a balanced mix of technical expertise (hard skills) and the ability to work well with others and adapt to new challenges (soft skills).

The National Education Policy (NEP) 2020 in India the significance of skill development as a crucial aspect of the education system. The NEP 2020 aims to equip students with a broad range of skills that are essential for personal growth, employability, and contributing to the nation's development. It emphasizes the integration of skill development across all levels of education, from school to higher education.

Following important points are include in NEP 2020:

Early Childhood Education: The policy highlights skill development from an early age. It aims to encourage foundational skills such as critical thinking, problem-solving, creativity, and communication in children through play-based and activity-based learning in early childhood education.

Vocational Education: NEP 2020 advocates for the combination of vocational education into the mainstream curriculum. This tactic aims to provide students with practical skills and knowledge applicable to various trades and industries. It seeks to remove the traditional hierarchy between academic and vocational streams and encourages students to discover various career options.

Internships and Experiential Learning: This policy helps practical learning through internships, apprenticeships, and hands-on training opportunities to the students. This allows students to increase practical knowledge and progress employable skills while following their studies.

Flexible Curriculum: NEP 2020 inspires a elastic curriculum that permits students to choose from a wide range of subjects and skill-based courses. This flexibility allows students to discover their interests and strengths, fostering a holistic development method.

Teacher Training and Professional Development: The policy highlights the training and professional development of teachers to train them with the skills and knowledge needed to efficiently impart skill-based education to students.

Technology Integration: NEP 2020 identifies the importance of technology in skill development. It highlights the use of technology to improve teaching and learning experiences and to convey digital skills to students.

Entrepreneurship Education: The policy encourages entrepreneurship education to encourage invention and self-employment. It seeks to foster an entrepreneurial mindset among students and provide them with the necessary skills to start their schemes.

Recognition of Prior Learning: NEP 2020 acknowledges the value of skills acquired external formal education systems. It aims to provide mechanisms for recognizing and accrediting prior learning, allowing individuals to gain theoretical credit for their existing skills and knowledge.

It's significant to note that the application of skill development creativities under NEP 2020 may differ across different states and educational institutions in India. Since policies are subject to nonstop updates and changes, I recommend referring to official government sources or educational institutions for the most current and detailed info on skill development in NEP 2020.

Conclusion

Indians understand the value of education in their daily lives. Not only in terms of money, but also in terms of respect in society, education is given a special place. Assets may go tomorrow but arrive today. Education, however, is not stolen or burned in the same way. If someone imparts information to others, the recipient will become more knowledgeable. According to a statistical study, in India, parents spend 60% of their income on their children's tuition. The NEP 2020 must be implemented by teachers. Because the government is dealing with more issues and holding more meetings with educators, opposition party suggestions, parents' opinions, and public input. The government then implemented the policy. Teachers work in the field, thus. Every strategy has flaws, and success depends on Every strategy has flaws; the execution of the plan determines whether it succeeds. How to carry out the strategy on the ground. As a result, more educationalists offer advice to the government for NEP 2020. The government includes the educationalists' recommendations to the NEP 2020's developed next level.

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MAKE IN INDIA: PROMOTING MANUFACTURING AND GROWTH

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Abstract

Manufacturing is believed to be the key to the development of a nation. However in case of India it is the services which has spurred the development. Realizing the imperativeness of manufacturing sector 'Make in India' initiative was launched on 25th September 2014 by our Prime Minister, Mr. Narendra Modi. The new policy is launched with the objective of making India the manufacturing hub of the world. The initiative is a sales pitch; focusing the key 25 industries; to attract foreign investors. However to make it successful the areas of regulations, power, infrastructure etc. needs fixing up.

This research paper is written with the intention to expound the concept of 'Make in India' campaign, objectives, its purpose and its merits.

Keywords: Make, India, Manufacturing.

Introduction

The Government of India began the "Make in India" project in 2014 with the goal of supporting domestic manufacturing and accelerating economic growth. The initiative's main goal is to entice both domestic and international businesses to participate in Indian manufacturing.

By fostering an advantageous business environment, streamlining laws, and promoting ease of doing business, the "Make in India" initiative seeks to turn India into a major global manufacturing base. It aims to entice investment in a variety of industries, including renewable energy, textiles, electronics, autos, and medicines.

Objective of the Study

- To list out the objective of make in India scheme
- To list out the merits of make in India scheme
- To list the methods and forms of FDI

Objectives of Make in India

1. Promoting investment: By providing incentives, tax advantages, and streamlined regulatory processes, the campaign hopes to draw both domestic and foreign direct investments (FDI). It strives to foster a climate that is business-friendly.
2. Improvement of infrastructure, such as transportation systems, logistics systems, and industrial corridors, is a key goal of the plan. This is crucial for the efficient transport of commodities and raw resources, which lowers prices.
3. The "Make in India" initiative acknowledges the value of skilled workers for the manufacturing sector. It attempts to improve workforce skill sets through a variety of activities, including partnerships with industry leaders and programs for vocational training.
4. Protection of intellectual property rights (IPR): To safeguard innovations and promote research and development, the government is aiming to improve India's IPR system. This is essential for encouraging innovation and luring investments in technology-driven production.
5. Sector-specific policies: To address the special difficulties and opportunities in many industries, the initiative has created sector-specific policies. With the help of these policies, focused growth and competitiveness can be encouraged in a variety of industries.

The "Make in India" project seeks to increase employment possibilities, foster economic growth, and establish India as a hub for global manufacturing by boosting local production and luring investments. To promote sustainable economic development, it aims to take use of India's sizable consumer market, talented labour, and favourable demographics.

Merits of Make in India

The Make in India initiative offers several merits and advantages for India. Some of the key merits of the Make in India scheme are:

1. Economic growth: The initiative aims to boost economic growth by promoting domestic manufacturing and attracting foreign direct investment (FDI). Increased manufacturing activities contribute to GDP growth, job creation, and overall economic development.
2. Job creation: The Make in India scheme focuses on creating employment opportunities across various sectors, including manufacturing, infrastructure development, and services that support the manufacturing ecosystem. This helps to reduce unemployment rates and improve the standard of living for the population.

3. **Skill development:** The initiative emphasizes skill development programs and vocational training, aiming to enhance the capabilities of the workforce. This helps bridge the skill gap and ensures a skilled labor force that can meet the demands of the manufacturing industry. It also promotes entrepreneurship and innovation, creating a culture of self-employment and job creation.
4. **Foreign direct investment (FDI):** The Make in India scheme aims to attract foreign companies to invest in India's manufacturing sector. By simplifying regulations, providing incentives, and improving ease of doing business, it creates a favorable environment for foreign investors. Increased FDI inflows bring in advanced technology, capital, and expertise, leading to the growth and development of the manufacturing sector.
5. **Technological advancements:** The Make in India initiative encourages the adoption and development of advanced technologies in the manufacturing sector. This helps upgrade the industrial infrastructure, improve productivity, and enhance the competitiveness of Indian manufacturing companies in the global market.
6. **Export promotion:** By promoting domestic manufacturing, the Make in India scheme aims to increase exports. It focuses on developing export-oriented industries and facilitating trade, leading to a favorable balance of trade and foreign exchange earnings for the country.

Foreign Direct Investment

A **foreign direct investment (FDI)** refers to purchase of an asset in another country, such that it gives direct control to the purchaser over the asset (e.g. purchase of land and building). In other words, it is an investment in the form of a controlling ownership in a business, in real estate or in productive assets such as factories in one country by an entity based in another country.^[1] It is thus distinguished from a foreign portfolio investment or foreign indirect investment by a notion of direct control.

The origin of the investment does not impact the definition, as an FDI: the investment may be made either "inorganically" by buying a company in the target country or "organically" by expanding the operations of an existing business in that country.

Methods

The foreign direct investor may acquire voting power of an enterprise in an economy through any of the following methods:

- by incorporating a wholly owned subsidiary or company anywhere
- by acquiring shares in an associated enterprise

- through a merger or an acquisition of an unrelated enterprise
- participating in an equity joint venture with another investor or enterprise

Forms of FDI incentives

Foreign direct investment incentives may take the following forms:

- low corporate tax and individual income tax rates
- tax holidays
- other types of tax concessions
- preferential tariffs
- special economic zones
- EPZ – export processing zones
- bonded warehouses
- maquiladoras
- investment financial subsidies
- free land or land subsidies
- relocation & expatriation
- infrastructure subsidies
- R&D support
- energy
- derogation from regulations

Conclusion

To make India free of unemployment by bringing development and growth this policy is the urgent need. We can downsize poverty in India to a great level by solving the unemployment issue for youths. Thus the country economy will achieve a new height after the success of this campaign. This, in turn, may solve various social issues in the country.

This program is an absolute necessity if we are to eradicate unemployment in India while also fostering economic growth. We can significantly reduce poverty by addressing the issue of youth unemployment. A strong economy is inevitable following the success of the “Make in India” initiative. By doing so, various socio-economic problems in the country may be addressed.

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IMPLEMENTATION OF ICT SKILLS FOR THE STUDENTS OF THEIR EMPLOYMENT IN SKILL BASED JOBS



TRAINING



LEARNING



KNOWLEDGE



SKILL



COUCHING



SUPPORT



DEVELOPMENT

Volume 1



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IMPACT OF ICT IN OUR DAILY LIVES

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ABSTRACT

In the present interrelated world, information and communication technology (ICT) is broadly utilized by our nation and it influences our lives everyday. In the ongoing advanced age regular new innovation comes as ICT revolt. These new advancements have been open by individuals in their day-to-day existence and increment their expectations for everyday comforts. In Present days, numerous ICT contraptions are utilized in our life and they work with portability accordingly utilized anywhere and at any time. These contraptions work for Data, Speed, and Communication and diminish the physical and mental human responsibility. By that standards, advanced contraptions really helped people in day-to-day existence. ICT has contributed a great deal to change our daily existence, for example, letter to email, market shopping to on-line shopping, classroom learning to e-learning, and so on. This paper present's the impacts of ICT as Home and domestic Exercises, Interpersonal interaction, Training, Wellbeing, Business, Banking, and Work. In light of this survey, positive and adverse consequences to involve ICT in our everyday life are examined.

Keywords: Information and Communication Technology (ICT), e-learning, impacts of ICT.

Introduction

ICT stands for Information and communication technology, which is an innovation that permits us to look for Information and to communicate with one another. Society has seen the ICT transformation in the main edge. The new advancements of the computerized age have been accessible in our daily existence with the dependable advantages so ICT has been supported as our extraordinary expectations for everyday comforts. ICT coordinate

all communication channels for us to use in our regular day to day existence. ICTs are presently not an extravagance for emerging nations. In the beyond couple of many years, ICT offers society with a enormous exhibit of new communication capacities, such as home and domestic exercises, work, schooling, comfort, business, banking, and person to person communication sites. We are currently in the computerized age so the quantities of ICT devices such as computers, laptops, web, cell phones, tablets, and so on are accessible into our lives. Individuals get ups the latest patterns and move up in existence with the utilization of ICT. Over the most recent couple of many years, ICT has turned into the need as opposed to the special case.

What is ICT?

Information and communication technology (ICT) is often used as a drawn out equivalent word for information technology (IT), yet is a more unambiguous term that burdens the job of bound together interchanges. ICT gives permission to data through broadcast communications. It is such as information technology (IT), however focuses generally on communication advancements, for example, the Web, remote organizations, mobile phones, and other communication mediums. ICT incorporates any specialized gadget or application, enveloping: radio, TV, cell phones, computer, laptops, tablets, and organization equipment and programming, so on. ICT additionally offers the different types of assistance on the web and applications related with them.

Significance of ICT

Information and communication technology (ICT) plays a significant role on the world since we are currently in the information age period. With ICT, the organization can make the business easier to occur with the client, suppliers, and wholesaler. It is additionally vital in our regular routines. The absence of suitable data brilliantly will bring about low efficiency, low- quality examination works, and waste of time to seek after information and even to do investigate which others had done or in different nations. These days ICT can't be isolated from our everyday necessities.

ICT enormously affects our regular routines. For instance, we can examine our nearby paper utilizing the internet-based paper. One more model is we actually can get associated with our family, relatives, or college regardless of whether we are abroad by

utilizing electronic mail, yahoo messenger, call gathering, or video conference.

Advanced Computer and systems administration have changed our economy idea to an economy with no limit in existence in view of ICT. It brings a ton of benefits for financial improvement empowering a great many exchanges to occur in a simple and quick manner. ICT is one of the financial improvement points of support to acquire a public upper hand. It can work on the nature of human existence since it is utilized as a learning and education media, the mass communication media in promoting and campaigning practical and important issues, such as the health and social area. It gives more extensive information and can help in acquiring and getting the information.

ICT has turned into an essential piece of day-to-day existence for some individuals. It builds its significance in individuals' lives and it is normal that this pattern will proceed, to the degree that ICT education will turn into a practical necessity for people's work, social, and personal's lives.

Effects of ICT

As human being we are always connected with lot of essential things in our everyday life. Using ICT gadgets in our lifestyle, many time-consuming calculation and tough tasks has become easier and social contacts has been increased. ICT has affected lives by improving timely distribution of information through the media and improved communications in homes and workplaces through social networks, and emails. ICT has extremely enhanced the quality of human life. For examples, writing a letter could take few days to arrive to the receiver but by the writing an e-mail reaches in just a minute. ICT provides each facility on 24 Hrs X 7 days with the wider knowledge and information. ICT affects fields of daily life some of them are discussed as follows:



As Home and Domestic Activities: We can join and control home equipment's (together with washing machine, refrigerator, cell-phones, laptops). Carry out internet banking, on-line shopping, examine newspapers on-line, watch TV programs, impart training and connects ourselves to our family, friends, or loved ones whilst we're at lengthy distance through the use of the e-mail, messenger, call-conference, or video-conference. As Social Networking: There are many social networking web sites are to be had such as Facebook, Orkut, Twitter, and LinkedIn which lets in customers to talk and live linked with every different throughout the globe regularly. All those web sites have helped to slender the bodily distances among people. Social Networking gives centres together with quicker verbal exchange speed, powerful sharing of information, and paperless environment.

As Education/E-Learning: E-Learning is a digital mastering, wherein the learner makes use of a computer to analyse a task, skill, or method at that point instructor teaches thru the computer online. Students can analyse through looking videos, e-books, dialogue groups, bulletin boards, blogs and e-mastering in a collaborate environment. Students also can ask query to their instructor the usage of emails. Educational institutes make use of projector or digi-magnificence to train students.

As Health: When we get sick, we do not like to head out of door seven to go to the doctors. Today, we had an answer use ICT device to touch with our health practitioner and describe our problems. It is beneficial to clinical college students to find out about disease, medicines, and surgeries. Doctors can display essential surgical operations to clinical college students via way of means of the usage of ICT. Doctors can function important affected person in steering of many expert surgeons via videoconferencing.

As Shopping/Commerce: Online purchasing entails E-commerce. It attracts on such technology as digital budget transfer, online transaction processing, Inventory control device and automatic facts series systems. It makes shopping for and promoting sports easier, greater green and quicker through the use of computers, net and shared software. ICT helped groups to make extra cash and spend much lesson their business. We can pick variety of objects from exceptional nations without accomplishing that location to shop for anything we need at any time. We pay for the objects at there with a secure net price option. Product marketing and marketing is likewise feasible via ICT.

As Banking: Banking helped us to shop formatters the use of E-commerce. It consists of out digital transactions via Debit/Credit cards, internet banking and Air/Rail tickets reserving at anywhere at whenever with the use our equal banking account. We can keep our time, get admission to debts for mortgage applications, transactions and replace our coins go with the drift at any time. Banking is facilitated with digital cash, so it introduces an Eco-pleasant world.

As Employment/Jobs: ICT increases the number of employments in our society. People can work as Web developer, and IT network supervisor who have skills in ICT. It gives new job opportunity for many people to become victorious self-employer to work from their home.

Conclusion

ICTs affect nearly everyone that approaches them and that the web has changed society and how we live. ICT brings individuals from areas of the world together to speak with one another across the world. It offers a chance to further developing communication, to meet new individuals on the web and establish a friendship, to share the individual data web based, expanding potential open doors for training. Without a doubt ICT device have truly made people groups life straightforward and engaging yet information, Media, and Innovation Abilities are required for the utilization of ICT. ICT can decidedly affect our lives yet we must be cautious while utilizing it since we might experience the negative effects of some adverse consequence by utilizing them. We must be perceptive in utilizing the ICT devices. In this manner, ICT is the new advancements of the computerized age have been open in our day-to-day existence with a confusing mix of ensured benefits for certain issues.

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EMOTIONAL INTELLIGENCE

OF PHYSICAL EDUCATION TEACHERS

DR. D. RAJASEKARAN
DR. M. CHITHIRAI SELVAN



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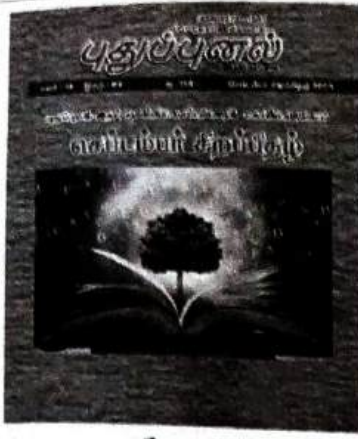
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சங்ககாலக் கருவூர்ப் புலவர்களின் பாடல்கள் காட்டும் செய்திகள்

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தமிழ் இலக்கியத்துறை

நல்லமுத்துக் கவுண்டர் மகாலிங்கம் கல்லூரி

பொள்ளாச்சி

கோயம்புத்தூர்

முன்னுரை

தமிழில் தோன்றிய சங்க இலக்கியங்கள் வழி அக்கால மக்களின் காதல், வீரம் ஆகியவற்றோடு அவர்களின் நம்பிக்கைகள், வழிபாடுகள், பழக்கவழக்கங்கள், வாழ்க்கை தொடர்பான மதிப்பீடுகள், வரலாறுகள், மனித இயல்புகள் போன்றன பற்றியும் அறிந்துகொள்ளமுடியும். சங்கஇலக்கியத் தொகுப்பில் பண்டைய தமிழகத்தின் பல்வேறு பகுதிகளில் வாழ்ந்த புலவர்களின் பாடல்கள் இடம்பெற்றுள்ளன. புலவர்களின் அறிவாற்றல், அனுபவத் தன்மைகளுக்கேற்ப பாடல்கள் அமைந்துள்ளன. அவை, காலந்தோறும் படிப்போர்க்குப் பல வகைகளில் பயனளிக்க வல்லனவாக உள்ளன. பண்டைய தமிழகப் பிரிவுகளில் ஒன்றாக இருந்தது கொங்குப்பகுதியாகும். கொங்குப் பகுதியில் அமைந்திருந்த கருவூர் என்னும் ஊரின் பெயரைத் தங்கள் பெயர்களுக்கு முன்கொண்டுள்ள புலவர்கள் எழுதிய பாடல்கள் சங்க இலக்கியத் தொகுப்பில் இடம்பெற்றுள்ளன. மயிலை.சேனி.வேங்கடசாமி இவர்களைக் கொங்குநாட்டுப் புலவர் பெருமக்கள் என வகைப்படுத்துவார். (மயிலை.சேனி.வேங்கடசாமி, ப.170) சங்க காலத்தைச்சார்ந்த, தமிழகத்தின் ஒரு குறிப்பிட்ட நிலவியலுக்குட்பட்ட புலவர்களின் பாடல்கள் வெளிப்படுத்தும் செய்திகளை ஆராயும் நோக்கில் இக்கட்டுரை அமைகிறது.

கருவூரின் சிறப்பு

கருவூர்க்குப் பல சிறப்புகள் உள்ளன. இது ஆன்பொருளை என்னும் அமராவதி ஆற்றங்கரையில் அமைந்துள்ளது. அதாவது, இப்போதுள்ள கரூர்பகுதி. கருவூர் என்பதே கரூர் என மருவியதாகக் கருதப்படுகிறது. இது சங்க காலத்தில் சேரர்களின் தலைநகராக இருந்துள்ளது. சேரர்கள் கொங்கு நாட்டைக் கைப்பற்றிய பிறகு சேரநாட்டின் தலைநகரமான கருவூரின் பெயரையே இதற்கு இட்டதாகச் சொல்லப்படுகிறது. இதற்கு வஞ்சி என்ற வேறுபெயரும் உண்டு. சேரர்கள் வழிவந்த இரும்பொறை அரசர்கள் இங்கிருந்து ஆட்சிசெய்துள்ளனர். சேரர்களிடமிருந்து இதைக் கைப்பற்ற சோழர்களும் பாண்டியர்களும் போர் செய்துள்ளனர். பிறகு, பாண்டியர்களின் ஆட்சிக்கும் அதன்பிறகு நாயக்கர் ஆட்சிக்கும் உட்பட்டு இருந்துள்ளது.

கருவூர்ப்புலவர்கள்

கருவூர் என்ற ஊரின் அடையொடு தங்கள் பெயர்களைக் கொண்ட புலவர்கள் பின்வருமாறு: கருவூர் ஓதமானியார், கருவூர்க்

கண்ணம்பாளனார். கருவூர் கதப்பிள்ளை, கருவூர்க் கண்ணம்புல்லனார், கருவூர்க் கலிங்கத்தார், கருவூர்க்கிழார், கருவூர் சேரமான்; சாத்தன், கருவூர் நன்மார்பனார், கருவூர் பவுத்திரனார், கருவூர் பூதஞ்சாத்தனார், கருவூர் பெருஞ்சதுக்கப் பூதனார் ஆகிய புலவர்கள் ஆவர்.

கருவூர்க் கண்ணம்பாளனார்

மகளிரின் சோலை விளையாடல், ஆறலைக்கள்வர் செயல்கள், வஞ்சி மாநகரை ஆளும் சேரனின் சிறப்பு, உடன்போக்கில் சென்றுவிட்ட மகளை நினைத்து வருந்தும் தாயின் நிலை, பொருள்தேடச் செல்லும் தலைவன் தன் தலைவிக்கு மென்மொழியால் ஆறுதல் கூறிச்செல்லும் பாங்கு ஆகியன இவருடைய பாடல்கள் (அகநானூறு-180,263), நற்றிணை(141) வெளிப்படுத்தும் செய்திகளாக இடம்பெற்றுள்ளன. சோலையில் விளையாடும் பெண்களுள் ஒருத்தியைக் கண்டு காதலுற்ற தலைவன் ஒருவன் தான் அவளை விரும்புவதை வெளிப்படுத்த அவளுக்குப் குவளைப்பூக்கள் கொண்டு கட்டிய மாலையை அவளின் தலையிலிருந்து முதுகுப்புறம் வரை தொங்கும்படி குட்டிவிட்டுச்சென்றதை,

தன்கயத்து அமன்ற ஒண்பூங் குவளை

அரும்பு அலைத்து இயற்றிய கரும்பு ஆர் கண்ணி

பின்னுப்புறம் தாழக் கொன்னே குட்டி

நல்வரல் இளமுலை நோக்கி, நெடிது நினைந்து

நில்லாது பெயர்ந்தனன் ஒருவன் (இரா.செயபால்,2004)

என்ற பாடலடிகள் வாயிலாகக் கூறுகிறார். (அகம்.180) இதனால் குவளைப் பூக்களை அன்று மாலையாகக் கட்டும் வழக்கம் இருந்ததையும் ஆண்கள் தாங்கள் விரும்பும் பெண்ணுக்கு மலை குட்டித் தன் விருப்பத்தை வெளிப்படுத்தும் வழக்கம் இருந்ததையும் காணமுடிகிறது.

வில்லாற்றல் மிக்க ஆறலைக்கள்வர்கள் என்போர் பாலை நிலவழிச்செல்வோரை யாமரத்தின் உச்சியில் ஏறியிருந்து கிளைகளை தாங்கள் மறைவதற்கு இடமாகக்கொண்டு தாக்கும் இயல்புடையோர் என்பதை,

ஆறுசெல் வம்பலர் வருதிறம் காண்மார்

வில்வல் ஆடவர் மேல்ஆள் ஒற்றி

நீடுநிலை யாத்துக் கோடுகொள் அருஞ்சுரம்

(இரா.செயபால், 2014)

என்ற அடிகளில் (அகம்-263) பதிவாக்கியுள்ளார். இவர்களின் அக்கறைக்கும் அஞ்சாமல் தலைவியை உடனழைத்துச் செல்லும் தலைவனின் உறுதியையும் காணமுடிகிறது.

ஒளிவேல் கோதை ஒம்பிக் காக்கும்
வஞ்சி அன்னஎன் வளநகர் விளங்க
இனிதினின் புணர்குவென் மன்னோ-துனி இன்று
திருதுதல் பொலிந்த என் பேதை
வருமுலை முற்றத்து ஏழுறு துயிலே (இரா.செயபால்,2014)

என்ற அடிகளில் (அகம்-263) கோதை (சேரன் இளஞ்சேரல் இரும்பொறை) வஞ்சியாகிய கருவூரைப் பாதுகாக்கும் தன்மையையும் அது வளமையெனக் கொண்டு விளங்குவது போன்ற வீட்டினக்கொண்டவளாக தலைவியின் தாய் விளங்குவதையும் தலைவியின் காதல் உறுதியுடையதாக இருப்பதை உணர்ந்தால் அவளுடைய தலைவனோடு மணம் முடிக்கும் மனம் கொண்டவளாக இருந்ததையும் அறியமுடிகிறது.

அச்சம் நிறைந்த வழியில் அஞ்சாது செல்லும் தலைவனுடன் அவனைத் திருமணம் செய்துகொள்ளத் துணிந்து செல்லுதலும் தலைவியும் அவன் பொருள்தேடச்சென்ற காலத்து மனவுறுதியுடன் அவன் செயல் வெற்றிபெறவேண்டிக் காத்திருந்ததும் தலைவியின் குணங்கள் என்பதை

வண்ணம் தோக்கியும், மென்மொழி கூறியும்
தீ அவண் வருதல் ஆற்றாய் எனத் தாம்
தொடங்கி ஆள்வினைப் பிரிந்தோர்

வருந்தேன் தோழி! வாய்க்க, அவர் செலவே!
(கு.வெ.பாலகப்பிரமணியன்,2014)

இவர் பாடலடிகளால் (நற்.148) அறியமுடிகிற செய்திகளாகும்.

கருவூர் கந்தப்பிள்ளை சாத்தனார்

இப்பெட்சி, கரத்தைப் போர்கள், அவ்வீரர்கள் கொளுத்த ஆவின் குருதியை எடுத்துத் தெய்வம் உறையும் வேப்பமரத்தின் மீது தெளித்தல், அந்த ஆவினை உண்ணல் ஆகிய செய்திகளை இவரின்,

"வயவாள் எறிந்து, வில்லின் தீக்கி
பயந்திரை தழீஇய கடுங்கண் மழுவர்
அம்புசெண் படுத்து வன்புலத்து உய்த்தென
தெய்வம் சேர்ந்த பராரை வேம்பில்
கொழுப்பு ஆ எறிந்து குருதி தூஉய்
புலவுப் புழுங்கு உண்ட வான்கண் அகல்அறை"
(இரா.செயபால்,2014)

பாடலடிகளில் (அகம்.309) காணலாம்.

கூத்தர்கள் குதிரைப்படையைப் பெரிய அளவில் கொண்டவனும் நல்ல போர்த்திறன் கொண்டவனுமான சேரனை நாடிச்சென்ற செய்தியையும் இவரின்,

".....கோடியர்
பெரும்படைக் குதிரை, நல்போர் வானவன்
திருந்துகழற் சேவடி நசைஇப் படர்ந்தாங்கு"
(இரா.செயபால்,2014)

என்ற பாடலடிகள் வழி அறியலாம்.. நற்றிணையில் (343) அவர் எழுதிய பாலைத்திணைப்பாடலில் கடவுள் உறையும் ஆலமரம் பற்றிக் குறிப்பிடுகிறார். மேலும், கடவுளுக்குப் படையல் (பலி உணவு) வைக்கும் பழக்கத்தைக் குறிப்பிட்டுள்ளார். அதைக் காக்கைகள் உண்ணும் செய்தியையும் கூறியுள்ளார்.

".....ஆ புறம் தீண்டும்
நெடு வீழ் இட்ட கடவுள் ஆலத்து
உரு பலி அருந்திய தொகு வீரர் காக்கை"
(கு.வெ.பாலகப்பிரமணியன்,2014)

இவர்கொங்குப்பகுதியில் குதிரைமலை நாட்டைச் சேர்ந்தவரின் கொங்குச் சேரரின் (சேரமான் கோதை) கிழப் படைத்தலைவனான இருந்தவனுமாகிய பிட்டங்கொற்றனைப் பற்றிப் பாடிய (147ம்) பாடலில் பல செய்திகள் அறியக்கிடக்கின்றன.

பன்றிகள் காந்தள் கிழங்குகத் தின்னும் பொருட்டு மண்ணைக்கிளறின. அவ்வாறு அவை கிளறிய நிலத்தில் குறவர்களும் உழவுசெய்யாமலேயே நல்லநாள் பார்த்துத் தினை விதைத்தனாம். விளைந்த தினைக்கதிர்களை நல்லநாள் பார்த்து புதிதாக உண்டுள்ளமை, தினை அரிசியை மானிறைச்சிசமைத்த பாணையைக் கழுவாமலேயே மரை ஆ என்று சொல்லக்கூடிய நுரைபடக் கரந்த ஒருவகை ஆவின் பாலை உலைநீராக ஊற்றியமை, அந்த உலைநீர் திணையரிசியைமிட்டுச் சந்தன விறகால் எரியூட்டிச் சமைத்தமை, கூதாளியால் அழகுபெற்று விளங்கும் முற்றங்கொண்ட மலைமல்லிகை மணக்கும் வீட்டின் முற்றத்தில் வாழ்வினாம். போட்டு அதில் உணவுபடைத்துப் பலருடன் விருந்துண்டமை எனப் புலவர் கூறும் செய்திகள் குறவர்களின் வாழ்வியலைப் படம்பிடிப்பன. மேலும் பிட்டங்கொற்றன் வில்வீரர்களுக்குத் தலைவன் என்பதையும் அறியமுடிகிறது. அம்மலையில் விளைந்த விளைபொருட்கள் பற்றியும் தெரிந்து கொள்ளமுடிகிறது.

கருவூர்க் கதப்பிள்ளையார்

இப்புலவர் ஆக்கள் நிறைந்த கருவூருள் ஆன்நிலை என்ற ஊரைச் சார்ந்தவர் ஆவார். அதனால்தான் அக்காலத்தில் தான் பார்த்த ஆக்களைக் கட்டுவதற்கு இருந்த மன்றத்தை இவரின்

"பல் ஆ நெடுநெறிக்கு அகன்று வந்ததென
புன்தலை மன்றம் தோக்கி, மாலை
மடக்கண் குழவி அலம் வந்தன்ன" (வி.நாகராசன்,2104)

பாடலில் (குறு.64) உவமையாக்கிக் காட்டியுள்ளமையைக் காணலாம். இவருடைய நற்றிணைப் (135) பாடலில் தெய்வத் தன்மையையும்,

"தூங்கல் ஒலை ஒங்கு மடற் பெண்ணை
மா அரை புதைத்த மணல் மலி முன்றில்
வரையாத தாரம் வரு விருந்து அயரும்
தன் குடி வாழநர் அம் குடிச் சீறார்"
(கு.வெ.பாலகப்பிரமணியன்,2014)

படம்பிடித்துள்ளமை தெய்வத் நிலமக்களின் வாழ்வியல் செய்தியாகிறது.

கருவூர்க்கலிங்கத்தார்

இவர் கி.பி. இரண்டாம் நூற்றாண்டைச் சார்ந்தவர் என்றும் அக்காலத்தில் வணிகத்தின் பொருட்டு கலிங்க நாட்டிற்குச்சென்று திரும்பியவராக இருக்க வேண்டும் என்றும் மயிலை. சேனி. வேங்கடசாமி (2008) குறிப்பிடுகிறார். இவர் எழுதிய பாடலில் (அகம்-183) அக்காலத்தே மகளிர் திருத்தமாகச் செய்யப்பட்ட அணிகலனை திதையுடைய அங்குலில் அணிந்துள்ளமையை,

".....திருந்திழைத்
திதலை அல்குல் அவ்வரி வாடவும்" (இரா.செயபால், 2014)

என்றும் மேகங்கள் பெருங்கடலில் சென்று நீரினை மிகுதியாக அருந்தி மேற்குத் திசையில் எழுந்தன என்பதை,

"பணித்துறைப் பெருங்கடல் இறந்து, நீர்பருகி
குவவுத்தினை அருந்து கொள்ளைய குடக்கு ஏர்பு"

(இரா.செயபால், 2014)

என்றும் குறிப்பிட்டுள்ளார்.. சங்ககால மகவிர் திருத்தமாக
செய்யப்பட்ட அணிகலன்களை அணிந்தமையையும் மழைபெய்யும்
பொருட்டு மேகங்கள் கடலில் சென்று நீரினை முகந்துவரும் என்று
சொல்லும் இவரின் கருத்தையும் இங்கு அறியமுடிகிறது.

கருவூர்க்கோசனார்

கோசர் என்போர் கொங்கு நாட்டில் இருந்த ஒருபிரிவினர்.
இவர்கள் சங்க காலத்தில் போர் வீரர்களாகவும் அரசு
ஊழியர்களாகவும் தமிழகமெங்கும் பணிசெய்தவர்கள் ஆவர்.
இப்புவலர் கோசர் இனத்தைச் சார்ந்தவர் என்பதாலும் கருவூரில்
வாழ்ந்தவர் என்பதாலும் கருவூர்க் கோசனார் எனப்
பெற்றிருக்கலாம். இவர் எழுதிய பாடல் ஒன்று நற்றிணையில் (214)
இடம்பெற்றுள்ளது. இவர் பொருளிட்டலின் இன்றியமையாமை
குறித்துக் கூறியுள்ளமை பண்டைத்தமிழரின் பொருளிட்டல் குறித்த
பார்வையை எடுத்தியம்புகிறது.

இவ்வறத்தில் எச்செயலும் செய்யாது சோம்பியிருந்தால்
இம்மைக்குரிய புகழ், இம்மை மறுமைக்குரிய இன்பம்,
மறுமையிலும் இன்புறவைக்கும் கொடைமை ஆகிய மூன்றும்
அரிதாகக்கூட கைகூடாது என்பதை,

"இசையும் இன்பமும் ஈதலும் மூன்றும்
அசையநீர் இருந்தோர்க்கு அரும் புணர்வு ஈனம், என
வினைவயிற் பிரிந்த வேறுபடு கொள்கை"

(கு.வெ.பாலகப்பிரமணியன், 2014)

என்று கூறுகிறார். வெறும் பிழைப்பு மட்டும் கருதி வாழாமல் புகழ்,
இன்பம், கொடைமை ஆகியன கருதியும் பண்டைத்தமிழர்
பொருளிட்டச்சென்றமையை இவர்பாடலால் அறியலாம்.

கருவூர்ச் சேரமான் சாத்தன்

இவர் சேரமன்னர் குலத்தைச் சார்ந்தவராகக் கருதப்படுகிறார்.
இவர் எழுதிய பாடல் ஒன்று குறுந்தொகையில் (268)
இடம்பெற்றுள்ளது. தலைவனின் இரவுநேர வருகை குறித்து அச்சம்
கொள்ளும் தலைவியின் மனவோட்டத்தையும் விரைவில்
தலைவனை மணந்துகொள்ளும் அவளின் உணர்வையும்
இப்பாடலில் வெளிப்படுத்துகிறார்.

".....பாம்பின்
பையுடை இருத்தலை துயிக்கும் ஏற்றொடு
நடுநாள் என்னார் வந்து
நெடுமென் பணைத்தோள் அடைந்திசினோரே"

(வி. நாகராசன், 2014)

கருவூர் நன்மாப்பனார்

இவருடைய பாடல் அகநானூற்றில் (227) இடம்பெற்றுள்ளது.
இவருடைய பாடலில் தயிர்க்கடைதல், மனைவாழ் கோழி என
இல்லத்தோடு தொடர்புடைய செய்திகள் இடம்பெறுகின்றன.
இப்பாடலில் வேங்கை, புலி, பன்றி, மனைவாழ் கோழி, வண்டுகள்,
முருக்கமரம் எனப் பல்லுயிர்களைப் பற்றிய பதிவுகள்
காணக்கிடைக்கின்றன. புலியின் முழக்கத்தை விட்டில் தயிர்க்கடையும்
ஒசைக்கு உவமையாகக் காட்டியுள்ளமை குறிப்பிடக்கது..
(இரா.செயபால், 2014)

கருவூர்ப் பவுத்திரனார்

இவருடைய பாடல் குறுந்தொகையில் (162)
இடம்பெற்றுள்ளது.. முல்லை நிலம் மழையால் காக்கப்படும்

இயல்புடையது என்பதையும் பல ஆக்களும் தன் இடம் சேரும்
மாலை நேரம் என்பதையும் கூறி முல்லை நில இயல்பைக்
காட்டுகிறார். இப்பாடல் முதல், கரு, உரி என முப்பொருளும்
அமையப் பாடப்பட்டுள்ளமை குறிப்பிடத்தக்கது..
(வி.நாகராசன், 2004)

கருவூர்ப் புகஞ்சாத்தனார்

கருவூரில் பூதம் என்னும் தெய்வத்திற்குக் கோயில் இருந்தது
என்றும் அத்தெய்வத்தின் பெயரை இவருக்குச் சூட்டியிருக்கலா
மெனக் கருத்துண்டு இவருடைய பாடல் அகநானூற்றில் (50)
இடம்பெற்றுள்ளது. அக்காலத்தில் தலைவனின் அகவாழ்க்கை
தலைவியைத் தவிரப் பிற பெண்டிர்களுடன் இருந்துள்ளதைக்
கூறுகிறது இப்பாடல். தலைவனுக்கு உறுதுணையாக இருக்கும்
பாணவரிடம் கூறி அவனை அழைத்துவரச் சொல்லுதல், தலைவன்
தலைவியர் உறவை கொடுமையான சொற்களைப் பேசும் பெண்டிர்
குறித்த செய்திகள் அக்காலச் சமுதாய வாழ்வைப் பேசுவனவாக
உள்ளன. சிறிதுநேரம் கூடத் தன் துணையைப்பிரிய நேர்ந்தால்
உறக்கம் கொள்ளாத அன்றில் பறவைகளின் இயல்பை,

மனைசேர் பெண்ணை மடிவாய் அன்றில்

துணை ஒன்று பிரியினும் துஞ்சா காண் (இரா.செயபால், 2014)

என்ற அடிகளில் எடுத்துரைக்கிறார்.

கருவூர்ப் பெருங்சதுக்கப் புகனார்

இவர் பாடல் புறநானூற்றில் (219) இடம்பெற்றுள்ளது.
அக்காலத்தில் தன்வாழ்வை முடித்துக்கொள்ள வடக்குத்திசை
நோக்கி அமர்ந்து, தன் உயிரைத் துறக்கும் வழக்கம் இருந்துள்ளது.
கோப்பெருஞ்சோழன் உயிர் துறக்க வடக்கிருந்த போது அவரோடு
இருந்தவர்கள் பொத்தியார், கண்ணாகனார் போன்ற புலவர்கள்
இருந்துள்ளனர். இப்புவலரால் அங்கு செல்ல இயலாத நிலையில்
அதற்காகச் சோழனிடம் வருத்தம் தெரிவிக்கும் வகையில் அமைந்த
இப்பாடல். (கு.வெ.பாலகப்பிரமணியன், 2014) அரசனிடம்
புலவர்கள் கொண்டிருந்த அன்பும் அவனுக்காக தாங்களும்
உயிர்விடத்துணிந்த புலவர்களின் மாண்பும் இவரின் பாடலால்
அறியலாம்.

முடிவுரை

கருவூர் என்ற ஊரின் அடையொடு தங்கள் பெயர்களைக்
கொண்ட புலவர்கள் சங்ககாலத்தில் இருந்துள்ளனர். வேங்கை, புலி,
பன்றி, மனைவாழ் கோழி, வண்டுகள், முருக்கமரம் எனப்
பல்லுயிர்களைப் பற்றிய பதிவுகள் காணக்கிடைக்கின்றன
அக்காலத்தில் தன்வாழ்வை முடித்துக்கொள்ள வடக்குத்திசை
நோக்கி அமர்ந்து, தன் உயிரைத் துறக்கும் வழக்கம் இருந்துள்ளமை
தெரியவருகிறது. சங்க காலக் கருவூர்ப் புலவர்களின் பாடல்கள் வழி
அக்கால மக்களின் காதல், வீரம் ஆகியவற்றோடு அவர்களின்
நம்பிக்கைகள், வழிபாடுகள், பழக்கவழக்கங்கள், விளையாட்டுகள்,
வாழ்க்கை தொடர்பான மதிப்பீடுகள், வரலாறுகள், ஆறலைக்கள்வர்
செயல்கள், மனித இயல்புகள் போன்றன பற்றியும்
அறிந்துகொள்ளமுடிகிறது.

மேற்கோள் நூல்கள்

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மிகுதியும் பேசப்படாத கொங்குநாட்டு சுதந்திரப்போராட்ட வீரர்கள்

முனைவர் க. செல்வக்குமார்

உதவிப்பேராசிரியர், தமிழ் இலக்கியத்துறை
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தமிழகத்தின் ஒரு பகுதியாக விளங்குவது கொங்குப் பகுதியாகும். பண்டைக்காலம் முதற்கொண்டு கொங்குப்பகுதியானது தனக்கெனத் தனித்த வரலாற்றையும் அடையாளங்களையும் சிறப்புகளையும் பெற்றுவருவது. சங்ககாலத் தமிழகம் துளு நாடு, சேர நாடு, சோழ நாடு, பாண்டிய நாடு, தொண்டை நாடு, கொங்கு நாடு என ஆறு பிரிவுகளை உடையதாக இருந்தது. கொங்குநாடு என்பது தனக்கெனத் தனித்த நிலவியல் சிறப்புடையது. பழங்காலத்திலேயே ஒரு நாட்டுக்குரிய பல தன்மைகளைக் கொண்டிருந்துள்ளது. அவற்றுள் எல்லைகள், இயற்கைவளம், அரசர்கள், புலவர்கள், மக்கள் இலக்கியங்கள், கலைகள், தொழில்கள் எனப் பல கூறுகள் அடங்கும். இப்பகுதி இந்தியவிடுதலைக்குப் பல பங்களிப்புகளை வழங்கியுள்ளது. இப்பகுதியில் விடுதலைக்குப்போரில் பங்குகொண்டவர் பலராவர். அவர்களுள் பலர் வெளியுலகிற்குப் பெரிதும் அறியப்படாதவர்களாக உள்ளனர். அவர்கள் குறித்த கட்டுரையாக இது அமைகிறது.

கொங்கு நாட்டு எல்லைகள்

கொங்கு நாட்டின் எல்லைகளை மயிலை சீனி. வேங்கடசாமி முந்தையன என்றும் பிந்தையன என்றும் இரண்டு பிரிவாக்கிக் கூறியுள்ளார். 1800 ஆண்டுகளுக்கு முற்பட்ட கடைச்சங்க காலத்தில் கொங்கு நாடு என்பது இப்போதைய பழனிமலை வட்டாரத்திலிருந்து வடக்கே கர்நாடகாவிலுள்ள ஸ்ரீரங்கப்பட்டணம் வரையும், மேற்கே மேற்குத் தொடர்ச்சி மலைகள் வரையும் கிழக்கே சோழ, தொண்டை நாடுகளின் எல்லைகள் வரையும் பரவியிருந்துள்ளது. (கொங்குநாட்டு வரலாறு, ப.4)

வடக்குத் தலை மலையாம் வைகாவூர் தெற்கு

குடக்கு வெள்ளிப் பொருப்பு குன்று-கிழக்கு

கழி தண்டலை சூழும் காவிரிகுழ் நாடா

குழித்தண்டலையளவே கொங்கு

என்றும்

வடக்குப் பெரும்பாலை வைகாவூர் தெற்கு

குடக்கு பொருப்பு வெள்ளிக் குன்று-கிடக்கும்

களித் தண்டலைமேவும் காவிரிகுழ் நாட்டுக்

குளித்தண்டலை யளவே கொங்கு

என்றவாறு கொங்கு நாட்டின் எல்லைகளைக் கூறுகின்றன பழம் பாடல்கள்.

மு.கொ.நாட்டராயன்

“ஈரோட்டில் மு.கொ.நாட்டராயன் எனும் காலமான சுதந்திர போராட்ட தியாகியை இப்பகுதி மக்களால் இன்றளவும் அறியப்படவில்லை. காரணம் அவருக்கு குழந்தைகள் இல்லை. 1917-ல் ஈரோடு அருகே உள்ள வடுகபட்டி எனும் கிராமத்தில் பிறந்தார்.. இளம் வயதிலேயே காங்கிரஸ் கட்சியால் ஈர்க்கப்பட்டு சுதந்திர போராட்டத்தில் ஈடுபட்டு சிறை சென்றவர். பண்டிதமேதை ஜவகர்லால் நேரு அவர்கள் காலமானபோது டெல்லி சென்று திரும்பி நேருவின் அஸ்தியைப் பெற்று ஈரோடு மாவட்ட தியாகிகளுடன் கன்னியாகுமரி கடலில் கரைத்து முடிகொடுத்த தியாகிகளில் அவரும் ஒருவர் என்பது நான் நேரில் கண்ட காட்சி. தனக்கு வாழ்க்கைத் துணையாக வேறு இனத்தை சேர்ந்த விதவையை மணம் புரிந்தவர். ஒன்றுபட்ட கோவை மாவட்டமாக இருந்தபோது ஈரோடு ஜில்லா காங்கிரஸ் கட்சியின் தலைவராக இருந்தார். அப்போது லஞ்சம் வாங்கிய ஒரு சப்கல்கடரை கைப்பிடியாகப் பிடித்துக் காமராஜரிடம் வாழ்த்து சர்ட்டிபிகேட் பெற்றவர்.

வெள்ளையனே வெளியேறு இயக்கத்தில் முன்னணி தலைவராக இருந்து போராடியவர். ஏன் வெள்ளையனை எதிர்க்க வேண்டும் என்று காரணம் கூறி அதற்காக நூல்கள் எழுதியுள்ளார். மிகவும் உணர்ச்சிகரமான புத்தகம் அது. பலமுறை சிறைக்குச் சென்றார் என்பதற்காக அவருக்கு கொடுமுடி அருகில் நொய்யல் ஆறு அருகில் மூன்று ஏக்கர் நிலம் இலவசமாக வழங்கப்பட்டது. இரயிலில் இலவச பாஸ் வழங்கப்பட்டது. சில காலம் ஈரோடு மாவட்ட சுதந்திர போராட்ட தியாகிகள் சங்கம் தலைவர் என்ற பதவியில் இருந்தார். பவானிசாகர் நீர் பாசனம் திட்டம் நிறைவேற்ற பல்வேறு உதவியாக இருந்தவர். அன்றாடம் காலையில் கட்சி அலுவலகம் சென்று விடுவார். அங்கு வரும் மக்கள் பிரச்சனைகளைக் கேட்டு பின்னர் அவர்களோடு ஊர் ஊராகச் சுற்றி அலைவார்.

அதற்கான செலவையும் தானே ஏற்றுக்கொள்வார். செலவின் பொருட்டுத் தனக்கு வழங்கப்பட்ட பூமியின் மீது சிறிது சிறிதாகக் கடன் வாங்கினார். வாழ்வின் கடைசியில் அந்த பூமி முழுவதும் கடனில் முழுகியது. தியாகி பென்சனில் கணவன் மனைவி இருவரும் கடைசி வரை காலம் தள்ளினர். முன்னாள் ஜனாதிபதி மேதகு திரு. ஆர். வெங்கட்ராமன் இவரது சிறைத் தோழர். அதன் காரணமாக அவர் ஜனாதிபதி ஆனதும் இவரை அழைத்து உபசரித்தார். ஒருமுறை ஜனாதிபதி வெங்கட்ராமன் அவர்கள் ஈரோட்டில் சேஷாயி பேப்பர் மில் விசேடத்திற்கு வந்திருந்தார். அப்போது அவர் அங்கு அவரை வரவேற்க வந்திருந்த காங்கிரசாரிடம் தியாகி நாட்டராயனைப் பார்க்கலாம் என்று கூறவே தொண்டர்களும் இவர் இருப்பிடம் தேடி வந்து அந்தத் தள்ளாத வயதிலும் காரில் அழைத்துச் சென்று காண்பித்தனர்.

ஜனாதிபதி அவர்கள் என்ன வேண்டும் என்று கேட்டதற்கு தங்கள் அன்பே போதும் என்று கூறியவர். தன் மனைவியின் சகோதரி மகளை தத்தெடுத்து வளர்த்தார். ஆனால் அவருக்கு இவருடைய உதவி தேவையில்லாத படியால் இவரிடம் எதையும் பெறவில்லை. இருப்பினும் கணவன் மனைவி இருவரையும் கோவையில் உள்ள தன் வீட்டில் கொண்டு போய் வைத்து ஆயுள் வரை காப்பாற்றி அடக்கம் செய்யப்பட்டார்கள். அதனால் இவர்கள் காலமானது கூட ஈரோட்டில் எவருக்கும் தெரியாது. இவர்களுடைய வாழ்நாளில் எத்தனை எத்தனையோ பேர் இவர் வீட்டில் உண்டு களித்து பயனடைந்தவர்கள் உண்டு. பல பல அரசு காரியங்களை எளிதாகச் சாதித்தவர்கள் உண்டு. ஆனால் அவர்கள் எவருமே இறுதிக் காலத்தில் இவர்களைக் காண விழைந்ததில்லை. இதற்குத்தான் சொந்த குழந்தைகள் வேண்டும் என்பது இருப்பினும் தன் உறவுப் பெண் கடைசியில் தங்களை மருத்துவமனையில் சேர்த்து பலகாலம் பார்த்துக்கொண்டதை பலரிடமும் கூறி நன்றியுடன் கூறியுள்ளார்.. ஈரோடு சந்திரன் ஸ்டூடியோ பெரியவர் மட்டும் அவருடைய நினைவு நாளன்று செய்தித்தாள்களில் வருடாவருடம் அஞ்சலி செலுத்தி வந்தார்.

ஒருமுறை அவர் ஈரோட்டில் நகர பேருந்தில் பயணித்தபோது எவனோ ஒரு பிப்பாக்கெட்காரன் இவருடைய சட்டைப்பையை அப்படியே பிளேடு போட்டு அறுத்து எடுத்து சென்றுவிட்டான். இவர் கண் கலங்கி நிற்பதையும் காரணத்தையும் கேட்ட மக்கள் அவரை தேற்றிப் பணம் கொடுத்தும் காவல் நிலையத்திற்கு அழைத்துசென்றும் புகார் கொடுத்தனர். காவல் துறையினர் அடுத்த ஒரு மணி நேரத்தில் குற்றவாளியைப் பிடித்து பணத்தை மீட்டனர். இவரோ எனக்கு பணம் முக்கியமில்லை. இந்த அடையாள அட்டை போதும். அவனுக்கு தேவையான பணத்தை கொடுங்கள் என்று கூறி இருக்கிறார். 1967-தேர்தலில் காங்கிரஸ் கட்சியின் வேட்பாளர் திரு. சாயிநாதன் தோல்வி என்பதைக் கேட்டு மனம் வருந்தி அரசியலில் இருந்து விலகி இருந்தார். 1988-ல் கோவையில் காலமானார் என்று சின்னசாமி என்பவர் கூறியுள்ளார் (றற்ற. வய. நரமசய. உழஅ).

சுப்பணகவுண்டர். கே.கே. (குகலூர்க்காந்தி)

1904 செப்டம்பர் 30 ஆம் நாள் குப்பாண்டாக்கவுண்டர் குட்டியம்மாளுக்குத் திருமகவாக கூகலூரில் பிறந்தார். காந்தியத்தில் தீவிர ஈடுபாடு கொண்டதால் கூகலூர்க்காந்தி -அப்பன் - அருந்தலைவர் என்று மக்களால் அழைக்கப் பெற்றார். காந்தியடிகளின் அடிச்சுவட்டில் விடுதலை வேள்வியில் சத்தியாக்கிரகம், தீண்டாமை எதிர்ப்பு, கள்ளுக் கடை மறியல் முதலானவற்றில் ஈடுபட்டுப் பன்முறை சிறை சென்றார்.

1945 முதல் 1952 வரை தமிழக சட்ட மன்ற உறுப்பினராகப் போட்டியின்றித் தேர்ந்தெடுக்கப்பட்டு மக்கட் பணியாளராக விளங்கினார் கோபி மற்றும் கூகலூரில் கூட்டுறவுச் சங்கங்கள் தோன்றிச் சீருடன் பணிசெய்ய அரும்பாடுபட்டார்.

கதர் இயக்கம் சிறக்க "இராட்சக் கழகம்" கண்டார். கதர்த் துணியை விற்கத் தம் தோளில் சுமந்து சென்று விற்றதன் பிறிதரும் துபரங்களைப் பொறுமையுடன் ஏற்றுக்கொண்டார். தீண்டாமைத் தீயை அழிக்கத் தமது சொந்தக் கிணற்றில் அரிசனங்கட்குத் தண்ணீர் எடுக்க இசைவுதந்தார். அதன் காரணமாக ஊராள் உழுவார் அவைவரின் அச்சுறுத்தலுக்கும் பகைக்கும் ஆட்பட்டார். அண்ணல் காந்தியடிகளாரோ இவரின் தீண்டாமைப்பணியைப் பாராட்டி 1.6.1931இல் யங் இந்தியாவில் எழுதினார்.

1930 இல் கள்ளுக்கடை மறியல், மற்றும் தனிப்பட்டார் அறப்போரில் தம் துணைவியாருடன் சிறை சென்றார். 1942 இல் "வெள்ளையனை வெளியேறு" இயக்கத்தில் பங்குகொண்டதால் மூன்று ஆண்டுகள் பாதுகாப்புச் சட்டத்தின் கீழ்க் கைதாக்கிச் சிறையில் இருந்தார். 2.6.1948 இல் காந்தியடிகளின் பெயரால் கூகலூரில் கல்வி நிறுவனம் கண்டார். விடுதலைக்குப் பின்னர் மக்கட் பணியோடு ஆன்மிகப் பணிகளில் ஈடுபட்டுத் "திருப்பணிச் செம்மல்" என்னும் பேறு பெற்றார். இவ்வாறு தமிழகத்தில் காந்தியடிக் கோட்பாட்டின் கொள்கலனாக இலங்கி மக்கட்பணியையும் மகேசன் பணியையும் உயிர் முச்சாகக் கொண்ட பெருமைக் குரியவர் இவராவர். (கொங்கு களஞ்சியம், தொகுதி-2, ப.132)

குணாவன் நாடார்

குணாவன் நாடார் கொங்கு நாட்டிலுள்ள காதையுரைச்சேர்ந்தவர். போர்ப்பயிற்சி மிக்கவர். வெள்ளையனை எதிர்த்துப்போராட கொங்கு மண்ணின் இளைஞர்களுக்கு சுதந்திர தாகத்தை ஊட்டியவர்.

எத்தலப்பர்

வீரபாண்டிய கட்டபொம்மன் காலத்தில் உடுமைலைப்பகுதியிலுள்ள தளி என்ற பகுதியை ஆண்ட பாளையக்காரர் எத்தலப்பர். ஆங்கிலேயருக்கு எதிராகப் போராடி மாண்டவர் இவர். சுதேசி வீரர்கள் வரிசையில் இவர் இடம்பெறுகிறார். (முற்பாணெரவையாடை. அடை.)

சுந்தராமபாள் தியாவி (1913-2007)

சுதந்திர போராட்டத் தியாகியான சுந்தராமபாள் திருப்பூர் அருகில் உள்ள வீரபாண்டியில் 7101913 அன்று எஸ். நாச்சிமுத்துக் கவுண்டருக்கும் சாமியாத்தாளுக்கும் மகனாகப் பிறந்தார். காந்தியப்பற்றும் தேசியப்பற்றும் கொண்டவர். ஹரிசன சேவர் நிதிக்காகத் தனது நகைகளைக் கழற்றிக் கொடுத்துள்ளார். திருப்பூருக்கும் வீரபாண்டிக்கும் இடையில் தற்போது அமைந்துள்ள காதிகிரோமொத் யோக் வித்யாலயம் முன்னர் ராஜாஜியால் தொடங்கப்பட்ட ஜம்னாலால் பஜாஜ் வித்யாலயம் ஆகும். இதற்காக 22.82 ஏக்கர் நிலத்தைக் கொடையாக கொடுத்துள்ளார். இவர் தனிநபர் சத்தியாகிரகப் போராட்டத்தில் 1947 ஆம் ஆண்டு கைக்குழந்தையுடன் மூன்று மாத காலச் சிறைத்தண்டனையும், 1942ஆம் ஆண்டு வெள்ளையனை வெளியேறு போராட்டத்தில் ஏழு மாத காலச் சிறைத் தண்டனையும், 1943ஆம் ஆண்டு தடையை மீறிய குற்றத்திற்காக மூன்று மாதகாலச் சிறைத் தண்டனையும், நாராயணசாமி நடத்திய விவசாய சங்கப் போராட்டத்தில் சிந்தது கொண்டாவும் எழுபது நாட்கள் சிறைத் தண்டனையும் அனுபவித்துள்ளார். ஜெயப் பிரகாஷ் நாராயணன் துவக்கிய சோசலிஸ்ட் கட்சியில் சிறிதுகாலம் இருந்துள்ளார். வினோபா அடிகள் கேட்டுக் கொண்டதன் படி அனாதைக் குழந்தைகளுக்கான ஆசிரமம் ஒன்றைத் பொறுப்பாக நடத்தி வந்தார். 2007இல் காலமானார். (கொங்கு களஞ்சியம், தொகுதி-2, ப.132)

சுந்தராமபாள் கே.பி.

"ஞானப் பழத்தைப் பிழிந்து" என்ற இனிய பாடல் நாடகத் தந்தை சங்கர தாக சுவாமிகளால் இயற்றப் பெற்றது. அதனை இன்றும் உயிர்ப்பித்துக் கொண்டிருக்கும் குரல் கே.பி. சுந்தராமபாளுடையது. அவர் ஒரு சகாப்தம்.

கருகுக்கும் கொடுமுடிக்கும் இடையே செய்த ரயில் பயணத்தின் போது சிறுமி சுந்தராமபாள் பாடக்கேட்ட எப்.ஜி. நடேச அப்பரும், கஞ் காவல்துறை அலுவலர் ஆர்.எஸ். கிருட்டிணசாமியும் செய்த பரிந்துரையால் 1917-இல் பி.எஸ். வேலுநாயகர் நாடகக் குழுவில் சேர்த்துக் கொள்ளப்பட்டார்.

அப்போது குழந்தை நடிகையாக நல்ல தங்காள் நாடகத்தில் நடிக்க பார்ட்டப் பெற்றார். அன்று மெய்சிலிர்க்க வைத்த கம்பீரமான குரலை அதன் பின் இசையுலகம் மறக்கவில்லை.

“ஸ்திரீ பார்ட்”, “ராஜ பார்ட்” அழைக்கப்பட்ட நாயகி. நாயகன் வேடங்களில் புகழின் ஏணிப்படிகளில் உயர்ந்தார். 1926- இல் நாடகங்களில் நடிக்க இலங்கைக்குச் சென்றார். ஏறத்தாழ அதே காலத்தில் இலங்கைக்கு வந்த இசைப் பேரரசு கிட்டப்பா இவர் குரலில் மயங்கினார். இருவரும் இணைந்து நாடகங்களில் தோன்றிய போது கூட்டம் அலைமோதியது. இரண்டு இசையும்தம் ஒன்று கலப்பதைக் கேட்க மக்கள் எங்கெங்கும் திரண்டனர். ஒன்றுபட்ட குரல்கள் வாழ்விலும் ஒன்றுபட்டன. 1927-இல் மாயவரத்தில் திருமணம் நிகழ்ந்தது. ஊடலும் கூடலுமாக வாழ்க்கை தொடர்ந்தது. இருவருமே தேசிய உணர்வு மிக்கவர்களாகவும் விளங்கினார். 1933 டிசம்பர் 2 ஆம் நாள் இளம் மனைவியைத் துயரத்தில் அன்புக்குரியவர் ஆழ்த்திக் கிட்டப்பா மறைந்தார். கொடுமுடி என்ற ஈரோடு மாவட்டச் சிற்றூரில் 1908 அக்டோபர் 26-ஆம் நாள் அன்னை பாலாம்பாளின் ஏழை மகளாகப் பிறந்தார். கொடுமுடி பாலாம்பாள் சுந்தராம்பாள் என்பது தான் கே.பி.எஸ். என்பதன் விளக்கம்

கொங்கு நாட்டின் பாரம்பரிய வழக்கப்படி இருபத்தி ஆறே வயதான கேபி சுந்தராம்பாள் வெள்ளைச் சேலையும் திருநீறும் அணிந்து விதவைக்கோலம் பூண்டார். ஆண் நடிகர்களுடன் இணைந்து நடிப்பதைக் கைவிட்டார். ஆனால் தேசியத்தையும், தேனிசையையும் இருகண்களாகக் கருதி வாழத் தொடங்கினார். பகத் சிங் தூக்குத் தண்டனை என்றாலும், காந்தியடிகள் லண்டன் பயணமென்றாலும் கே.பி. சுந்தராம்பாள் பாடல்களால் மக்களுக்குத் தேசியப் போராட்டச் செய்திகள் எட்டிக் கொண்டிருந்தன. தனி இசை நிகழ்ச்சிகளும் தொடர்ந்து கொண்டிருந்தன.

1935- அப்போதைய திரை நட்சத்திரம் தியாகராஜ பாகவதர் ஒரு படத்தில் ஆயிரம் ரூபாய் வாங்கி நடித்தார். அதே ஆண்டு நந்தனாராக நடிக்கக் கே.பி. சுந்தராம்பாள் ஒரு லட்ச ரூபாய் வாங்கினார். இன்றைய நிலவரப்படி மூன்று, நான்கு கோடிக்கு அது நிகரானது. கோபாலகிருஷ்ண பாரதியார் பாடல்களை நெஞ்சுருகப் பாடியிருந்தார் சுந்தராம்பாள். 1940-இல் மணிமேகலை படத்தில் நடிக்கும் வாய்ப்புக் கிடைத்தது “சிறைச் சாலை என்ன செய்யும்?” என்ற இப்படப் பாடல் சுதந்திரப் போராட்டக் களத்தில் ஆவேசத்தை மூட்டியது. இவருடைய தேசியப் பணியை மகாத்மா காந்தியடிகளும் பாராட்டி மகிழ்ந்தார். இதனிடையே சென்னையில் தீர் சத்திய முர்த்திக்கு வீடு கட்ட நிலம் வாங்கி அளித்தார். வழக்கம் போல் முருக பக்திப் பாடல்களால் தமிழகத்தை மெய் மறக்கச் செய்து வந்தவர் சுந்தராம்பாள். 1948-இல் எஸ்.எஸ். வாசன் வேண்டு கோளை ஏற்று ஒளவையார் படத்தில் நடித்தார். இப்படத்தின் பாடல்களால் இன்றும் வாழ்கிறார் கே.பி.சுந்தராம்பாள். படம் 1953 இல் வெளி வந்தது. 1957-இல் தமிழக அரசின் இசை விருதும் பொற்கிழியும் பெற்றார். 1958-இல் இவரை மேலவை உறுப்பினராக்கி மகிழ்ந்தது தமிழக அரசு. தமிழிசைச் சங்கம் இசைப் பேரறிஞர் விருது தந்து போற்றியது. (கொங்கு களஞ்சியம், தொகுதி-2, ப.130)

சுந்தரம். எஸ்.டி. (1924-1979)

சிறந்த காந்தியவாதியும், எழுத்தாளருமான எஸ்.டி சுந்தரம் சேலம் மாவட்டம் ஆத்தூரில் 22-7-1924 ஆம் நாளன்று துரைசாமி ஐயர், பூங்கோதை தம்பதியினருக்குப் பிறந்தார். தந்தையார் சூட்டிய பெயர் கோவிந்தராசு, தாயார் வைத்த பெயர் சுந்தரம் என்பவையாகும். இறுதியில் தாயார் குறித்தபெயரே நிலைத்தது காந்தியத்தின் மீது அளவுகடந்த பற்றுக்கொண்டவர். வெள்ளையனே வெளியேறு போராட்டத்தில் கலந்து கொண்டவர். இவரது படைப்புக்களில் சுதந்திரப் போராட்டத்தின் தாக்கங்கள் இருக்கும்.

இவர் சிறந்த நாடக ஆசிரியர் வருகின்றார் நேதாஜி, வானமுதம், களியின் குரல், காந்திபுகழ், கவியின் கனவு, வீர சுதந்திரம் முதலிய நாடகங்களைப் படைத்துள்ளார். கன்னியின் காதலி, கள்வனின் காதலி முதலிய திரைப்படங்களுக்குப் பாடல்களும் எழுதியுள்ளார். (கொங்கு களஞ்சியம், தொகுதி-2, ப.123)

சுந்தரம். ஜி.கே.

லட்சுமி தொழில் குழுமத்தை வழிநடத்திய பெருமைக்குரியவர்கள் ஜி.கே. தேவராஜலு, ஜி.கே. சுந்தரம் மற்றும் அவர்களின் சகோதரர்கள். ஆந்திரப் பிரதேசம் குண்டூரை அடுத்த ராசகொண்டா

குன்றுப் பகுதியிலிருந்து சில தலைமுறைகள் முன் குடிபெயர்ந்து வந்த கம்மா நாயுடு குடும்பத்தைச் சேர்ந்தவர் ஜி.கே. சுந்தரம். அதன் நினைவாகவே தம் இல்லத்துக்கு "ராசகொண்டலு" என்று பெயர் சூட்டியுள்ளார். ஏறத்தாழ கி.பி. 1800 வாக்கில் பாப்பநாயக்கன் பாளையத்தில் குடியேறிய குடும்பத்தில் பெரிய கோவிந்தசாமி நாயுடுவின் மகனாக ஜி. குப்புசாமி நாயுடு 1884இல் பிறந்தார். 1906இல் லட்சுமியம்மாளைத் திருமணம் செய்து கொண்டார். இவர்களுக்கு ஜி.கே. தேவராஜலு, ஜி.கே. சுந்தரம், கே. கோவிந்தசாமி, கே. இராஜகோபால் ஆகிய நான்கு புதல்வர்கள் வாய்த்தனர். ஜி.கே. சுந்தரம் 1914 அக்டோபர் 3ஆம் நாள் பிறந்தார். தந்தையார் இராமா பணத்தில் மிகுந்த ஈடுபாடு உடையவராக இருந்தமையால் தனயனுக்கும் அது நலச்சொத்தாக அமைந்தது. காங்கிரஸ் இயக்கத்திலும் தந்தையாருக்கு நெருக்கம் இருந்தது. ஜி.கே. சுந்தரம் தேசிய உணர்வின் வழிப்பட்டதற்கும் இது அமைந்தது.

பீளமேடு சர்சவன் உயர்நிலைப் பில் பயின்றார்சன் சென்னை மாநிலக் கல்லூரியில் இண்டர் மீடியட் வகுப்பில் படித்தார். டாக்டர் ஹெச்.பி.வாரன், முதலிய அருமைப்பேராசிரியர்கள் அவருக்கு அப்போது வாய்த்தது தனிச்சிறப்பு. தொடர்ந்து லங்காஷையர் பெற்றார். போல்ட்டன் பொறியியல் கல்லூரியில் ஜவுளி இயல் கற்றுத் தேர்ச்சி பெற்றார். பெருந்தொழில்மேதையாகத் தன்னை உருவாக்கிக் கொள்ளுமுன் பள்ளி வயதி லேயே தேசியப் போராட்டத்தில் ஈடுபட்டவர் ஜி.கே. சுந்தரம். 1930 இல் காந்தியடிகள் உப்புச்சத்தியாகிரகம் தொடங்கியபோது இவருக்கு வயது பதினாறு. ராஜாஜி வேதாரண்யம் உப்புச் சத்தியாகிரகம் செய்யப் புறப்பட்டபோது, தந்தையாரின் அனுமதியுடன் தானும் களம் புகுந்தார். ஆறுமாதம் சிறைத் தண்டனை அனுபவித்தார்.

1910ஆம் ஆண்டிலேயே தந்தையார் தம் துணைவியாரின் பெயரால் இலட்சுமி மில்ஸ் கம்பெனியைப் பதிவு செய்து தொடங்கி இருந்தார். 1932இல் இலட்சுமி மில்ஸ் நூற்பாலை ஆரம்பமாயிற்று. 1938இல் இங்கிலாந்திலிருந்து தொழில்கல்வி முடித்துத் தாயகம் திரும்பினார் ஜி.கே. சுந்தரம். ஜி.டி நாயுடு, வெளிநாட்டில் முதல் முறையாகத் தொழில் கல்வியை முடித்து வந்தவர் என இவரைப் பாராட்டியுள்ளார். (கொங்கு களஞ்சியம், தொகுதி-2, ப.123)

நிறைவாக

இந்திய நிலப்பரப்பில் கொங்கு நாடு பல நிலைகளில் வரலாறு, பண்பாட்டுச்சிறப்புடையது. இந்திய விடுதலைப் போரில் பல்வேறு காலகட்டங்களில் பங்கெடுத்தவர்களின் வரலாற்றைக் கொண்டு இந்நிலவியலுக்குப் பெருமை சேர்க்கிறது.

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Rural Advancement Through Smart Information Technology Strategies

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Abstract-With rapid technological advancements, smart information technology (IT) practices in rural development have gained significant attention to bridge the urban-rural divide and enhance the overall quality of life in rural communities. This abstract provides a concise overview of the key themes explored in the comprehensive study "Smart IT Practices in Rural Development."

This study delves into the transformative potential of smart IT practices, including digital infrastructure, data analytics, and connectivity solutions, in addressing the unique challenges faced in rural areas. It highlights how these technologies can empower rural communities by improving access to essential services, enhancing agricultural productivity, facilitating healthcare delivery, and fostering economic growth.

The research underscores the importance of IT solutions to suit the specific needs of rural regions, acknowledging the diversity of challenges and opportunities that different areas present. It also emphasises the need for collaborative efforts among governments, private sector stakeholders, and local communities to implement smart IT practices in rural development effectively.

INTRODUCTION

In the age of digitisation and connectivity, societies are undergoing a profound transformation in how they operate and evolve. While technological progress often converges in urban centres, rural areas, characterised by their unique challenges and specific needs, should be included in the periphery of this technological wave. Smart Information Technology (IT) practices in rural

development offer a compelling solution to bridge the urban-rural divide and uplift the quality of life in these underserved regions. This introduction sets the stage for a comprehensive exploration of "Smart IT Practices in Rural Development." It underscores the role of technology in empowering rural communities, improving their access to essential services, optimising agricultural processes, and stimulating economic growth.

In the modern era of digitisation and connectivity, the world is witnessing a profound transformation in how societies operate and develop. While urban centres often serve as the focal points of technological advancement, rural areas should not be left behind with their distinct challenges and needs.

Adopting innovative Information Technology (IT) practices in rural development presents a compelling solution to bridge the urban-rural divide and elevate the quality of life in these often underserved regions. "Smart IT Practices in Rural Development" revolves around leveraging technology to empower rural communities, enhance initial services, optimise agricultural processes, and stimulate economic growth. This serves as a comprehensive exploration of the potential, challenges, and opportunities in IT-driven rural development, emphasising the need to recognise the diversity of rural landscapes and the unique contexts in which they exist. As the digital age continues to unfold, understanding the role of smart IT practices in rural development becomes imperative for achieving holistic and inclusive progress.

REVIEW OF LITERATURE

To understand the impact of digital connectivity, one must also understand the actual usage. Providing connectivity and technology is just one aspect of keeping up with developments; adoption and actual usage are the next steps that need to be taken for digital connectivity to have an impact (Hage et al., 2013).

The material issues that rural communities face in the digital age are also issues of a social nature. The adoption and use of the Internet and associated applications are becoming increasingly diverse, and digital inclusion is no longer regarded as a binary issue. In other words, the debate is no longer about 'haves' and 'have nots' (Kilpeläinen & Seppänen, 2014)

The widespread use of ICTs can also pose a threat to rural areas in the sense that ICTs expose the weaknesses of rural businesses and make them more vulnerable to outside competition since rural enterprises may not be able to tap into competitive advantages, conferred by their rural location, beyond lower costs of production (EC, 2007).

A Smart IT Approach by John Smith (2020) describes the broad spectrum of smart IT applications in rural development, offering case studies for practical insights. It could benefit from a deeper examination of the challenges faced by rural communities in adopting these technologies.

Michael Brown (2019) offers an insightful exploration of smart IT in agriculture, emphasising precision agriculture, IoT, and data analytics. The addition of recent advancements would enhance the discussion.

Richard Clark (2017) focuses on the challenges and barriers to implementing smart IT practices in rural areas, identifying obstacles like digital literacy and infrastructure limitations. Adding case studies and best practices for overcoming these challenges would enhance the paper.

PMGDISHA (Pradhan Mantri Gramin Digital Saksharta Abhiyan)

OBJECTIVE

1. Making one person in the family digitally literate is one of the integral components of the prime minister's vision of Digital India."
2. Pradhan Mantri Gramin Digital Saksharta Abhiyan is the Scheme to make six crore persons in rural areas, across states/UTs, digitally literate, reaching around 40% of rural households by 31st March 2019.
3. The Scheme would empower the citizens in rural areas by training them to operate computers or digital access devices, send and receive emails, browse the Internet, access government services, search for information, and undertake digital payment. This enables them to actively participate in information technology and related applications, especially digital payments. The Scheme explicitly targets the rural population, including the marginalised sections of ety like scheduled castes (SC)/scheduled tribes (ST), minorities, those below the poverty line (BPL), women and differently-abled persons and minorities.

PMEGP (PRIME MINISTER'S EMPLOYMENT GENERATION PROGRAMME)

OBJECTIVES:

1. To generate continuous and sustainable employment opportunities in Rural and Urban areas of the country
2. To provide continuous and sustainable employment to a large segment of traditional and prospective artisans and rural and urban unemployed youth by setting up micro-enterprises.
3. To facilitate the participation of financial institutions for higher credit flow to the micro sector.

Prime Minister's Employment Generation Programme (PMEGP) was announced on 15th August 2008 and launched in place of the REGP Scheme. PMEGP is a credit-linked subsidy programme launched by the Ministry of MSME

in 2008-09 for the creation of employment in both rural and urban areas. The Ministry of Micro, small, and Medium Enterprises (MoMSME) has approved continuing the PMEGP scheme for five years from FY 2021-2022 to FY2025-2026. The Scheme is implemented by KVIC, which acts as a Nodal agency at the state level. The state director of the concerned state is authorised to monitor and implement the Scheme and activities under BFL besides attending various meetings and workshops.

PMSYM (Pradhan Mantri Shram Yogi Maan-dhan) OBJECTIVES

Prime Minister Narendra Modi launched Pradhan Mantri Shram Yogi Maan-Dhan (PM-SYM) under the Ministry of Labor and Employment in February 2019. It was launched at Vastrapur in Gujarat. PM-SYM is the world's largest pension scheme. Pradhan Mantri Shram Yogi Maan-Dhan is a central sector scheme introduced for old age protection and social security of Unorganized Workers (UW).

The unorganised workers mostly engaged as home-based workers, street vendors, mid-day meal workers, head loaders, brick kiln workers, cobblers, rag pickers, domestic workers, washer men, rickshaw pullers, landless labourers', own account workers, agricultural workers, construction workers, handloom workers, leather workers, audio- visual workers and similar other occupations whose monthly income is Rs 15,000/ per month or less and belong to the entry age group of 18-40 years. They should not be covered under the New Pension Scheme (NPS), Employees' State Insurance Corporation (ESIC) scheme or Employees' Provident Fund Organization (EPFO). Further, he/she should not be an income taxpayer.

PMJDY (Pradhan Mantri Jan-Dhan Yojana) OBJECTIVES

The objective of "Pradhan Mantri Jan-Dhan Yojana (PMJDY)" is to ensure access to various financial services like availability of

basic savings bank accounts, access to need-based credit, remittances facility, insurance and pension to the excluded sections i.e. weaker sections & low-income groups.

Narendra Modi launched Pradhan Mantri Jan-Dhan Yojana (PMJDY) on 28th August 2014. It is a national mission to provide access to various financial services, including Remittance, Credit, Insurance, Pension, Banking Savings and deposit Accounts affordably. Prime Minister Narendra Modi announced this Scheme during his Independence Day speech on 15th August 2014.

Atal Pension Yojana OBJECTIVES

The underlying objective of this Scheme is to provide social and financial security to people in their old age by enabling them to make regular savings during their productive years. APY aims to provide a minimum guaranteed monthly pension after 60 years in different slabs, viz.

The Atal Pension Yojana (APY) was launched on 09.05.2015 to create a universal social security system for all Indians, especially the poor, underprivileged, and the unorganised sector workers administered by the Pension Fund Regulatory and Development Authority (PFRDA). APY is open to all bank account holders aged 18 to 40 years, and the contributions differ based on the pension amount chosen. Provided that from 1st October 2022, any citizen who is or has been an income-tax payer shall not be eligible to join APY

PMKMY(Pradhan Mantri Shram Yogi Maan Dhan Yojana) OBJECTIVES:

Pradhan Mantri Kisan Maan Dhan Yojna (PMKMY) Scheme aims to provide a social security net for Small and Marginal Farmers (SMF) by way of pension, as they have minimal or no savings to sustain their livelihood during their old age and to support them in the event of the consequent loss of livelihood. Under this Scheme, a minimum fixed pension of ₹3,000/- per month will be provided to eligible small and

marginal farmers, subject to specific exclusion clauses, on attaining the age of 60 years. The Scheme is a voluntary and contributory pension scheme, with an entry age of 18 to 40 years. The beneficiary would be required to contribute Rs 100/- per month at a median entry age of 29 years. The Central Government shall also contribute to the Pension Fund an equal amount.

The Scheme was implemented in 2019, and since the maximum age for enrollment limit is 40 years, the minimum fixed pension of Rs. 3000/- per month will be due once the enrolled farmers reach 60. Hence, the benefits of the Scheme shall be available only after a minimum period of 20 years. This information was given in a written reply by the Union Minister of Agriculture and Farmers Welfare, Shri Narendra Singh Tomar, in Lok Sabha.

DIGI LOCKER

STRENGTH

Online businesses offer enhanced digital skills, increased economic opportunities, and community-building potential, ultimately contributing to gender equality and women's advancement.

CHALLENGES

Rural women need help adopting smart IT practices due to inadequate infrastructure, resource limitations, privacy and security concerns, and cultural barriers.

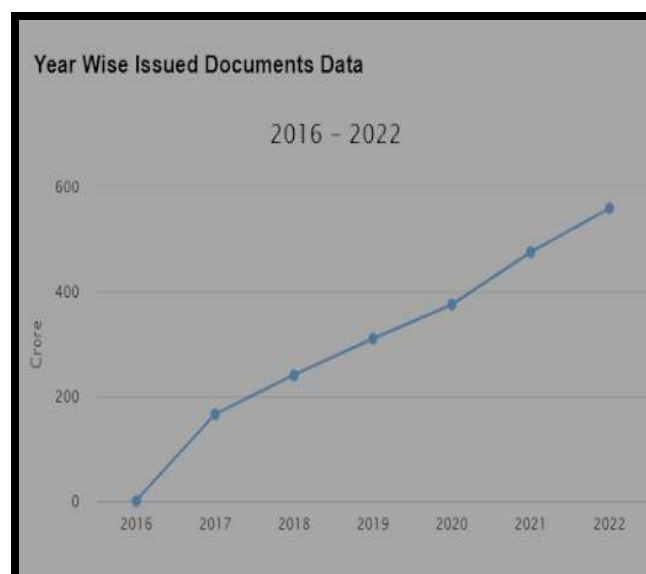
SWOC

WEAKNESS

Rural women face a digital divide, limited literacy, resource constraints, and cultural barriers in smart IT practices, hindering their full participation in technology-driven initiatives and economic opportunities.

OPPORTUNITIES

Smart IT practices can enhance rural women's economic prospects and well-being by providing access to new markets, online education, advocacy for their rights, and the development of support networks.



OBJECTIVES

Enable digital empowerment of residents by providing them with Digital Locker on the cloud e-signing of documents and making them available electronically and online to minimise the use of physical documents. Ensure the Authenticity of the e-documents and, thereby, eliminate the usage of fake documents. Secure access to issued documents through a web portal and mobile application for residents. Reduce the administrative overhead of Govt. departments and agencies and make it easy for the residents to receive services Anytime, anywhere. Access to the documents by the resident Open and interoperable /Access to residents' documents can be made simpler and more efficient using interoperable standard document format. This approach supports easy sharing of documents across various departments and agencies while ensuring acy and authorised access to residents' data standards-based architecture to support a well-structured standard document format to

support easy sharing of documents across departments and agencies. Ensure privacy and authorised access to residents' data.

CONCLUSION

In conclusion, the concept of "Smart IT Practices in Rural Women" offers an inspiring vision of empowerment and progress. Integrating information technology in rural women's lives can break down barriers, improve access to education and employment opportunities, and foster community and support.

The path forward lies in bridging these divides, ensuring equitable access to technology, providing digital literacy programs, and fostering a supportive environment that encouraging rural women to embrace IT practices. By doing so, the transformative power of technology is to empower rural women, enhance their quality of life, and promote gender equality.

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A NEW APPROACH ON E-LEARNING SYSTEM USING WEB MINING APPROACH

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Abstract

The E-Learning has become matured learning paradigm with the advent of web based learning and content management tools, and shifted the focus of entire world from instructor centric learning paradigm to learner centric approach. The Web Mining plays a very important role for the E-learning systems. In personalized E-Learning system, user customizes the learning environment based on personal choices. In a general search process, a hyperlink which is having maximum number of hits will get displayed first. For making a personalized system history of every user need to be saved in the form of user logs. The proposed system provides a new approach with combination of web usage mining, HIT algorithm and web content mining. It combines hits results on user logs and web page contents with a clustering algorithm called as Lingo clustering algorithm. In this paper, we will describe an approach aiming to achieve personalization in e-Learning services using web usage and Content mining. This paper discusses about the benefits and usefulness of web mining in e-learning.

Keywords: Web usage mining; web content mining; web personalization; e-learning system, Lingo; Hilltop Algorithm.

Introduction

The World Wide Web (WWW) is the subset of the Internet. E-Learning refers to the learning in which the learner and instructor are separated by time or space where the gap between two is bridged through the use of online technologies. With the help of web based learning, it is possible for learners to learn from anywhere at any time.

E-learning is a form of electronic teaching that enables people to learn anytime and anywhere. The objective of an online personalization system is to provide users with the information they require, without asking them explicitly. Web Personalization is outlined as any action that adapts the data or services provided by a website to the requirements of a selected user or a collection of users, taking advantage of the information gained from the users guidance behavior and individual interests.

The prominent characteristic of E-learning system is that the students become self-learners and explorers of knowledge. In learning process, learner is the main body but not passive recipient. E-learning system is built on web service related technology and provides all kinds of learning ways to students to realize real-time, interactive and cooperative learning at different places.

It should be able to find the individual differences of learners and construct personalized learning environment to meet their individual needs.

Personalization in E-learning

The personalization include how to find and filter the learning information that fits the user preferences and needs, how to represent it and how to give the user tools to reconfiguration the systems, in consequence, reconfiguration system could be part of personalized environment in some systems.

A core part of the personalization method is generation of interested information to users. It's strictly supported as certain patterns, and ensuing probabilities.

E-Learning systems are grouped in the following approaches:

- Personalization of the learning content, based on learners' preferences, educational background and experience.
- Personalization of the representation manner and the form of the learning content.
- Full personalization, which is a combination of the previous two types.

Distinguishing these changes and adapting to them may be a key goal of personalization. We recommend that the personalization process be taken to a new level, where the user doesn't to be actively attached the personalization method. All that the user has to do is to register to the system, create own profile and once the user logs onto E-learning system, the browser checks for that profile file as it checks for the cookies. The profile file describes the user's area of interest. Since the profile file is in standardized format, the contents are provided according to the profile file. This is able to enhance the user's personalization method while not their active involvement.

In e-learning systems, the challenges are increase of complexity and more interoperability between systems in distributed environment. The lacking is reference architecture in which by reusing web services, reusing learning objects etc

E-learning portal applications need to present data in a tabular format to the users. The functionality provided by the search component is dynamic query generation based on user input, sort order, joins, etc. There are multiple ways to invoke the query service. All are supported by this protocol. The search component of personalized E-learning systems is as shown in figure 1.

Therefore a well-designed customized distance education system might have the subsequent characteristics:

- It will find out the learners' study interest, access habits, learning orientation
- It will change the location map and customize the learners' interface dynamically consistent with the access log.
- It will suggest learning resources by analyzing the learner's interest and learning process.
- It will recommend interested information.

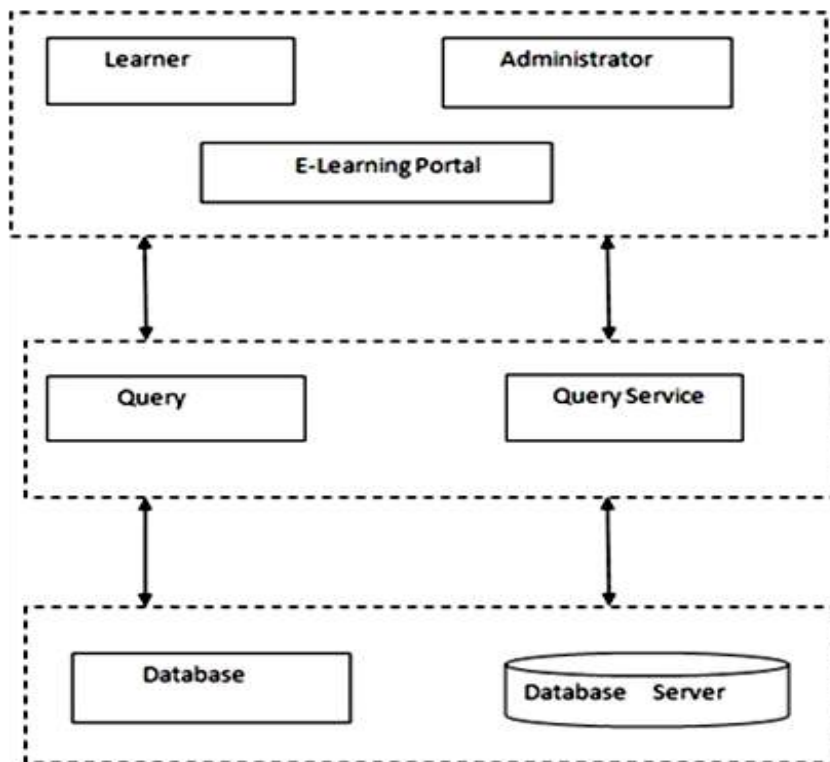


Figure 1: Search Component of ServiceOriented Reference Architecture for Personalized E-Learning System.

Based on the service description and the protocol, new client interfaces can be easily built according to users' preferences. Learners want search the learning object related to Computer Science, then they have to type 'Computer Science'. By activating the link on the query interface, it obtains the extra services exposed by other providers.

There are variations between layout customization and personalization.

In customization, the location is often adjusted to each user's preferences concerning its structure and presentation. Whenever a registered user logs in, his/her customized home page is loaded.

This method is performed either manually or semi-automatically. In personalization system advises in modifications regarding the content or maybe the structure of an online web site is performed dynamically.

Personalized E-Learning Services

Some basic and important e-learning services augmented with personalization (Figure. 2) features are as follows:

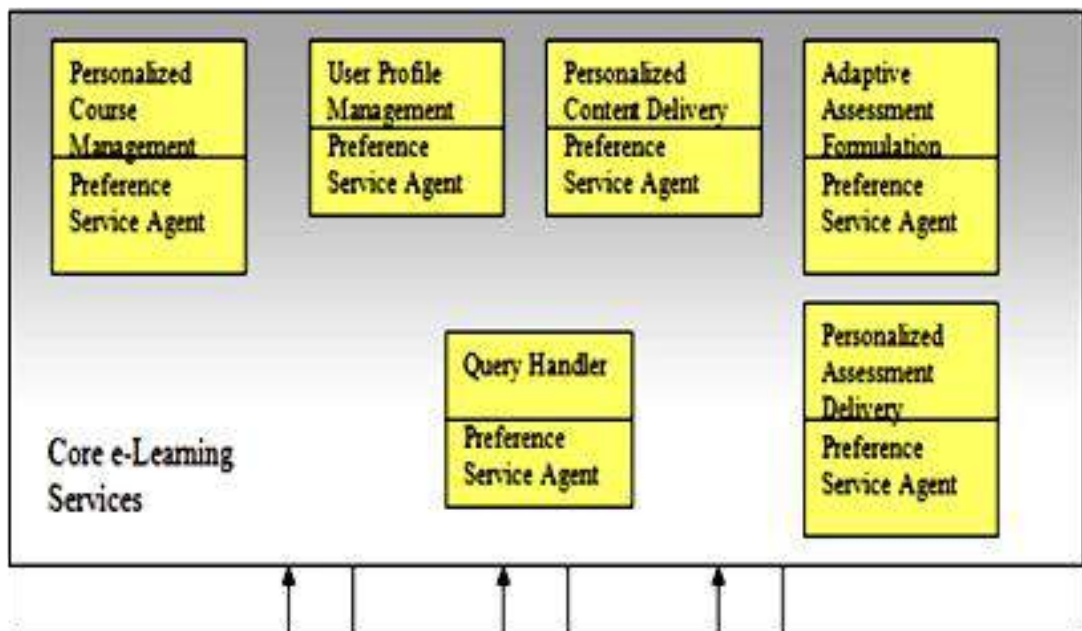


Figure.2. Personalized e-Learning services

- a. Personalized Course Management.
- b. User Profile Management.
- c. Personalized Content Delivery.
- d. Adaptive Assessment Formulation
- e. Personalized Assessment Delivery
- f. Query Handler

Web Mining Applicable To E-Learning

A. Web Mining Techniques

Web mining is one of the important branches in data mining. Extraction of useful information or pattern from the web data is called web mining. It can be classified into three following categories as shown in figure (3).

- Web structure mining
- Web content mining
- Web usage mining
- Web Structure mining:

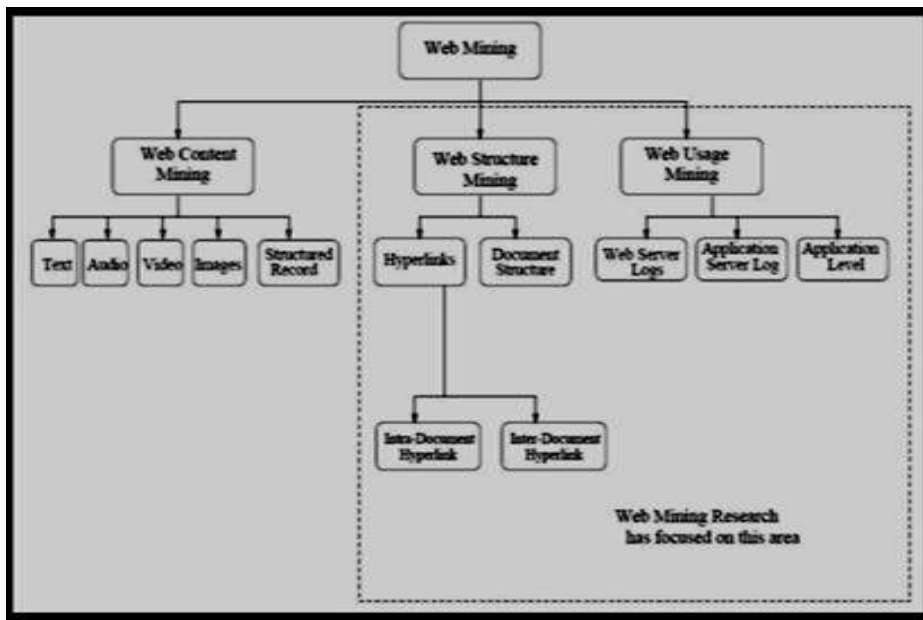


Figure 3. Structure of Web mining

Web Content mining

Web content mining refers to the extraction of useful information from the Web document's content. The content of the web page consist of text, images, audio, video etc., it includes the techniques like clustering or associating web pages according to the respective branches. It also helps in discovering patterns in web pages to mineuseful data.

- **Web Usage mining**

Web Usage Mining is the type of data mining techniques to discover interesting usage patterns from Web data, in order to understand and better serve the needs of Web based applications. Usage data captures the identity of Web users along with their browsing behavior at a Web site.

Moreover, the most important research initiatives in Web usage mining and personalization area are presented. But this is not as much effective method for personalization.

- **Web structure mining**

Web structure mining targets on analysis of theweb and one of its uses is to identify more preferable documents helps to discover similarities between web sites or discovering significant sites for a specific topic or branch or indiscovering web communities. It is also used to reveal the schema of web pages

Web mining based E-learning System

The E-learning system consist three parts. Teaching resource library, learning platform and user. Education resource library is a storage server to store different types of resource which is related to education. The learner of that web based system is the user.

Web server is the Learning platform that gives web based learning platform to user.

The Proposed System Architecture

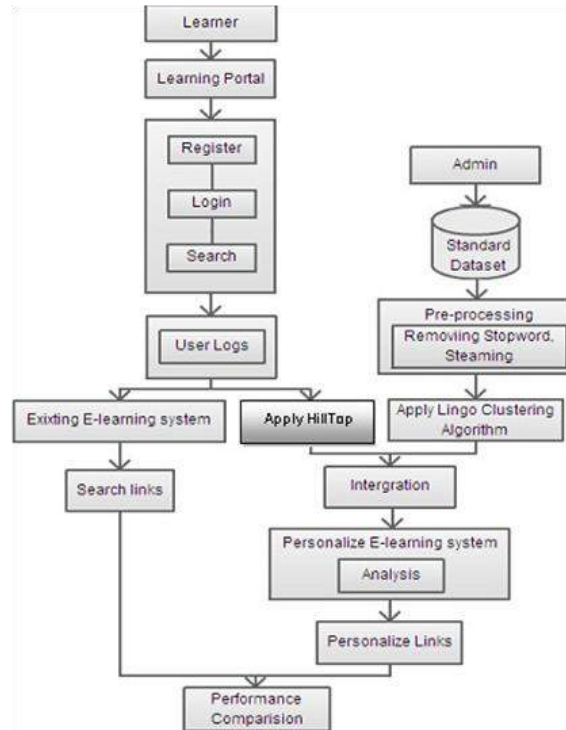


Figure 4. Architecture of proposed approach

The objective of this approach is to provide users with the information they want or need, without expecting from them to ask for explicitly. Figure (3) represents proposed architecture for personalized E-learning system combining HITS algorithm on user logs and Lingoclustering algorithm.

Admin is responsible for forming a standard dataset including learning objects. This dataset is preprocessed by removing stop words and stemming. A new user first makes registration to the learning portal. When user login to the

System using his own user name and password and search for a particular topic, at server side user logs are stored for that search. Then HITS algorithm is applied to those logs to increase the weight of that log.

For proposed approach, preprocessed data is given to content mining using Lingo clustering algorithm. Clusters are formed from preprocessed data. Final results are calculated by combining user logs, HITS algorithm and clustering results.

Algorithm of the Proposed System

HillTop Algorithm

The Hilltop algorithm is an algorithm used to find documents relevant to a particular keyword topic. Created by Krishna Bharat while he was at Compaq Systems Research Center and when you enter a query or keyword into the Google search engine, the Hilltop algorithm helps to find relevant keywords whose results are more informative about the query or keyword.

The algorithm operates on a special index of expert documents. These are pages that are about a specific topic and have links to many non-affiliated pages on that topic. Pages are defined as non-affiliated if they are authored by people from non-affiliated organizations. Results are ranked based on the match between the query and relevant descriptive text for hyperlinks on expert pages pointing to a given result page

Clustering Algorithm- LINGO

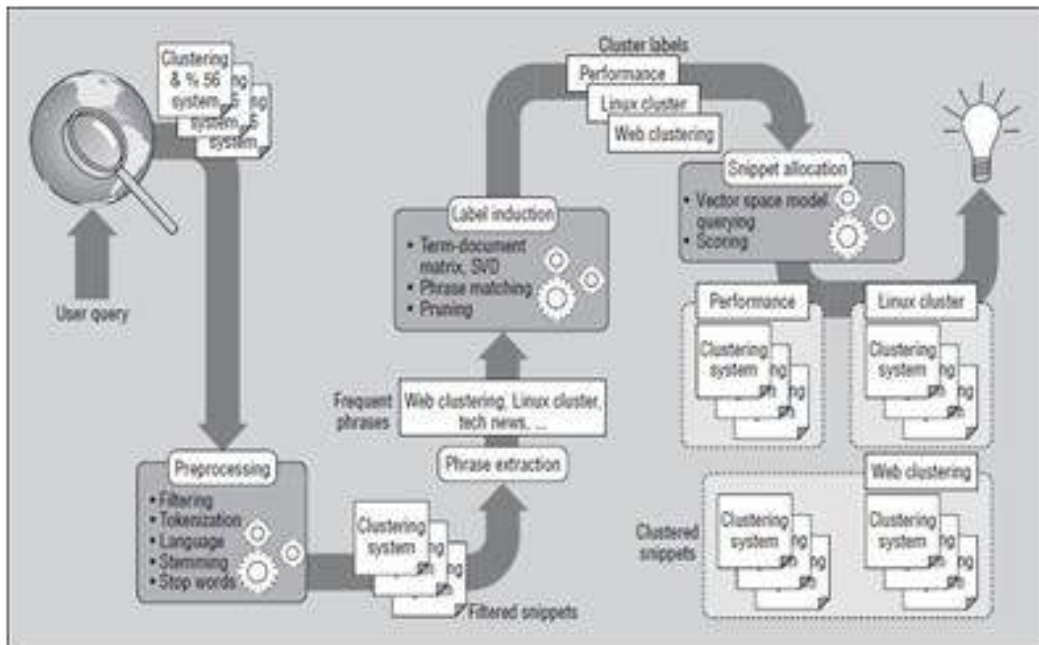


Figure 5 Overview of the Lingo algorithm's phases.

The performance of the web search engines could be improved by properly clustering the search result documents. Most of the users are not capable to give the appropriate query to get what exactly they wanted to retrieve. So the search engine will retrieve a massive list of data, which are ranked by the page rank algorithm or relevancy algorithm or human judgment algorithm.

Search-results clustering aims to present information about the matching documents. It's like taking a step backward to grasp a bigger picture. They consider no longer care about individual documents, but about some underlying semantic structure capable of explaining why these documents constitute a good result to the query. The user will always find to self with the unrelated information related to the search due to the ambiguity in the query by the user.

Evaluating the performance of the clustering algorithm is not as trivial as counting the number of errors or the precision and recall of a supervised classification

Algorithm: e- personalization of information.
Input: search query.
Output: recommended learner's URLs and text.
Process:
 Step1: begin.
 Step2: calculate both the sum of hub score of page and authority score of page (to find the maximum hits).
 Step3: preprocessing the dataset.
 Remove unnecessary entries in the web log (image entries in the log having extensions .gif, .jpeg, etc) and remove the records that have failed HTTP status code.
 Step4: apply Lingo clustering algorithm.
 Step5: output clusters.
 Step6: input clusters to the web mining techniques with user profile.
 Obtain data from various sources (usage data, content data structure data with user data).
 Step7: data analysis and mining the interesting patterns.
 Step8: e-personalization (Learner and Session Identification).
 Step9: recommendation phase.
 mining of learners' profile, crawling and indexing of learning resources, extracting user preferences from the learner's active session, computing relevant links to recommend for the active learner and finally, give recommendation to the learner's and then waiting for his feedback.
 Step9: end of algorithm.

Figure 6.Lingo Clustering Algorithm

3. Results

A. Experimental Analysis

As we see in Figure. 7, this is home page of personalized E-learning system. There are two different logins as user login and Admin login. After registration user can login and search for a particular topic as we see in Figure. 7, this is the admin maintain material page of personalized E- learning system.

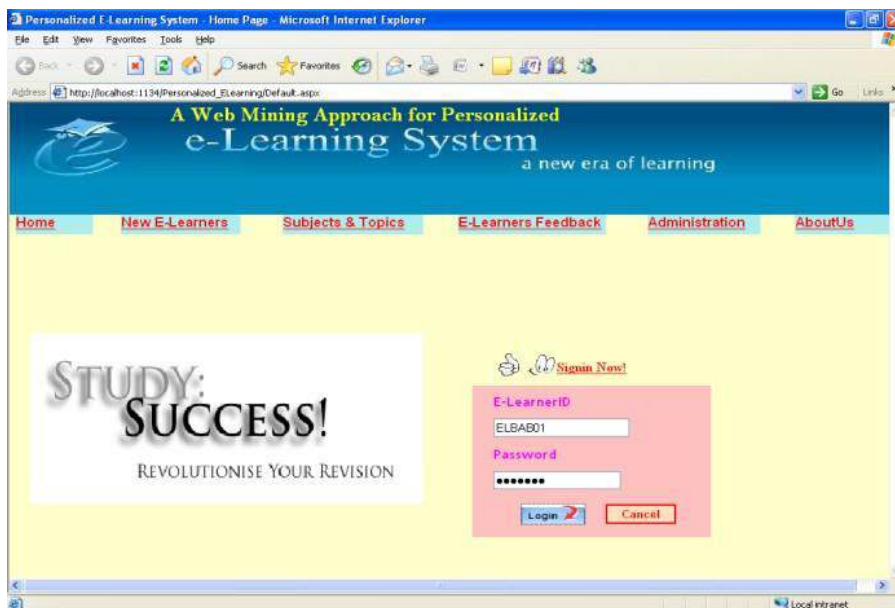


Figure 7: Home page of Personalized Learning system

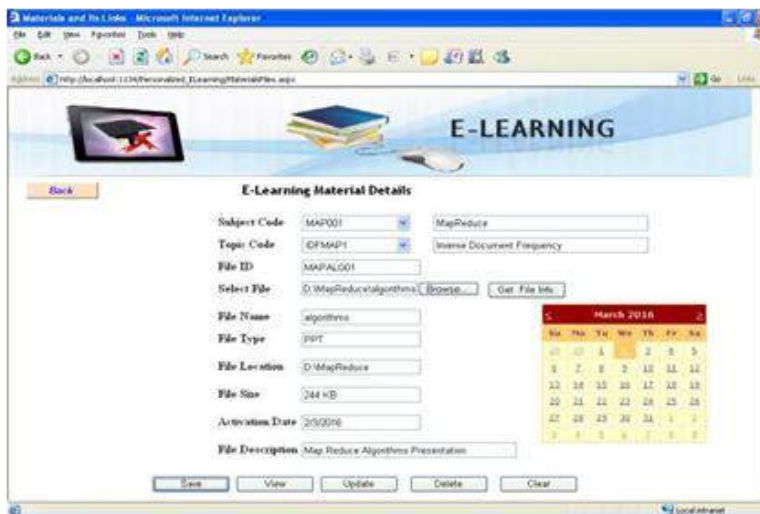


Figure 8. Admin Maintain Material Details.



Figure 9. Search results for Map Reduce keyword with combined approach

As shown in Fig. 9, when users search for Map Reduce keyword, he gets different links. When user selects a combined approach, more accurate links are available to user, which results in personalized output.

Conclusion

The performance of the system is evaluated under different settings and in comparison with the previous method which is based only on the usage mining. The application can be used for personalized recommendation to give personalized recommendation based on users browsing history. Throughout this paper we have discussed many aspects of research for personalized E-learning system. Based on existing limitations, in this paper a new web mining approach based on combination of web usage mining and web content mining is presented which is showing the better performance improvement as compared to the existing method.

Future Work

In future we discover the learner's time distribution pattern to realize personalized curriculum organization, discover the learning behavior pattern to build up a series of feedback and motivation system and we will give different training according to different learners' levels.

For future work, research can be done in developing integration strategies for approaches that can accurately predict student performance in courses and approaches that help a select a subject or courses based on student interests.

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ICT APPARATUSES FOR CREATIVITY IN TEACHING LEARNING PROCESS

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Abstract

ICT is a wide term represents Data Correspondence Innovation. ICT instruments for instructing and gaining cover everything from computerized frameworks like printers, Computers, workstations, tablets, and so on, to programming devices, for example, Google Meet, Google Bookkeeping sheets, and so on. In conventional study halls, an educator's fundamental educational devices for showing data are blackboards, multipurpose sheets, notice sheets and diagrams. In any case, in the present current situation, apparatuses of numerous callings are changing at a fantastic rate and that schooling is no exemption. The effect of innovation has prompted the expanded utilization of PCs for detesting data in large numbers of the present study halls. To make ICT instructing and learning more intuitive, different stages and apparatuses have been made and refreshed over the timeframe.

Keywords: Information Communication Technology, Teaching-Learning, Visual Information, Online Platforms.

Introduction

In the present globalized world the Data and Correspondence Advancements (ICTs) have become well established in instructive settings. Imaginative ICT devices utilized in homeroom training which assists educators with coordinating in their subject, for instructing learning and evaluation. There are various subjects explicit liberated from cost ICT apparatuses accessible on the web and disconnected stages which can be utilized for instructing, learning and appraisal. They are utilized by educators to energize cooperation and connect with learning in their study halls. ICT can likewise be utilized by instructors to advance cooperative work and imagination across a great many subjects. This study targets featuring the predominance of ICT instruments for working with understudy learning, maintenance and mentalities. Their utilization has encouraged subjective changes in how educating is drawn closer, particularly as far as introducing the items sound outwardly. Despite the fact that there has been a lot of conversation over various techniques to show understudies, addresses are not prone to quit being utilized. To underscore specific focuses, many talks utilize composed material introduced on a blackboard, whiteboard, or by transparencies on an above projector. However, over the

most recent 10 years, one more technique for giving visual data addresses has acquired conspicuousness which is projecting data straightforwardly from a PC onto a screen for example PowerPoint introductions. As a matter of fact, numerous schools and colleges have rooms outfitted with innovation vital for any educator to show data thusly. Moreover, a few organizations are pushing the educators to involve different innovations for imaginative instructing and learning.

1. **Information Communication Technology:** The ICT devices means to computerized foundations like PCs, PCs, printers, scanners, programming programs, information projectors, and intuitive educating box.
2. **Teaching-Learning:** Teaching can be characterized as commitment with students to empower their comprehension and use of information, ideas and cycles while learning is the obtaining of information or abilities through study, insight, or being instructed.
3. **Visual Information:** It is utilization of at least one of the different visual media regardless of sound. By and large, visual data incorporates still photography, film photography, video or sound recording, realistic expressions, visual guides, models, show, visual show administrations, and the help processes.
4. **Online Platforms:** A web-based stage is a computerized administration that utilizes the Web to work with communications between at least two separate yet reliant clients.

Literature Review

Simin Ghavifekr, Thanusha Kunjappan, Logeswary Ramasamy and Annreetha Anthony, in their examination paper, "Educating and Learning with ICT Devices: Issues and Difficulties from Educators' Discernments (2020)", uncovered that their review is more connected with recognizing the insights in carrying out ICT apparatuses in instructing and learning in the homeroom among teachers. It looks at the difficulties of utilizing ICT devices in educating and learning in the study hall among teachers and perceives the viability of the degree of ICT apparatuses in supporting homeroom instructing and learning.

D. Sakthivel, Dr. B. Radha, in their review "ICT Devices for Current Training (2021)", thought that Innovation can be a very significant apparatus, however it is just an instrument and innovation "can't supplant an educator" and isn't planned to supplant the educator. A decent instructor should carefully be in a real sense and should know the powerful method for coordinating innovation into the educational program with the goal that educators can keep the understudies committed.

Marta Ferragut Martorell, in her review, "Utilization of ICT apparatuses in the EFL homeroom and their effect on understudies' inspiration", expressed that, ICT has transformed into one of the underpinnings of our cutting edge society. Accordingly, the comprehension and dominance of ICT have turned into a fundamental piece of the present instruction, close by numeracy, composing and perusing and it is normal to change the manner in which understudies learn.

Objectives & Limitations

This study means to examine whether utilizing ICT apparatuses would be more useful for understanding the Blackboard instructing. It likewise expects to evaluate the adequacy of ICT apparatuses in aiding the understudies in understanding and holding the data. One of the significant impediments of the review was that absolutely subject to optional information may not be completely confirmed. Likewise the time used for the review was extremely restricted which confined the extent of the review.

Research Methodology

The review depends on auxiliary information. Important information are benefited from different wellsprings of data like Books and Different sites.

ICT Enabled Tools for Effective Teaching Learning Process: Most educators feel good in utilizing address technique, which isn't equipped for accomplishing different targets of homeroom guidance. ICT might be of extraordinary use in accomplishing different targets of educating - growing experience. It gives right data in an extensive way with various models. It assists students with widening their data base. ICT gives assortment in the introduction of content, which assists students with picking up as per their own speed. It helps in better comprehension, and long maintenance of data. Following apparatuses are utilized in the Showing educational experience in Online-Disconnected method of guidance.

Learning Management System (MOODLE): Moodle represents Particular Article Arranged Unique Learning Climate and insights. Moodle is free programming, a learning the board framework giving a stage to e-learning and it helps the different instructors significantly in conceptualizing the different courses, course designs and educational plan in this way working with collaboration with online understudies. Moodle upholds a scope of media to present or connection to learning materials, support the understudies and to evaluate their learning. It can give robotized evaluation as test, and give quick point by point criticism to the understudies.



Google Classroom: Google Homeroom is a free, mixed learning stage that offers various advantages for the two understudies and instructors. Google Study hall improves the efficiency and take work process the board to a higher level. It monitors tasks coming in with a straightforward look making it extremely simple to know everybody's status and to circle back to understudies who are missing work. Everything is time stepped, so late work is effectively recognizable. Since Google applications are cloud based the work in Google Study hall saves consequently and is available from any gadget. With the application, the two understudies and educators can partake in the full usefulness of Google Homeroom on a cell phone.



Google Forms: Google Forms allows directing MCQ tests on the web. The data is put away as a calculation sheet consequently records the responses. The calculation sheet then, at that point, populates the reactions from the test or review progressively. Google structures can be utilized to give input to and get criticism from understudies and guardians.



Video conferencing Platforms: During Corona virus pandemic when the world moved to Online mode for showing learning different free videoconferencing stages like Google meet, Zoom and Cisco WebEx and so on, were utilized to direct web-based classes. Every one of these has fluctuating requirements and highlights for working with intuitive educating and learning.



Virtual Labs: The Virtual Labs gives remote-admittance to recreation based Labs in different disciplines of science and designing. This understudy driven approach works with the assimilation of fundamental and high level ideas through recreation based trial and error. Web based trial and error further allows utilization of extra web-assets, video-addresses, energized exhibitions and self-assessment. Virtual labs are any spot, any speed, any-time, and any sort labs. It is a change in outlook in understudy's driven, online training.



Educational Videos and animations (YouTube and Internet): Different significant instructive recordings of different subjects accessible on web likewise have an incredible effect. YouTube give extra assistance in better comprehension of subject information.



Smart Classroom: Classroom incorporated with Smart board and web connections gives upgraded and intuitive learning and showing open doors for understudies and educators. The web connection with frameworks in brilliant classes is put away with plentiful data. It is open whenever for their instructing and educational experience. Educators can get to data from different instructive hotspots for the end goal of educating. It helps in simple admittance to online assets. Brilliant Homerooms helps in creating decisive reasoning and critical thinking abilities in understudies. There are a lot more ICT instruments that work with imaginative showing educational experience.

Advantages of Using ICT tools Inteaching learning Process

1. **Teaching Makes Easier:** Educators are individuals with one of profoundly benefited of having ICT in schooling. Using it, it makes the instructing more straightforward. At the point when an instructor shows the understudy on another example it makes for them simple to illuminate and to assess what they maintain that they should be aware. Making records documents, pdf records or power point show using PC or PC for them to show the subjects that they will going to handle is an extraordinary way for instructing.
2. **Lesson can be seen and heard:** The advantage of data correspondence innovation is the illustrations should be visible and be hear. Dissimilar to on the books you can simply see it, seeing those pages with sections and brimming with text and at some point we can see the photos. Sound coming from the recordings or music that being utilized will be played again and again that makes it to recall well.
3. **Easier to Understand:** At the point when the understudies see pictures showing up on the white screen utilizing a projector they comprehend it effectively what it truly implies.
4. **Improves Communication:** Having an innovation in the school conversation further develops correspondence. Since through that medium the educators as well as the understudy find out increasingly more jargon words. The legitimate approach to saying a word or words, the right punctuation and the significance of the words gets to the next level.
5. **Enjoying While Learning:** Images, music and recordings are one of the wellsprings of diversion. At the point when individuals see that they are cheerful and appreciate. Dissimilar to from the articles that simply make out of loaded with text

it is exhausting. Through the bright pictures, understudies appreciate paying attention to the music and envision what it truly implies.

6. **Students Perform Better:** What is great and significance of ICT in educating and learning is the understudies perform better. At the point when an educator train before the class and begin to have a visual guide like projector, the understudies are drawing in. Pictures project on the screen and the understudy will see what that is. The understudies perform better when it is alluring.
7. **Know More Information:** The web is one of the quickest approaches to getting data on the grounds that only one touch can get what is required. In training the more we search and read the more data we will get. The educator and the understudies both get more data by the manner in which they use it.
8. **Improves Visual Skill:** At the point when understudies are learning with the utilization of pictures, or recordings their visual ability gets to the next level. A few educators use questions utilizing photographs that will further develop their reasoning expertise and mental ability. What's more, in view of that understudies are partaking in the lesson.

Conclusion

ICT tools are exceptionally strong in educating and learning. ICT instruments enable the two educators and students. They change the educating and educational experiences from being exceptionally educator ruled to becoming understudy driven and this change brings about expanded learning gains for understudies, setting out and considering open doors for students. Also, they are cost-productive and take out the utilization of paper. Close by limiting expense, they additionally save time during class addresses empowering quick and dynamic transmission of content. They give admittance to dynamic instructing and learning strategies and work with simple understudy the executives. ICT is an incredible asset for instructive change and change. Fitting utilization of ICT has assisted the school with raising the interest levels among the understudies and has associated figuring out how to genuine circumstances. Understudies appreciate while learning and perform better.

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IMPACT OF ICT TOOLS IN ENHANCEMENT OF TEACHING AND LEARNING IN RURAL AREAS USING VIRTUAL REALITY

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Abstract

The usage of ICT tools has contributed significantly to improving the quality of educational programs offered by institutions rural areas. In this increasingly varying technologically advanced world, educators must cope with the inventions and advancements to provide to the students of this generation. With the help of ICT, one can generate awareness amongst students apart from augmenting their knowledge level in different aspects. Education is one of the notable sectors that is affected by the pandemic. The world is after ICT tools like remote meeting applications, online exams, Virtual Reality, Augmented Reality, etc., to improve the quality of education. Information communications technology has become an integral part of our life, and it is one of the necessities of the modern education system. However, teachers have a mixed opinion to adopt ICT or integrate Virtual Reality or Augmented reality in their routine. Several pieces of research have been carried out to highlight the significance of the use of ICT, VR, or AR tools in education. At the same time, it is difficult for the students in rural areas to acquaint themselves with the technology. So, it is necessary to enhance the usage of advanced tools to increase the outcome the teachers must agree and welcome the integration of Virtual Reality and Augmented reality to enhance the quality of education. A key benefit of using VR in education is that you learn through experience. VR allows us to bring 2D objects to life and makes visualization a reality, enabling us to experience real scenarios or fabricated experiences over and over, and learn in an immersive way.

Keywords: ICT, ICT Tools, Educational inequality, Rural Children, Virtual Reality (VR), VR for education.

Introduction

Although education is a fundamental human right for global citizens, educational inequality still exists within and among countries. Still today, many students struggle to access and receive quality education. Therefore, the value of using immersive technology to increase social competence and perceived social support for children who live in remote areas of the world, reduce inequality, and improve the quality of education requires much attention to address the lacuna between urban and rural education systems. Based on three representative pedagogies (Pedagogy of Technology, Play-based Learning, and Traditional Pedagogy), we designed three social competence educational approaches – virtual reality (VR) assisted social competence education, Lego social competence education, and traditional classroom learning – and applied them to interventions in two rural schools in Southwest China. Our results showed that VR and Lego social competence education prompted children's social competence and perceived social support with elementary school children [1]. Furthermore, VR social competence education resulted in substantially greater social competencies and subjective sense of social support than

traditional classroom learning with middle school children. The results suggest that VR-assisted social competence education could be a potential tool to reduce educational inequalities in underdeveloped countries and regions.

The Concept of Social Competence

The concept of *social competence* refers to an individual's ability to appropriately engage in social occasions and develop meaningful interactions with others. It usually incorporates additional components, such as social communication, social interaction, and social inference. Social competence manifests in a child's emotions, behaviors, and ability to interact with others. The development of social competence is essential for future functioning in society, emotional adjustment, and behavioral management. For example, children who get along with others are more likely to rate themselves as happier and have better academic performance [2]. Socially competent children are also more likely to grow into adults with better health and adults with appropriate social skills gain more prosperous reciprocal interpersonal relationships and function better in society.

A. Current Status of Rural Children and the Importance of Social Competence Education

The global rural population is now close to 3.4 billion. Therefore, rural children's educational development is vital for global human sustainability. Growing evidence suggests that a higher quality of education positively influences children's social competence development. For instance, research has indicated that children from disadvantaged rural regions who experience higher levels of classroom learning have better social skills and fewer behavior problems than children who have not been provided with the same. Thus, it is essential to ensure that as many children as possible can obtain quality social competence education, which can boost their chances for future success and reduce inequality in underdeveloped rural regions [3].

Social Competence Education (SCE) is the concept of teaching particular social skills for students' development, future success, and social well-being. It has also been used in various pedagogies to train rural children's social skills at school. Here we review the most popular and widely used SCE pedagogies from previous and ongoing studies, categorizing them into three categories: the traditional pedagogy - traditional classroom learning; the student-centered pedagogy - play-based learning and a novel pedagogy - the pedagogy of technology (i.e., virtual reality).

B. SCE-related pedagogies

1. Traditional Classroom Learning

It is a highly teacher-centered activity. The classroom usually consists of rows of desks and chairs, allowing students to easily observe and listen to the teacher and watch PowerPoint slides or transparencies. Many schools in rural areas are small and geographically isolated, with inadequate infrastructure, limited educational offerings, and continuous student absence. Therefore, over the past decades, traditional classroom

learning has been employed as the primary approach in many rural schools. It can be effective despite being seen as rigorous and unprogressive. For example, research has demonstrated that students learning in a conventional setting may have higher social skills scores than those in an online environment [4].

2. Play-based Learning

It is a student-centered pedagogy that highlights learning through play as a valuable method for a child's development of social and emotional skills. As a representative of play-based learning, Lego playing has provided a practical approach to encouraging children's genuine interest in strategic play and motivating their socio-behavioral improvement by embedding social interactions through its construction activities. Research has illustrated that Lego may have a powerful potential to engage children and young adults in interactive and collaborative activities. Also, Lego has been harnessed globally to support many rural regions' educational sustainability and to help children's social skills education. However, although many practitioners have endorsed that play-based learning is a practical pedagogy that benefits children's learning, students might be distracted by it more than what they can gain from its learning activities [4].

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C. Deepening Understanding through Experiential Learning

For years, teachers have provided students field trip opportunities to deepen the learning experience. Moreover, field trips tend to be limited to the local area of the school. Experiential learning through AR/VR serves as an extension to curriculum and encourages students to connect learning with real-world situations and natural phenomena [5]. At Taylorville High School, where AR/VR lessons for Social Studies are being implemented, a survey showed 87% of 9th, 10th, and 11th graders using zSpace confidently felt that AR/VR created a positive learning experience, with 89% of them reporting excellent quality and flow of AR/VR lesson content. Schools in rural communities often face obstacles to providing equitable learning experiences for their students as a result of underfunding in rural schools and districts, poor infrastructure (e.g., slow or no Internet),

and/or less access to technology and professional development to integrate technology for teachers [7]. Barriers to equitable learning across the country - AR/VR helps level that playing field. Using AR/VR, students far away from bodies of water can still study the causes and effects of beach and river erosion, global water distribution and the water cycle, as well as fish structure and function. With content ranging from microscopic (e.g., atoms and cells) to macroscopic (e.g., planets and stars), the possibilities with AR/VR are virtually endless and bring great value to rural students.

Impacts of VR System in Education

A. VR - Assisted Social Competence Education

The main benefit of using VR as a social competence education tool is the possibility of displaying real-life social situations while maintaining control over what is happening. VR can provide simulated scenarios with the exact physical and behavioral mechanism as users' real-life environment, supporting increased standardizations of procedures. When conducting an intervention in a VR scenario, it is possible to create interactive social situations and manipulate all the presented variables simultaneously. Sophisticated VR technology offers a high level of interactivity with stimulating environments, which can motivate children to learn and practice social skills. For example, VR interventions can combine delivering social knowledge, emotional regulation, social interaction, and attention practice, while allowing students to practice social skills in a multi-sensorial, safe, realistic simulated, controllable, and interactive setting.

With the rapid development of VR education, VR-assisted SCE has emerged with related social support programs that may have the potential to help students develop social competence traits for today's world [6]. Research also indicates that VR-based social competence training is as effective for the general population as for special education samples, and most studies related to VR-assisted SCE have focused on special education and clinical interventions. Investigating VR-assisted SCE in mainstream education used VR as an educational training tool to enhance learners' competence in behavioral health and motivational interviewing skills.

B. VR in Rural Areas

The Indian Institute of Technology-Madras (IIT Madras) researchers are developing an AR/VR-enabled (Augmented reality/Virtual Reality) learning for schools in rural areas. The researchers are using digital technologies to develop teaching-learning models for the secondary-school subjects. The initiative's goal is to develop VR-enabled immersive and experiential environments where students get opportunities to learn social science, history, sciences and languages. Through AR/VR, the world-building, digital storytelling and games, the learning process becomes efficient helping students prepare even better [7]. By developing pedagogic tools using AR/VR technology, the project could potentially revolutionize education in rural areas by enabling virtual access and mobility through portable platforms.

C. VR system as a substitute for school laboratories

Rather than building biology, chemical, and physics laboratories, a computer laboratory equipped with VR system can replace them all. This is because VR system can generate various environments virtually, including all school laboratories [8]. Besides replacing standard functionality of those school laboratories, VR system can also add a new functionality to each laboratory. For example in standard biology laboratory, a student observes cells using a microscope, with this method a student can only observe the cells in flat visual or 2D visual. However, using VR system a student can virtually becomes smaller as little as a cell and walk through the observed cells, observing cells from the inside in full 3D visual. The use of VR system to replace school laboratories can also cut school expenditures. Besides cutting the initial cost of building all those laboratories, annual expenses can also be reduced because there will be no cost for disposable lab items such as chemical substances used in chemical laboratory – all experiments are done in virtual environment with virtual items.

D. VR system supports active learning method

Active learning is a method where a student performs certain actions according to what he/she is currently learning. It is totally different with passive traditional classes where students come to class, sit down, listen to their teacher, watch slides, or read their book. VR system can reach the 90% level by allowing the students to simulate the real experience by themselves[9]. Using VR system, students can interact with their learning subject and make their own conclusions based on actions they do in the overall learning process.



Fig 1: VR Device for Prototype Implementation

It is also possible to design VR system where future learning conditions are made from students' past conclusions, this will allow each student to have his/her own current learning condition based on what he/she has learned before, thus generating a specific personal experience for each of them. To maintain an adequate immersion level, minimum devices required are a head-mounted display (HMD), a data glove, a head tracker and a hand tracker. We use eMagin Z800 [1] for the HMD, which uses a separate OLED displays and comes with an integrated head tracker, and P5 [8] for the data glove, which is also

comes with an integrated hand tracker. It is a good thing that both the HMD and the data glove have trackers integrated into them, this will save us some money since most trackers are available with high prices. Unfortunately, the minus point of P5 is its tracker which uses an infrared system so the precision level is not so good. As addition, we will also use a joystick to move our character around. All the devices used in this prototype implementation can be seen in Fig 3[10].

Conclusion

VR system delivers positive impacts for education where it can deliver a fun yet informative edutainment, substitute school equipments and facilities, substitute destructive experiments, support active learning and support constructivism. Those positive impacts also support the fact that VR system is very suitable for education in rural areas where schools there are lack of equipments and facilities needed by their students. By bringing VR system for education in rural areas, students there can have equal education level with students in big cities. It is also possible to make a low cost VR system without sacrificing much of its immersion level[10]. Using various sub-engines available in the internet and low cost VR devices we can develop and run VR system suitable for education.

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SIGNIFICANCE OF ICT TOOLS AND THEIR APPLICATIONS IN TEACHING LEARNING PROCESS

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Abstract

Information and Communications Technology (ICT) is the use of computing and telecommunication technologies, systems and tools to simplify the way information is created, collected, processed, transmitted and stored. It includes computing technologies like servers, laptop computers and software applications, as well as the wired and wireless communication technologies that support telephones, the Internet, the Internet of Things (IoT). The goal of ICT is to improve access to information and make human-to-human, human-to-machine and machine-to-machine (M2M) communication easier and more efficient. The importance of ICT for teaching and learning process has become significant as it facilitates teaching and learning process, create conducive learning environment, and help learners develop innovative thinking and self confidence. Teachers' well-equipped preparation with ICT tools and facilities is one of the main factors in the success of technology-based teaching and learning. This paper focuses on the use of ICT in schools and colleges by students and teachers to support the processes of learning and teaching.

Keywords: ICT, Technology, ICT tools, Teaching and Learning, Internet, Communication

Introduction

There are different technologies such as radio, television, computer, etc., used in the teaching-learning process. Different ICTs have potentiality to expand the access to education, strengthen the process of education and enhance the quality of education. It has also become essential to the teaching-learning interaction, through such approaches as replacing chalkboards with interactive digital whiteboards, using students' own Smartphone or other devices for learning during class time, and the "flipped classroom" model where students watch lectures at home on the computer and use classroom time for more interactive exercises. ICT in teaching-learning has tremendous potential to serve and help the people connected with the process and product of education in many ways. ICT will help in transitioning from a broadcast model of learning to interactive learning. Thus making the students active and participate in the teaching-learning process. ICT prepares teachers to meet challenges of the teaching-learning task of modern age. It helps teachers in proper execution of their multi-dimensional responsibilities in various areas of education.

Literature Review

Koc mentioned that using ICT enables students to communicate, share, and work collaboratively anywhere, any time. Bransford, J. D., Brown, A. L., & Cocking, R. R reported that, what is now known about learning provides important guidelines for uses of technology that can help students and teachers develop the competencies needed for the twenty-first century. Forcheri, P. & Molfino suggested that ICT can be used to

promote collaborative learning, including role playing, group problem solving activities and articulated projects. **Yusuf** said that the field of education has been affected by ICTs, which have undoubtedly affected teaching and learning. **Yelland, N** integrating of ICTs in education requires establishment of infrastructural facilities, acquisition of technologies and their periodic updating, management and professional support services.

ICT Tools for Teaching Learning Process

Following tools are used in the Teaching learning process in Online- Offline mode of instruction. These ICT tools proved to be a boon for making the teaching learning process easy and accessible to all students.

Learning Management System (MOODLE and Google classroom)

Moodle stands for Modular Object-Oriented Dynamic Learning Environment and statistics. Moodle is free software, a learning management system providing a platform for e-learning and it helps the various teachers considerably in conceptualizing the various courses, course structures and curriculum thus facilitating interaction with online students. RSCOPR has a self-customized MOODLE developed by Digital Content development team. It is a very useful platform to share all learning resources, videos, sharing webpage. It is able to provide automated assessment in the form of quiz, and give immediate detailed feedback to the students. The messaging system allows learners and teachers to communicate easily. Teachers can also communicate with groups of learners via course forums either to provide answers to learners' questions or to just get involved in discussions. The MOODLE mobile app makes students access even easier via smart phone or mobile device.

Google Classroom - Blended Learning Platform

Google Classroom is a free, blended learning platform that offers a variety of benefits for both students and teachers. Google Classroom enhances the productivity and takes workflow management to the next level. It keeps track of assignments coming in with a simple glance making it very easy to know everyone's status and to follow up with students who are missing work. Everything is time stamped, so late work is easily identifiable. Since Google apps are cloud based the work in Google Classroom saves automatically and is accessible from any device. With the app, both students and teachers can enjoy the full functionality of Google Classroom on a mobile device.

Google Forms

Google Forms allows conducting MCQ quizzes online. The information is stored as a spreadsheet automatically records the answers. The spreadsheet then populates the responses from the quiz or survey in real-time. Google forms can be used to give feedback to and receive feedback from students and parents.

Video Conferencing Platforms

During COVID pandemic when the world shifted to Online mode for teaching learning various free videoconferencing platforms like Google meet, Zoom and Cisco webex were used to conduct online classes. All these have varying needs and features. Zoom allows the facility of using its features using a browser also without the need to download the application, the app download is mandatory in case of the other two software. Google Meet allows the maximum on-screen chatting time with respect to the others.

Virtual Labs

The Virtual Labs provides remote-access to simulation-based Labs in various disciplines of science and engineering. This student-centric approach facilitates the absorption of basic and advanced concepts through simulation-based experimentation. Internet-based experimentation further permits use of additional web-resources, video-lectures, animated demonstrations and self-evaluation. Virtual labs are any place, any pace, any-time, any-type labs.

Educational Videos and animations (YouTube and Internet)

Various valuable educational videos of pharmacy subjects available on internet, YouTube provide additional help in better understanding of subject knowledge.

Smart Classroom

Classroom integrated with Smartboards and internet connections provides enhanced and interactive learning and teaching opportunities for students and teachers. The internet-connected to systems in smart classes is stored with abundant information. It is accessible anytime for their teaching and learning process. Teachers can access information from various educational sources for teaching purposes. Smart Classrooms helps in developing critical thinking and problem-solving skills in students.

e-Resources

E- journals from ProquestPharma and DELNET were available for students to access remotely in online mode and enhance their learning experience. e books were uploaded on MOODLE and Google Classroom.

Current Situation and Importance Of Ict Today

The importance of Information Communication Technology are as follows;

1. **Online Education:** Due to Covid-19, there is no option without online education. As lockdowns don't allow opening schools, colleges, and so online education is only one option through which education can be continued.
2. **Use of apps:** Different apps nowadays are used for online education. These apps are helpful for students and teachers to reach. Such type of apps is also used for meetings, online teaching learning process. Ex. Zoom, Google meet, Webex etc.
3. **Platforms for online education:** There are different platforms available for online education. Through these platforms, online classes can be taken, videos can be

uploaded, recorded videos can be send. So these platforms are helpful to the students as well as teachers. Ex. Swayam, Webex, Impartus etc.

4. **Use of different e-content:** Due to online education there is no time limit as well as place restriction for learning. Anyone can learn from any place and at any time. So many type of education any one can take. And different e-contents are also prepared for students. These are helpful for them to enrich their knowledge.
5. **Tools for teachers:** GeoGebra can construct almost every conceivable geometrical object, even in 3D! Object drawing is interactive and can be moved around, modified, and measured. PhET Simulations are interactive computer programs which allow a user to change variables and see the effect of the changes on the system.

The Various Ict Initiatives

Few important initiatives are as given below.

1. **e-pathshala :** The digital India campaign has promoted extensive use of ICTs in the teaching learning process. The ePathshala, a joint initiative of Ministry of Education, Govt. of India and National Council of Educational Research and Training (NCERT), has been developed for showcasing and disseminating all educational e-resources including textbooks, audio, video, periodicals, and a variety of other print and non-print materials for Students, Teachers, Parents, researchers and educators.
2. **NROER:** The National Repository of Open Educational Resources (NROER) is developed by CIET, NCERT. It was launched during the National Conference on ICT for School Education. NROER hosts large number educational resources in many subjects and in different Indian languages for Primary, Secondary and Senior Secondary classes.
3. **Swayam MOOCs:** SWAYAM (Study Webs of Active-Learning for Young Aspiring Minds) is a programme initiated by Government of India and designed to achieve the three cardinal principles of Education Policy viz., access, equity and quality. All the courses are interactive, prepared by the best teachers in the country and are available, free of cost to the residents in India.
4. **SwayamPrabha:** SWAYAM Prabha is an initiative of the Ministry of Human Resources Development to provide 32 High Quality Educational Channels through DTH (Direct to Home) across the length and breadth of the country on 24X7 basis.
5. **ICT in education curriculum:** The National Policy on ICT in School Education has set the goal of preparing youth to participate creatively in the establishment, sustenance and growth of knowledge. Teachers and Children must not be treated merely as consumers but also as active producers.
6. **Diksha:** In India, many teachers are creating & using innovative tech-based solutions in their classrooms. Some state governments have also initiated programs to support their teachers digitally. This inspired MHRD and NCTE to coordinate these efforts at a national level and build DIKSHA.

Application of Information and Communication Technology in Education

ICT is being utilized in every part of life. Due to the increasing importance of the computer, students cannot afford to keep themselves distant from this potential medium in education, use of ICT has become imperative to improve the efficiency and effectiveness at all levels and in both formal and non-formal settings. It can be used for the following purposes.

- To broadcast material, online facility or CD-ROM can be used as sources of information in different subjects.
- To facilitate communication for pupils with special needs;
- To use electronic toys to develop spatial awareness and psycho motor control;
- To use the online resource like, email, Chat, discussion forum to support collaborative writing and sharing of information.
- To facilitate video-conferencing or other form of Teleconferencing to involve wide range of students from distant Geographic areas.
- For blended learning by combining conventional classroom learning with E-learning systems
- To process administrative and assessment data.
- To exchange and share ideas -among teachers for the professional growth.
- To carry out internet-based research to enhance, educational process

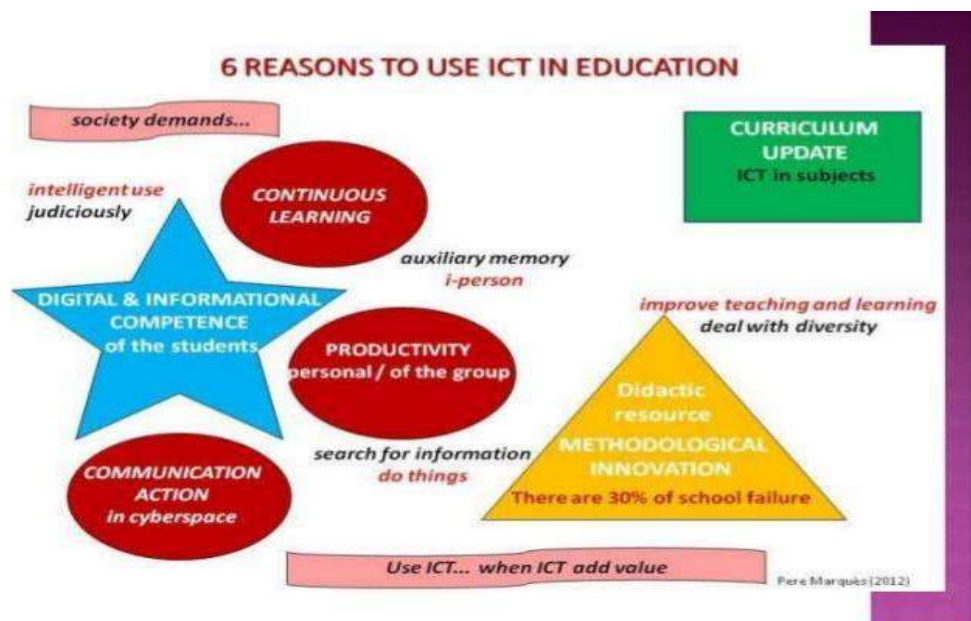


Figure 1: Six Reasons to use ICT in Education

Advantages of Ict in Education

Some of the advantages of ICT in education are as follows;

- Enhance Teaching Effectiveness
- Ensure Active Participation

- Foster Collaborative Learning
- Easy Student Evaluation
- Better Conceptual Understanding
- Assists Students in Research

Conclusion

The intervention of information and communication technology is redefining the way students learn. It is making the process of learning more efficient and effective for students and teachers. ICT tools in education make it easier for teachers to use the best strategies to bring out the best in their students. Moreover, the technology enables them to manage all the management and administration functions in a seamless manner. Hence, there is no doubt that it is a boon to the education industry. One of the objectives of this paper is to provide better understanding and appreciation of the importance of ICT in teaching and learning process. Several view points of importance of ICT in teaching and learning system has been discussed.

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TEACHING AND LEARNING WITH ICT TOOLS: ISSUES AND CHALLENGES FROM TEACHERS' PERCEPTIONS

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Abstract

In this digital era, ICT use in the classroom is important for giving students opportunities to learn and apply the required 21st century skills. Hence studying the issues and challenges related to ICT use in teaching and learning can assist teachers in overcoming the obstacles and become successful technology users. Therefore, the main purpose of this study is to analyze teachers' perceptions of the challenges faced in using ICT tools in classrooms. Evidence has been collected through distribution of a modified- adopted survey questionnaire. Overall, the key issues and challenges found to be significant in using ICT tools by teachers were: limited accessibility and network connection, limited technical support, lack of effective training, limited time and lack of teachers' competency.

Keywords: ICT, teaching-learning, higher education, & Teachers' Perceptions.

Introduction

Information and Communication Technology (ICT) includes computers, the Internet, and electronic delivery systems such as radios, televisions, and projectors among others, and is widely used in today's education field. Kent and Facer (2004) indicated that school is an important environment in which students participate in a wide range of computer activities, while the home serves as a complementary site for regular engagement in a narrower set of computer activities. Increasingly, ICT is being applied successfully in instruction, learning, and assessment. ICT is considered a powerful tool for educational change and reform. A number of previous studies have shown that an appropriate use of ICT tends to expand access to education. Through ICT, learning can occur any time and anywhere. Online course materials, for example, can be accessible 24 hours a day, seven days a week. Teleconferencing classrooms allow both learner and teacher to interact simultaneously with ease and convenience. Based on ICT, learning and teaching no longer depend exclusively on printed materials. Multiple resources are abundant on the Internet, and knowledge can be acquired through video clips, audio sounds, visual presentation and so on. Current research has indicated that ICT assists in transforming a teaching environment

There were some challenges: lack of knowledge, confidence, enough experience, training, interest and access to ICT tools, lack of technical support, lack of genuine ICT Software and unstable and unreliable internet connection at the schools. Due to these challenges, teachers did not use ICT in the classroom. Therefore, teachers should learn more to improve their knowledge and skills in ICT. The government should focus on management strategies and policies to reduce the challenges faced by teachers in mathematics classrooms. By these policies, they can use the ICT tools in the classroom. the

current study presents teachers' perceptions regarding technology integration in their teaching-learning practices at all educational levels in light of the previous studies performed in the last 5 years. By knowing teachers' experiences and perceptions, this study would help teachers make the best use of ICT in teaching and learning activities by sorting out the challenges and assisting concerned authorities in formulating policies accordingly..

Literature Review

Challenges in using ICT in teaching and learning Integrating ICT into teaching and learning is a complex process and one that may encounter a number of difficulties. These difficulties are known as "challenges" A challenge is defined as "any condition that makes it difficult to make progress or to achieve an objective" The following are some of the key challenges that have been identified in the literature regarding teachers' use of ICT tools in classroom.

Limited Accessibility and Network Connection

Several research studies indicate that lack of access to resources, including home access, is another complex challenge that prevent teachers from integrating new technologies into education. Various research studies indicated several reasons for the lack of access to technology. In Sicilia's study (2005), teachers complained about how difficult it was to always have access to computers.

Providing continuity of learning in low and intermittent connectivity scenarios Millions of students have limited access to the internet at home, leaving them struggling to access interactive online lessons and forcing them to find offline workarounds on devices lacking storage for video and other resources. Today, devices and education technology tools are more integrated into education than ever before, and learning opportunities happen not just at school, but at home and everywhere in between. In this landscape, the ability to work online and offline is key so that learning can continue regardless of a student's ability to connect to the internet

School with Limited Technical Support

When teachers dwell on textbooks alone. The generation of students today learned how to use devices at a very young age, which is comparatively faster than other age groups. With that in mind, it is obvious that traditional teaching styles can hardly capture their interest. Because of that, most institutions began to eliminate the antiquated ways of teaching and started to inject technology into their curriculum and school processes.

From the blackboard method of teaching, schools integrated the use of different types of devices to facilitate student learning. The use of these devices, with proper administration from teachers and educators, encourages participation and collaboration.

Lack of Effective Training

Lack of trained teachers- A major obstacle in the use of ICT in rural education is the lack of knowledge and skills. There is dearth of dynamic teachers formally trained in ICT. Moreover, there is hardly any quality training imparted on a regular basis to teachers involved in ICT education.

Limited time

lack of time exists for teachers in many aspects of their work as it affects their ability to complete tasks. Some of the teachers who participated specifically mentioned that they need time to locate internet information, prepare lessons, explore and practice using the technology, deal with technical problems, and receive adequate training. Recent studies show that lack of time is an important factor affecting the application of new technologies in

ICT Education

Lack of Teachers' Competency

Teachers often worry that their knowledge level does not match those of their 'digitally native' students. This distracts from one of the main advantages of ICT skills for educators: being able to facilitate lessons more effectively using digital technologies. Another challenge directly related to teacher confidence is teachers' competence in integrating ICT into pedagogical practice (Becta, 2004). In Australian research, Newhouse (2002) found that many teachers lacked the knowledge and skills to use computers and were unenthusiastic about the changes

Methodology

The central objective of this systematic analysis was to present a succinct account of representative literature dealing with the teachers' perceptions and experiences while integrating ICT in their teaching-learning practices. The best literature review provides a full reflection, which helps develop theory

Research Design

In this research, quantitative methodology was used to collect and analyze the data obtained from all the respondents. A questionnaire was self-developed and finalized by the researchers before being distributed to the targeted group of respondents. The questionnaire was designed specifically to address research objectives with regard to teachers' perception on use of ICT tools

Data Collection Procedures

Data collection defines the procedure for collecting data by the researcher. The questionnaire has been distributed to 120 teachers randomly. They were given one week to fill in the questionnaire and return it to the researcher. All of the participants volunteered themselves in the research. Some questionnaires were with missing information that the details could not be used as a contribution in this research.

Data Analysis

Process The data collected from the respondents were gathered together to be analyzed using the Statistical Packages for the Social Sciences (SPSS) version 22. The analysis includes both descriptive and inferential analysis. The researchers used descriptive analysis to analyze the frequency and percentage of the overall population in the demographic background. Besides, it is also used to determine the mean, standard deviation, frequency and percentage

Validity & Reliability

Internal consistency is measured in this research using the Cronbach's coefficient alpha (α). This method is used to identify the correlation between scores of each item in the test and the total score for all items in the test or is known as test index score. Items with high correlation with the test index score have high reliability, and those with low correlation values with the test index score have low reliability and will be deleted from the test.

Discussion of Findings

In this chapter, I discuss the findings presented the challenges the six key participants faced

Perceptions

What are teachers' perceptions of using ICT in teaching?" Perceptions are discussed in relation to the two main components of the Technology Acceptance Model (TAM),

Ease of Use

Perceived ease of use has been shown to influence positive attitudes towards using computers which in turn influence behavioural intention to use ICT in teaching (Davis, 1986; In the below figure Table shows that 141 (77%) of the questionnaire respondents perceived computers as easy to use

Statements	Agree	Disagree	Not sure	Missing	Mean
I find the computer easy to use	141 (77%)	24 (13%)	14 (8%)	4 (2%)	1.73
It takes up too much time for me to find things on the computer	57 (31%)	102 (56%)	19 (10%)	5(3%)	2.17
I find the computer difficult to use	23 (12%)	132 (73%)	14 (8%)	14 (8%)	2.01
I find it easy to get the computer to do what I want to do	143 (78%)	19 (10%)	16 (9%)	5 (3%)	2.17

In the present study, teachers' general positive attitudes do not appear to reflect actual use and, even less so, their confidence in using computers for teaching. An overwhelming majority (170 or 93%) of questionnaire respondents enjoyed using the computer and 160 (87%) thought it was fun but only 128 (70%) claimed to use computers daily to a few times a week

Usefulness

Teachers perceived computers as useful for reducing their workload as teachers and for preparing lessons rather than for meaningful use in the classroom. Quantitative findings show that questionnaire respondents generally perceived computers as useful or administration and lesson planning or preparation rather than classroom use. For example, questionnaire respondent number 112 said, "...presentations, administration work such as schedules, reports can be done through them [computers]" while ACE-ICT student teacher 16 said, "this year I am doing the in-service ACE-iCT

Experiences

"What are teachers' first experiences using ICT in the classroom?" Positive perceptions towards ICT are an important determinant of the kind of experience a user will have while using ICT (Elwood et al., 2006). Given the generally positive perceptions reported above, the expectation for the six key participants was that they would have positive experiences of teaching with computers in the classroom.

Subject

Such use of ICT was a surprising finding as these teachers had completed in-service qualifications that focused on cross curriculum ICT integration (the ACE-ICT and the BE-ICT courses) in which learning theories and their implications for teachers as they integrate ICT into their teaching were discussed. In particular, teachers were taught to develop activities that promote higher order

Tools

Using ICT as a combination of different tools is an effective strategy for ICT integration and it is crucial to know when to use what. In the two classrooms where ICTs were used with learners, teachers used ICT as more than one too

Use of ICT tools in classroom

Items	Always	Often	Sometimes	Rarely	Mean	SD
Produces a text using a word processing program	39 (39%)	24 (24%)	30 (30%)	7 (7%)	2.05	.989
Use emails to communicate with other	26 (26%)	26 (26%)	38 (38%)	10 (10%)	2.32	0.973

Capture and edit digital photos, movies or other Graphics	39 (39%)	24 (24%)	30 (30%)	7 (7%)	2.05	.989
Edit text online containing internet links and images	26 (26%)	26 (26%)	38 (38%)	10 (10%)	2.32	0.973
Create a database	38 (38%)	27 (27%)	30 (30%)	5 (5%)	2.02	.943

Discussion & Conclusion

This study is more related to identifying the perceptions in implementing ICT tools in teaching and learning in the classroom among school teachers. Furthermore, it examines the challenges of using ICT tools in teaching and learning in the classroom among school teachers and recognizes the effectiveness of the extent of ICT tools in supporting classroom teaching and learning. Based on the study the findings indicate that average level of the perceptions in implementing ICT tools in teaching and learning in the classroom among school teachers, high level of challenges of using ICT tools in teaching and learning in the classroom among school teachers and recognizing the effectiveness of the extent of ICT tools in supporting teaching and learning in the classroom.

Study showed that teachers do combine different resources in their teaching, as well as utilizing various modes of ICT with almost two-thirds claiming to use technologies (63%) and website (62%). Anyway, it is also evident that textbooks are still considered fundamental in the educational systems. Nearly two thirds of our respondents (64%) always or often follow textbooks in their teaching.

Important technologies for learning such as computers (98%) and educational software (93%) were ranked as the top technologies the rate of ICT use among teachers in school is average. However, the finding shows that more teachers used computer with teaching software in the classroom to present or demonstrate examples to students. They also like to use the computer to access students' results and keep track of their progress.

ICT contribution to the teaching-learning process. Since the attitude and perceptions of the teachers are critical to how effectively an innovation is implemented, it is important to gauge how teachers perceive this innovation and its efficacy as a tool for enhanced teaching and learning. It is also hoped that this study will contribute to the growing knowledge base and 21st century generation regarding the use of ICT in education

In future studies more focus should be given on management strategies and policies to address the barriers faced by teachers in using ICT tools in teaching and learning. If the barriers faced by teachers can be overcome, it is a step forward to enhance our students' learning outcome. The studies done with the same gender distribution could give more appropriate analysis whereby the gender perceptions could be analyzed.

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THE SIGNIFICANCE OF ICT IN HIGHER EDUCATION TO ENHANCE TEACHING AND LEARNING PROCESS

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Abstract

Information and Communication Technology (ICT) is the mode of education that uses information and communication technology to support, enhance and optimize the knowledge of students on global level. Increasing the use of ICT in higher education with integrative technology has found positive impact on student achievements.

The implementation of various ICT related tools has made the overall teaching and learning process more efficient. The rate of interaction between the students and the teachers are also enhanced with the help of this process. The secondary mode of data collection has been used in this study to understand the main concept and related information. The implementation of various ICT tools also ensures that the students are able to learn on their own. With the rise in technology and internet, it can be stated that the implementation of various ICT tools will be beneficial for the overall teaching and learning process.

Technologies in ICT include:

- *Access of course material.*
- *Online digital repositories for lecture, course material and digital library.*
- *Flipped classroom.*
- *Audio-Video devices, projector, online presentations are useful in enhancing students understanding level.*

Keywords: *ICT, ICT tools, Teaching and Learning Process, E-learning*

Introduction

The teaching and learning environment is embracing a number of innovations and some of these involve the use of technology through ICT integration in education. This innovative pedagogical approach has been embraced rapidly though it goes through a process. In higher education, with the rise of the internet and usage of various technologies towards the learning process, usage of ICT will be beneficial. ICT also has the potential to increase the level of interaction between the teacher and the student, which will increase efficiency of the entire process of learning. The interest of the student also increases as there are multiple audio and visual methods of learning associated with the ICT process. In the past few years, the world has witnessed a phenomenal growth in communication technology, computer network and information technology. The growth of these communication systems, their ease of use, the power and diversity of information transfer allow teachers and students to have access to a world beyond the classroom. It has the potential to transform the nature and process of teaching and learning environment and envision a new learning culture.

Literature Review

A research of (2012) asserted that ICT is reducing the cost per students and expanding the enrolments and makes the provisions for students and supports enduring learners. Lalitbhushan S. Waghmare, et-al (2014) studied "Role of Information and communication technology in Higher education: learners perspective in rural medical schools". They concluded that there is a need to foresee the role of technology in education which helps in encouraging students towards learning .Information and communication technology in higher education in India: challenges and opportunities (2014). The study revealed that ICT enabled education will ultimately lead to the democratization of education and it has the potential for transforming higher education in India. Mahisa, Anju studied "The role of ICT in higher education in India" (2014) .The study revealed that ICT play vital role as a strong agent for change among many educational practices.

The role of science and technology in the overall process of education has significantly increased over the past two decades. According to the statement of Agarwal and Mittal (2018), education in the 21st century is going through drastic changes and information and communications technology can be used as an alternative for this purpose. ICT can be defined as a set of resources or various technological tools. These tools are used for the purpose of sharing or exchanging information along with creating new segments of resources (Unesco, 2021). These tools can consist of a number of different equipment such as the internet or various broadcasting technologies.

The learning technology that ICT provides can be defined as a self paced learning process. As mentioned earlier, there are various segments associated with the overall process. With the effective use of these segments, the process of teaching or learning can be done in a more productive method. From the perspective of the learning process, the interaction between the teachers and the students can also be enhanced. As stated by Zia et al. (2018), the students are being updated, the capacity of teachers are also enhanced. The implementation of the process in this segment ensures that an open and interactive channel of communication is being established between the teacher and the student.

It is a known fact that education nowadays is no longer confined into books or other reading materials. The learning of new technologies is also essential with the presence of new literacy's into the segment. As per the views of Park (2018), the rate of digital literacy should also be considered as a part of the learning process, which can be significantly improved. These new set of technologies can be used towards the traditional ways of learning so that things can be done in a more engaging way. This can also present itself as a challenge for the teachers as they need to integrate these technological advancements in their teaching processes. By doing so, it can be ensured that student engagement is increased towards the technological literacy.

Incorporation of ICT tools into the teaching segment also points out the fact that the teaching style of the teachers will also change. The overall learning process is transforming and with that, the roles of the teacher will also change (Rodriguez et al. 2018). However, implementing the technological advancements into the learning process is a complex process. If the ICT based teaching methods are compared to the traditional ways of teaching, the enhanced learning process is way ahead in terms of efficiency.

Implementation of ICT can bring various advantages towards the way of teaching and learning. In the overall education segment, the presence of ICT opens up new ways of providing knowledge towards the students. The teachers are also positively impacted by these scenarios as they are able to provide new guidelines or teaching methods towards the students. As stated by Asabere et al. (2017), implementing the ICT model will also be beneficial for the overall process of integrated teaching. Online learning or online education is starting to become an essential part of our lives.

Especially after the pandemic, it can be mentioned that ICT opens up a new horizon of opportunities for the schools. Furthermore, the students will have more options available to gather knowledge from. As compared to previous methods of teaching and learning, studying and gathering knowledge are not only restricted to the classrooms anymore. With the help of the ICT tools, students can continue the process of learning and gathering knowledge as per his wish. This will ensure that the learning process is a lot more fluid.

Curriculum materials, which are a common part of classroom education, can also be benefited from ICT inclusion. Along with that, the students that are displaying a comparatively slower rate of learning and growth can also be targeted with this process. As stated by Zimic and Gadzo (2017), advanced technologies can be used in an innovative way so that more innovative approaches can be created and utilized. However, it can be stated on a contradictory note that the students from the backward class of economy may not get the entire ICT benefits. It is important for the schools and educational institutions to look for strategies that can mitigate these scenarios. Otherwise, there are chances of a digital divide, restricting students from getting the full advantage.

More knowledge is always beneficial for the student base. As per the views of Popkova (2019), it is absolutely essential to gain the ability for effective usage of the information. The recent times can be stated as a platform for pervasive use of ICT so that more effective outputs can be produced. It is important to mention that the implementation of ICT is not restricted to the educational sector only. It impacts all the other segments of society as well. This is why digital technologies should be considered as an integral part of the overall national curriculum as it is already a trend among various economies.

With the implementation of the ICT in the educational scenarios, there are often questions with the acceptability of the entire process. However, it can be mentioned that students or younger adults are often attracted towards the technological advancements. These characteristics should be emphasized so that collaboration can be encouraged. This will also ensure the increase in the rate of subject learning. From the perspective of the teacher, there are also multiple benefits associated.

Method

Various initiatives in the recent past portrayed the significant role that ICT plays in the realm of higher education development. Several projects have reduced the costs, and it also has increased transparency. India has taken up major initiatives in terms of content delivery and furthering education through Information and Communication technology. For example Gyan Darshan was launched in 2000 in broadcast educational programs for

school kids, university students and adults. Similarly Gyan Vani was another such important step with broadcast programs contributed by institution such as IGNOU and IITs. Under the UGC country wise classroom initiative, education programs are broadcast on Gyan Darshan and Doordarshan national channel every day. E-Gyankosh which aims at preserving digital learning resources is a knowledge repository launched by IGNOU in 2005. Almost 95% of IGNOU's printed material has been digitized by uploaded on the repository.

The national programme for technology enhanced learning (NPTEL) launched in 2001 is another joint initiative of IITS and IISC which education through technology. Sristi, the society for research and initiatives for sustainable technologies and institutions is facilitating the use of ICT for strengthening the capacity of grass roots inventors, innovations and entrepreneurs engaged in conserving bio diversity and developing eco-friendly solutions to local problems.

Result and Discussion

Use of ICT in education presents a unique opportunity to solve multitude of challenges quickly as well as at low rate. Here is an overview of advantages of an ICT

Motivating Factor

The internet can act as a motivating tool for many students. Young people are very captivated with technology. Educators must capitalize on this interest excitement and enthusiasm about the Internet for the purpose enhancing learning. For already enthusiastic learners, the internet provides them with additional learning activities not readily available in the classroom.

Fast Communication

The internet promotes fast communication across geographical barriers. Students can join collaborative projects that involve students from different states, countries or continents.

Co-operative Learning

The internet facilitates co-operative learning, encourages dialogue and creates a more engaging classroom. For example, a LISTER V for our class will allow students to get involved in class discussions through e-mails in a way not possible within four walls of classroom.

Locating Research Materials

Apart from communication, research is what takes many people to the internet. There are many resources on the internet than the school library can provide.

Acquiring Varied Writing Skills

If students are required to publish their work on the internet, they have to develop hypertext skills. These skills help students gain experience in non sequential writings.

Recommendations

The quality of programs as measured by fitness for purpose should continue to grow, if the stakeholders perceive the various educational programs as meeting their needs and expectations. ICTs serve to provide the means for activities to realize the potential in human resources. Furthermore, adequate funds must be provided to initiate, develop, promote, review and implement ICT policies in the educational sector to bring about an improvement on ICT utilization, through computer apprentices courses taught in vigerian tertiary institutions. In this period after covid-19 the price of ICT equipment and materials will continue to the astronomical. It becomes highly imperative for all stakeholders of education to entice industrial establishments, politicians, big businessman and entrepreneurs, non-governmental organizations and the community at large to assist the institutions in the provision of ICT equipment and materials and well finished computer laboratories

Conclusion

With the rise in technology and the growth of the internet, various technological tools are being implemented towards the teaching and learning process. It can be mentioned that ICT tools can be used as a viable tool towards providing effective higher education for the students. ICT also ensures that the interaction and feedback process increases, so that more student centric approaches can be incorporated into the process of teaching and learning.

ICT play vital role as a strong agent for change among many educational practices ,conducting online exam, pay online fees, accessing online books and journals. Thus ICT in Higher education improves teaching learning process, provides the facility of online learning to thousands to thousands of learners who cannot avail the benefits of higher education due to several checks, such a time, cost, geographical location etc.

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EMPOWERING WOMEN; BASIC RIGHT FOR BEING AN INDIVIDUAL

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Abstract

Concept Women empowerment emerges from the middle of 20th century and now recognize globally. Empower the women from discrimination; inequality and injustice are the basic aspects of this approach. Gender equality, economic empowerment, social empowerment, political empowerment and education are all the integral of women empowerment which provide the safe space where they have rights for education, equal opportunities in social, economic and political status.

Keywords: *Battered Women, Abusive Relationship, Women's Mental Health.*

Introduction

Women empowerment is an essential aspect of socioeconomic development globally [1]. Empowering women through equal access to education, employment opportunities, and leadership positions can lead to gender equality and promote economic growth [2]. Therefore, this paper aims to investigate women's empowerment by employing a mixed-method approach. The study examines both qualitative and quantitative data to provide a comprehensive understanding of the subject matter.

The literature review focuses on the previous research works on women's empowerment. The review summarizes the existing literature on the topic, identifying the gaps in knowledge that this study aims to address. The literature review explores the various dimensions of women's empowerment, including economic, social, and political. The review also highlights the challenges to women's empowerment, including cultural and societal barriers, inadequate education and training, and discriminatory policies [3].

Women empowerment is the process of enhancing women's economic, social, and political status in society. It involves creating an environment where women have equal opportunities and access to resources to make decisions that affect their lives positively. Women's empowerment is essential for promoting gender equality, improving women's health and well-being, reducing poverty, and promoting economic growth [4,5]. Historically, women have been subjected to discrimination, oppression, and inequality. They have been denied basic human rights such as the right to education, health, and the right to own property. Women have also been excluded from participating in decision-making processes that affect their lives. However, over the years, there has been a significant shift towards promoting women's empowerment [6].

Methodology

This study employs a mixed-method approach to investigate women's empowerment. The study collects both qualitative and quantitative data to provide a comprehensive understanding of the subject matter. The quantitative data is collected using a questionnaire distributed among women in different regions. The survey questionnaire comprises close-ended questions that provide insights into women's empowerment levels [7]. Qualitative data, on the other hand, is collected through interviews with selected women from different regions. The semi-structured and open-ended interviews allow the participants to provide detailed information about their experiences and views on women's empowerment. To investigate the gaps between the knowledge of empowering women and to found the real struggle of women on daily basis we applied both the quantitative and qualitative data collection procedure, which include the questionnaire with close-ended question and the interviews with selected women from different region [8].

Results

The study's results indicate that women's empowerment levels vary across different regions, with some regions having more empowered women than others. The study also reveals that cultural and societal barriers remain the most significant hindrance to women's empowerment. In contrast, education and training opportunities positively impact women's empowerment levels. The study's qualitative findings reveal that the participants' personal experiences influence their views on women's empowerment, with some participants reporting progress in their empowerment journeys. Women with different background have different approaches and their empowerment vary according to it even though culture and social bouncing's hindering the pathway of empowerment. But it has been noted that the education and training sessions are helpful in bringing change in one's narrative and behavior. Empowering the women; it's not only the concept of girls education right, it also about their social, political and economic stability. Women empowerment is a multi-dimensional concept that involves enhancing women's economic, social, and political status in society. There are several themes that are integral to women's empowerment, and they include:

1. Gender Equality

Gender equality is a fundamental theme in women's empowerment, and it involves creating an environment where women and men have equal rights, opportunities, and access to resources. Gender equality is crucial to promote women's empowerment as it challenges gender norms, stereotypes, and discrimination that limit women's progress in society.

2. Education

Education is another essential theme in women's empowerment. Education provides women with knowledge and skills that enhance their decision-making abilities. Educated

women are more likely to participate in economic activities and become agents of change in their communities. Education also helps to reduce gender inequality, poverty and improve women's health and well-being.

3. Economic Empowerment

Economic empowerment involves providing women access to resources such as credit, financial services, and markets. Economic empowerment enables women to become financially independent, allowing them to make decisions that affect their lives positively. It also helps to reduce their vulnerability to poverty and exploitation.

4. Social Empowerment

Social empowerment involves promoting gender equality, challenging gender norms and stereotypes, and reducing gender-based violence. It involves creating an environment where women have equal access to resources, services, and opportunities. Social empowerment can be achieved through various means, including legislation, awareness campaigns, and community mobilization.

5. Political Empowerment

Political empowerment involves promoting women's participation in decision-making processes at all levels of society. It ensures that women have equal representation in political structures and are actively involved in policy-making processes. Political empowerment can be achieved through affirmative action policies, education and training, and increasing women's representation in decision-making structures.

Discussion

One of the essential aspects of women's empowerment is education. Educating girls and women has a positive impact on their empowerment levels. It helps to increase their knowledge and skills, which, in turn, enhances their decision-making abilities. Educated women are more likely to participate in economic activities, which can improve their economic status and reduce poverty. Education also empowers women to become agents of change in their communities, promoting social and political equality.

Another critical aspect of women's empowerment is economic empowerment. Economic empowerment involves providing women with access to resources such as credit, financial services, and markets. Social empowerment involves promoting gender equality, challenging gender norms and stereotypes, and reducing gender-based violence [9]. It involves creating an environment where women have equal access to resources, services, and opportunities. Social empowerment can be achieved through various means, including legislation, awareness campaigns, and community mobilization [10].

Political empowerment involves promoting women's participation in decision-making processes at all levels of society. It involves ensuring that women have equal representation in political structures and are actively involved in policy-making processes [11, 12]. Political empowerment can be achieved through affirmative action policies,

education and training, and increasing women's representation in decision-making structures.

Precisely, women empowerment is a basic approach in the modern world. It involves enhancing the economic, social, and political status of women in society, promoting gender equality, improving women's health and well-being, reducing poverty, and promoting economic growth. Women's empowerment can be achieved through various means, including education, economic empowerment, social empowerment, and political empowerment [13]. It is essential to promote women's empowerment to create a society where women have equal opportunities and their rights are respected and protected.

The study's findings support the previous research on women's empowerment, highlighting the need for policy changes to remove cultural and societal barriers to women's empowerment. The study's results also emphasize the need for increased education and training opportunities for women, which can have a positive impact on their empowerment levels [14]. However, the study acknowledges the limitations of its sample size and recommends further research on the subject.

Conclusion

In conclusion, women's empowerment is an essential aspect of socioeconomic development globally. This study employs a mixed-method approach to investigate women's empowerment, collecting both qualitative and quantitative data. The study's findings highlight the need for policy changes to remove cultural and societal barriers to women's empowerment and increase education and training opportunities for women. Overall, the study provides a comprehensive understanding of women's empowerment, contributing to the existing knowledge on the subject matter.

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TEACHING AND LEARNING WITH ICT TOOLS: ISSUES AND CHALLENGES FROM TEACHERS' PERCEPTIONS

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Introduction

Due to ICT's importance in society as well as in the future of education, identifying the possible challenges to integrating these technologies in schools would be an important step in improving the quality of teaching and learning. Balanskat, Blamire, and Kefala (2006) argue that although teachers appear to acknowledge the value of ICT in schools, they continue encountering obstacles during the processes of adopting these technologies into their teaching and learning.

Therefore, the main objectives of this study are as follow:

1. To identify school teachers' perceptions in implementing ICT tools in teaching and learning in classroom.
2. To determine the challenges of using ICT tools in teaching and learning in the classroom among school teachers.
3. To identify that to what extent do teachers use ICT tools in teaching and learning in the classroom.

Theoretical Framework

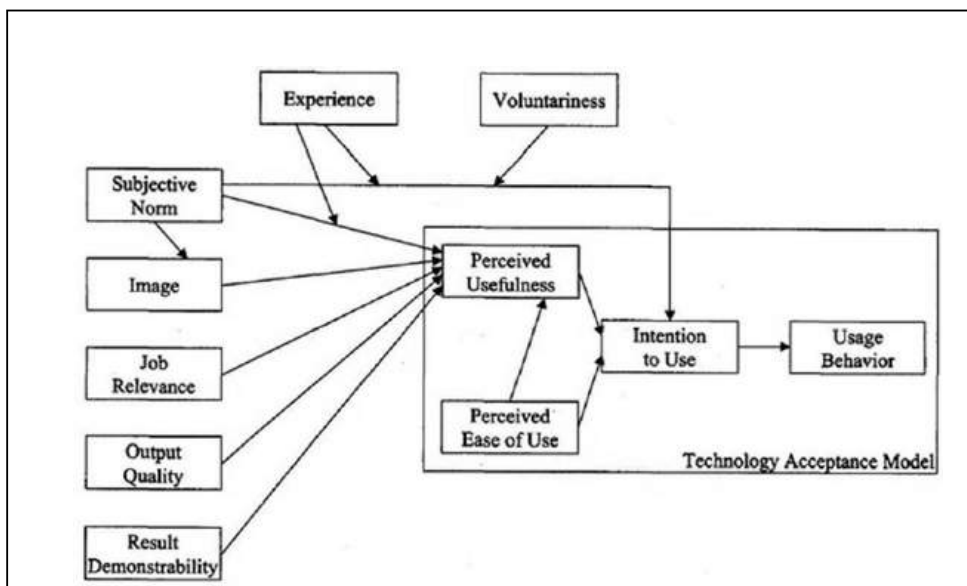


Figure 1 A theoretical extension of the technology acceptance model

External Variables – It represents the challenges that teachers face that come from outside their sphere of control when integrating a new technology in their teaching and learning process. These challenges include:

- Limited accessibility and network connection
- Schools with limited ICT facilities
- Lack of effective training
- Limited time
- Lack of teachers' competency

Perceived usefulness(PU)–It represents the degree to which they believe that using a particular technology would enhance their job performance. If teachers feel there is no need to question or change their professional practice then, according to studies, they are unlikely to adopt the use of ICT tools. However, if they perceive ICT to be useful to them, their teaching and their pupils' learning, then according to the empirical evidence of previous studies (Cox, Preston & Cox, 1999) they are more likely to have a positive attitude to using ICT in the classroom. The following factors have been identified as key elements to teachers' perceived usefulness of ICT tools:

- Work more quickly
- Job performance
- Increased productivity
- Effectiveness
- Useful

Perceived ease-of-use(PEOU)–It represents the degree to which they believe that using a particular system would be free from effort. Previous studies have identified a number of factors relating to the perceived ease of use of ICT, in study on experienced practicing ICT users. The Impact project(Watson, 1993) and other studies identified a wide range of skills and competencies which teachers felt they needed in order to find ICT easy to use. Some of these are:

- Easy to learn
- Clear and understandable
- Easy to use
- Controllable
- Easy to remember

Attitude toward use – teacher's positive or negative feeling about performing the target behavior(e.g., using a system). Basically, teachers' attitudes too many of these factors will depend upon how easy they perceive using ICT tools to be on a personal level as well as for teaching in the classroom.

Behavioral intention - The degree to which the teacher has formulated conscious plans to perform or not perform some specified future behavior.

Social influence processes -(subjective norm, voluntariness, and image) and cognitive instrumental processes (job relevance, output quality, result demonstrability, and perceived ease of use) as determinants of perceived usefulness and usage intentions.

Literature Review

Challenges in using ICT in teaching and learning

Integrating ICT into teaching and learning is a complex process and one that may encounter a number of difficulties. These difficulties are known as “challenges”. A challenge is defined as “any condition that makes it difficult to make progress or to achieve an objective”. The following are some of the key challenges that have been identified in the literature regarding teachers’ use of ICT tools in classroom.

i) Limited accessibility and network connection

Several research studies indicate that lack of access to resources, including home access, is another complex challenge that prevent teachers from integrating new technologies into education.

Various research studies indicated several reasons for the lack of access to technology. In Sicilia’s study teachers complained about how difficult it was to always have access to computers. The author gave reasons like “computers had to be booked in advance and the teachers would forget to do so, or they could not book them for several periods in a row when they wanted to work on several projects with the students”(p. 50). In other words, a teacher would have no access to ICT materials because most of these were shared with other teachers. According to Becta, the inaccessibility of ICT resources is not always merely due to the non-availability of the hardware and software or other ICT materials within the school. It may be the result of one of a number of factors such as poor resource organization, poor quality hardware, inappropriate software, or lack of personal access for teachers

The challenges related to the accessibility of new technologies for teachers are wide spread and differ from country to country .Empiric’s European study found that lack of access is the largest barrier and that different challenges to using ICT in teaching were reported by teachers, for example a lack of computers and a lack of adequate material. Similarly, Korte and Hüsing found that in European schools there are some infrastructure barriers such as broadband access not yet being available. They concluded that one third of European schools still lack broadband Internet access. Pelgrum (2001) explored practitioners’ views from 26 countries on the main obstacles to ICT implementation in schools. He concluded that four of the top ten barriers were related to the accessibility of ICT. These barriers were insufficient unit of computers, insufficient peripherals, insufficient numbers of copies of software, and insufficient immediate Internet access. Toprakci (2006) found that low numbers of computers, oldness or slowness of ICT systems, and scarcity of educational software in the school were barriers to the successful ICT implementation in Turkish schools. Similarly, Al-Alwani (2005) found that having no access to the Internet during the school day and lack of hardware were hampering technology integration in Saudi schools. Recent research on Syrian schools indicated that insufficient computer resources were one of the great impediments to technology integration in the classroom.

ii) School with limit ed technical support

Without both good technical support in the classroom and whole-school resources, teachers can not bee expected too overcome the obstacles preventing them from using ICT(Lewis,2003). Pelgrum(2001)found that in the view of primary and secondary teachers, one of the top barriers to ICT use in education was lack of technical assistance.

In Sicilia's study (2005), technical problems were found to be a major barrier for teachers. These technical barriers included waiting for websites to open, failing to connect to the Internet, printers not printing, malfunctioning computers, and teachers having to work on old computers. "Technical barriers impeded the smooth delivery of the lesson or the natural flow of the classroom activity"(Sicilia,2005,p.43).

Korteand Hüsing (2007) argued that ICT support or maintenance contracts in schools help teachers to use ICT in teaching without losing time fixing software and hardware problems. The Becta (2004) report stated "if there is a lack of technical support available in a school, then it is likely that technical maintenance will not be carried out regularly, resulting in a higher risk of technical breakdowns" (p. 16). Many of the respondents to Becta's survey (2004) indicated that technical faults might discourage them from using ICT in their teaching because of the fear of equipment breaking down during a lesson. In teaching, several studies indicated that lack of technical support is a main barrier to using technologies. According to Gomes (2005), ICT integration in teaching needs a technician and if one is unavailable the lack of technical support can be an obstacle. In Turkey, Toprakci (2006) found that the lack of technical support was one of two significant barriers to ICT integration in science education in schools and might be considered"serious". In Saudi Arabia, science teachers would agree to introduce computers into teaching, except that they believe they will encounter problems such as technical service or hardware problems (Almohaissin, 2006). Sicilia (2005) argued that whatever kind of technical support and access teaching staff have and whether they have twenty years of experience or are novices to the profession, technical problems generate barriers to the smooth less on delivery by teachers.

iii) Lack of effective training

The challenge most frequently referred to in the literature is lack of effective training (Albirini,2006; Balanskat et al., 2006; Beggs, 2000; Özden, 2007; Schoepp, 2005; Sicilia, 2005; Toprakci, 2006; Ghavifekr &Wan Athirah, 2015). One finding of Pelgrum's (2001) study was that there were not enough raining opportunities for teachers in using ICTs in a classroom environment. Similarly, Beggs (2000) found that one of the top three barriers to teachers' use of ICT in teaching was the lack of training. Recent research in Turkey found that the main problem with implementing new ICT in education was the insufficient amount of in-service training for teachers (Özden, 2007), and Toprakci (2006) concluded that limited teacher training in ICT usein Turkish schools is an obstacle.

According to Becta (2004) , the issue of training is certainly complex because it is important to consider several components to ensure training effectiveness. These were time for training, pedagogical training, skills training, and an ICT use in initial teacher training.

Correspondingly, recent research by Gomes (2005) relating to various subjects concluded that lack of training in digital literacy, lack of pedagogic and didactic training in how to use ICT in the classroom and lack of training concerning technology use in specific subject are as were obstacles to using new technologies in classroom practice. Some of the Saudi Arabian studies reported similar reasons for failures in using educational technology: the weakness of teacher training in the use of computers, the use of a "delivery" teaching style instead of investment in modern technology (Alhamd, Alotaibi, Motwaly, & Zyadah, 2004), as well as the shortage of teachers qualified to use the technology confidently (Sager, 2001).

Providing pedagogical training for teachers, rather than simply training them to use ICT tools, is an important issue (Becta, 2004). Cox et al. (1999a) argue that if teachers are to be convinced of the value of using ICT in their teaching, their training should focus on the pedagogical issues. The results of the research by Cox et al. (1999a) showed that after teachers had attended professional development courses in ICT they still did not know how to use ICT in their classrooms; instead they just knew how to run a computer and setup a printer. They explained that this is because the courses only focused on teachers acquiring basic ICT skills and did not often teach teachers how to develop the pedagogical aspects of ICT. In line with their search by Cox et al. (1999a), Balanskat et al. (2006) indicated that inappropriate teacher training is not helping teachers to use ICT in their classrooms and in preparing lessons. They assert that this is because training programs do not focus on teachers' pedagogical practices in relation to ICT but on developing ICT skills.

Fundamentally, when there are new tools and approaches to teaching, teacher training is essential (Osborne & Hennessy, 2003) if they are to integrate these into their teaching. However, according to Balanskat et al. (2006), inadequate or inappropriate training leads to teachers being neither sufficiently prepared nor sufficiently confident to carry out full integration of ICT in the classroom. Newhouse (2002) stated "teachers need to not only be computer literate but they also need to develop skills in integrating computer use in to their teaching/learning programmes" (p. 45).

iv) Limited time

Several recent studies indicate that many teachers have competence and confidence in using computers in the classroom, but they still make little use of technologies because they lack the time. A significant number of researchers identified time limitations and the difficulty in scheduling enough computer time for classes as a barrier to teachers' use of ICT in their teaching (Al-Alwani, 2005; Becta, 2004; Beggs, 2000; Schoepp, 2005; Sicilia, 2005). According to Sicilia (2005), the most common challenge reported by all the teachers was the lack of time they had to plan technology lessons, explore the different Internet sites, or look at various aspects of educational software.

Becta's study (2004) found that the problem of lack of time exists for teachers in many aspects of their work as it affects their ability to complete tasks, with some of the participant teachers specifically stating which aspects of ICT require more time. These include the time needed to locate Internet advice, prepare lessons, explore and practise using the technology, deal with technical problems, and receive adequate training.

V) Lack of teachers' competency

Another challenge directly related to teacher confidence is teachers' competence in integrating ICT into pedagogical practice (Becta, 2004). In Australian research, Newhouse (2002) found that many teachers lacked the knowledge and skills to use computers and were unenthusiastic about the changes and integration of supplementary learning associated with bringing computers in to their teaching practices. Current research has shown that the level of this barrier differs from country to country. In the developing countries, research reported that teachers' lack of technological competence is a main barrier to their acceptance and adoption of ICT (Pelgrum, 2001; Al-Oteawi, 2002). In Syria, for example, teachers' lack of technological competence has been cited as the main barrier (Albirini, 2006). Likewise, in Saudi Arabia, a lack of ICT skills is a serious obstacle to integration of technologies into science education (Al-Alwani, 2005; Almohaissin, 2006). Empirical (2006) produced are proton ICT use in European schools. The data used for the report came from the Head Teachers and Classroom Teachers Survey carried out in 27 European countries. The findings show that teachers who do not use computers in classrooms claim that "lack of skills" are constraining factor preventing them from using ICT for teaching. Another worldwide survey conducted by Pelgrum (2001), of nationally representative samples of schools from 26 countries, found that teachers' lack of knowledge and skills is a serious obstacle to using ICT in primary and secondary schools. The results of a study conducted by Balanskat et al. (2006) have shown that "in Denmark ... many teachers still chose not to use ICT and median teaching situations because of their lack of ICT skills rather than for pedagogical/did actics reasons" while "in the Netherlands... teachers' ICT knowledge and skills is not regarded any more as the main barrier to ICT use" (p.50). Hence, lack of teacher competence may be one of the strong barriers to integration of technology into education. It may also be one of the factors involved in resistance to change.

Methodology

Research Design

In this research, quantitative methodology was used to collect and analyze the data obtained from all the respondents. A questionnaire was self-developed and finalized by their searchers before being distributed to the targeted group of respondents. The questionnaire was designed specifically to address research objectives with regard to teachers' perception on use of ICT tools in public secondary schools in Melaka.

Instrumentation & Sampling

A self-developed cross-sectional survey questionnaire consisting of 7 sections and 114 items was test deeming respondents. The questionnaire was based on 5-point Likert Scale ranging from: 5 =always, 4 often, 3 = sometimes, 2 = rarely and 1 = never. A total of 100 secondary school teachers in the state of Melaka were selected randomly as the sample for the study. The sample responded to the statements given and chose their answers based on their perceptions. The survey was distributed by hand to the respondents. The various

sections of the questionnaire included:(A)Personal Details,(B)Experience with ICT for Teaching,(C) ICT access for teaching, (D) Support for teachers for ICT use, (E) Challenges of using ICT tools in teaching and learning,(F)Teachers' ICT skills, (G) Teachers' opinion about ICT use impact on students' learning outcome.

Data Collection Procedures

Data collection defines the procedure for collecting data by the researcher. The questionnaire has been distributed to 120 teachers randomly. They were given one week to fill in the questionnaire and return it to the researcher. All of the participants volunteered themselves in the research. Some questionnaires were with missing information that the details could not be used as a contribution in this research. Finally 100 questionnaires were returned to the researchers for data analysis.

Data Analysis Process

The data collected from the respondents were gathered together to be analyzed using the Statistical Packages for the Social Sciences (SPSS) version 22. The analysis includes both descriptive and inferential analysis. The researchers used descriptive analysis to analyze the frequency and percentage of the overall population in the demographic background. Besides, it is also used to determine the mean, standard deviation, frequency and percentage. Inferential statistics (t-test) were also used to analyze the research findings.

Validity & Reliability

Internal consistency is measured in this research using the Cronbach's coefficient alpha (α). This method is used to identify the correlation between scores of each item in the test and the total score for all items in the test or is known as test index score. Items with high correlation with the test index score have high reliability, and those with low correlation values with the test index score have low reliability and will be deleted from the test. Based on the findings, the Cronbach's alpha value for this study shows .817 which is satisfactory (between .65 – .95). The alpha value shows that the instrument is reliable. In fact, all items in the instrument have α level of more than.7. The highest alpha level is.847 and the lowest is.799.

Findings

Demographic Factors of the Respondents

The following Table1 give the demographic background of the research participants.

Table1 shows the demographic finding where the age category under 25 is frequency 4 and percentage is 4%, age 26-35 is frequency 64 and percentage is 64%, age 36-45 is frequency 27 and percentage is 27%,age46-55isfrequency3 and percentage is 3%, and age 55+ is frequency 2 and percentage is 2%.

The gender findings how small as frequency 25 and percentage is 25% and female is frequency 75 and percentage is 75%. The experience based on the years of experience by the sample is less than 1 year frequency is 5 and the percentage is 5%, 1-4 years frequency

is 25 and the percentage is 25%, 5-10 years frequency is 16 and the percentage is 16%, 10-20 years frequency is 16 and the percentage is 16%, and 20+ years frequency is 1 and the percentage is 1%.

Ethnicity analysis shows that Malay frequency is 37(37%), Chinese frequency is 19 and the percentage is 19%, Indian frequency is 44 and the percentage is 44% and Others frequency is 0. The subjects taught by the respondents are: Language (frequency is 38 and percentage is 38%), Mathematics (f=36 or 36%), Science subjects (f = 22 or 22%) and Other (f = 4 or percentage 4%). Based on the data obtained, most of the participants in this research are aged between 36-45 years, the majority are female and have 5-10 years of experience.

Discussion & Conclusion

This study is more related to identifying the perceptions in implementing ICT tools in teaching and learning in the classroom among school teachers. Furthermore, it examines the challenges of using ICT tools in teaching and learning in the classroom among school teachers and recognizes the effectiveness of the extent of ICT tools in supporting classroom teaching and learning. Based on the study the findings indicate that average level of the perceptions in implementing ICT tools in teaching and learning in the classroom among school teachers, high level of challenges of using ICT tools in teaching and learning in the classroom among school teachers and recognizing the effectiveness of the extent of ICT tools in supporting teaching and learning in the classroom.

With the advent of Information and Communications Technologies (ICT) in education, teachers form their own beliefs about the role of ICT as a teaching tool, the value of ICT for student learning outcomes and their own personal confidence and competency (Prestridge, 2007). Barriers exist in integrating ICT in teaching and learning (Ertmer, 2005). The barriers are extrinsic to the teacher and include lack of resources, time, access and technical support. Findings of this research suggest that teachers were still giving comment on the barriers in implementing ICT tool at school in teaching and learning.

Results of the Cachia and Ferrari (2010) study showed that teachers do combine different resources in their teaching, as well as utilizing various modes of ICT with almost two-thirds claiming to use technologies (63%) and website (62%). Anyway, it is also evident that textbooks are still considered fundamental in the educational systems. Nearly two thirds of our respondents (64%) always or often follow textbooks in their teaching.

Important technologies for learning such as computers (98%) and educational software (93%) were ranked as the top technologies by the respondents of Cachia and Ferrari's (2010) research. On the other hand, our research showed that the rate of ICT use among teachers in school is average. However, the finding shows that more teachers used computer with teaching software in the classroom to present or demonstrate examples to students. They also like to use the computer to access students' results and keep track of their progress.

Despite the current efforts in ICT integration in schools, many families specifically in rural areas still do not know how to use ICT tools in their daily life. They even did not know how to check their children's results in the existing systems. Not all houses have

computers and Internet facilities to use daily. In this regard, the main challenge is to provide appropriate ICT tools to both urban and rural areas efficiently.

This study will offer priceless information to the school administration as well as to educational policy makers regarding the nature of ICT contribution to the teaching-learning process. Since the attitude and perceptions of the teachers are critical to how effectively an innovation is implemented, it is important to gauge how teachers perceive this innovation and its efficacy as a tool for enhanced teaching and learning. It is also hoped that this study will contribute to the growing knowledge base and 21st century generation regarding the use of ICT in education in Malaysia.

In future studies more focus should be given on management strategies and policies to address the barriers faced by teachers in using ICT tools in teaching and learning. If the barriers faced by teachers can be overcome, it is a step forward to enhance our students' learning outcome. The studies done with the same gender distribution could give more appropriate analysis where by the gender perceptions could be analyzed.

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The rapid growth of wireless networks in advanced networking enhances comfort and security. Ad-hoc wireless networks, including Mobile Ad-hoc Networks (MANET), Vehicular Ad-hoc Networks (VANET). VANET, a subset of MANET, facilitates Vehicle-to-Vehicle (V2V) and Vehicle-to-Roadside (V2R) communications. Its components include On-Board Unit (OBU), Road Side Unit (RSU), and Trusted Authority (TA), with applications in Intelligent Transport System (ITS). VANETs face broadcast storms causing collisions and data redundancy. The proposed research focuses on reviewing existing broadcast algorithms, suggesting a cluster-based protocol to minimize storms, avoid redundant data, reduce transmission delays, and form enhanced clusters. Efficient cluster head selection is crucial. Protocols like Cluster-Based Efficient Broadcasting (CBE-B), Selective Reliable Communication (SRC), and Improved Cluster Head Selection (ICHS) address these issues, outperforming existing solutions.



Gunavathi Ramasamy
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Advanced Networking: VANET

Cluster Based Broadcasting Protocol with Selective
Reliable Communication in VANET

Dr. R. Gunavathi is currently working as an Associate Professor in Christ (Deemed to be University). She has produced 17 research scholars and published more than 80 papers in Scopus, and reputed journals. Ms. R.Shiddharthy, currently working as Assistant Professor, Nallamuthu Gounder Mahalingam College, and published 4 papers in reputed journals.

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Advanced Networking: VANET

**Cluster Based Broadcasting Protocol with
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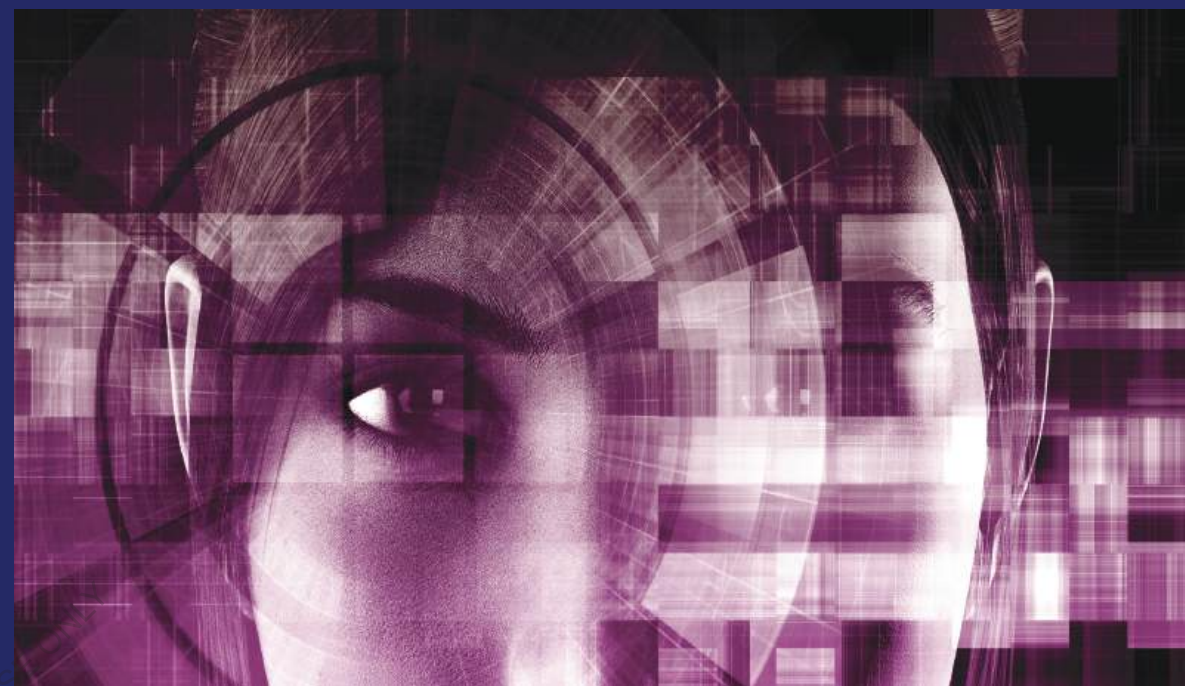
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Plant diseases and pests are important factors determining the yield and quality of plants. Plant diseases and pests identification can be carried out by means of digital image processing. In recent years, deep learning has made breakthroughs in the field of digital image processing, far superior to traditional methods. How to use deep learning technology to study plant diseases and pests identification has become a research issue of great concern to researchers. This book provides a definition of plant diseases and pests detection problem, puts forward a comparison with traditional plant diseases and pests detection methods. According to the difference of network structure, this study outlines the research on plant diseases and pests detection based on deep learning in recent years from three aspects of classification network, detection network and segmentation network, and the advantages and disadvantages of each method are summarized.



Jayapriya P
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Deep Learning with Neural Networks

A practitioner's guide



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WEARABLE BASED IOT SYSTEM FOR ELDERLY FALL DETECTION AND PREVENTION

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ABSTRACT: Falls threaten elderly well-being. This research proposes a wearable-based IoT system for their detection and prevention. The system utilizes multi-sensor units for precise movement tracking, coupled with advanced machine learning algorithms for accurate fall detection, all while maintaining user comfort and energy efficiency [1]. Real-time data transmission via secure IoT protocols ensures immediate fall alerts. Additionally, the system explores preventive measures like automated adjustments and assistance requests, aiming to not only detect falls but prevent them altogether. This comprehensive system has the potential to improve elderly safety, independence, and quality of life, while reducing healthcare costs.

Keywords: IoT, Multi-Sensor Units, Deep Learning Algorithms, CNN.

1. INTRODUCTION

Falls pose a significant threat to elderly individuals, impacting their health, mobility, and independence. Early detection and intervention are paramount in minimizing fall-related consequences. This research delves into a novel wearable-based Internet of Things (IoT) system specifically designed for elderly fall detection and prevention. The system leverages multi-sensor units worn by the elderly, comprising accelerometers, gyroscopes, and other pertinent sensors to meticulously capture movement patterns. Machine learning and data analysis techniques power robust fall detection algorithms, discerning falls from daily activities with exceptional accuracy. Secured IoT protocols enable seamless [2] communication between wearable devices and a central hub, facilitating real-time data transmission and immediate fall alerts.

Furthermore, the system explores preventive measures triggered by fall risk prediction or early fall detection. These measures could include automated environmental adjustments, automated assistance requests, or deployment of assistive devices.

The research aims to design a user-friendly, comfortable, and energy-efficient wearable device, coupled with accurate and efficient fall detection algorithms fueled by advanced machine learning. Integration with a secure and reliable IoT network for real-time data transmission is another key focus. Ultimately, the research seeks to develop a comprehensive system that promotes healthy and independent living for the elderly population by improving fall detection accuracy, reducing false alarms, enhancing safety and independence, lowering healthcare costs, and

contributing to improved quality of life for both the elderly and their caregivers.

2. SENSOR TECHNOLOGY AND DATA ACQUISITION

Accurately detecting falls in the elderly population hinges on the technology embedded within their wearable devices. Sensor selection and data acquisition strategies play a pivotal role in capturing the right information and translating it into timely interventions [3].

A. The Multi-Sensory Toolkit:

Accelerometers, gyroscopes, and barometers form the core sensor team, measuring movement patterns like acceleration, orientation, and altitude changes, crucial for identifying fall events. However, expanding the toolkit with sensors like ECGs, EMGs, and pressure sensors offers richer data, potentially improving accuracy. This comes with trade-offs, though, raising concerns about user privacy and potentially hindering long-term adherence due to comfort and design limitations.

B. Fusion Power:

Combining data from multiple sensors holds immense potential. Imagine fusing accelerometer data with pressure sensor readings from a cane to differentiate a fall from simply sitting down. However, efficiently fusing this data and managing the increased computational complexity remains a challenge.

C. Comfort is Key:

No matter how fancy the sensors, if the device isn't comfortable and unobtrusive, long-term use plummets. Researchers are constantly innovating, designing wearables that are lightweight, discreet, and integrate seamlessly with daily life, ensuring seniors can benefit from this technology without sacrificing comfort or style.

Ultimately, sensor technology and data acquisition in wearable-based IoT systems for elderly fall detection are constantly evolving. The goal is to strike the perfect balance between accuracy, user comfort, and privacy, empowering seniors to live safely and independently through the power of technology.

3. FALL DETECTION ALGORITHMS

Fall detection algorithms are the brains behind wearable-based IoT systems for elderly safety. But these algorithms rely heavily on the quality of data they receive, and that's where wearable technology and data acquisition come into play [4].

Sensing the Fall: Accelerometers, gyroscopes, and barometers are the workhorses, capturing movement patterns like acceleration, orientation changes, and altitude shifts. These provide valuable clues for fall detection algorithms. However, exploring additional sensors like ECGs, EMGs, and pressure sensors can offer even richer data, potentially improving accuracy.

Fusion Frenzy: Combining data from multiple sensors holds immense potential. Imagine an algorithm that fuses accelerometer data with pressure sensor readings from a cane to differentiate a fall from simply sitting down. However, efficiently fusing this data and managing the increased computational complexity remains a challenge.

Personalization Matters: Not all falls are created equal, and neither are the people experiencing them. Adapting algorithms to individual user characteristics and activity patterns is crucial. This means considering factors like age, mobility, and typical daily activities to fine-tune the algorithm's sensitivity and reduce false alarms.

The Edge of Innovation: Edge computing, where processing happens on the wearable device itself, is an exciting possibility. It reduces reliance on central servers, improves response times, and offers potential privacy benefits. However, developing efficient algorithms and managing resources on resource-constrained devices is a challenge [5].

i) Fall Detection Algorithm Development: Data collection: Gather labeled data from real-world scenarios, including fall events and various daily activities. Ensure balanced and diverse representation.

ii) Convolutional Neural Network (CNN):

- **Purpose:** CNNs are primarily designed for image-based tasks, making them suitable for analyzing sensor data from wearable devices (such as accelerometers or gyroscopes) commonly used for fall detection [6].

- **Architecture:**

- CNNs consist of multiple layers, including:
 - **Convolutional layers:** These layers learn spatial hierarchies of features by applying convolutional filters to input data.
 - **Pooling layers:** These layers downsample feature maps to reduce dimensionality.

- **Fully connected layers:** These layers connect to the output layer for classification.

- CNNs automatically learn relevant features from raw sensor data, which is crucial for fall detection.

- **Training:**

- CNNs are trained on labeled datasets containing both fall and non-fall samples.
- The network learns to differentiate between patterns associated with falls (such as rapid changes in acceleration) and normal activities.

- **Inference:**

- During inference, the trained CNN processes real-time sensor data.
- If the network detects patterns indicative of a fall (e.g., sudden acceleration changes), it triggers an alert.

- **Advantages:**

- CNNs can handle complex, high-dimensional data.
- They automatically learn relevant features, reducing the need for manual feature engineering.
- Their hierarchical architecture captures spatial dependencies.

- **Evaluation and testing:**

Evaluate the algorithm's performance using rigorous metrics (e.g., accuracy, sensitivity) on unseen data. Conduct real-world tests with user involvement to assess usability and effectiveness.

4. FALL PREVENTION STRATEGIES:

While detecting falls is crucial, the ultimate goal is preventing them altogether. Here's how wearable-based IoT systems are evolving to incorporate proactive fall prevention strategies:

Predicting the Unpredictable: Machine learning algorithms are being trained to analyze sensor data and personal health information to predict potential falls before they happen.

Smart Homes on Guard: Imagine smart lights automatically illuminating upon detecting unsteady movement at night, or the thermostat adjusting to prevent dizziness from sudden temperature changes. Wearables can trigger adjustments in the surrounding environment to minimize fall risks.

A Helping Hand (or Device): Imagine a system automatically sending an assistance request if a fall is detected or predicted. Or, deploying assistive devices like walking sticks or fall cushions proactively based on individual needs and risk factors.

Guidance in Real-Time: Real-time voice prompts or visual cues on smart glasses can warn individuals of potential hazards or suggest safer alternatives during risky activities.

5. IMPLEMENTING THE ELDERLY FALL DETECTION SYSTEM

Transforming the concept into reality, implementing the wearable-based IoT system demands meticulous planning across hardware and software development, integration, and deployment [8].

Fall detection algorithms take shape, honed for accuracy and minimal false alarms, while prevention strategies like risk prediction, environmental adjustments, and real-time guidance are coded into the system. Secure communication protocols and user-friendly interfaces complete the software backbone. Components converge – wearable, communication systems, and servers – undergoing rigorous testing in simulated scenarios and real-world pilot studies. Security breaches are plugged, ensuring user privacy remains inviolable.

6. CHALLENGES AND FUTURE DIRECTIONS

Collecting labeled fall data can be challenging due to the rarity of actual falls. Class imbalance: Falls occur less frequently than normal activities, leading to imbalanced datasets. Generalization: Ensuring the model generalizes well across different environments and populations. Balancing data collection and analysis with user privacy demands secure data storage, anonymization techniques, and robust user consent models. Fairness, bias, and potential discrimination in algorithms need careful consideration and mitigation strategies. Balancing functionality, cost, and scalability is crucial for wider adoption, especially in resource-constrained settings. Seamless integration with existing healthcare IT infrastructure and data sharing protocols is necessary for effective care management [7].

7. CONCLUSION

Wearable-based IoT systems offer significant potential for improving elderly fall detection and prevention. Ongoing research addresses challenges in sensor technology, algorithm development, in the realm of wearable-based IoT systems for elderly fall detection and prevention, technological advancements have enabled the practical implementation of wearable devices. These devices, equipped with sensors, monitor real-time data and trigger alerts in case of falls. Algorithmic approaches, including Convolutional Neural Networks (CNNs) and Support Vector Machines (SVMs), play a crucial role in accurately identifying falls [8]. Challenges such as class imbalance and generalization are being addressed, and future directions involve personalized risk assessment and collaboration between researchers and healthcare professionals. These systems hold immense potential for enhancing elderly safety and promoting independent living.

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TOWARDS SUSTAINABLE IOT: A COMPREHENSIVE REVIEW ON DATA MINING FOR ENERGY EFFICIENCY

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ABSTRACT

The vast Internet of Things (IoT) data is considered to be of high business value, and data mining algorithms can be applied to the IoT to extract secret information from data. A very large and enormous amount of data is generated or accessed using IoT. The amount of data analysed is increasing as devices are increasingly connected. Enabling smart interactions with users is one of the important aspects of IoT (such as automation of services). In order to make the IoT system smart enough to provide suitable services and environments, data mining plays a crucial role. The ability of devices, applications and services to implement data mining is the most important factor in IoT. When we apply data mining to IoT, IoT-collected data is transformed into serviceable information, and then this data is converted into user-needed knowledge. Green information and communication technology is an emerging field of research and development, and energy-efficient designs for IT systems are a major factor in this area. The accuracy of outcomes with current consumption efficiency and good latency, commonly known as inaccurate or estimated computing, is one of the most sought after solutions. In this regard, some approximation techniques used to achieve energy-efficient data mining or green data mining with the best possible results for a given permissible deviation are used. The majority of businesses currently have data centres to store their data; high-end processing machines and devices are what data centres need. The implementation of green database techniques, however, helps to reduce the amount of energy that data centres consume. Patients and costs are required for implementing data warehouses and data centres. The installation of a data warehouse can be very expensive without proper planning, particularly when it comes to electricity. The idea of reducing energy consumption when analysing data collected by IoT devices and making the world secure is envisaged by Green Data Mining. This paper addressed the techniques used to reduce data centre energy usage, thus moving data from IoT devices to data centres and analysing data using data mining on data centre servers.

Keywords: Green Data Mining, Internet of Things, Energy consumption, Network, Server, Data Center, Smart City.

1. INTRODUCTION

The Internet of Things (IoT) refers to the type of the network which connect anything i.e. physical objects-devices, buildings, vehicles and other items embedded with software, sensors and network connectivity based on stipulated protocols that enables these objects to collect and exchange data. In our daily lives, we have become more reliant on IoT with our wearable tech, appliances, our cars, how we receive health care. Due to Seamless integration of

classical networks with IoT, it enables a great vision that all things can be easily monitored and controlled which results in to voluminous data. So, in order to make IoT more smarter, lots of data analysis is needed for which one of the most solution is data mining [2]. Much research in recent years has focused on data mining in Internet of Things (IoT) which connects physical objects, person to person, person to machine or machine to machine via internet and manages information.

Data mining process refers to the process of semi automatically analyzing large databases for pattern mining which are innovative, legitimate, useful and understandable which is also known as Knowledge Discovery in Databases (KDD) [3]. Data mining or KDD process includes problem formulation, data collection, data cleaning i.e. pre-processing, transformation, choosing mining task/method and result evaluation/visualization. Knowledge discovery is an iterative process. Data mining overlaps with other fields like statistics, machine learning, artificial intelligence, databases but mainly it focuses on automation of handling large heterogeneous data, algorithm and scalability of number of features and instances. The objective of any data mining process is to build an efficient predictive or descriptive model of a large amount of data that not only best fits or explains it, but is also able to generalize to new data [14].

At first in 1999 The Massachusetts Institute of Technology (MIT) put forwarded the concept of IoT. IoT is described as data and things round the clock connected through the Internet. The IoT also views everything as the same, as things. These things includes Smartphones, users, processing units tablets, Bluetooth, ZigBee, data centers (DCs), the Infrared Data Association (IrDA), cellular networks, ultra-wideband (UWB), near field communication (NFC) DCs, Wi-Fi networks, RFID, chips and sensors, vehicles, wristwatches, household equipments means IoT is mixture of factual things and virtual things which are connected anytime and anywhere. The data generated or collected by these devices is huge in volume. This data will be in vast amounts for a system, and immense for a larger systems. To conserve and produce significant business information out of this data, to provide different services to improvement of the business growth and system planning data mining is essential. In this paper,

we have considered the problem of data mining in the perspective of energy efficiency and good latency [12, 16].

2. DATA MINING FUNCTIONALITIES

Data mining functionalities include classification, clustering, association analysis, time series analysis, and outlier analysis.

- Classification is the process of finding a set of models or functions that describe and distinguish data classes or concepts, for the purpose of predicting the class of objects whose class label is unknown.
- Clustering analyzes data objects without consulting a known class model.
- Association analysis is the discovery of association rules displaying attribute-value conditions that frequently occur together in a given set of data.
- Time series analysis comprises methods and techniques for analyzing time series data in order to extract meaningful statistics and other characteristics of the data.
- Outlier analysis describes and models regularities or trends for objects whose behaviour changes over time.

3. DATA MINING APPLICATIONS

Data Mining in e-Commerce. Data mining enables the businesses to understand the patterns hidden inside past purchase transactions, thus helping in planning and launching new marketing campaigns in prompt and cost-effective way. e-commerce is one of the most prospective domains for data mining because data records, including customer data, product data, users' action log data, are plentiful; IT team has enriched data mining skill and return on investment can be measured [2].

Data Mining in Industry. Data mining can highly benefit industries such as retail, banking, and telecommunications; classification and clustering can be applied to this area. One of the key success factors of insurance organizations and banks is the assessment of borrowers' creditworthiness in advance during the credit evaluation process. Credit scoring becomes more and more important and several data mining methods are applied for credit scoring problem.

On the enterprise side IoT offers services like Energy based applications such as operating management, as rigs and wells predictive maintenance, spill accident management, Smart healthcare applications, Smart retails, Smart

agriculture applications, Smart banking applications, Smart building and Smart construction, Smart education, Smart insurance, Smart logistics and Smart manufacturing applications [4, 6].

Data Mining in Health Care. In health care, data mining is becoming increasingly popular, if not increasingly essential. Heterogeneous medical data have been generated in various health care organizations, including payers, medicine providers, pharmaceuticals information, prescription information, doctor's notes, or clinical records produced day by day. These quantitative data can be used to do clinical text mining, predictive modelling, survival analysis, patient similarity analysis, and clustering, to improve care treatment and reduce waste. In health care area, association analysis, clustering, and outlier analysis can be applied.

Data Mining in City Governance. In public service area, data mining can be used to discover public needs and improve service performance, decision making with automated systems to decrease risks, classification, clustering, and time series analysis which can be developed to solve this area problem.

Smart Cities provide the opportunity to integrate the physical infrastructures of the city such as the transportation sector, utilities, land, and city services [18]. The smart city model typically integrates the economic, social and environmental components of the city in a way that sustainably maximizes the efficiency of the city's primary systems.

Traffic Control - IoT devices or things such as smart phones, vehicle sensors, GPS are employed all over the city can served as data points such as time of traveling, incidence of heavy vehicles, accident prone zones and construction areas. Awareness of the causes behind traffic obstruction in the selected area is known with the help of these data points. To solve the traffic blockage problem we can use classification algorithm. The selected areas can be classified based upon the higher, lower or medium chances of traffic jam incidents in a specified location.

Suburban Electronic Meters - Traditional meters are replacing with smart electronic meters with a rapid pace, since smart meters can offer detailed description about real time energy consumption information in a digital way via e-mail or smart phones.

Pipeline Leak Detection – For municipal corporations, maintenance of water pipe leakages is burdensome more precisely with old pipes. Using outlier detection algorithm along with use of sensors, sound of water movement can be analyzed to spot leaks.

4. KEY ISSUES IN DATA MINING OF IOT

There are various issues involved in data mining in Internet of Things:

- Efficiency in data gathering - Energy efficiency, scalability and fault tolerance should be taken into consideration when data is to be collected from distributed sensor networks
- Data abstraction and aggregation - Managing massive data generated from IoT is a challenging task. Efficient mechanism should be adopted for data reduplication.
- Distributed data processing and mining - Due to nodes' constraints, paradigm shift is needed for prior level pre-processing of the data at each distributed nodes and an aggregated information is to be sent to sink node in order to optimize energy usage instead of sending all distributed data to server for processing [17].
- Data mining towards the next age of Internet - In an upcoming generations of Internet, latest trends and technologies like ubiquitous computing, semantic web, IPv6 technologies are going to be integrated with IoT. This will give rise to challenges for Data Mining due to heterogeneous unstructured data [1].

5. GREEN DATA MINING

Currently the majority of companies have data centers for storing their information; high-end server machines and devices are what data centers required [7]. There are two factors will be affected, a lot of power and deploying will be consumed and a lot of money will be consumed as well. However, applying green database techniques in Regional Health Authority (RHA) will helps to reduce the amount of energy that be consumed by data centers. Green database developing method is different with the developing method of normal database. The concepts of green database are derived from the green computing idea or green IT [11]. Green computing is a set of approaches that be designed to make data centers more efficient through reducing the consuming of power and cooling required. When it comes to compares the difference between the daily power consumption of typical data centers with the monthly power consumption of thousands homes, it will be noticed they are equivalent. The size of data center and the number of systems in data centers are the factors that will be used to identify the number of homes.

Green database is a type of database technique that used to manage power consumptions of data centers. The

implementation of data warehouses and data centers requires patients and costs. Without a careful planning implementing a data warehouse can be very costly; especially when it comes to electricity. RHA has to look at the available possibilities to implementing a cost effective environmental friendly solution. Green database helps to save energy and save the environment [8]. The green includes the infrastructure, the optimization techniques and the virtualization solutions.

6. IOT WITH DATA MINING ARCHITECTURE

IoT gathers data from different places, again that data may contain required data for IoT aside [5]. Data collected by IoT is converted into serviceable information when we apply data mining to IoT, and then this information is converted into knowledge needed by user. The method of extracting patterns from the output of the data processing step and then incorporating these patterns into the decision making process, which oversees the transformation of input into useful knowledge, all these steps are supervised by data mining process.

7. ENERGY CONSUMPTION IN CLOUD CENTER/DATA CENTER

Data centers are cost-effective infrastructures for storing large volumes of data and hosting large-scale service applications [9]. Data centers contain hundreds of thousands of servers, interconnected via switches, routers and high-speed links. Today, large companies such as Amazon, Google, Face book, and Yahoo! routinely use data centers for storage, web search, and large-scale computations. With the rise of cloud computing, service hosting in data centers has become a multi-billion dollar business that plays an important role in the future information Technology trade [10]. However, a large-scale computing infrastructure consumes huge amounts of electrical power leading to terribly high operational costs which will exceed the cost of the infrastructure in a very few years. In a datacenter, power consumption is mainly due to servers, networking devices, and cooling systems. There are two main approaches for reducing the energy consumption of datacenters: (a) shutting down devices or (b) scaling down performance. The former, commonly referred as Dynamic Power Management (DPM), results in the greatest savings, since the average workload often remains below 30% of its capacity in cloud computing systems.

Dynamic Voltage and Frequency Scaling (DVFS), a voltage reduction technique for battery-operated systems scaling, was introduced in the 90s, which dramatically reduces power consumption in large digital systems by adapting both voltage and frequency of the system with reference to dynamic workloads. Equipped with DVFS, a regulated system can adjust the supply voltage of a digital

circuit at the functional boundary for the speed requirements, the temperature, and the technology parameters. DVFS describes the two power saving techniques (dynamic frequency scaling and dynamic voltage scaling) used to save power in embedded systems including cell phones. The servers left idle are put into sleep mode (DNS scheme) Dynamic Shutdown Scheme. According to Open Compute project report, 93% of the energy consumption in a data centre depends upon efficient utilization of computing resources at data centers [15].

8. ENERGY SAVING TECHNIQUES FOR SERVERS

The most important energy saving approaches for servers are;

- *Virtualization* - Virtualization is a prominent technique for reducing energy consumption in servers. It refers to making more than one Virtual Machine (VM) on a server. Using this technique decreases the number of hardware in use, improves the utilization of resources and reduces hardware and operating expenditure. Server virtualization also allows consolidation of server workloads. It may achieve energy saving by decreasing the amount of active and functioning servers with regards to Quality of Service requirements.
- *Dynamic Power Management*- Another important technology to decrease energy consumption is Dynamic Power Management. This technique is based on powering down the computing servers to save more energy. Putting inactive servers on the sleeping mode is the other way to reduce energy consumption in this technology. Moreover, joining virtualization technique with dynamic power management is another solution to save more energy for servers. This energy saving approach consolidates virtual machines on a subset of tangible servers and turned idle servers off or put them into sleep mode at the low utilization times. Then the servers which are powered off or putted into sleep mode are powered on when load increases and virtual machines from overloaded servers are moved to active servers that are ready to use with accessible resources.
- *The Dynamic Voltage/Frequency Scaling* - This approach sets the CPU power due to the presented load. By using this technique the power consumption will reduced, once CPU load is low.

9. ENERGY SAVING SOLUTIONS FOR NETWORK

Network infrastructure is the next main energy consumer in data centers. Around 30% of the entire energy usage which utilized for computation is consumed by data center network. Network in Data Centers includes switches and links. The utilization of a link is not directly balanced with its power consumption. Power consumption depends on capacity of the link instead of its utilization [13]. Energy usage of switches relies on a marketer and it is directed with the number of line cards and ports involved. It should be considered that power usage of both links and switches are important for reducing power consumption by network. The four following solutions are existed for saving energy in data center networks. Such as;

Adaptive Link - Adaptive Link Rate technique is extensively considered on wired networks. However, it has not been used on data center networks yet. This approach is based on the idea that energy usage of a link may be decreased its data rate, while traffic load of network links are low in most situations. In such cases, Adaptive Link Rate decreases link energy usage by dynamically setting link data rate to its utilization, while sleep mode method decreases energy usage through switching off network resources or placing them to sleep mode. Moreover, other active network resources should meet QoS requirements.

Virtual Network Embedding - Virtual network embedding is the next approach which is useful for reducing energy consumption of network. VNE is mostly useful while the network traffic is low. The aims of network virtualization is to use embedding algorithms to assign virtual network resources on a fewer number of physical infrastructure with an optimal approach.

Sleep Mode - The idle network resources could be switched off or put into sleep mode.

Green Routing - Recently, Energy aware routing or green routing for decreasing energy usage in data center network is studied. The main idea of Energy aware routing is to deliver routing service to less number of network resources to reduce energy usage, while sustaining network performance.

10. COMBINED ENERGY SAVING SOLUTIONS FOR SERVERS AND NETWORK

Recently, mixed approaches for saving energy in data centers are proposed extensively. 16 % of power usage may be saved by effecting network energy reducing approaches alone. It is worth mentioning that by combining server and network energy aware methods, energy could be save up 75 % of energy usage in data centers. By combining energy saving approach, network traffic consolidation and server workload consolidation are cooperatively used. Three

techniques for saving energy in data centers; such as Link state adaptation (LSA), Server load consolidation (NTC), Network traffic consolidation (SLC).

In LSA the power controller adapts to the state of links according to the information about traffic on each link. NTC decreases energy usage considerably by removing all redundancy in the network. This approach consolidates traffic on few numbers of links and switches, and idle links and switches are deactivated. SLC is a way to consolidate network traffic in a fewer links and switches to allow the controller to turn off unused resources. To achieve this goal, SLC transfers jobs to few numbers of servers to turn off unused servers. The results display that 16 % of energy could be stored by implementing only a link state adaptation approach, 75 % of energy could be stored by implementing both server load consolidation and network traffic consolidation together.

11. CONCLUSION

The idea of the Internet of Things derives from the need for all computers, instruments, and sensors in the world to be controlled, automated, and explored. Data mining technologies are combined with IoT technologies for decision-making support and device optimization in order to make wise decisions for both people and items in the IoT. Data mining includes the discovery of novel, fascinating and potentially useful data patterns and the application of algorithms to secret knowledge extraction. IoT produces huge quantities of useful heterogeneous data. Data mining systems are built in order to turn this data into information. The main purpose of the paper is to promote greenness, energy conservation and performance improvement in data mining tasks. An efficient and successful use of cloud computing tools can help to achieve Green Data Mining. The related research ideas concentrate primarily on energy-saving data centre approaches. More energy consumption is also minimised by choosing the best web services. However, due to the growing demand for data centre bandwidth and network access, data centre network and data centre server and network energy usage will rise rapidly in the future. This paper covered most of the technologies used in data centre data mining for energy saving during data mining.

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DENCLUE ALGORITHM FOR CLUSTERING HD DATA

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ABSTRACT

Clustering is a data mining task devoted to the automatic grouping of data, based on mutual similarity. Clustering in high-dimensional spaces is a recurrent problem in many domains. It affects time complexity, space complexity, Data Size Adaptability and Precision Value of clustering methods. High-dimensional data usually live in different low dimensional subspaces hidden in the original space. As high-dimensional objects appear almost alike, new approaches for clustering are required. Consequently, recent research has focused on developing techniques and clustering algorithms specifically for high-dimensional data. In this research work, Denclue is chosen to analyse the compatibility of clustering high dimensional data. Denclue is a density based clustering technique. In density based clustering, the objects are classified based on their regions of density. These algorithms have the ability to discover classes of arbitrary shapes and omit noisy objects. To efficiently cluster the high dimensional nonlinear data, a new modified Denclue is proposed by incorporating the mathematics methods such as meta-heuristics, curse of dimensionality, sub spaces, data routing, correlation, normal distribution and darboxivariate. The advantages of this proposed algorithm are it works on erroneous data, noisy data, provides better Clustering Pace, Competence Rate, Data Size Adaptability, Precision Value and Prognostic Reliability.

Keywords: Clustering, High dimensional data, Denclue, Mathematical methods.

INTRODUCTION

The main aspiration of clustering is to find high quality clusters within reasonable amount of time. Clustering in data mining is the process of discovering groups. Each group is a dataset such that the similarity among the data inside the group is maximized and the similarity in outside group is minimized. The discovered clusters are then used to explain the characteristics of the data distribution. Today there is tremendous necessity in clustering the high dimensional data. For example, many business applications, clustering can be used to describe different customer groups and allows offering customized solutions. Clustering can be used to predict customer buying patterns

based on their profiles to which cluster they belong. Real-world datasets have very high dimensional feature space and is highly sparse. It becomes difficult to generate meaningful results from such redundant and sparse data through traditional clustering algorithm. This is due to the fact that when dimensionality increases, data becomes sparse since data points are located at different dimensional subspaces. Thus it requires greater computational power to compute clusters as distance measure to find similarities between data objects become meaningless and often noise becomes prevalent and masks the real cluster to be discovered.

The motivation of this research work is to enhance the high dimensional nonlinear data clustering method by proposing new algorithm called M-Denclue Algorithm. Mathematical methods such as meta heuristics, curse of dimensionality, data routing, correlation, normal distribution and Darboux variate are added with existing Denclue algorithms in order to efficiently cluster the high dimensional non linear data

Literature Survey

Alexander Hinneburg and Daniel A. Keim introduced a new algorithm to clustering in large multimedia databases called DENCLUE (DENsity-based CLUstEring). The basic idea of our new approach is to model the overall point density analytically as the sum of influence functions of the data points. Clusters can then be identified by determining density-attractors and clusters of arbitrary shape can be easily described by a simple equation based on the overall density function. The advantages of new approach are (1) it has a firm mathematical basis, (2) it has good clustering properties in data sets with large amounts of noise, (3) it allows a compact mathematical description of arbitrarily shaped clusters in high-dimensional data sets and (4) it is significantly faster than existing algorithms. To demonstrate the effectiveness and Competence Rate of DENCLUE, they perform a series of experiments on a number of different data sets from CAD and molecular biology. A comparison with DBSCAN shows the superiority of the new approach.

PoojaBatraNagpal and PriyankaAhlawat Mann presents a comparative study of three Density based Clustering Algorithms that are DENCLUE, DBCLASD and DBSCAN. Six parameters are considered for their comparison. Result is supported by firm experimental evaluation. This analysis helps in finding the appropriate density based clustering algorithm in variant situations.

AminehAmini, HadiSaboochi et al., summarized the main density-based clustering algorithms on data streams, discuss their

uniqueness and limitations, but also explain how they address the challenges in clustering data streams. Moreover, they investigated the evaluation metrics used in validating cluster quality and measuring algorithms' performance. It is hoped that this survey will serve as a stepping stone for researchers studying data streams clustering, particularly density-based algorithms.

Denclue algorithm

DENCLUE (DENsity-based CLUstEring) is a clustering method based on a set of density distribution functions [1] The method is built on the following ideas: (1) the influence of each data point can be formally modelled using a mathematical function, called an influence function, which describes the impact of a data point within its neighbourhood; (2) the overall density of the data space can be modelled analytically as the sum of the influence function applied to all data points; and (3) clusters can then be determined mathematically by identifying density attractors, where density attractors are local maxima of the overall density function.

DENCLUE (D, h, ξ , ϵ):

$A \leftarrow \emptyset$

foreach $x \in D$ do // find density attractors

$x^* \leftarrow \text{FINDATTRACTOR}(x, D, h, \epsilon)$

if $f(x^*) \geq \xi$ then

$A \leftarrow A \cup \{x^*\}$

$R(x^*) \leftarrow R(x^*) \cup \{x\}$

$C \leftarrow \{\text{maximal } C \subseteq A \mid x_i, x_j \in C, x_i \text{ and } x_j \text{ are density reachable}\}$

foreach $C \in C$ do // density- based clusters

foreach $x^* \in C$ do $C \leftarrow C \cup R(x^*)$

return C

FINDATTRACTOR(x, D, h, ϵ):

$t \leftarrow 0$

$x_t \leftarrow x$

repeat

$$\frac{\sum_{i=1}^n k\left(\frac{x_t - x_i}{h}\right) - x_t \sum_{i=1}^n k\left(\frac{x_t - x_i}{h}\right) - x_t}{\sum_{i=1}^n k\left(\frac{x_t - x_i}{h}\right) - \sum_{i=1}^n k\left(\frac{x_t - x_i}{h}\right)}$$

$x_{t+1} \leftarrow$

$t \leftarrow t+1$

until $\|x_t - x_{t-1}\| \leq \epsilon$

return x_t

But the drawbacks of this algorithm are; it is less sensitive to outliers. It does not work well for high dimensional data, because of the curse of dimensionality phenomenon. The density parameter and the noise threshold need to be selected carefully as it significantly affects the quality of results.

M-Denclue algorithm

M-DENCLUE works on two stages as pre-processing stage and clustering stage. In pre-processing step, it creates a grid for the data by dividing the minimal bounding hyper-rectangle into d-dimensional hyper-rectangles with edge length 2σ . In the clustering stage, M-DENCLUE associates an “influence function” with each data point and the overall density of the dataset is modelled as the sum of influence functions associated with each point. The resulting general density function will have local peaks, i.e., local density maxima, and these local peaks can be used to define clusters. If two local peaks can be connected to each other through a set of data points, and the density of these connecting points is also greater than a minimum density threshold ξ , then the clusters associated with these peaks are merged forming the clusters of arbitrary shape and size.

M-DENCLUE (D, h, ξ, ϵ):

$A \leftarrow \emptyset$

foreach $x \in D$ do // find density attractors
 $x^* \leftarrow \text{FINDATTRACTOR}(x, D, h, \epsilon)$
 if $f(x^*) \geq \xi$ then

$A \leftarrow A \cup \{x^*\}$

$R(x^*) \leftarrow R(x^*) \cup \{x\}$

$C \leftarrow \{\text{maximal } C \subseteq A \mid x_i^*, x_j^* \in C, x_i^* \text{ and } x_j^* \text{ are density reachable}\}$

foreach $C \in C$ do // density- based clusters
 foreach $x^* \in C$ do $C \leftarrow C \cup R(x^*)$

return C

FINDATTRACTOR(x, D, h, ϵ):

$t \leftarrow 0$

$x_t \leftarrow x$

repeat

$$x_{t+1} \leftarrow \frac{\sum_{i=1}^n k\left(\frac{x_t - x_i}{h}\right) - x_t \sum_{i=1}^n k\left(\frac{x_t - x_i}{h}\right)}{\sum_{i=1}^n k\left(\frac{x_t - x_i}{h}\right)}$$

until $\|x_t - x_{t-1}\| \leq \epsilon$

return x_t

The performance of M-DENCLUE is good compared with DENCLUE algorithm. It works well on high dimensionality increase or if noise is present.

Working principle of M-Denclue algorithm

Density based algorithms find the cluster according to the regions which grow with high density. These algorithms are known as one-scan algorithms. Basically, there are two approaches that may be used in density-based methods. The first approach, called the density-based connectivity clustering, pins density to a training data point. The algorithms that represent this behaviour include DBSCAN and OPTICS. The second approach pins density to a point in the attribute space and is called Density Functions. This behaviour is illustrated by the algorithm M-DENCLUE.

M-DENCLUE uses two main concepts i.e. influence and density functions. Influence of each data point can be modelled as mathematical function. The resulting function is called Influence Function. Influence function illustrates the impact of data point within its neighbourhood. Second factor is Density function which is sum of influence of all data points. M-DENCLUE defines two types of clusters i.e. centre defined and multi centre defined clusters. $y \in F$ is an influence function of the data objects. Which is defined in terms of a basic influence function F , $F(x) = F(x, y)$.

The density function may be defined as the sum of the influence functions of all data points. M-DENCLUE is also used to generalize other clustering methods like Density based clustering; partition based clustering, hierarchical clustering. DBSCAN is an example of density based clustering and square wave influence function is used. Multicenter defined clusters here use two parameter $\sigma = \text{Eps}$, $\varepsilon = \text{MinPts}$. In partition based clustering example of k-means clustering is taken where Gaussian Influence function is explained. Here in center defined clusters $\varepsilon = 0$ is taken and σ is calculated.

M-DENCLUE is considered as a special case of the Kernel Density Estimation. The Kernel Density Estimation is a non-parametric estimation technique, which aimed to find dense regions points. The authors of M-DENCLUE developed this algorithm to classify large multimedia databases, because this type of database contains large amounts of noise, and requires clustering high-dimensional feature vectors. Principally, M-DENCLUE operates through two stages, the pre-clustering step and the clustering step. The first step is for constructing a map of the database. This map is used to speed the calculation of the density function. As for the second step, it allows identifying clusters from highly populated cubes (the cubes of which the number of points exceeds a threshold ξ determined in parameters), and their neighbouring populated cubes. M-DENCLUE is based on the calculation of the influence of points between them. The total sum of these influence functions represents the density function. There exist many influence functions, based on the distance between two points x and y ; but we will focus in this work on the Gaussian function. The equation (5.1), shows the influence function between two points x and y .

$$f_{\text{Gauss}}(x, y) = \frac{1}{\exp\left(-\frac{d(x, y)^2}{2\sigma^2}\right)}$$

where $d(x, y)$ is an euclidean distance between x and y , and σ represents the radius of the neighbourhood containing x . Equation (5.1), represents the density function.

$$f_D(x) = \sum_{i=1}^N f_{\text{Gauss}}(x, x_i)$$

$$f_D(x) = \sum_{i=1}^N f_{\text{Gauss}}(x, x_i) \quad 5.2$$

where D represents the set of points on the database, and N its cardinal. To determine the clusters, M-DENCLUE calculate the density attractor for each point in the database. This attractor is considered as a local maximum of the density function. This maximum is found by the Hill Climbing algorithm, which is based on gradient ascent approach as shown in equation (5.3).

$$\begin{aligned} x^0, x^{i+1} &= x^i + \delta \frac{\nabla f_{\text{Gauss}}^D(x^i)}{\|\nabla f_{\text{Gauss}}^D(x^i)\|} \\ x^0, x^{i+1} &= x^i + \delta \frac{\nabla f_{\text{Gauss}}^D(x^i)}{\|\nabla f_{\text{Gauss}}^D(x^i)\|} \end{aligned} \quad 5.3$$

The calculation ends when $f^D(x^k) < f^D(x^{k+1})$ with

$x^* = x^k$ as a density attractor. The points forming a path with the density attractor are called attracted points. Clusters are made by taking into account the density attractors and its attracted points. The strength of this algorithm resides in the choice of the structure with which the data are presented. A hyper-rectangle is constituted by hypercubes. Each hyper-cube is represented by the dimension of the feature vector points (i.e., the number of criteria) and by a key. This structure allows to M-DENCLUE an easy manipulation for the data, by using the cubes keys, and considering only populated cubes.

Experimental Results

The dataset used for this research is the DNA microarray Data Set. The experimental results have been given for clustering

pace, competence rate, data size availability, precision value, knowledge score and Prognostic Reliability.

6.1 Clustering Pace

Clustering Pace directly attributes to the Ratio of the nodes indicated in the cluster sampling, which is measured using Piece-wise Independence Assumption equation, which states as follows: If an entity of the class label assumed to be independent of E, then the Clustering Pace factor for any designated node n is calculated, for any Child node, where a ranges from 0 to T (sample size) and a is the attributed value of the corresponding nodes.

$$CP = E \quad (6.1)$$

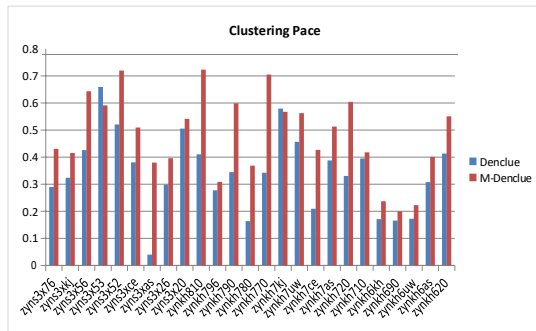


Fig: 6.1 Clustering Pace

Graph indicated in Fig 6.1 shows various levels of Clustering Pace on DNA Microarray data set influenced over Denclue and M-Denclue Algorithm. The graph reveals that the M-Denclue Algorithm performs very much better than Denclue Algorithm. It is also indicated that Clique algorithm has a very low performance. The average Clustering Pace inference over the tested algorithms varies in the ratio 0.06:0.36, for a random varied interval data sample range of zyns3x76 to zyns3x120.

6.2 Competence Rate

$Pr[X > \alpha] > E[X]/\alpha$. Let $\gamma = Pr[X > \alpha]$. since $X > 0$, it is required to make sure the expected value of X does not get too large. So, let the instances of X from the Competence Rate of

its values which are less than $E[X]/\alpha$ be as small as possible, namely 0. Then it can still reach a contradiction:

$$E[X] \geq (1-\gamma)0 + (\gamma)\alpha = \gamma\alpha > \frac{E[X]}{\alpha} \alpha = E[X]. \quad (6.2)$$

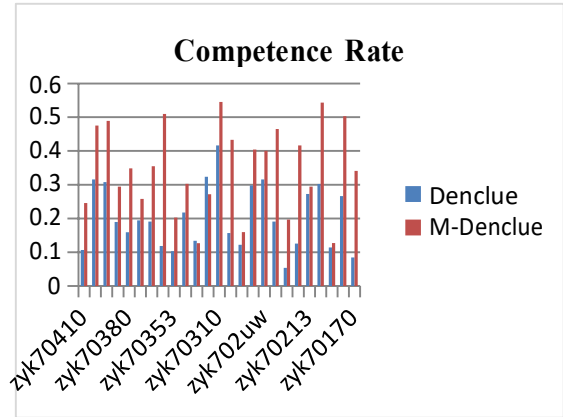


Fig: 6.2 Competence Rate

Graph indicated in Fig 6.2 shows various levels of Competence Rate on DNA Microarray data set influenced over Denclue Algorithm and M-Denclue Algorithm. The average Competence Rate inference over the tested algorithms varies in the ratio 0.16:0.24, for a random varied interval data sample range of zyk70410 to zyk70170.

6.3 Data Size Adaptability

Upper Bound for the Success Data Size Adaptability based on Chernoff techniques and the Binomial Theorem, the upper bound for $S(I)$ can be computed for any $x-1$.

$$S(I) \leq \sum_{j=1}^b \binom{b}{j} [xP(I)]^j [1-P(I)]^{b-j} = x [1+(x-1)P(I)]^b \quad (6.3)$$

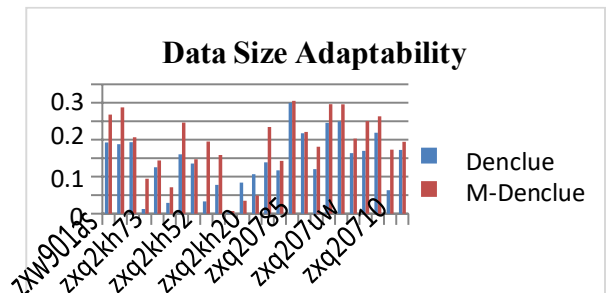


fig:6.3 Data Size Adaptability

Graph indicated in Fig 6.3 shows various levels of Data Size Adaptability on DNA Microarray data set influenced over Denclue Algorithm and M-Denclue Algorithm. The graph reveals that the M-Denclue Algorithm performs very much better than Denclue Algorithm. The average Data Size Adaptability inference over the tested

algorithms varies in the ratio 0.11:0.16, for a random varied interval data sample range of zxw901as to zxq20710.

Precision Value

The Propensity Score is calculated based on

the accuracy of a classifier that is the probability of correctly predicting the class of an unlabelled instance and it can be estimated in several ways. Propensity Score measures for binary classification can be described in terms of four values:

- TP or true positives, the number of correctly classified data.
- TN or true negatives, the number of correctly classified misclassified data.
- FP or false positives, the number of controls classified as data.
- FN or false negatives, the number of patients classified as misclassified data

The sum of TP, TN, FP and FN equals N , the number of instances to classify. These values can be arranged in a 2×2 matrix called contingency matrix, where we have the actual classes P and C on the rows, and the predicted

classes $\tilde{P}$ and $\tilde{C}$ on the columns. The classifier sensitivity (also known as recall) is defined as the proportion of true positives on the total number of positive instances. The classifier specificity (also referred to as precision) is defined as the proportion of true positives on the total number of instances identified as positive. A low sensitivity corresponds to a high number of false negatives, while a low specificity indicates the presence of many false positives and high rates of false negative or

false positive predictions might have different implications. To estimate accuracy is to compute the percentage of correctly classified data (positive instances): which is complemented by the percentage of correctly classified misclassified data (negative instances): Taking into account all the correctly classified instances, accuracy can be computed as:

$$Sensitivity = \frac{TP}{TP + PN} \quad (6.4)$$

$$Specificity = \frac{TN}{TN + FP} \quad (6.5)$$

$$PS_{neg} = \frac{TN}{TN + FP} \quad (6.6)$$

$$PS_{pos} = 100 \cdot \frac{TP}{TP + FN} \quad (6.7)$$

$$PS = 100 \cdot \frac{TP + TN}{TP + TN + FP + FN} \quad (6.8)$$

Another option is to average PS_{pos} and PS_{neg} to obtain the average prediction score on both classes, as follows:

$$PS_{avg} = \frac{PS_{pos} + PS_{neg}}{2} \quad (6.9)$$

F-measure (or F-score or F_1 -score) has been introduced to balance between sensitivity and specificity. It is defined as the harmonic mean of the two scores, multiplied by 2 to obtain a score of 1 when both sensitivity and specificity equal 1. When working with more than two classes, say M , the resulting contingency matrix

$$X = \{x_{ij}\} \text{ is } M \times M \text{ matrix}$$

where each entry x_{ij} is the number of instances belonging to class i that have been assigned to class j, for $i, j = 1, \dots, M$. The sensitivity for class i can then be computed as:

$$Sensitivity_i = 100 \cdot \frac{x_{ii}}{n_i} \quad \text{where } n_i \text{ is the}$$

number of instances in class i. Similarly, the specificity for class i is : $Specificity_i = 100 \cdot \frac{x_{ii}}{P_i}$

predicted to be in class i. The percentage of all correct predictions of Propensity Score corresponds to:

$$Propensity\ Score = 100. \left(\frac{\sum x_{ii} + \sum x_{ij}}{\sum x_{ij}} \right) \quad (6.10)$$

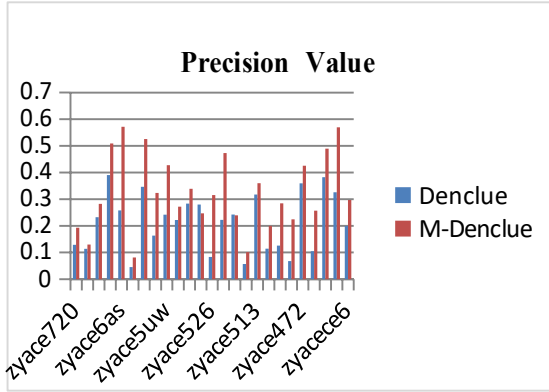


Fig: 6.4 Precision Value

Graph indicated in Fig 6.4 shows various levels of Precision Value on DNA Microarray data set influenced over Denclue Algorithm and M-Denclue Algorithm. The graph reveals that the M-Denclue Algorithm performs very much better than Denclue Algorithm. The average Precision Value inference over the tested algorithms varies in the ratio 0.15:0.17, for a random varied interval data sample range of zyace720 to zyacece6.

Knowledge Score

The knowledge score is calculated by using following formula;

$$P(c|X) = P(x_1|c) * P(x_2|c) * \dots * P(x_n|c) * P(c) \quad (6.11)$$

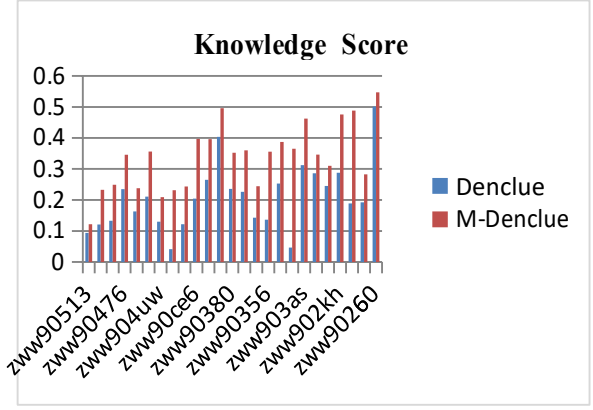


Fig: 6.5 Knowledge Score

Graph indicated in Fig 6.5 shows various levels of knowledge score on DNA Microarray data set influenced over Denclue Algorithm and M-Denclue Algorithm. The graph reveals that the M-Denclue Algorithm performs very much better than Denclue Algorithm. The average Knowledge Score over the tested algorithms varies in the ratio 0.13:0.26, for a random varied interval data sample range of zww90513 to zww90260.

Prognostic Reliability

Prognostic Reliability is the ratio between the harmonic mean of precision and recall vs geometric mean of precision and recall, that is, the ratio between F Score and G Score. Prognostic Reliability is the Ratio of F-Score and G-Score which is

$$PR = 2. \frac{\left(\left(\frac{TP}{(TP + FP)} \right) \cdot \left(\frac{TP}{(TP + FN)} \right) \right)^{\frac{3}{2}}}{\left(\frac{TP}{(TP + FP)} \right) \cdot \left(\frac{TP}{(TP + FN)} \right)} \quad (6.13)$$

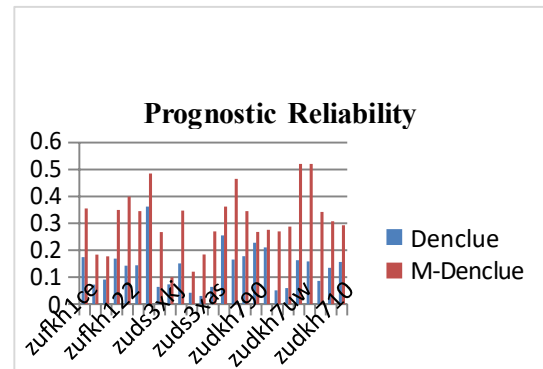


Fig:6.6 Prognostic Reliability

Graph indicated in Fig 6.6 shows various levels of Prognostic Reliability on DNA Microarray data set influenced over Denclue Algorithm and M-Denclue Algorithm. The graph reveals that the M-Denclue Algorithm performs very much better than Denclue Algorithm. The average Prognostic Reliability inference over the tested algorithms varies in the ratio 0.10:0.20, for a random varied interval data sample range of zufkhlce to zudkh710.

Conclusion

Every day, a large volume of data is generated by multiple sources, social networks, mobile devices, etc. This variety of data sources produce an heterogeneous data, which are engendered in high frequency. One of the techniques allowing to a better use and exploit this kind of complex data is clustering. Finding a compromise between performance and speed response time present a major challenge to classify this monstrous data. For this purpose, an efficient algorithm is proposed which is an improved version of DENCLUE, called M-DENCLUE.

The proposed **M-DENCLU** algorithm works on two phases. In first phase, the algorithm performs pre-processing work on high-dimensional dataset. Then the output of this first phase is taken as an input for second phase. So in second phase the proposed M-DENCLU algorithm performs clustering process and provides result. The advantages of this proposed algorithm are it works on erroneous data, noisy data, gives better knowledge score, Clustering Pace, Competence Rate, Data Size Adaptability, Precision Value and Prognostic Reliability.

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BRAIN TUMOR DETECTION BASED ON MACHINE LEARNING ALGORITHMS USING MRI IMAGE

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ABSTRACT

Brain tumors are abnormal cell aggregations within brain tissues, making diagnosis difficult due to factors like synaptic structure, size, and shape. Machine learning algorithms aid in detecting brain cancers using imaging techniques like magnetic resonance imaging (MRI). MRI uses radio frequency waves to excite target tissue and create an internal image. Convolutional Neural Networks (CNN) are used as an image compression technique to improve the quality of MRI images. This paper aims to create a model based on an image classifier to detect cancer in brain MRI pictures, using a new Deep Convolutional Neural Network architecture and a three-step preprocessing method. This approach can effectively diagnose glioma, meningioma, and pituitary tumors.

Keywords: Brain Tumors, MRI Images, Deep Convolutional Neural Network (DCNN).

I. INTRODUCTION

The brain, a complex organ, is responsible for various body functions such as thinking, speech, memory, and movement. It receives, processes, and interprets information and is composed of the Cerebrum, Cerebellum, and Brain stem [1]. A brain tumor is a growth of abnormal cells within the brain, classified into primary and metastatic types. They can be further categorized into glioma, meningioma, and pituitary tumors. Glioma tumors typically occur in the brain and spinal cord, particularly near the optic nerve, brain stem, and cerebellum. Meningioma tumors occur in the meninges layer of the brain, starting in the brain and spinal cord. Pituitary tumors, located behind the nose, are abnormal growths in the pituitary gland near the brain. Most pituitary tumors are not

cancerous and do not spread to other parts of the body [2].

Brain imaging techniques, including CT scans, PET, and MRI, are utilized by doctors to examine brain diseases, damage, and severe mental illness, aiding in the analysis of patients' mental health. Computed Tomography (CT) is used to examine patients with internal damage from accidents or traumas. Positron Emission Tomography (PET) is used to check for disorders in cases like cancer, heart disease, and medical research. Magnetic Resonance Imaging (MRI) provides better contrast in soft tissue images and can differentiate between white and gray matter, aiding in tumor diagnosis [3].

II. METHODOLOGY

MRI brain images are processed using a median filter, analyzing brain tissue through morphological segmentation and tumor extraction techniques. This method provides

accurate tumor images, aiding in detection, determination, identification, and classification of brain tumors in MR images. MRI images are processed using Jupyter Notebook to classify tumor types, including Glioma, Meningioma, and Pituitary tumors. The Sartaj dataset, divided into training and testing subfolders, contains 826 MRI images for glioma, 247 for meningioma, 827 for pituitary, and 328 for no tumor. The testing folder contains 101 MRI images for glioma, 128 for meningioma, 91 for pituitary, and 105 for no tumor. A Convolutional Neural Network (CNN) model is used for image recognition and classification, offering a high level of accuracy compared to other models.

Brain tumor types:

Tumors in the human brain are caused by an increase in cell numbers without a decrease in neuron deaths, and can significantly impact the body and lead to health impairment. Early detection is crucial for all brain tumors, and MRI is a valuable tool for early detection. MRI scans consist of axial, coronal, and sagittal views, and can be run in three separate ways. The three-dimensional (3D) phase MRI scan can be run in two sequences, T1-weighted and T2-weighted, which help identify brain tumors that have shifted to the cerebral spinal fluid spaces. Tumors are usually found in the brain and pituitary gland, with glioma being a common disease affecting both the brain and spinal cord. Gliomas originate in the glial help cells of the brain and can shape itself in the dura membrane. They make up 15-20% of brain tumors in adults. Pituitary tumors grow in the pituitary gland, which regulates hormonal balance and regulates other glands, including the menstrual cycle. In conclusion, early detection of brain tumors is vital for improving treatment and preventing further health complications. MRI scans can be used in three separate ways, with T1-weighted MRI identifying tumors that have shifted to the cerebral spinal fluid spaces and T2-weighted

MRI identifying tumors that have grown in the pituitary gland.

DATASET DETAILS:

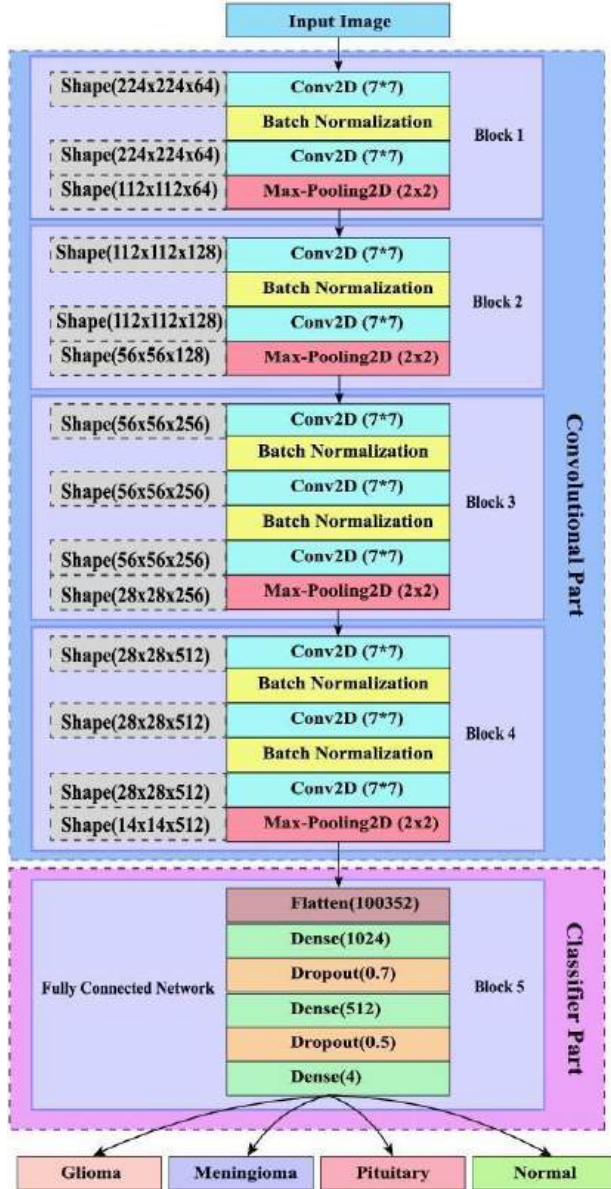
Dataset	Glio ma	Pituita ry	Meningio ma	Normal (No tumor)
Training	826	827	247	328
Testing	101	91	128	105

III. PROPOSED MODEL

The model consists of a convolutional and classifier part, with ten layers for convolution, five for batch normalization, and four for max-pooling, and three dense layers for classifier. The proposed model utilizes a CNN architecture consisting of a Convolutional operation and batch normalization operation, which gathers features from an input image using the RELU activation function, thereby enhancing its performance in a multilayer feed forward neural network.

RELU(x) = (x , if x > 00, otherwise)

The RELU is a rectified linear unit activation function, while batch normalization layer speeds up the training process and reduces over fitting by eliminating noisy features.



IV. ALGORITHM

To build a CNN model, import required modules like Keras, NumPy, and TensorFlow. Create separate folders for training and testing images. The model uses RELU activation function for Convolution layer and SoftMax activation function for dense layer. Train the model with 30 epoch values and 0.1 validation splits. As epoch increases, accuracy increases. The model's accuracy is 97, a metric for evaluating classification models. Accuracy is the fraction of predictions the model gets right,

with accuracy defined as the fraction of predictions made correctly.

$$ACCURACY = \frac{NUMBER\ OF\ CORRECT\ PREDICTIONS}{TOTAL\ NUMBER\ OF\ PREDICTIONS}$$

As epoch count increases, Accuracy of the model increases.

V. RESULTS

The MRI image of the Glioma region in the brain shows cell aggregation, which when applied to our model results in the display of a Glioma tumor.

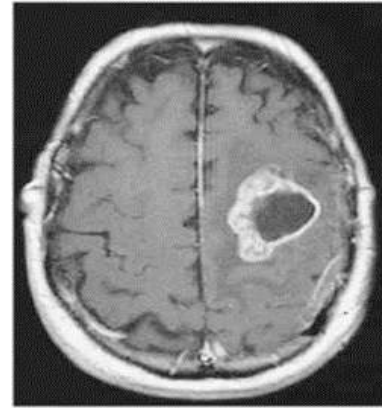


Figure-1: MRI with Glioma tumor

The MRI image reveals cell aggregation in the meninges region of the brain, which when applied to our model results in the display of Meningioma tumor.

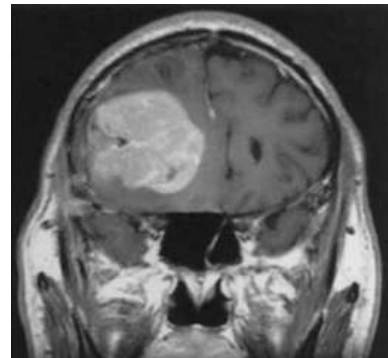


Figure-2: MRI with Meningioma tumor

The MRI image reveals cell aggregation in the pituitary region of the brain, which when applied to our model results in the display of a Pituitary tumor.

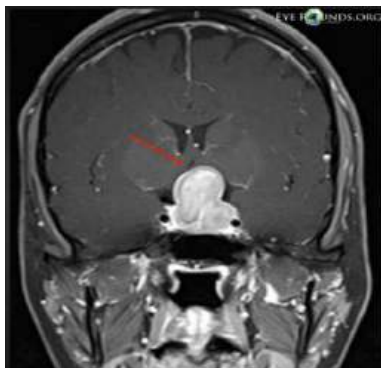


Figure-3: MRI with Pituitary tumor

The MRI image does not show any cell aggregation, and when applied to our model, the corresponding result is displayed as No tumor.



Figure-4: Normal MRI image

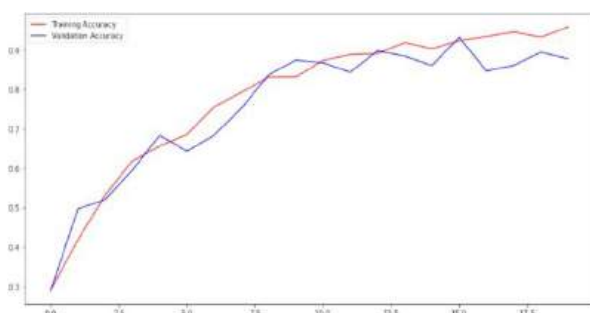


Figure-5: Graph between Training accuracy and Validation accuracy

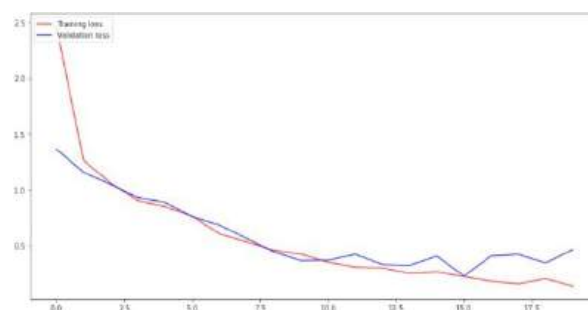


Figure-6: Graph between Training loss and Validation loss

VI. CONCLUSION

This report discusses the importance of MRI image techniques in patient treatment, focusing on the design of a model that can quickly identify and classify various tumor types in MRI images with a 97% accuracy rate. The model uses a proper dataset for training and testing, and a preprocessing approach removes noise and increases contrast. It can detect Meningioma, Glioma, and Pituitary tumors and can be used as an automated computer-aided detection tool for detecting brain abnormalities in MRI images. Future improvements involve increasing the dataset size.

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ENORMOUS VIDEO MULTICASTING, AS VIA NETWORKING ENCODED COORDINATED TRANSMISSION IN MOBILE NETWORKS

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ABSTRACT

The amount of video traffic and portable devices has increased dramatically over the last ten years, necessitating the development of imaginative program infrastructures. One such example is enormous footage distributing, which has the potential to be used in performing arts centres or stadiums for football to the term multicast various perspectives of a live feed to patrons' smartphones or tablets. Nevertheless, the most advanced mobile technology available today just unicasts every audio and video broadcast to a single node, which is tremendously sourceunproductive. In this example, we show how the concepts of cooperation connectivity and randomized linear network programming are used together in order to offer consistent huge video the multicasting over conventional LTE lines. We transfer a majority of the LTE communication to WiFi broadcasts, thereby improving the LTE channel usage productivity by numerous orders of significance.

Keywords: Long-Term Evolution (LTE) networks, wireless networks, collaborative networks, and network encryption

1.INTRODUCTION

Over the past five years, there has been a significant increase in the need for multimedia congestion, and this trend is predicted to continue in the upcoming years [2]. In addition to providing the telecommunications industry with a source of income, this demand puts a great deal of strain on their networks. During circumstances in which an ordinary clip is broadcast to a number of wireless device users, the issue can get more worse and much less efficient with resources. The telecoms companies are comprised of all communication/telephone firms and service

providers for the internet, and they play a significant role in the growing popularity of wireless telecommunications and the advancement of information society[1]. Co-located users are instances of this, such as spectators at an athletic event within a stadium or passengers viewing a festival of music on the same train. Because multicast technology, a traditional network solution, is not possible in cell phone networks, a huge and redundant bandwidth requirement is generated within the telco's network. Offloading such is one possible fix. Transmission requirement to a concurrent channel, like WiFi, that serves users who are located together. They are able

EXPLORING HYBRID MODELS FOR ANOMALY DETECTION IN CYBER SECURITY USING DATA MINING AND DEEP LEARNING TECHNIQUES

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ABSTRACT

Cyber Security threats have become increasingly sophisticated, necessitating advanced techniques for timely and accurate anomaly detection. This paper delves into the exploration of hybrid models that seamlessly integrate data mining and deep learning techniques to enhance the efficacy of anomaly detection systems. The study begins with a comprehensive overview of the evolving cyber threat landscape, emphasizing the critical role of anomaly detection in safeguarding digital ecosystems. The proposed hybrid models leverage the strengths of both data mining and deep learning, addressing challenges posed by diverse cyber threats. The paper outlines robust data preprocessing strategies, including cleaning, transformation, and feature engineering, to optimize the performance of hybrid models. The framework consist of an combination of unsupervised algorithms - K-means clustering, semi-supervised - GANomaly and supervised learning - CNN algorithms. It is then validated verified and estimated the performance of implemented framework using various datasets.

Keyword - Index Terms—Anomaly Detection, Intrusion Detection, Deep Learning, Unsupervised Learning, Neural Networks

I. INTRODUCTION

1. Overview of Cyber Security Threats

In the ever-evolving landscape of cyber security, the relentless surge in sophisticated cyber threats poses a formidable challenge to the integrity of digital systems. As organizations grapple with the imperative to secure sensitive data and critical infrastructures, the role of anomaly detection emerges as a linchpin in fortifying defensive strategies. Traditional methods, while foundational, are proving insufficient in the face of dynamic and complex cyber-attacks. In response, this paper embarks on an exploration of innovative hybrid models that seamlessly amalgamate the prowess of data mining and deep learning techniques, aiming to revolutionize anomaly detection in cyber security [1]. The significance

of anomaly detection cannot be overstated, as it serves as the frontline defense against malicious activities that deviate from established norms. In this context, the paper initiates with a comprehensive survey of the contemporary cyber threat landscape, shedding light on the diverse and evolving nature of attacks [1].

In the contemporary digital landscape, the proliferation of technology has brought unprecedented conveniences, but concurrently, it has exposed individuals, organizations, and critical infrastructures to a myriad of cyber threats. Cyber Security threats have evolved in complexity, ranging from traditional methods such as malware and phishing attacks to more advanced and persistent threats like zero-day exploits and nation-state-sponsored cyber-espionage. The interconnected nature of

modern systems has exacerbated the potential impact of these threats, necessitating sophisticated and adaptive defense mechanisms.

2. Significance of Anomaly Detection in Cyber Security

The exploration of hybrid models for anomaly detection in cybersecurity, employing a combination of data mining and deep learning techniques, is of paramount significance in the contemporary landscape of digital security. Anomaly detection serves as a critical line of defense by identifying irregular patterns or behaviors within networks and systems, offering a proactive means to detect potential threats before they escalate into more severe security incidents [2]. Early detection is particularly crucial in the realm of cybersecurity, where threats continually evolve, necessitating adaptive and dynamic approaches to stay ahead of malicious actors. The integration of data mining and deep learning in hybrid models enhances the accuracy of anomaly detection, providing a more robust defense mechanism against both traditional and emerging cyber threats. Moreover, these hybrid models contribute to the reduction of false positives, ensuring that cybersecurity professionals can focus their attention on genuine threats and optimize response times [2]. As the digital landscape becomes increasingly complex, the research into hybrid anomaly detection models underscores its pivotal role in fortifying the resilience of cyber defenses and safeguarding critical information infrastructure.

3. Evolution of Anomaly Detection Techniques

Data mining techniques, such as clustering, classification, and association rule mining, introduced a more intelligent and exploratory aspect to anomaly detection. These approaches allowed for the identification of patterns and relationships within large datasets, enabling a more nuanced understanding of normal system behavior and facilitating the detection of anomalies that may evade traditional methods [3].

The integration of deep learning marked a significant leap forward in anomaly detection capabilities. Deep learning models, particularly neural networks, demonstrated unparalleled capacity to learn intricate patterns and representations from vast amounts of data. This was especially beneficial in cybersecurity, where the ability to discern complex, non-linear relationships among variables became crucial. The application of deep learning in anomaly detection often involved training models on large datasets to automatically extract features and recognize anomalous patterns, offering a more sophisticated and adaptive approach [3].

II. LITERATURE REVIEW

A review of traditional anomaly detection methods is crucial in understanding the context and limitations that paved the way for the exploration of hybrid models, incorporating data mining and deep learning techniques in the field of cybersecurity. Traditional methods primarily relied on rule-based systems and statistical approaches, and while they have been instrumental in their own right, they often faced challenges in coping with the complexity and dynamic nature of modern cyber threats [4].

Rule-based systems, one of the earliest anomaly detection methods, relied on predefined rules to identify abnormal behavior. Statistical anomaly detection methods, such as the use of standard deviation or other statistical measures, offered a more quantitative approach. These methods worked well in identifying anomalies based on statistical outliers but faced challenges in distinguishing between genuine anomalies and normal variations in system behavior. Moreover, statistical approaches were often less effective in handling non-linear relationships and complex patterns inherent in modern cyber threats.

As cyber threats became more advanced, traditional methods struggled to keep pace with the intricacies of novel attack vectors. The limitations of rule-based and statistical approaches prompted the exploration of more advanced techniques, leading to the integration of data mining methodologies. Data mining

brought a more exploratory and intelligent dimension to anomaly detection by allowing for the identification of hidden patterns and relationships within large datasets.

III. DATA PREPROCESSING FOR HYBRID MODELS

1. Data Cleaning:
 - Remove missing or incomplete data.
 - implementing appropriate techniques such as imputation
2. Normalization and Standardization:
 - Normalize numerical features to a standard scale.
 - Standardize features to have a mean of 0 and a standard deviation of 1.
3. Feature Engineering:
 - Extract relevant information or create new features.
4. Handling Categorical Data:
 - Encode categorical variables appropriately.
5. Temporal Considerations:
 - Incorporate temporal aspects, such as timestamps.
6. Dealing with Imbalanced Data:
 - Address class imbalance using oversampling, undersampling, or SMOTE.

IV. HYBRID MODEL DESIGN

1. Integration of Data Mining and Deep Learning Approaches

The integration of data mining and deep learning approaches is a cornerstone in the development of an advanced hybrid model for anomaly detection in cybersecurity, as explored in this research paper. One pivotal aspect of this integration lies in feature fusion, where insights derived from data mining techniques, such as clustering or association rule mining, are seamlessly combined with features generated by deep learning models. This fusion not only ensures a comprehensive representation of the data but also enables the model to capture both global and intricate patterns inherent in cybersecurity datasets [5].

The architecture of the hybrid model is carefully designed to harmoniously incorporate both data mining and deep learning components. This involves creating a framework where the outputs from data mining inform and influence the training or decision-making processes of deep learning layers. The synergy between these components is vital, providing the model with a unique blend of interpretability from data mining and complex pattern recognition from deep learning. Additionally, ensemble techniques are explored, leveraging the strengths of both approaches through methods like stacking or boosting to enhance overall model performance. The model is endowed with a dynamic adaptability mechanism, ensuring it can continuously learn and adjust its anomaly detection capabilities to address emerging cybersecurity threats.

A critical feature of this integration is the establishment of a feedback loop between the data mining and deep learning components. This loop allows for the periodic updating of data mining insights based on the evolving nature of the data, enriching the deep learning training process with the latest knowledge. Moreover, the hybrid model prioritizes interpretability, a key consideration in cybersecurity, offering insights into the rationale behind flagged anomalies, which is invaluable for cybersecurity professionals.

In essence, the integration of data mining and deep learning approaches within the hybrid model framework is meticulously crafted to leverage the distinctive advantages of each methodology. By combining interpretability, adaptability, and pattern recognition, this integrated approach aims to enhance the overall effectiveness of anomaly detection in the ever-evolving landscape of cybersecurity [5].

2. Feature Fusion Strategies

Feature fusion strategies are pivotal in the research paper's exploration of anomaly detection for cybersecurity, utilizing hybrid models that integrate data mining and deep learning techniques. A central tenet of this research involves the careful amalgamation of

features derived from distinct methodologies to enhance the overall efficacy of anomaly detection. The hybrid model architecture is intricately designed to facilitate this fusion, creating a symbiotic relationship between the interpretability of data mining and the intricate pattern recognition capabilities of deep learning.

One significant feature fusion strategy is the integration of insights from data mining techniques, such as clustering and association rule mining, with features generated by deep learning models. This holistic approach ensures that the hybrid model can discern both broad global patterns and subtle anomalies within the cybersecurity dataset. By combining the strengths of these methodologies, the model becomes more adept at capturing the multifaceted nature of cyber threats [6].

Enabling a seamless information exchange between data mining and deep learning components is crucial. The hybrid model architecture is equipped with mechanisms that allow the outputs of data mining to inform the training or decision-making processes of deep learning layers. This iterative and collaborative approach enhances the model's ability to learn intricate patterns and adapt to evolving cybersecurity threats.

Furthermore, the research paper explores ensemble techniques as a feature fusion strategy. By combining predictions from both data mining and deep learning models through methods like stacking or boosting, the hybrid model can achieve a synergistic effect, leveraging the complementary strengths of each approach. This ensemble strategy contributes to a more robust and accurate anomaly detection system.

3. Model Architecture and Design Considerations

The architecture and design considerations of the hybrid model for anomaly detection in cybersecurity, as explored in this research paper, are paramount in achieving a synergistic amalgamation of data mining and deep learning techniques. The model architecture is meticulously crafted to

harmonize the interpretability of data mining with the intricate pattern recognition capabilities of deep learning. A key emphasis is placed on seamless integration, creating a cohesive framework where information flows seamlessly between the components.

The hybrid model is structured to accommodate the strengths of both data mining and deep learning methodologies. Data mining components provide insights that inform and enhance the training or decision-making processes of deep learning layers. This iterative and collaborative approach not only leverages the strengths of each methodology but also ensures adaptability to the dynamic nature of cybersecurity threats.

Considerations for ensemble techniques are embedded in the model architecture, facilitating the combination of predictions from data mining and deep learning models. Strategies such as stacking or boosting contribute to an ensemble effect, enhancing the overall robustness and accuracy of the anomaly detection system.

V. EVALUATION METRICS

In evaluating the effectiveness of the hybrid models designed for anomaly detection in cybersecurity, a robust set of evaluation metrics is indispensable to provide a nuanced understanding of their performance. Precision and recall are pivotal metrics in this assessment, offering insights into the model's accuracy in identifying anomalies and its ability to minimize false positives. Striking a balance between precision and recall is crucial, particularly in cybersecurity, where the consequences of both false positives and false negatives can be substantial.

1. F1 score

The F1 score, a harmonization of precision and recall, serves as a comprehensive metric, offering a consolidated measure of the hybrid model's overall performance. This is particularly valuable in scenarios where there is an imbalance between normal and anomalous

instances, ensuring a well-rounded evaluation [6].

2. Area Under the Receiver Operating Characteristic (ROC) Curve (AUC-ROC) and the Area Under the Precision-Recall (PR) Curve (AUC-PR)

Additionally, the Area Under the Receiver Operating Characteristic (ROC) Curve (AUC-ROC) and the Area Under the Precision-Recall (PR) Curve (AUC-PR) provide insights into the model's ability to make effective classifications, with a focus on distinguishing anomalies from normal behavior. These metrics are critical for understanding the trade-offs between true positive rates and false positive rates across different thresholds.

The confusion matrix is a foundational tool in the evaluation process, breaking down the model's predictions into true positives, true negatives, false positives, and false negatives. This matrix enables a detailed analysis of the model's strengths and weaknesses, facilitating targeted improvements.

In the realm of cybersecurity, where timely detection is paramount, assessing the detection time metrics is crucial. These metrics evaluate how swiftly the hybrid model can identify and respond to potential threats, contributing significantly to the overall efficacy of cybersecurity measures [6].

Moreover, interpretability metrics play a vital role, considering the importance of understanding the model's decisions in the cybersecurity domain. Metrics assessing the explainability and transparency of the model contribute to its practical utility, providing valuable insights for cybersecurity professionals.

VI. RESULTS AND DISCUSSION

The results of the hybrid anomaly detection model, integrating data mining and deep learning techniques for cybersecurity, reveal a comprehensive evaluation of its performance. The quantitative metrics, including precision, recall, F1 score, AUC-

ROC, and AUC-PR, collectively paint a detailed picture of the model's effectiveness. Precision, indicating the accuracy of positive predictions, is crucial for minimizing false positives, while recall underscores the model's ability to capture all actual anomalies, balancing sensitivity. The F1 score, synthesizing precision and recall, offers a consolidated metric for overall performance. The AUC-ROC and AUC-PR metrics provide insights into the model's discriminatory ability, particularly in distinguishing anomalies from normal behavior.

A granular analysis of the confusion matrix further illuminates the model's strengths and weaknesses. True positives showcase instances where the hybrid model accurately identifies anomalies, while true negatives represent its proficiency in correctly identifying normal behavior. False positives and false negatives reveal areas for improvement, providing context to the model's decision-making process [7].

The detection time metrics shed light on the hybrid model's responsiveness, emphasizing its agility in identifying and responding to potential threats in the dynamic cybersecurity landscape. Improved response times have practical implications for incident response, contributing to the efficiency of cybersecurity measures.

Interpretability metrics underscore the model's transparency and its ability to provide meaningful insights into the reasons behind anomaly predictions. This addresses a crucial need in cybersecurity, where understanding the rationale behind flagged anomalies is paramount for effective decision-making by cybersecurity professionals[7].

Comparisons with baseline models or traditional anomaly detection approaches offer additional context, highlighting any significant advancements achieved through the integration of data mining and deep learning. The results collectively demonstrate the hybrid model's efficacy in enhancing anomaly detection capabilities, contributing to a more robust cybersecurity defense mechanism. The discussion of these findings not only validates the model's performance but also provides

insights for future improvements and applications in real-world cybersecurity scenarios

VII. CONCLUSION

In conclusion, the exploration of hybrid models for anomaly detection in cybersecurity, integrating data mining and deep learning techniques, represents a significant stride toward advancing the effectiveness of cybersecurity defenses. The results obtained through comprehensive quantitative metrics, including precision, recall, F1 score, AUC-ROC, and AUC-PR, underscore the model's ability to accurately identify anomalies while balancing the trade-offs between false positives and false negatives. The nuanced analysis of the confusion matrix offers valuable insights into the model's decision-making process, pinpointing areas for refinement and improvement.

Furthermore, comparisons with baseline models demonstrate the tangible advancements achieved through the integration of data mining and deep learning, validating the efficacy of the hybrid approach. These findings collectively affirm the hybrid model's potential to significantly enhance anomaly detection capabilities, contributing to a more resilient and adaptive cybersecurity infrastructure.

As cybersecurity threats continue to evolve, the hybrid model's dynamic adaptability and comprehensive feature fusion, as discussed in the research, position it as a promising avenue for future developments in anomaly detection. The insights gained from this study not only contribute to the academic discourse but also hold practical implications for cybersecurity professionals seeking advanced tools to combat emerging threats. Looking ahead, the hybrid model offers a pathway for refining and optimizing anomaly detection strategies, fostering a proactive and effective cybersecurity

paradigm in the face of an ever-changing threat landscape.

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EXPLORING SUSTAINABLE URBAN FUTURES: A STUDY ON ENERGY-EFFICIENT SMART CITIES THROUGH G-IOT TECHNOLOGY

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ABSTRACT

Smart cities are becoming important innovation and economic development hubs and thus need special attention and concentration. Sustainable, effective, and smart solutions for transport, governance, the climate, quality of life, and so on are needed for the drastic increase in urbanisation over the past few years. The Internet of Things (IoT) is a forum for global communication between millions of internet-connected electronic devices. Wireless and wired sensors, home appliances such as televisions, refrigerators, etc., Radio Frequency Identification (RFID), etc. were included in these devices and electronic appliances. The Internet of Things has many advanced and pervasive smart city applications. The energy demand for IoT applications is growing, while the number and specifications of IoT devices continue to rise. Smart city strategies must also have the potential to use resources effectively and manage the associated challenges. Energy management is seen as a crucial framework for the implementation in smart cities of complex energy systems. Smart cities have been fitted with numerous electronic devices on the basis of the Internet of Things (IoT), thereby being smarter than ever, due to the increasing advances in advanced metering and digital technologies. The goal of this article is to provide a thorough overview of the challenges and management of energy in smart cities. In addition, the IoT technologies for smart cities and the key components and features of a smart city are listed in this survey.

Keywords: Green IOT, Smart City, Internet of Things, Big Data, Security, Privacy, Data Center, Sensors.

1. INTRODUCTION

In order to achieve sustainable goals within urban context, IoT based smart city is a popular concept to endeavor. The utilization of IoT technology is the backbone of this concept. The concept of Internet of Things (IoT) was offered by Kevin Ashton in 1999, when the distribution of devices with intelligent sensors integrated with the

appropriate communication tools started. Internet of Things are defined as self-organized systems having no conceptual limitations, being the part of the convergent systems and are designed to increase the efficiency of processes in these systems. In its turn the IoT-applications are defined as sets of connected or integrated objects or devices into the environment. These objects or devices use the standard communication protocols for

information exchange. The results of the carried out investigations prove that at present the number of connected Internet of Things, exceed the number of the planet population and their variety and diversity include a lot of devices which can be used as unified block solutions while implementing the innovative projects of the future "smart cities".

The proposal of the Indian Government to build 100 smart cities in the country for which Rs. 7,060 crores has been allocated in the current budget could lead to a major and rapid expansion of the country's IoT. The launch of the Government's Digital India Program to 'transform India into a digitally empowered society and information economy' would also provide the requisite impetus for the growth of the country's IoT industry. The various initiatives proposed to be taken under the Smart City concept and the Digital India Program to setup Digital Infrastructure in the country would help boost the IoT industry. IoT will be critical in making these cities smarter. Some of the key aspects of a smart city are Smart parking, Intelligent transport system, Tele-care, Woman Safety, Smart grids, Smart urban lighting, Waste management, Smart city maintenance, Digital-signage, Water Management.

Among other things, IoT can help automate solutions to problems faced by various industries like agriculture, health services, energy, security, disaster management etc. through remotely connected devices. Apart from direct IoT applications, the IT industry also has an opportunity to provide services, analytics and applications related to IoT. Internet of Things involves three distinct stages. Such as 1. the sensors which collect data, 2. An application which collects and analyzes this data for further consolidation and, 3. Decision making and the transmission of data to the decision-making server. The Internet of Things (IoT) holds the promise to improve our lives by providing innovative services conceived for a wide range of application domains, ranging from personal to industrial environments, and facing several societal challenges in various everyday-life

human contexts. The development of new "smart" devices, opportunities and services is expected to provide a new radical evolution of what the current and future cities will be. The idea behind the new vision of "Smart Cities" is to enable an improved wellbeing to the citizens from economic, social, and environmental perspective.

A smart city is a place where traditional networks and services are made more flexible, efficient, and sustainable with the use of information, digital and telecommunication technologies, to improve its operations for the benefit of its inhabitants. Smart cities are greener, safer, faster and friendlier. The different components of a smart city include smart infrastructure, smart transportation, smart energy, smart healthcare, and smart technology. It is these components that make cities smart and effective. Information and communication technology (ICT) makes it possible for traditional cities to be turned into smart cities. The two closely related modern Internet of Things (IoT) and Big Data (BD) technology systems make smart cities efficient and responsive. To allow smart cities to evolve, the technology has fairly matured. There is, however, a great need to make the majority of cities worldwide smart in terms of physical infrastructure, clean energy, ICT, IoT, and Big Data.

World population has increased significantly in the last decades and so has the expectation of living standards. It is predicted that around 70% of the world population will live in urban areas by the year 2050. At present cities consume 75% of the world's resources and energy which leads to the generation of 80% of greenhouse gases. Thus, in the next few decades there can be severe negative impact on the environment. This makes the concept of smart cities a necessity. The creation of smart cities is a natural strategy to mitigate the problems emerging by rapid urbanization and urban population growth. Smart cities, in spite of the costs associated, once implemented can reduce energy consumption, water consumption, carbon emissions, transportation requirements, and city waste [16].

2. INTERNET OF THINGS (IOT)

IoT is an emerging technology that uses the Internet and aims to provide connectivity between physical devices or “things”. Examples of physical devices include home appliances and industrial equipment. Using appropriate sensors and communication networks, these devices can provide valuable data and enable offering diverse services for people. For instance, controlling energy consumption of buildings in a smart fashion enables reducing the energy costs [11]. IoT has a wide range of applications, such as in manufacturing, logistics and construction industry. IoT is also widely applied in environmental monitoring, healthcare systems and services, efficient management of energy in buildings, and drone-based services.

When planning an IoT application which is the first step in designing IoT systems, the selection of components of IoT such as sensor device, communication protocol, data storage and computation needs to be appropriate for the intended application. For example, an IoT platform planned to control heating, cooling, and air conditioning (HVAC) in a building, requires utilizing relevant environmental sensors and using suitable communication technology. In IoT platform IoT devices are used for data collection, transmission, and processing [3]. For example, an IoT gateway device enables routing the data into the IoT system and establishing bi-directional communications between the device-to-gateway and gateway-to-cloud.

The communication protocols enables the different devices to communicate and share their data with the controllers or the decision making centers. IoT platforms offer the flexibility to select the type of the communication technologies (each having specific features), according to the needs of the application. The examples of these technologies include Wi-Fi, Bluetooth, ZigBee and cellular technology such as LTE-4G and 5G networks. The data storage in IoT platform which enables management of collected data from the sensors. In principle, the data

collected from the devices is very large. This necessitates planning an efficient data storage that can be in cloud servers or at the edge of an IoT network. The stored data which is used for analytical purposes, forms the fifth component of the IoT platforms. The data analytics can be performed off-line after storing the data or it can be in form of real-time analytics. The data analytic is performed for decision making about the operation of the application. Based on the need, the data analytics can be performed off-line or real-time. In off-line analytics, the stored data is first collected and then visualized on premises using visualization tools. In case of real-time analytics, the cloud or edge servers are used to provide visualization, e.g. stream analytics` `.

2.1 IoT in the Energy Sector

Today, the energy sector is highly dependent on fossil fuels, constituting nearly 80 % of final energy globally. Excessive extraction and combustion of fossil fuels has adverse environmental, health, and economic impacts due to air pollution and climate change to name a few [1]. Energy efficiency, i.e., consuming less energy for delivering the same service, and the deployment of renewable energy sources are two main alternatives to diminish the adverse impacts of fossil fuel use [6]. An energy management system based on IoT can monitor real-time energy consumption and increase the level of awareness about the energy performance at any level of the supply chain.

2.2 IoT Data and Computing

Computing and analyzing the data generated by IoT allows gaining deeper insight, accurate response to the system, and helps making suitable decisions on energy consumption of the systems. Computing IoT data is a challenging issue, however. IoT data, known as Big Data, refers to an enormous amount of structured and unstructured data generated from various elements of IoT systems, such as communication networks, smart or intelligent devices, software applications and sensors. Due to the characteristics of Big data, which are

big volume, high velocity, and high variety, it needs to be efficiently processed and analyzed. Processing the Big data is beyond the capacity of traditional methods, i.e., storing it on local hard drives, computing, and analyzing them afterwards. Advanced computing and analytic methods are needed to manage the Big data.

2.3 Energy Efficiency and information infrastructure of smart cities

The growing role of human beings in creating the Internet of Energy (IoE) requires the development of the new information technology and intelligent network-centric control algorithms. Smart city solutions use communication and networking technologies for dealing with the problems precipitated by urbanization and growing population. The Internet of Things (IoT) is a key enabler for smart cities, in which sensing devices and actuators are major components along with communication and network devices [2]. The sensing devices are used for real-time detection and monitoring of city operations in various scenarios. It is projected that in the near future, common industrial, personal, office, and household devices, machines, and objects will hold the ability to sense, communicate, and process information ubiquitously [7]. However, it is challenging to design a fully optimized framework due to the interconnected nature of smart cities with different technologies. Further, smart city solutions have to be energy-efficient from both the users' and environment's points of view [8].

2.4 Energy Management and Challenges for Smart City Applications

Home Appliances: Home appliances are the major sources of energy consumption. Demand management is a key for customizing energy use by managing the lighting, cooling, and heating systems within residential units. On the other hand, the intelligent operation of activities can also facilitate the optimized management and operation of energy [9].

Education and Healthcare: Considering the importance of educational and healthcare services, it is difficult to dematerialize them. However, it is possible to demobilize services for the reduction of energy consumption; for example, exploiting remote healthcare by visualizing sensors and mobile phones, and distance education can create a significant reduction in energy consumption.

Transportation: The energy use for transportation includes public transport, daily commuting to work in personal vehicles, leisure travel, and so on. In addition to the energy consumed by public transport and personal vehicles, they are also a major cause of pollution in cities. IoT-enabled solutions can be employed for energy management, such as traffic management, congestion control, and smart parking. This can significantly reduce energy consumption as well as CO₂ emission [16].

Food Industry: Energy consumption in the food industry is not only related to the storage, purchase, and preparation of food; it also includes diners moving into restaurants in search of food. IoT-enabled solutions can be used here for making optimized choices in terms of food availability. On the other hand, the transportation of the food can also be optimized by incorporating intelligent means of transportation.

2.5 Energy-Efficient Solutions for Smart Cities

With the increase in IoT applications for smart cities, energy-efficient solutions are also evolving for low-power devices. There are some energy-efficient solutions that can either reduce energy consumption or optimize resource utilization. Following are some main research trends for energy-efficient solutions of IoT-enabled smart cities [10].

Lightweight Protocols: Lightweight means that a protocol causes less overhead. IoT-enabled smart cities have to use various protocols for communication. There are several existing protocols in the literature such

as Message Queue Telemetry Transport (MQTT), Constrained Application Protocol (CoAP), Extensible Messaging and Presence Protocol (XMPP), Advanced Message Queue Protocol (AMQP), 6lowPAN, and Universal Plug and Play (UPnP) IoT.

Scheduling Optimization: Scheduling optimization for IoT-enabled smart cities refers to the optimization of resources with the aim of minimizing energy consumption and subsequently reducing electricity usage. In this regard, demand-side management (DSM) is of prime importance; it refers to the manipulation of residential electricity usage by altering the system load shape and consequently reducing the cost. Broadly speaking, DSM comprises two main tasks: load shifting and energy conservation, where load shifting refers to the transfer of customers' load from high-peak to low-peak levels. By adopting this, electricity can be conserved and provide room for other customers.

Predictive Models for Energy Consumption: Predictive models for energy consumption in IoT-enabled smart cities are indeed of vital importance. They refer to the wide range of applications in smart cities, including predictive models for traffic and travel, predictive models for controlling temperature and humidity, and so on. Various prediction models such as neural networks and Markov decision processes can be incorporated here. Exploiting the predictive models will not only reduce the significant energy consumption but also lead to many societal benefits.

Cloud-Based Approach: Cloud computing has reshaped the computing and storage services, which can be used to provide energy-efficient solutions for IoT-enabled smart cities. More precisely, the cloud-based approach helps in managing the massive data center flexibility and in a more energy-efficient manner.

Low-Power Transceivers: Since the IoT devices in smart city applications operate on limited batteries, a low-power design

architecture or operation framework is of superior importance for addressing the energy management in IoT-enabled smart cities. Mostly, the existing application protocols for IoT devices are not in accordance with the energy efficiency perspective.

Cognitive Management Framework: IoT devices are heterogeneous in nature, and the associated services are unreliable. Therefore, it is important to investigate a cognitive management framework that adopts intelligence and cognitive approaches throughout the IoT-enabled smart cities. The framework should include reasoning and learning in order to improve decisions for IoT networks.

3. GREEN IOT

The energy consumption of IoT devices is an important challenge, especially in large-scale deployment of these technologies in near future. To run billions of devices that will be connected to the Internet significant amount of energy is required. The big number of IoT devices will also produce a great deal of electronic waste. To tackle these challenges, a low-carbon and efficient communication networks are needed. Fortunately, these necessities has led to the appearance of the green IoT (G-IoT). The key component of G-IoT is its energy-efficient characteristics throughout the life cycle, i.e., design, production, deployment, and ultimately disposal.

G-IoT cycle can be applied in different IoT technologies. For example, in radio frequency identification (RFID) tags. To decrease the amount of material in each RFID tag, which is difficult to be recycled, the size of RFID tags are reduced. Green M2M communications is another example, which enables adjusting power transmission the minimum level, facilitates more efficient communication protocols using algorithmic and distributed computing techniques. In wireless sensor networks also the sensors nodes can be in the sleep mode and just work when necessary. In addition, radio optimization techniques, such

as, modulation optimization or cooperative communication can be applied to reduce the power consumption of the nodes. Moreover, energy-efficient routing techniques, such as, cluster architectures or multi-path routing can provide efficient solutions. These above said approaches will reduce the energy needs of IoT systems.

4. THE INTERNET OF THINGS (IoT) TECHNOLOGIES IN SMART CITIES

The Internet of Things is the foundation of intelligent city implementation (IoT). The IoT is the technological foundation of smart cities, in other words. Smart cities need to have three main features: knowledge, interconnection, and IoT-enabled instrumentation. It can be claimed that smart cities can be made feasible by the use of IoT[12]. The use of smart phones, smart meters, smart sensors, and radio-frequency identification (RFID) in essence forms the IoT framework in the smart cities. The IoT framework consists of various components including electronics, sensors, networks, firmware, and software. IoT is the network of interconnected physical objects (called “things”) including computers, smart phones, sensors, actuators, wearable devices, homes, buildings, structures, vehicles, and energy systems. The IoT ensures the communication of many variety types of systems and applications for providing increasingly smart, reliable and secure services. A large variety of sensors including RFID, IR, and GPS, connect the buildings, infrastructure, transport, networks and utilities through ICT. Some of the IoT-related technologies are discussed in the following

- Radio-Frequency Identification (RFID)
– RFID is used to carry out their automatic identification and assign a unique digital identity to each object, in order to be incorporated in the network and related to the digital information and service.
- Wireless sensor network (WSN) - WSNs could be integrated with RFID

systems to gain some goals like obtaining information regarding the position, movement, temperature, etc.

- Addressing - To monitor them through the Internet, it is vital to address the large-scale combination of artifacts in a unique way. Reliability, scalability and persistence, in addition to the aforementioned definition of uniqueness, denote the primary criteria for creating a unique addressing scheme

Middleware - In reality, middleware combines the functionality and communication capabilities of all the devices involved in a succinct way.

5. SMART CITIES: COMPONENTS AND CHARACTERISTICS

The components of smart cities are smart infrastructure, smart housing, smart transport, smart energy, smart healthcare, smart technology, smart governance, smart education, and smart people. Depending on their emphasis, various smart cities have varying levels of these smart components. Sustainability, quality of life (QoL), urbanization, and intelligibility are the different characteristics of smart cities. The sustainability of a smart city is related to city infrastructure and governance, energy and climate change, pollution and waste, and social issues, economics and health. The quality of life (QoL) can be measured in terms of the emotional and financial well-being of the citizens. The urbanization aspects of the smart city include multiple aspects and indicators, such as technology, infrastructure, governance, and economics. The smartness of a smart city is conceptualized as the ambition to improve economic, social and environmental standards of the city and its inhabitants. Smart economy, smart citizens, smart mobility, smart governance, and smart living are numerous widely cited facets of city smartness.

6. BIG DATA ANALYSIS IN SMART CITIES

The rapid processing of Big Data of poorly structured data in the "smart cities" projects involves a wide range of activities concentrated on the selection, transmission, transformation, storage and analytical processing of information flows concerning the state and processes of environmental pollution, weather, accumulation and utilization of wastes, water supply and other natural resources, heat and energy sources, sensory of city events and incidents [4]. At the same time, mining and transformation of data concerning urban life from social networks are carried out. The technologies of data transmission and selection formed by urban engineering components, are based particularly on the use of wireless sensors integrated into numerical industrial and service information-technological applications [5]. The combination of data obtained from both physical sensors and social sources contributes to the formation of full picture of city-wide processes, complexes, subsystems and structures.

7. SMART CITY DESIGN: CHALLENGES AND OPPORTUNITIES

The challenges for building smart cities are quite diverse and complex. A few include cost, efficiency, sustainability, communication, safety, and security [13]. These design challenges are governed by various factors including the natural environment, government policy, social communities, and economy. Cost is the most important factor of the smart city design. The cost includes design cost and operation cost. The design cost is a onetime cost of the smart cities. Operation cost is that cost that is required to maintain the smart city. Design cost needs to be small to make a smart city realization possible. At the same time small operation cost will make it easier for cities to operate on a long run with minimal burden on the city budget. Cost optimization over the complete system lifecycle can be a challenging problem. Operation efficiency of the smart cities is an important challenge: higher efficiency can

reduce the operational cost and improve sustainability of the smart city [14]. Cutting down carbon emissions and city waste is needed to enhance sustainability and efficiency, and reduce operation cost. Smart cities need to cope up with population growth while ensuring long-term sustainability with optimized operation cost. Smart cities need to be resilient to disasters and failures. Disasters can come from nature. Failures can originate for many reasons in the system such as a failure in ICT, or power failure. Natural disasters also can lead to failure of various components of smart cities.

These disasters and failures must be taken into account in any smart city design so that smart cities can recover from such circumstances efficiently within minimal time. These problems will impact the design and operating costs of smart cities. Smart cities are made possible due to the effective use of many smart components including ICT, sensors, and IoT and will need to process and store large volumes of data [15]. Security of the information and infrastructure is an important design challenge. Above all, public safety is a critical design challenge for smart cities as the safety of the inhabitants is of paramount importance, which can also increase design and operation budgets.

8. CONCLUSION

In order to build productivity, enhance sustainability, encourage economic growth and improve the quality of life of the people who live and work in cities, smart cities use data and technology. Today, smart city technology paves the way for the next wave of consumer investment and services. Smart cities need information on lighting, smart neighbourhoods, micro grids, electric cars, fibre and other smart solutions in order to work properly. All of these entail several complexities that still need to be addressed in the distribution of goods and services in the fields of distributed manufacturing, solar, energy management and infrastructure. A

combination of data collection, processing and distribution technology, network and computer technologies and data protection and privacy measures are used by Smart City to promote application innovation to enhance the overall quality of life of its residents, including infrastructure, healthcare, transportation, entertainment and public services. Whether it's improving security, resilience, sustainability, traffic congestion, public security or municipal services, every community should invest in developing smart cities based on smart systems for a variety of reasons. These improvements lead to improving the protection of electricity, energy efficiency and economic stability of major urban centres, which are slowly but steadily becoming hubs of the 21st century's economic and social growth. Energy management has seen the advent of "smart things: smart networks, smart water and smart energy. All these components are becoming an integral part of the Internet of Energy (IoE), a modern intelligent network capable of sharing data, knowledge and energy in two ways. Big Data will help coordinate wind and solar energy with conventional energy sources in the smart cities of the future. Government and public efforts can build infrastructure to avoid energy scarcity and loss, in order to operate efficiently with big data and smart cities. In this article, we present a brief overview of Green IoT, smart city energy-efficient solution, smart city technology and smart city architecture challenges and opportunities.

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AN ANALYSIS OF MACHINE LEARNING TECHNIQUES IN MALWARE INVESTIGATION PROCEDURES AND TOOLS: A COMPARATIVE ASSESSMENT

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ABSTRACT

Malware refers to suspicious code and software to contaminate computers of individual or collapse entire network of organization. It is installed in a system without knowledge of owner. It is installed and handled by third party to hack the data or corrupt the data of the user. The Malware developers are spreading their malicious software and it is not single software it may be in the following forms such as – worms, trojan horses, spyware, viruses, rootkits, cookies, adware, and many more through the world of immense networking – the Internet.

Keywords: Malware, worms, Trojan horses, spyware, viruses, rootkits, cookies

INTRODUCTION

The Internet has become an essential part of our life as it fastens us to the entire world virtually but it opens the path for various people with malicious intents, who aim to attack and harm legitimate clients in different ways for various reasons. Many a time the reason is money. A point to be noted in this respect is the use of malicious software which is installed in the computer without the cognizance of its owner – this software can take away confidential data and also allow isolated access which may cause the denial of services (DoS) in the system [4]. To secure legitimate users from diverse threats, security vendors such as antivirus software offer detection and analysis procedures. Numerous online tools can dynamically inspect the malware and detect it, the tools use cloud

computing hence they are more efficient and safer. The main idea of this study is to diagnosediverse online malware analysis tools and compare them based on their analysis.

Objectives

The main objectives followed as –

1. Evaluating online and offline dynamic malware analysis tools.
2. Comparing the results centered on the methods of analysis, the correctness of results, and time needed to analyze the malware.
3. Collecting the reports of the malware study from the scene.

II. LITERATURE SURVEY

The research articles related to malware analysis declared different tools and techniques which can be potentially pursued to detect and analyze the malware. There are two basic methods to analyse the malware, Static and Dynamic [2]. Many of the studies defines that, dynamic analysis is much more efficacious and exact than static analysis [3]. Distinct malware cases may illustrate the characteristics of various sections at the same time. The tools must be compelling enough to detect different malware efficiently. There are different techniques identified under dynamic analysis – Process Call Monitoring, Process Parameter Analysis, Tracking of information, Instruction Tree, Auto-Start Extensibility. Due to enormous malware obfuscation, the results from static and dynamic analysis seem to be deficient, this directs the security analysts to use machine learning, deep learning, and neural network techniques. Machine learning methods for malware analysis has seen enormous growth in the research field these days, there are features collected from static and dynamic analysis to figure out the

malware [26]. Even neural networks can be used to predict the malicious software from the raw bytes of the file [26]. The malwares can be branched into different families and then the final dataset should be used for machine learning, various ML algorithms were compared on various tools and the outcome state that Random Forest is the best algorithm for analyzing the dataset [27]. Since there is an increasing number of malwares these days, researchers are proposing the use of data visualization with ML which will escalate the accuracy. The exactness using n-gram features of the masked code and then using Machine Learning model for analysis [31].

III. MALWARE ANALYSIS AND DETECTION METHODOLOGY

To understand the maliciousness of the malware, it should be analyzed in two methods – 1. Static Analysis and 2. Dynamic Analysis. To detect, if a given program is malware or not, it must be primarily analyzed Statically and then dynamically [4]. The flow chart of different malware detection techniques has been shown in figure no. 1.

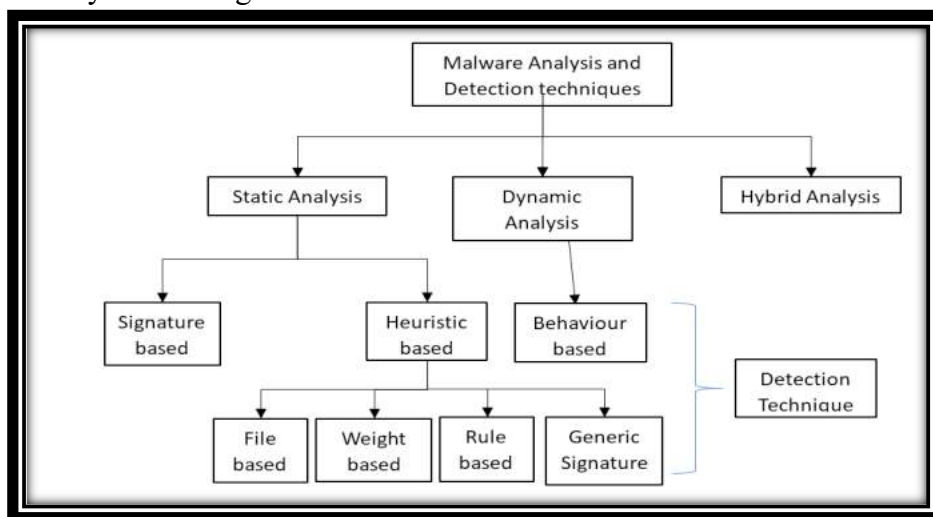


Fig. 1. Hierarchal representation of Malware analysis and detection techniques

A. Malware Analysis Methods Static Analysis. Using this method, we audit the software without running it. In static analysis, this method is divided down by the procedure of reverse engineering [3]. The static analysis compares the program with a huge database of assorted signatures using string and hashing

mechanisms [4]. Though the static analysis can easily analyze and detect the known malicious software but fails for complex and new malicious software. Some of the latest static analysis techniques can analyze composite malware but these processes are quite inconvenient and require more advanced

knowledge in operating systems and disassembly. Dynamic Analysis. Analysing the characteristic of the strategies that have been implemented while the program is being run decides dynamic analysis. It can be implemented by different techniques such as tracking the function calls, analyzing the function parameters, tracking the information flow, tracing the instructions, and AutoStart Extensibility Points [2].

The advancement in files and registry, networking activities, and access to the RAM and various HDD (hard-drive) can also be examined and used for dynamic malware analysis. For detecting a new malware dynamic analysis is always chosen above static because although the structure of the malware changes the behavior and the characteristics does not change and remain as it is which helps dynamic analysis to detect the malware easily [4]. In recent times it is observed that the malware has risen more intelligent, they cease executing immediately it detects any behavioral analysis is being done. In these cases, Machine Learning surpass both dynamic and static analysis methods [6].

B. Malware Detection Methods Signature Based Detection Technique. Signature is a distinguishing behaviour of a particular malware with which it can be easily detected. This method is also called – pattern matching, string matching, mask matching, and fingerprinting technique. A signature is a bit of sequence introduced in the application program by malware writers, to uniquely identify a particular malware [3]. Also,

C. hashing made to the code of the malware with various algorithms such as SHA 256, MD 5, MD 4, etc. which is utilized for comparing process later on.

Behavior-based Detection Technique. In this technique, the behavior of the program is utilized to determine whether a specific one is malware or not. It will not look for the code and the code sequence. The major disadvantage of this technique in Sandbox or a VM machine the malicious software doesn't always show its full potential and all the characteristics. Hence, it is found that it will guide to some incorrectly or wrong malware analysis [4].

Heuristic-Based Detection Technique. Also called as the proactive technique, is like the signature-based technique in detecting malicious code. Machine learning method is used to ascertain the behaviour of the malware. Here, the API system calls, Opcodes, N-Grams, Control flow Graphs, and hybrid features are been executed. This comes with the malware detector, a new feature that seek for the commands and instructions in the application program that has not been discovered earlier. This supports in discovering various novel viruses and maintaining their signatures.

D. Malware Detection Tools There are countless tools for detecting malware and few of them have been identified and presented in the following tables. The tools are divided into static and dynamic malware analysis.

TABLE I. STATIC ANALYSIS TOOLS

Sno	Tool Name	Description
1	PE id [4]	Supports in identifying complicated malware. It works on the signature-based detection process having almost 600 fingerprints of different malware.
2	PE view [9]	Information about the file headers and portable executables are being provided by this tool. Various description of the malware is accumulated from this tool including – compile-time and import/export functions.
3	PE explorer [4]	Similar to PE View this tool provides features - Files packed from malware packers such as UPX and Ns Pack can be unpacked.
4	Bin Text [10]	Character strings of a binary file can be searched and

		displayed using this tool
5	UPX [9]	This tool is used to compress Malware samples with the method of packing the executables
7	Dependence Walker [4]	This tool was implemented by Microsoft for static analysis which explores the DLLs and functions imported by the malware
8	Resource Hacker [11]	This tool is specially made and used in the Windows operating system. The tool is used to view, modify, add, and extract resources for both 32bit and 64bit Windows executables.
9	IDA pro [11]	This tool is very famous among malware analysts, reverse engineers, and vulnerability testers. This gives an interactive disassembling feature.
10	Hex Editors [4]	Binary files are viewed and edited using this tool.

TABLE II. TOOLS USED FOR STATIC MALWARE ANALYSIS

Sr no.	Tool's Name	Illustration
1	Process Explorer [12]	Having affinity with the task manager, this tool give the active running processes in a hierarchical view of processes.
2	Process Monitor [13]	Real-time file creation, file read, file writes, and file closure use this tool. This tool has other functions like – 1. Monitoring the registry and activity changes 2. Tracking processes and networks.
3	Reg shot [14]	Two registry snapshots are held, one before and after the process to analyse the changes therefore if any malicious activity is present, it can be easily detected by the reg shot.
4	Net cat [15]	A Tool to keep track of inbound and outbound connections.
5	Wireshark [16]	This is a network packet analyser have the potential to capture the network traffic generated by malware immediately it was executed.
6	Olly Dbg [17]	When the source is not available this x86 debugger is utilized for the binary code analysis.
7	Burp Suite [18]	Security of web applications is tested with this tool. This tool can monitor various server requests posted by the malware to any remote server. All the HTTP and HTTPS invocation made by the malware can be intercepted by this tool using the Man in the Middle Attack.
8	Sandboxes [4]	Sandbox is a virtual container that can be utilised for analysing untrusted programs/malware in a virtual system (installed inside or outside the main system which is relatively a safer environment) without hurting the main system. The sandboxes use both static and dynamic approaches to analyse the programs.

IV.IMPLEMENTATION, COMPARISON AND ALGORITHM ANALYSIS

It is found that Dynamic Malware analysis is consistently better than Static Malware analysis, but for analyzing the malware in the computers the malicious codes must be executed such that the tools can keep a check on the activities taking place in the computer. This procedure has an increasing probability of harming the computer as the malware runs

freely on the computer. There are various online-based malware analysis tools identified which works on cloud computing and online virtual machines. These tools provide efficient malware analysis and no harm to the user's computer. The goal of this paper is to analyze the different dynamic malware analysis tools mainly the online-based ones and compare them among each other for identifying the best. The online and offline software's identified has been shown in table no. 3.

TABLE III. COMPARISON OF VARIOUS MALWARE ANALYSIS TOOLS (BOTH ONLINE AND OFFLINE)

Name	Description	Detection Method	Time Required	Result
Reverss (Anlyz) [20]	It provides automated dynamic malware analysis and helps Cyber Intelligence Response Teams (CIRT) to solve complicated malware problems effectively and steadily.	Reverse Engineering, Cognitive Analytics, Swift Reversal, Real-Time Classification, and comprehensive reporting	11 days (SLOW)	Malicious
Any run [21]	This is a cloud-based malware analysis tool that can be uploaded and is analysed in the online Virtual Machine	Signature-based, behavioural, and heuristic-based analysis	1 hour (FAST)	Malicious
Valkyrie Verdict [22]	This tool has an effective database of malware that are used for static behavioural analysis. The analysis is very fast for the same reason. After uploading the malware on the cloud the analysis is done.	Signature-based static malware analysis	Less than an hour (VERY FAST)	Malware Malicious
Virus Total [25]	Suspicious files can be uploaded which are compared with different anti-virus software and outcome are given, whether the signature along with the URLs is available	Signature-based and Heuristic-based	Less than an hour (VERY FAST)	Malicious

	in Anti-virus software.			
Olly DBG (offline) [17]	When the origin is not available this x86 debugger is used for the binary code analysis.	Reverse Engineering	Less than an hour (VERY FAST)	Malicious
Reg Shot (offline) [14]	Two registry snapshots are taken, one before and after the process to analyse the changes so that if any malicious activity is present it can be easily detected by the reg shot.	Reverse Engineering	Less than an hour (VERY FAST)	Malicious

V. RESULT AND DISCUSSION

From the study, it is found that different types of malware analysis methods can be used to detect malicious code. Yet there must be an algorithm that can be followed in such a way that the analysis procedure becomes much easier to execute. The tools chosen based on the above comparison tables. The tools are numbered according to the order of higher precedence which was found from the study.

VI. CONCLUSION

In this research work different types of tools and ways in which a particular malware can be analysed are well explained. Various researches show that one single malware couldn't be analyzed in a single tool. Experimental results show that every malware analysis tool has a different metric and way to analyze the malicious code. It is also found that IntezerAnalyze software as best among various tools since it can take the output from Virus Total using unique Genetic software mapping algorithm. This algorithm is comparing the genes with various other malware for coming to a solid result.

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A GATED RECURRENT UNITS (GRU)-BASED MODEL FOR EARLY DETECTION OF PLANT DISEASES THROUGH CONVOLUTION NEURAL NETWORK

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ABSTRACT

Crop disease identification plays a pivotal role in ensuring food security and agricultural sustainability. The advent of deep learning has significantly advanced the field of computer vision, providing powerful tools for automated image analysis. In this study, investigation of application with deep learning algorithms for image segmentation in the context of crop disease identification is carried out. So started to conduct an extensive review with the existing literature, that focus on prominent deep learning architectures such as U-Net, FCN, DeepLab and their variants. The research involved the development of a novel dataset comprising images of both healthy and diseased crops, representing diverse crop types. The labeled dataset facilitates the training and evaluation of the proposed deep learning models. The effectiveness of Convolution Neural Network(CNN) using Gated Recurrent Unit(GRU)in capturing intricate details relevant to crop disease segmentation. Additionally, explore the impact of transfer learning to leverage pre-trained models on large-scale datasets. Then results try to highlight the potential of transfer learning in enhancing the performance of deep learning models particularly when training data is limited. Furthermore, various comparison of segmentationaccuracy with different architectures is developed. Then discuss their strengths and limitations in the context of crop disease identification. Multi-scale information integration and comparative analyses contributes valuable insights into the selection of appropriate architectures for specific agricultural scenarios.

Index terms CNN, CNN-GRU,deep learning, Image Segmentation

I. INTRODUCTION

Agriculture, being the cornerstone of global sustenance, faces the constant challenge of ensuring crop health to meet the demands of an ever-growing population. The identification and mitigation of crop diseases are critical components in achieving optimal agricultural productivity.

Traditional methods of disease detection often rely on manual inspection, which is time-consuming and susceptible to human error. The integration of advanced technologies, particularly deep learning, has emerged as a transformative solution to automate and enhance

the accuracy of crop disease identification. This research focuses on the application of deep learning algorithms for image segmentation in the realm of crop disease identification. By delving into state-of-the-art architecture of Convolution Neural Networks (CCN), aim is to advance the understanding of how this model can be tailored to address the unique challenges posed by diverse crop types and diseases. The study not only investigates the segmentation accuracy of these models but also explores the impact of accuracy assessment, a technique proven to enhance performance when training data is limited.

II. DEEP LEARNING

Deep learning, a subset of machine learning, leverages neural network architectures to extract intricate patterns and features from complex datasets. In recent years, these techniques have demonstrated remarkable success in various computer vision tasks, prompting their application in agriculture for crop disease analysis. Image segmentation, a fundamental computer vision task, holds immense potential in delineating regions of interest within

agricultural images, aiding n the precise identification of diseased crops. To facilitate investigation, a curated comprehensive dataset encompassing images of both healthy and diseased crops across various agricultural settings are persuaded [1].

The dataset serves as a benchmark for training and evaluating the proposed deep learning models. Through rigorous experimentation, seek to elucidate the strengths and limitations of different architectures, providing valuable insights for researchers and practitioners engaged in precision agriculture [2]. As the global demand for food security intensifies, the integration of automated crop disease identification tools becomes imperative. This research contributes to the ongoing discourse on leveraging deep learning for precision agriculture, with a specific focus on image segmentation as a pivotal step towards accurate and efficient crop disease identification [3]. The outcomes of this study are poised to catalyze advancements in sustainable farming practices and empower farmers with timely and informed decision-making capabilities [4]. The framework of deep learning model is shown in Figure 1.

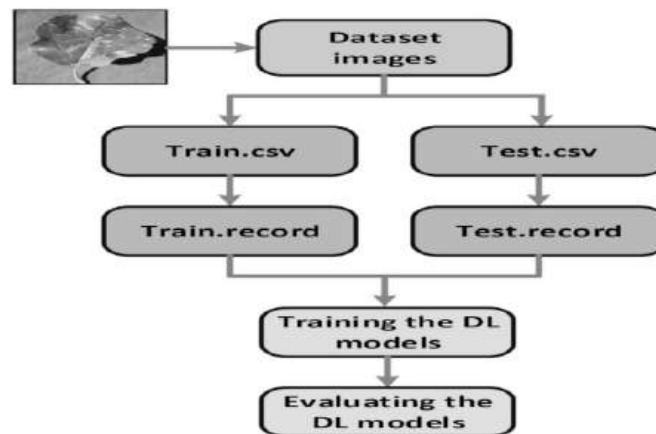


Figure 1: Framework of Deep Learning Model

III. PROPOSED CNN-GRU ARCHITECTURE

Identifying plant-leaf diseases using a combination of Convolutional Neural Networks (CNNs) for image processing and Gated Recurrent Units (GRUs) for sequential analysis can be an effective approach. Below is a conceptual outline of how you might structure such a model. The actual implementation details can vary based on the specification of dataset and task [5]. Input images of plant leaves, each with dimensions (width, height, and channels). Typical preprocessing steps, such as normalization, may be applied. Use convolutional layers to capture spatial features in the input images. Apply filters to identify patterns related to plant diseases. Use activation functions like ReLU to introduce non-linearity. Down sample the spatial dimensions to reduce computational complexity [6].

Algorithm

Step 1: CNN layers consist of convolutional and pooling layers to extract spatial features from the input data.

Step 2: The flatten layer is used to flatten the output of the CNN layers before feeding it into the GRU layer.

Step3: The GRU layer is configured to handle sequential dependencies. **return_sequences=True** ensures that it returns the full sequence of outputs for each input sequence.

Step 4: Dense layer is used for the final prediction.

Max pooling or average pooling can be applied. Create multiple stacks of convolutional layers to extract hierarchical features. Each stack captures features at different levels of abstraction. Reshape the output of the last convolutional

layer to fit the GRU input. GRUs will process features along the spatial dimension, treating each column as a time step. The hidden states capture contextual information across different spatial regions [7]. Apply upsampling layers to increase the spatial resolution. Concatenate the upsampled features with the corresponding features from the CNN layers. This process allows the model to refine spatial details. Apply additional convolutional layers to further refine the segmented features. Use a convolutional layer with Softmax activation for pixel-wise classification [8]. The number of output channels equals the number of classes (e.g., diseased, healthy).

3.1 Image Pre-Processing:

Data Preparation involves in the collection of dataset of plant leaf images containing healthy leaves and leaves affected by various diseases. Organize the dataset into training, validation, and test sets. Build a CNN for image classification[9]. This part of the model will be responsible for extracting features from the leaf images. Use pre-trained models like VGG16, ResNet, or Inception if you have a limited dataset or fine-tune them for your specific task. Remove the final classification layer of the pre-trained model and add a new dense layer for your specific classification task.

3.2 Image Segmentation:

Image segmentation is a computer vision task that involves partitioning an image into meaningful segments or regions [3]. The goal is to simplify the representation of an image or make it more meaningful for further analysis. Image segmentation is widely used in various applications, including object recognition, medical image analysis, autonomous vehicles, and more. Proposed architecture of CNN-GRU for Plant disease detection is shown in Figure 2.

3.3 Data Augmentation:

Data augmentation is a technique commonly used in machine learning and computer vision to artificially increase the diversity of a training dataset by applying various transformations to the existing data. This helps improve the generalization and robustness of machine learning models, especially in scenarios where the available training data is limited. In the context of image data, data augmentation involves applying transformations to the images, creating variations that still represent

meaningful inputs. Apply data augmentation techniques (rotation, flipping, zooming) to artificially increase the size of training dataset and improve model generalization

3.4 Disease Detection

Disease detection, especially in the context of computer vision and machine learning, refers to the process of identifying and classifying diseases or abnormalities in various types of data, such as medical images, sensor data, or biological samples [10].

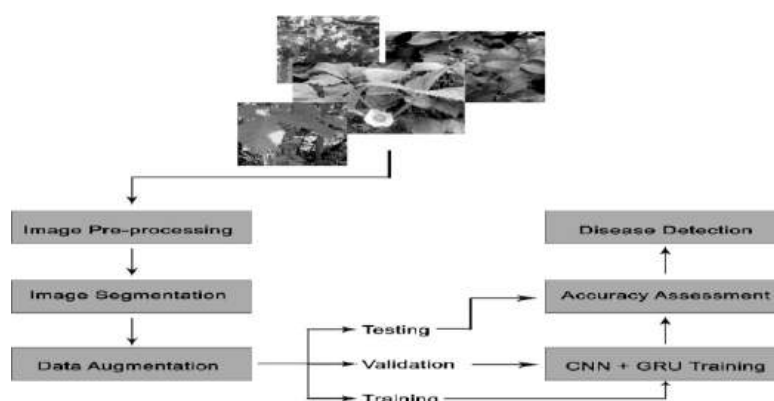


Figure 2: Proposed CNN-GRU for Plant disease detection

3.5 Accuracy Assessment

Accuracy assessment is a crucial step in evaluating the performance of a machine learning model. It involves measuring how well the model predicts outcomes compared to the actual values. The concept of accuracy is fundamental, but it's important to consider other metrics, especially in scenarios with imbalanced classes or when certain errors are more critical than others.

3.6 CNN with GRU for Sequential Analysis

Take the output features from the CNN and feed them into a GRU network. The sequence of features can be considered as a temporal

sequence representing the development of the disease over time or as a sequence of different leaves. Add a dense layer on top of the GRU output for final classification. Use softmax for multi-class classification if you have multiple classes (types of diseases). Compile the combined model using an appropriate loss function (e.g., categorical crossentropy) and an optimizer (e.g., Adam). Train the model on your training dataset, including both healthy and diseased leaves. Monitor the performance on the validation set to avoid overfitting.

3.7 Training

Training a Gated Recurrent Unit (GRU) involves optimizing the model's parameters to

minimize a certain loss function using a dataset. Training a Gated Recurrent Unit (GRU) involves optimizing the model's parameters to a GRU Combining Convolutional Neural Networks (CNNs) with Gated Recurrent Units (GRUs) is a common practice when dealing with sequential data that has both spatial and temporal dependencies. This type of architecture is often referred to as a 2D-CNN-GRU model. Evaluate the trained model on a separate test set to assess its generalization performance [11]. Experiment with hyperparameters such as learning rate, batch size, and the number of GRU units to optimize the model.

3.8 Testing

The CNN part is responsible for capturing spatial features, while the GRU part handles sequential dependencies. Identifying plant-leaf diseases using a combination of Convolutional Neural Networks (CNNs) for image processing and Gated Recurrent Units (GRUs) for sequential analysis can be an effective approach

minimize a certain loss function using a dataset. Here's a general overview of the steps involved in trainin

[12]. Below is a conceptual outline of how you might structure such a model. The actual implementation details can vary based on the specifics of your dataset and task

3.9 Model Deployment

If the model performs well, deploy it for real-world plant-leaf disease identification. When identifying plant-leaf diseases using a combination of Convolutional Neural Networks (CNNs) for image processing and Gated Recurrent Units (GRUs) for sequential analysis, various measurements and metrics can be used to evaluate the performance of the model

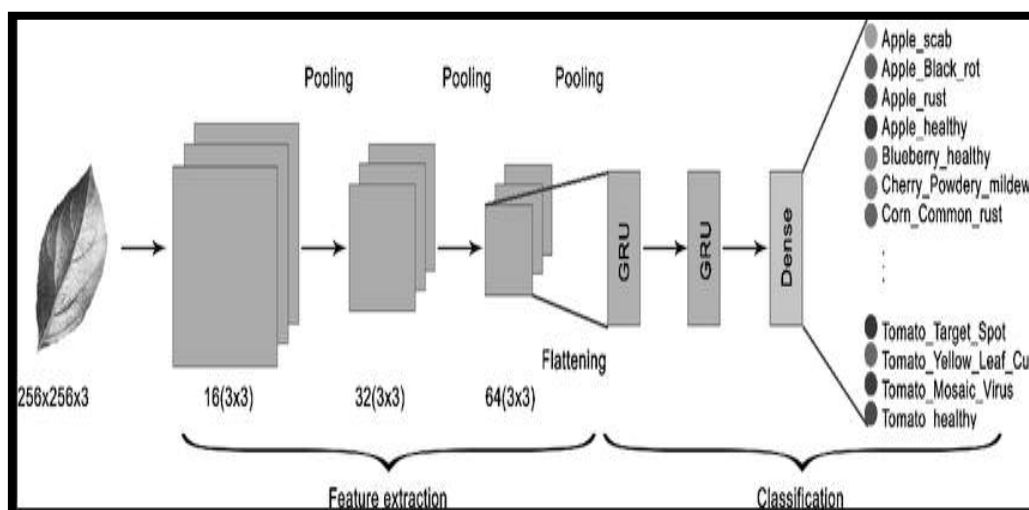


Figure 3: Simple Convolution and pooling layer architecture

IV. EXPERIMENTAL RESULTS

Consider metrics that take into account both image and sequential information. This might involve combining the predictions from the CNN and GRU components in a meaningful way. Depending on the application, consider how interpretable the model is. Techniques such as attention mechanisms in the GRU can help understand which parts of the sequence are most important for making predictions. Three indices, including overall accuracy, precision, F1 Score and recall, as calculated in Equations (1)–(4), were measured to evaluate the performance of models. Performance of the Proposed CNN-GRU model-based framework as shown in Figure 3 for Plant disease has been evaluated using the parameters namely Accuracy, Precision, F1 Score and Recall are as follows

4.1 Accuracy

The accuracy of the overall model can be measured at the sequence level, considering the entire sequence of predictions, considering both the CNN and GRU components. Accuracy is referred as closeness of a calculated value to an actual value. Precision value does not dependent on accuracy and is given by

$$Accuracy = \frac{TP+TN}{TP+TN+FP+FN} \quad (1)$$

4.2 Precision

Precision measures the accuracy of disease predictions, and recall measures the ability to capture all instances of disease. Precision measures the accuracy of positive predictions. It is the ratio of true positive predictions to the sum of true positives and false positives.

$$Precision = TP / (TP + FP) \quad (2)$$

4.3 Recall (Sensitivity)

Recall measures the ability of the model to capture all the relevant instances. It is the ratio of true positive predictions to the sum of true positives and false negatives.

$$Recall = TP / (TP + FN) \quad (3)$$

4.4 F1 Score

F1 score is the harmonic mean of precision and recall. It provides a balance between precision and recall. F1 Score provides a way to merge both precision and recall into just a single measure that captures TP and TN properties. This is the harmonic mean of the two fractions which is given by

$$F1Score = 2 * \frac{TP+TN}{TP+TN+FP+FN} \quad (4)$$

4.5 Confusion Matrix

A Confusion matrix shows the number of true positives, true negatives, false positives, and false negatives. It provides a detailed view of the model's performance. Useful for binary classification tasks that illustrates the trade-off between parameters. If data involves a time component, analyze the performance of the model over time. This is particularly relevant for diseases that evolve over the course of the plant's growth. Choose the evaluation metrics that are most relevant to your specific problem and take into account the characteristics of dataset. Additionally, it's beneficial to use a combination of these metrics to obtain a comprehensive understanding of your model's performance.

The confusion matrices are shown in 4. In calculation I, although GRU has the lowest number of true predictions for healthy quadrants, it has more true predictions for diseased quadrants than the other two methods.

For the FCDNN, the opposite is the case, since 230 quadrants were classified as healthy and only 10 quadrants were classified as diseased. The reason is that the FCDNN is more likely to predict samples as healthy. In calculation II, GRU made more true predictions for healthy quadrants. In calculation III, Both GRU and XGBoost classified 105 healthy quadrants correctly; however, GRU had more true predictions for diseased quadrants than XGBoost. In calculation IV, the performance of GRU was similar to that of XGBoost; the difference was only one healthy quadrant. The FCDNN did not perform well in the classification of healthy quadrants. In conclusion, the calculation results show that

prediction accuracy can be improved by using a sequence-based model, i.e., GRU, with time-series imagery.

Besides accuracy, the GRU-based method also achieved greater precision detection in all calculation scenarios, as compared to the XGBoost and FCDNN methods. In all calculation scenarios, the GRU-based method outperformed XGBoost and the FCDNN in prediction accuracy. Although XGBoost and the FCDNN are very powerful methods, they do not incorporate time-based information. From above confusion matrix, it is found that reflectance values were lower for healthy quadrants than diseased quadrants.

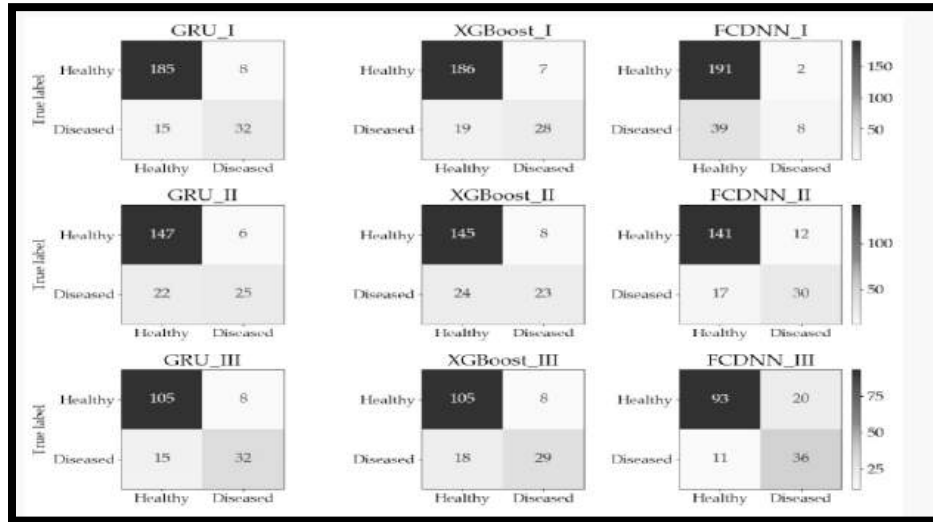


Figure 4: Confusion matrix of the testing dataset

Moreover, this pattern became clearer near the end of the cropping season, which indicates that incorporating time-based information for satellite images can add information to the data analysis.

V. CONCLUSION

In this work, proposed a CNN-GRU model to detect diseases in plants. The model is tested with apple, blueberry, cherry, corn and tomato leaves. The data set undergoes image segmentation with data augmentation. Various investigation of machine learning and deep

learning models are carried out and optimally developed a hybrid model which combines CNN with GRU. First extract spatial features through CNN and fed in to multi-layered GRU model temporal features corresponding to the input times series data. The proposed model works well as compared to other baseline models, indicating the real world implementation of proposed model disease classification of plant diseases.

VI. REFERENCES

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BIG DATA ANALYTICS FOR HEART DISEASE PREDICTION USING SPARK: A MODEL DEVELOPMENT AND COMPARISON STUDY

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ABSTRACT

Cardiovascular Disease (CVD) Remains The Leading Cause Of Death Worldwide , Claiming Millions Of Lives Each Year. Early Detection And Prevention Are Crucial, But Traditional Methods Are Often Time -Consuming And Expensive . Spark , An Open -Source Distributed Processing Framework, Has Emerged As A Valuable Tool For Healthcare Applications, Capable Of Efficiently Managing Large Datasets. Its Machine Learning Library (Mllib) Is Specifically Designed For Scalable And Distributed Machine Learning, Providing A Suite Of Tools And Algorithms For Effective Model Development And Training On Large Datasets .This Study Explores The Application Of Several Machine Learning Algorithms—Logistic Regression (LR), Decision Tree (DT), Random Forest (RF), Gradient Boost (GBT), And Support Vector Machine (SVM)—Implemented In Spark Mllib For Heart Disease Prediction . Evaluation Across Three Diverse Datasets Ensures Robustness And Generalizability Of The Findings .The Results Reveal Distinct Predictive Performances , With GBT Consistently Demonstrating The Highest Accuracy Across All Datasets . By Leveraging Ensemble Learning Techniques , GBT Achieves An Average Accuracy Of 89.65%, Outperforming LR, DT, RF, And SVM. This Suggests Its Superior Ability To Capture Complex Relationships Within The Data. The Study Provides Valuable Insights Into The Performance Of Different Machine Learning Algorithms , Aiding Healthcare Professionals And Researchers In Selecting The Most Appropriate Models For Specific Applications . Moreover , The Deployment Of Spark Mllib Ensures Scalability And Efficiency In Handling Large Datasets, Making These Models Practical For Real-World Use.

Keywords: Logistic Regression, Decision Tree, Random Forest, Gradient Boost, Support Vector Machine, Apache Spark, Mllib

1. INTRODUCTION

And General-Purpose Cluster-Computing Framework For Big Data Processing. It Was Developed In Response To The Limitations Of Mapreduce, The Previously Widely-Used Framework For Processing Large Datasets. Spark Is Renowned For Its Speed, Performing In-Memory Processing, Which Makes It Much Faster Than The Traditional Disk-Based Processing Used By Mapreduce. Spark Provides High-Level Apis In Java, Scala, Python, And R, Facilitating Application

Apache Spark Is An Open-Source Distributed Computing System That Offers A Fast A Development . It Also Incorporates Built -In Libraries For SQL, Machine Learning (Mllib), Graph Processing (Graphx), And Stream Processing (Structured Streaming). Spark Distributes Data Processing Tasks Across A Cluster Of Computers , Allowing For Parallel Processing , Thereby Enabling Scalability . Additional Machines Can Be Added To The Cluster To Handle Larger Datasets Or Increased Processing Demands.

Spark Provides High-Level APIs That Can Be Deployed In The Cloud Or On Local Computing Infrastructures. In The Healthcare Domain, Apache Spark Is Used To Quickly Process Big Data From Both Structured And Unstructured Health Records. It Offers Memory Computations For Analyzing Data In Memory And Fault Tolerance, Which Is Faster Than Reading And Writing Data From Hard Disks. In Some Cases, A Big Data Platform Is Necessary For Handling Large Data Files In Machine Learning Applications. For This Purpose, We Implement Spark With The Mllib Library To Achieve Faster Results. Mllib Supports Machine Learning Algorithms, Including Regression, Classification, Clustering, Collaborative Filtering, And Decomposition. Apache Spark Is 100 Times Faster Than Hadoopmapreduce When Handling A Huge Amount Of Data. Spark Can Be Used To Ingest And Preprocess Diverse Healthcare Data Sources, Such As Electronic Health Records (Ehrs), Medical Imaging Data, Patient Records, And Administrative Data. ETL (Extract, Transform, Load) Processes In Spark Help Clean, Transform, And Integrate Data From Different Sources, Ensuring Consistency And Preparing It For Further Analysis. Healthcare Organizations Often Deal With Massive Amounts Of Data, Including Clinical Data, Genomics Data, And Sensor Data. Spark's Distributed Computing Capabilities Enable The Parallel Processing Of Large Datasets, Facilitating Faster Analytics. Spark's Machine Learning Libraries (Mllib) And Scalable Machine Learning Algorithms Can Be Applied To Analyze Patient Outcomes, Predict Disease Progression, And Identify Patterns In Medical Data. Spark's Machine Learning Libraries Enable The Development And Deployment Of Predictive Models In Healthcare, Which Can Be Used For Risk Prediction, Patient Stratification, And Personalized Medicine. Predictive Analytics Can Help Healthcare Providers Identify High-Risk Patients, Optimize Treatment Plans, And Allocate Resources More Effectively. Traditional Machine Learning Libraries Operate On A Single Machine, Limiting Their Ability To Handle Large

Datasets Efficiently. Processing Big Datasets Might Require Distributed Computing Frameworks Or Sampling To Fit Within Memory Constraints. However, Mllib In Spark Is Designed For Distributed Computing, Efficiently Processing And Analyzing Large-Scale Datasets Across A Cluster Of Machines. This Allows For The Parallelization Of Tasks And Faster Model Training On Big Datasets. Non-Spark Machine Learning Algorithms May Struggle To Scale Seamlessly As The Dataset Size Increases, Resulting In Longer Training Times And Increased Resource Requirements. However, Mllib In Spark Is Inherently Scalable, Handling Datasets That Are Too Large For A Single Machine By Distributing The Workload Across A Cluster. This Scalability Is Crucial When Dealing With Big Datasets In Healthcare, Where Patient Records And Medical Data Can Be Extensive. Traditional Machine Learning Algorithms May Experience Performance Bottlenecks When Dealing With Large Datasets, Leading To Lengthy Training Times And Suboptimal Resource Utilization. However, Spark's Distributed Processing Capabilities Improve Performance, With Mllib Optimizing The Use Of Cluster Resources, Resulting In Faster Model Training And Prediction Times On Big Datasets.

Traditional Machine Learning Libraries May Not Integrate Seamlessly With Other Spark Components, Limiting The Ability To Leverage The Entire Spark Ecosystem For Data Processing And Analysis. Mllib Is Part Of The Broader Spark Ecosystem, Enabling Easy Integration With Other Spark Components Like Spark SQL, Spark Streaming, And Graphx. This Facilitates End-To-End Data Processing Pipelines Within A Unified Framework.

In This Paper, We Present A Spark-Based Heart Disease Prediction With Three Different Benchmark Datasets Named BNG Heart Statlog To Address The Challenges In Computing A Huge Amount Of Data With Some Important Evaluation Metrics. The Classifiers Used For Building The Offline Model Are LR, SVM, GBT, And DT To Improve The Prediction Accuracy By Combining The Prediction And Validation

Results Obtained From The Mentioned Algorithms. Furthermore, The Paper Is Organized As Follows: Section Two Describes Related Works In This Field, Section Three Defines The Presentation Of Proposed Research, Dataset, And Methodology. Section Four Describes Results And Discussions Related To This Research, And Finally, The Paper Ends In Section Five With A Conclusion.

2. LITERATURE SURVEY

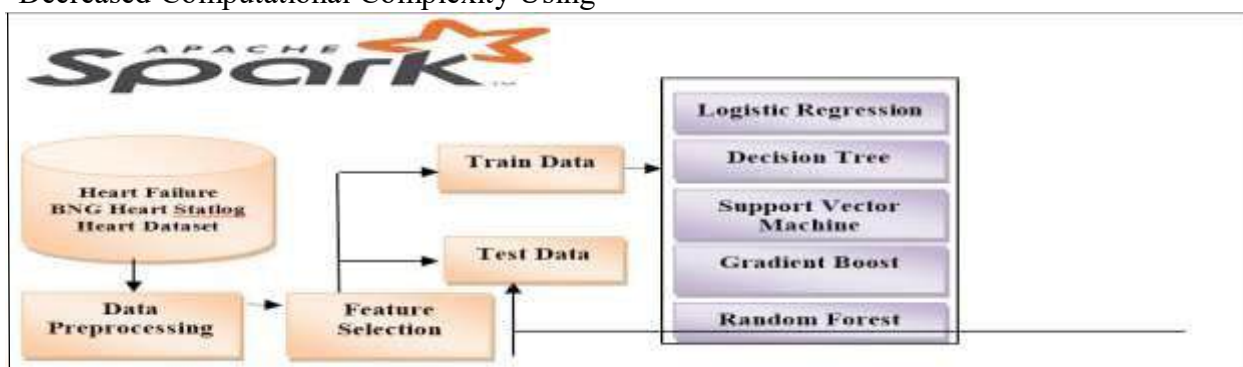
A. Ismail Et Al [1] Proposed A Hybrid System Based On SVM For Heart Disease Prediction. The System Extracts Key Features From The Dataset, Employing Appropriate Feature Selection Methods To Enhance SVM Performance. It Achieved A High Accuracy Of 90.5% In Classifying Heart Disease User Profiles In The Cloud. Selvi R.T Et Al [2] Developed An Optimal ANN Model For Heart Disease Diagnosis, Incorporating Distance-Based Multiclassified Instance Removal (DBMIR) And TLBO-ANN Techniques. This Model, Using The UCI Machine Learning Heart Disease Dataset, Was Implemented On Apache Spark For Offline And Online Prediction Of An Increasing Number Of Heart Disease Patients.

R. Venkatesh Et Al [3] Proposed A Big Data Prediction Analytics Model For Heart Disease Prediction Using The NB Approach (BPA-NB). This Approach Utilizes Bayes' Theorem For Probabilistic Class Analysis And Employs A Clustering Approach To Eliminate Unnecessary Data, Reducing Computational Complexity. The BPA-NB Approach Achieved An Impressive Accuracy Of About 97.12% In Predicting Only Heart Disease, Showing Decreased Computational Complexity Using

Mapreduce Algorithm With The Apache Spark Framework.

Ed-Daoudy Et Al [4] Developed A Data Processing Monitoring System Using Spark And Cassandra, Integrating A Random Forest Model For Healthcare Dataset Analysis And Real-Time Prediction. Similarly, [5] Utilized Spark With Apache Cassandra For Real-Time Breast Cancer Prediction Using Decision Trees On Actual Event Data. [6] Explores Apache Spark And Machine Learning For Real-Time Heart Disease Prediction Through Streaming Big Data, Proposing A Continuous Monitoring Framework. Nair Et Al [7] Introduced A Novel Approach To Real-Time Health Status Prediction Using Apache Spark And Machine Learning On Streaming Big Data From Twitter, Offering A Cost-Effective Solution For Proactive Health Monitoring. [8] Discusses Disease Prediction Using Machine Learning On Big Healthcare Data, Presenting A CNN-Based Multimodal Disease Risk Prediction Algorithm Evaluated On Real-Life Hospital Data.

Ghadgeet Al [9] Presents The Intelligent Heart Attack Prediction System Using Big Data And Data Mining Techniques For Diagnosing Heart Disease, Implementing Hadoop And Hbase For Real-Time Access To Large Datasets. Zolfaghar, Kiyana, Et Al. [10] Explore Big Data Solutions For Predicting The 30-Day Risk Of Readmission For Congestive Heart Failure Patients. Their Study Integrates Data From Multiple Sources, Including The National Inpatient Dataset, Showcasing The Effectiveness Of Big Data Solutions In Predicting Readmission Risk For Improved Accuracy And Scalability In Predictive Modeling.



3. MATERIALS & METHODS

3.1. Dataset:

In Our Study, We Utilized Three Distinct Datasets Related To Cardiovascular Diseases, Each Sourced From Different Platforms. The First Dataset, Focusing On Heart Failure, Comprised 12 Attributes And Was Obtained From Kaggle. The Second Dataset, Known As The BNG Heart Stalog Dataset, Featured 13 Attributes And Was Sourced From Openml. Lastly, The Third Dataset, Obtained From Kaggle, Included 14 Attributes And Covered A Broader Scope Of Heart-Related Information.

Table 1 Provides Comprehensive Details About The Features Present In Each Dataset, Facilitating A Clear Understanding Of The Variables Under Consideration. It Is Important To Note That All Three Datasets Were Carefully Examined And Found To Be Devoid Of Any Missing Values, Ensuring The Completeness And Reliability Of The Data For Our Analysis.

Dataset	Attributes
Heart Failure	Age, Anaemia, Creatinine Phosphokinase (CPK), Diabetes, Ejection Fraction, High Blood Pressure, Platelets, Sex, Serum Creatinine, Serum Sodium, Smoking, Time Death Event
BNG Heart Stalog	Age, Sex, Chest, Resting_Blood_Pressure, Serum_Cholesterol, Fasting_Blood_Sugar, Resting_Electrocardiographic_Results, Maximum_Heart_Rate_Achieved, Exercise_Induced_Angina, Oldpeak, Slope, Number_Of_Major_Vessels, Thal, Class
Heart	Age, Sex, Cp, Trestbps, Chol, Fbs, Restecg, Thalach, Exang, Oldpeak, Slope, Ca, Thal, Target

Figure 1 Illustrates The Structure Of The Framework Designed For Predicting Cardiovascular Disease. The Initial Step

Involves Loading The Dataset Into The Dataframe. Subsequently, Data Cleaning Is Executed Utilizing The Pandas Tool, Followed By The Application Of Preprocessing Techniques. The

Dataset Is Then Partitioned Into Training (70%) And Testing (30%) Datasets, After Which Machine Learning Algorithms Are Employed On The Divided Dataset. The Performance Evaluation Is Conducted Using The Train-Test Split Technique, A Standard Approach For Assessing The Effectiveness Of Supervised Machine Learning Models.

3.2 Data Preprocessing:

Data Preprocessing Is A Critical Step In The Machine Learning Pipeline That Involves Cleaning And Transforming Raw Data Into A Format Suitable For Training Machine Learning Models. The Goal Is To Enhance The Quality Of The Data, Address Any Inconsistencies Or Irregularities, And Prepare It For Effective Use In Predictive Modeling.

3.3 Feature Selection

Feature Selection Is A Technique That Filters Out Less Important Variables That Directs To A Simple, Better And Stable Model. In Spark, Implementing Feature Selection Is Harder Than Sklearn. So Simply Integrate The Feature Selection Step As A Part Of The Pipeline By Using The Function Selectfrommodel.

3.4 Machine Learning Algorithms In Apache Spark

A. Decision Tree: It Is A Popular Method For The Machine Learning Tasks Of Regression And Classification. In Apache Spark, The Decision Tree Is A Greedy Algorithm Which Performs A Recursive Binary Partitioning In The Feature Space And It Is Used Mostly In The Machine Learning Tasks Because It Is Easy To Interpret, Extend To The Multiclass Classification Setting, Handle Categorical Features, Capture Non Linearities, Do Not Need Feature Scaling And Also Feature Interactions Was Captured.

Can Capture Non-Linear Relationships And Interactions In The Data.

Prone To Overfitting, But Ensemble Methods Like Random Forest And Gradient-Boosted Trees Can Mitigate This.

B. Logistic Regression: It Is Generally Used For The Evaluation Of The Probability Where An Instance Fits A Certain Class. Logistic Regression Describes The Relationship Between A Categorical Outcome Quantity With One Or More Categorical Predictor Quantity By Using The Logit Transformation To The Dependent Variable Where The Logistic Model Forecasts The Logit Of Dependent Variable From Independent Variable. The Logit Function And The Equation Of The Probability Is Given Below:

$$\text{Logit}(P) = \log(P/1-P)$$

Logistic Regression Predicts Heart Disease In Big Data By Modeling The Probability Of Occurrence Based On Patient Features, Providing A Straightforward And Interpretable Binary Classification For Early Detection And Risk Assessment. Its Simplicity And Effectiveness Make It Suitable For Identifying Key Factors In Large-Scale Healthcare Datasets.

- Suitable For Binary Classification Tasks.
- Provides A Straightforward Interpretation Of Feature Coefficients.
- Effective When The Relationship Between Features And The Probability Of Heart Disease Is Approximately Linear.

C.Support Vector Machine:SVM Applied To Heart Disease Prediction With Big Data Involve Configuring SVM Models For Binary Classification, Utilizing Features Like Patient Demographics And Medical Indicators. The Algorithm Seeks An Optimal Hyperplane To Separate Instances Of Heart Disease And Non-Disease. SVM's Ability To Handle High-Dimensional Data Makes It Suitable For Diverse Feature Sets. The Iterative Training Process Ensures The Model's Accuracy In Predicting Heart Disease Outcomes, Contributing To Effective Early Detection In Large-Scale Healthcare Datasets. Adoption Of

SVM Aids In Leveraging Big Data For Robust And Scalable Cardiovascular Risk Assessment.

- Effective In High-Dimensional Spaces.
- Particularly Useful When There Is A Clear Margin Of Separation Between Classes.

D.Random Forest:Random Forest Applied To Heart Disease Prediction With Big Data Employs An Ensemble Of Decision Trees To Enhance Accuracy And Robustness. It Handles Diverse Features Effectively, Capturing Complex Relationships Related To Cardiovascular Health. Through Tree Aggregation, Random Forest Mitigates Overfitting And Provides A Reliable Model For Risk Assessment In Large-Scale Healthcare Datasets. Its Versatility In Handling High-Dimensional Data Contributes To Improved Predictive Performance. The Algorithm Is Particularly Effective In Uncovering Subtle Patterns And Interactions Within The Complex Landscape Of Heart Disease Risk Factors.

Combines Multiple Decision Trees To Improve Accuracy And Robustness.

..... Effective In Handling A Large Number Of Features And Capturing Complex Relationships.

E.Gradient Boost Tree: GBT Applied To Heart Disease Prediction With Big Data Involves Ensemble Learning Where Weak Learners, Often Decision Trees, Are Sequentially Trained To Correct Errors Of The Previous Ones. It Enhances Accuracy By Combining Multiple Models, Emphasizing Patterns In Complex Datasets Related To Cardiovascular Health. Gradient Boosting Minimizes Prediction Errors Through Iterative Training, Making It Effective For Uncovering Nuanced Relationships In Heart Disease Risk Factors. The Algorithm's Adaptability To Handle Diverse Features Contributes To Robust Predictions In Large-Scale Healthcare Datasets. Employing Gradient Boosting Enables Comprehensive Risk Assessment For Improved Cardiovascular Disease Detection And Prevention.

Builds An Ensemble Of Weak Learners Sequentially To Correct Errors.

- Often Provides High Accuracy And Can Handle Non-Linear Relationships.

Table 2: Accuracy Of Machine Learning Classifiers Using Pyspark

Algorithms	Accuracy			Average
	Heart Failure	BNG Heart Statlog	Heart	
Logistic Regression	87.90	83.44	84.04	85.12667
Decision Tree	86.58	88.81	79.81	85.06667
Random Forest	87.81	88.81	82.56	86.39333
Gradient Boost	88.90	96.58	83.48	89.65333
Support Vector Machine	94.03	92.17	80.18	88.79333

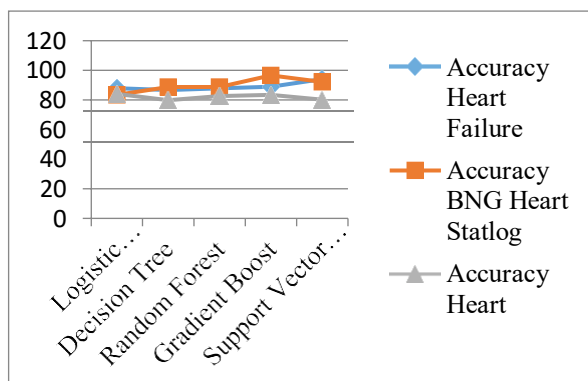


Figure 2: Comparison Of Machine Learning Algorithm Using Mllib

In The Analysis, A Random Forest Classifier Achieved An Accuracy Of 86.34% , Decision Tree Achieved 85.07% Accuracy Which Is Nearly Equal To The Logistic Regression Accuracy Of 85.13% Which Is The Lowest Of All The Classifiers In The Analysis, Support

Vector Machine (SVM) Achieved 88.79% And Random Forest Achieved An Accuracy Of 86.34%

4. CONCLUSION

In This Research, We Developed A Predictive Model For Cardiovascular Disease Using Pyspark And Spark Mllib Libraries Seamlessly Integrated With The Apache Spark Framework. We Applied Various Supervised Algorithms, Including The Decision Tree Classifier, Logistic Regression Classifier, Support Vector Machine Classifier, Random Forest Classifier, And Gradient-Boosting Tree Classifier. To Assess Model Performance, We Utilized Accuracy Metrics And Formulated A Comprehensive Framework That Encompasses Stages Such As Loading The Cardiovascular Diseases Dataset, Cleaning And Preprocessing The Data, Implementing Classifiers, And Ultimately Evaluating Their Effectiveness. Notably, The Gradient-Boosting Tree Classifier Exhibited The Highest Average Accuracy, Reaching 86.65%. Our Future Work Entails An In-Depth Examination Of Extensive Datasets. Additionally, We Envision The Development Of An Online Heart Disease Prediction System, Leveraging Real-Time Data From Diverse Sources Such As Sensors, Mobiles, Wearable Devices, And Smartwatches, Which Will Be Streamed Into An Apache Spark-Based Machine Learning Model.

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IOT SECURITY ENHANCEMENT USING DEEP LEARNING TECHNIQUES

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ABSTRACT

The rapid growth of the Internet of Things (IoT) has brought about a global concern for the security of interconnected devices and networks. This necessitates the use of efficient Intrusion Detection System (IDS) to mitigate cyber threats. Deep learning (DL) techniques provides a promising approach to effectively detect irregularities in network traffic, enhancing IoT network security and reducing cyber threats. In this paper, DL-based IDS is proposed using Feed Forward Neural Networks (FFNN), Long Short-Term Memory (LSTM), and Random Neural Networks (RandNN) to protect IoT networks from cyberattacks.

Keywords: Internet of Things Intrusion detection Cyber threats Deep learning Random Neural Network Long Short Term Memory Feed Forward Neural Network Machine Learning Network security

1. INTRODUCTION

The advancements of the Internet of Things (IoT), cloud computing, computer security, and cyber security has undergone significant progress on a broad scope recently. IoT is a potential paradigm for societal innovation concerned with the Internet and real things, including smart home automation, business applications, smart cities, and environmental monitoring. IoT presents enhanced adaptability and productivity, thereby facilitating the establishment of extensively interconnected frameworks that enable novel services [1]. The advantages are attractive for both industrial and consumer applications. The emergence of the IoT paradigm has been noted to coincide with the development of tailored solutions within the past decades, thereby defining the concepts of Industrial IoT and Industry 4.0 [2]. According to projections, there will be nearly three times as

many IoT devices in the world in 2030 compared to the 15.14 billion that exist today.

There are over 60% of IoT devices used in consumer markets and other corporate sectors. The percentage is expected to stay the same for the next ten years [3]. The network layer addresses the issues related to inter devices dependability, capacity building of data, energy utilization, and most significantly security aspects while connecting IoT devices to other networks, machinery, and services. The perception layer gathers data from the environment via sensors, actuators, and computing hardware. Considering power conservation, security, and interoperability issues, the physical layer manages operations like signal processing, encryption, and data transfer [7]. Security solutions for each layer of the IoT are broken down and categorized in Fig. 1 with the security threats on each tier.

Most IoT architectures includes a wide variety of information, enabling features, and technology expansion across three distinct tiers Improving the cybersecurity posture of crucial cyber infrastructures is a serious global concern. It is, therefore, crucial to identify cyber risks before implementing effective and robust cybersecurity remedies [9]. Fig. 2 depicts an overview of the architecture of the IoT, which interacts openly with authorized and unauthorized users encompassing many components, including but not limited to devices, sensors, servers, actuators, protocols, cloud services,

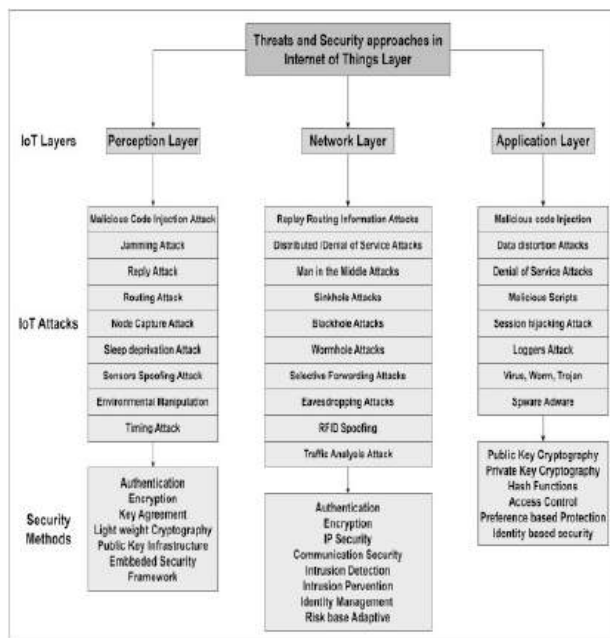
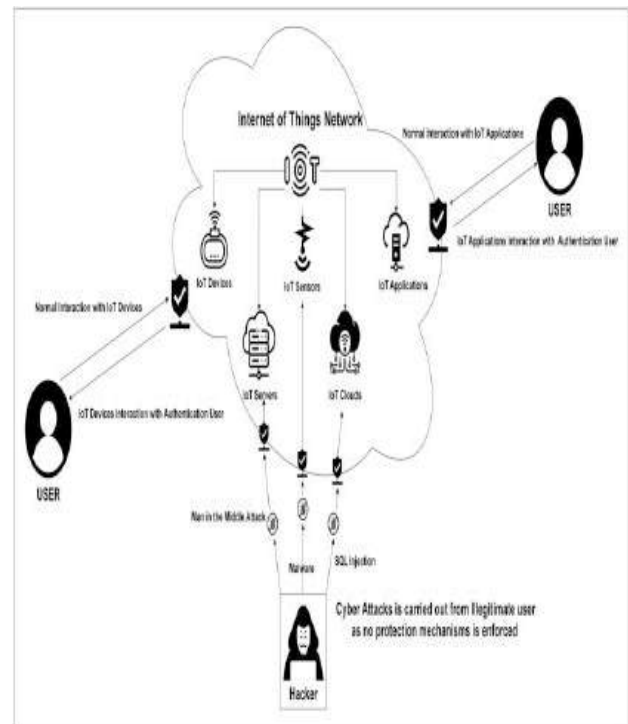


Fig. 1. Security threat and its mitigation in IoT layers [8], [9].



2. Literature survey

This section presents an in-depth review of the importance of cyber security in IoT infrastructure by reviewing previous studies and exploring the progress made by applying ML and DL techniques. This highlight the importance of IoT security and its challenges faced due to absence of IDS and emphasis on the need of IDS in IoT networks. The section examines existing research on deep learning-based IDS for IoT applications, focusing on identifying research gap in this area. Many research challenges must be updated to stop cyber attacks and make security solutions for light weight IoT networks. Applications like automobile, health monitoring, autonomous machinery, and smart homes generate a lot of data that requires new security measures. There needs to be more work done on intrusion detection for IoT, even though several academic and industrial researchers have utilized ML and DL techniques to build and deploy Intrusion Detection Systems (IDS) for IoTs during the past years.

2.1. IoT security challenges

IoT aims to improve the quality of life by providing a scope of smart, interconnected devices and applications across multiple domains. The critical challenges faced by IoT devices related to security threats lead to exploring advanced techniques such as DL to increase IoT security. A study in [21] introduced a Convolutional Neural Network (CNN) to enhance the efficiency and security of IoT networks by implementing an anomaly-based IDS. The model can identify intrusion and detect anomalies in traffic using the NID and BoT-IoT datasets, resulting in an accuracy of 99.51% and 92.85%, respectively. Even with the current progress in the IoT industry, a critical requirement exists for extensive research to enhance the threat detection rate of IoT systems. Thus, identifying anomalies in IoT devices is crucial in mitigating attacks

2.2. Intrusion detection systems in IoT

The IoT has a lot of potential across multiple sectors. However, techniques for detecting and avoiding security incidents must be developed to implement IoT in various businesses effectively. Several researchers use datasets produced by different organizations to support the development of ML models to predict intrusions. Due to this, not all classes of datasets have the same sample sizes, which is a common issue with datasets. Techniques like random undersampling and oversampling could be more effective in producing reliable results. Researchers in [25] tackle the problem of data imbalance in intrusion detection within the IoT by implementing a specialized loss function. The purpose of this function is to automatically focus on more complex negative cases over simple ones to lower the assigned weights. The effective training of ML models is facilitated by enabling changes in dynamically scaled gradients. This research demonstrates the effectiveness of a DL-based intrusion detection approach utilizing focal loss to analyze three datasets

derived from three distinct IoT domains. The FNN Focal technique performed better than the baseline model across the Bot-IoT dataset, achieving 91.55% accuracy. Whereas CNN Focal approach achieved a 24% increase in accuracy compared to the cross-entropy loss function. The scope is however limited to the Focal loss, thereby highlighting the necessity

2.3. Deep learning applications in security

The IoT network comprises several IoT nodes that transmit and receive large amounts of data, thus facilitating advanced intrusion detection techniques. The Attacks in IoTs go undetected for a long, resulting in service disruptions, financial loss, and identity theft. For IoT-enabled services to be reliable, secure, and profitable, IoT devices must be equipped with real-time intrusion detection. A fully connected four-layer network architecture (FCFFN) is presented in [18] to identify malicious traffic that targets connected IoT devices. In the FCFFN architecture, a deep neural network consisting of six layers are fine-tuned to detect intrusion accurately. The proposed deep learning-based IDS quickly identifies attacks on IoT networks like Blackhole, Distributed Denial of Service, Opportunistic Service, Sinkhole, and Workhole. The results show that the system is robust and can automatically identify attacks, with a detection rate of 93.21%, thus improving the safety of IoT networks. This IDS was however been trained using the dataset generated by the experimental system and includes only five types of intrusion.

IoT networks enable massive data flows between many devices. Attackers can now compromise the CIA traits of IoT devices and networks. IoT devices generates vast amounts of data that are difficult to analyze in real time, thus making IDS a challenge to build. A Deep Ensemble-based IDS was presented in [29] using a multi-classifier system known as Lambda architecture that identifies cyber-attacks using LSTM, CNN, and ANN classifiers to maximize batch layer training.

The batch layer trains the model, whereas the speed layer of the Lambda architecture makes decisions to improve the ability to make real-time evaluations. LSTM exceeds ANN and CNN-based classifiers in accuracy for Binary Classification. Hybrid Ensemble achieves 99.93% accuracy outperforming individual classifiers in multiclass by reducing processing time. The results indicate that the ensemble methodology

2.4. Related work on deep learning-based IDS for IoT

The growing of IoT devices and malicious software, as well as the wide use of encryption technology in IoT communication, has increased the amount of encrypted suspicious traffic between devices, posing a significant threat to IoT cybersecurity. Currently, many traffic detection techniques employed in the IoT need more dataset processing, suboptimal feature extraction, imbalanced data, and limited accuracy in multiclass classification. The vulnerability of IoT networks to threats was addressed by developing a bidirectional CNN-BiLSTM DDoS detection model, as proposed in [32]. The model was evaluated using the CICIDS2017 dataset and included three deep learning algorithms: RNN, LSTM-RNN, and CNN. This research builds a model responsive to different DDoS attacks and can distinguish between malicious and normal traffic to prevent false alarms. The CNN- BiLSTM model has an accuracy of 99.76%. This model examined the architecture of IoT networks and provided possible causes for their security flaws. The model demonstrated its compatibility with the existing IoT network infrastructure.

The increasing number of novel cyber-attacks poses a continual threat to modern IoT networks, requiring the development of advanced defense mechanisms to mitigate zero-day attacks effectively. The limitations of IoT devices are computing power and lack of endurance. Moreover, the diverse cyber-attacks poses a detection

requires continuous defense mechanisms. Researchers has proposed dynamic and distributed frameworks based on DL to detect cyberattacks [37]. The NSL-KDD and BoT-IoT datasets evaluate the performance of the LSTM and FFNN models within the framework. The framework was devised to safeguard IoT networks by utilizing fog layers to detect cyber-attacks. In order to boost detection and classification accuracy while reducing latency, fog layers evaluate data near the edge layer. The proposed distributed system detects cyberattacks by achieving an accuracy of 99.95%. The results indicate that FFNN exhibits a higher performance for the distributed NSL-KDD dataset. The proposed methodology has improved cyber-attack detection in IoT networks that utilize constrained end devices. This research is limited to sufficient data

2.5. Problem formulation

In future, advancements in anomaly detection within the system will enhance data processing and analyze security, thereby mitigating the risk of major failures in IoT networks. From the above review, it is clear that numerous methods have been proposed for enhancing the security of IoT devices. Multiple research has investigated IoT security and privacy concerns in cybersecurity. Complex models require tremendous resources, whereas lighter models are better suited for deployment on edge devices [20]. Current research has shown that DL needs to be enhanced because it produces misleading results that lead to inefficient procedures and overfits. Based on the above discussion, implementing advanced learning strategies can improve the performance of IDS [38]. Implementing security protocols for both the internal and external components of IoT devices is essential due to the importance of IoT networks. Attackers may launch destructive impacts on IoT-based critical applications. Implementing deep learning models for a better understanding of the decision-making process increases trust in the IDS and assists researchers in understanding and evaluating detection.

3. Proposed intrusion detection systems

This section presents a framework for deep learning-based intrusion detection to identify and classify potential vulnerabilities and attacks within IoT networks. The proposed framework is presented for three DL models, followed by a comprehensive evaluation of the tasks performed at each stage and a thorough analysis of the significant contributions of each step. The subsequent discussion comprehensively explains the intrusion detection dataset, hardware, software and libraries employed in this research.

2.6. Proposed framework

The proposed system has been designed to retrieve packets from the data produced by the underlying IoT infrastructure and identify intrusions following sufficient training. The proposed framework entails employing a traffic capture mechanism from an IoT Network, as proposed in [39], to collect the traffic flow of IoT devices. This data is then utilized to emulate the operations of an IoT-enabled Smart Home. The proposed framework involves utilizing a deep neural network trained on a dataset, CIC IoT 2022, consisting of network packets. The CICFlowMeter 4.0 is utilized as a feature extractor to extract relevant features from the packets transmitted through IoT networks

Anomaly detection encompasses a range of techniques, such as packet dropping, vulnerability scanning, IP address blocking, physical inspections, and user notification. The model under consideration streamlines the process of choosing algorithms for limited resources of IoT devices by considering actual performance and cost metrics, including accuracy and time cost. Tailored solutions address the distinct requirements of individual users are of paramount importance within the framework of anomaly detection systems for the IoT security. The dataset is subjected to

training through various DL models to identify anomalies. Thus, it can be deduced from the results of the model that has been trained. The system can run an algorithm to identify the existence of any malicious packets and conduct a thorough examination of the IoT devices. Hence, the proposed model aims to provide an best solution catering diverse user types, including large firms with abundant resources seeking maximum accuracy and startups prioritizing cost efficiency.

2.7. Workflow description of the proposed framework

The process consists of the following stages including data preprocessing which have importance in data analysis, as it involves cleaning, encoding, feature scaling and extracting the dataset. Data augmentation techniques is used to achieve class balancing and feature selection to identify the most appropriate features. The feature preprocessing encompasses the initial step of dividing the dataset, which is proceeded by the training, validation and testing of DL models.

Data Preprocessing: Initially, the network analyzer tool is employed to gather raw network traffic of IoT devices and extract packet features [39]. Features extraction can be done using CIC Flow Meter 4.0 [40] and convert PCAP (Packet Capture) files into CSV (comma-separated values) files. The dataset comprises 84 features, including 78 numerical values, five categorical values, and one label. The dataset features are subject to cleaning, feature scaling and encoding techniques before given to the DL models.

6. Conclusion and future work

This paper demonstrates the efficacy of deep learning-based IDS employing FFNN, LSTM, and RandNN models in countering cyber threats in IoT environments. The RandNN model exhibits its potential due to random connections, thus facilitating a more exploratory approach, enabling the model to capture intricate dependencies and uncovering

insights that might not be apparent in other architectures. The LSTM model shows strong suitability in addressing prolonged dependencies and effectively capturing temporal dynamics within the IoT data. Finally, the FFNN model has demonstrated superior results when compared with the proposed RandNN and LSTM models, and other state-of-the-art IDS techniques. Moreover, it has the ability to enhance the overall performance of an IDS by learning complex associations between input characteristics and output classifications. IDS framework enables the extraction and classification of features in a versatile manner, thereby facilitating the efficient identification of diverse cyber threats in IoT environments. The models can adjust to an IoT network's ever-changing and dynamic characteristics, thereby contributing to proactive mitigation of cyber threats. The results in this paper reflects compelling insights into the performance of various classifiers in effectively identifying a wide range of cyberattacks. The challenges associated with research in this field encompass several key aspects.

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VISION FOR VISHWA GURU INDIA: INITIATIVES FOR GLOBAL LEADERSHIP BY 2047

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EASE OF DOING BUSINESS

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Abstract

The Ease of Doing Business (EoDB) index is a ranking system established by the World Bank Group. In the EODB index, 'higher rankings' that is a lower numerical value indicate better, usually simpler, regulations for businesses and stronger protections of property rights.

Easy of Doing Business (EODB) has come to be recognized as a cross-border barometer for doing business. In several ways, because of its relative simplicity and easy-to-measure criteria, it has also become an actionable report, as evident from India's new approach of working towards improving its relative position rather than continuing to question the exercise.

Keywords: *The Ease of Doing Business, Ranking, Value.*

Ease of Doing Business

Ease of Doing Business is computed by aggregating the distance to frontier scores of different economies. The distance to frontier score uses the 'regulatory best practices' for doing business as the parameter and benchmark economies according to that parameter. For each of the indicators that form a part of the statistic 'Ease of doing business,' a distance to frontier score is computed and all the scores are aggregated. The aggregated score becomes the Ease of doing business index. Indicators for which distance to frontier is computed include construction permits, registration, getting credit, tax payment mechanism etc. Countries are ranked as per the index.

Among the chosen 190 countries, India ranked 63rd in Doing Business 2020, World Bank Report. In 2014, the Government of India launched an ambitious program of regulatory reforms aimed at making it easier to do business in India. The program represents a great deal of effort to create a more business-friendly environment.

India has emerged as one of the most attractive destinations not only for investments but also for doing business. India jumps 79 positions from 142nd in the

year 2014 to 63rd in the year 2019 in 'World Bank's Ease of Doing Business Ranking 2020'. Positive changes have led to this impressive improvement in India's ranking in the EoDB index.

India's Major Achievements are **Construction Permits** and . India's ranking on this parameter has improved from 184 in 2014 to 27 in 2019. This improvement has been mainly on the account of a decrease in the number of procedures and time taken for obtaining construction permits in India. India's ranking on this parameter has improved from 137 in 2014 to 22 in 2019. It takes just 53 days for a business to get an electricity connection in India. Apart from these significant improvements, among the 190 economies, India ranks 13th in Protecting Minority Investors and 25th in Getting Credit.

The report was a benchmark study of regulation. The survey consisted of a questionnaire designed by the Doing Business team with the assistance of academic advisers. The questionnaire centered on a simple business case that ensures comparability across economies and over time. The survey also based assumptions on the legal form of the business, size, location, and nature of its operations. The ease of doing business index was meant to measure regulations directly affecting businesses and did not directly measure more general conditions such as a nation's proximity to large markets, quality of infrastructure, inflation, or crime.

The next step was gathering data surveys of over 12,500 expert contributors that are lawyers, accountants, etc in 190 countries who deal with business regulations in their day-to-day work. These individuals interacted with the Doing Business team in conference calls, written correspondence, and visits by the global team. For the 2017 report, team members visited 34 economies to verify data and to recruit respondents. Data from the survey was subjected to several rounds of verification. The surveys were not a statistical sample, and the results were interpreted and cross-checked for consistency before being included in the report. Results were also validated with the relevant government before publication.

A Nation's ranking on the index was based on an average of the following factors

Starting a business

Starting a business Includes Procedures involved, time, cost, and minimum capital required to open a new business

Construction Permits

Construction permits Consists the Procedures, time, and cost involved to build a warehouse

Getting Electricity

It includes the procedures, time, and cost required for a business to obtain a permanent electricity connection for a newly constructed warehouse.

Registering Property

It deals with the Procedures involved, time, and cost needed to register commercial real estate

Getting Credit

It Analyse the Strength of legal rights index, depth of credit information index

Protecting Investors

It takes in to account the Indices on the extent of disclosure, the extent of director liability, and ease of shareholder suits

Paying Taxes

It Considers Number of taxes paid, hours per year spent preparing tax returns, and total tax payable as a share of gross profit

Trading Across Borders

It consider the Number of documents, cost, and time necessary to export and import.

Enforcing Contracts

Procedures involved, time, and cost required to enforce a debt contract is considered.

Resolving Insolvency

The time, cost, and recovery rate under a bankruptcy proceeding are considered.

Conclusion

For attracting new investment, both foreign and domestic, several macroeconomic issues have to be addressed. These include economic stability and quality physical infrastructure. India may have the advantage of a large domestic market, and our efforts to improve our ease of doing business rankings finally yielding best results.

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ROLE OF ICT IN PROFESSIONAL DEVELOPMENT OF TEACHERS

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Abstract

Information and communication technology (ICT) has brought revolutionary changes to enhance professional development of teachers. At present several ICT related instructional devices like computers, smart phones, laptops, tablets, LCD, multimedia and projectors are used in classrooms for making more attractive and productive teaching and learning process.. Teacher is considered to be the architect of the nation. In other words, the future of the nation lies in the hands of teacher. This shows the importance of teacher. One can realize how important education is which makes one a teacher. Most Inspiring innovation in the field of education is the integration of Information and Communication technology in education. The teachers should cope with the increasing demand for information and skills. Chalk and talk method become very old method. To survive in the changing, developing world one could update themselves. Teachers must be flexible and willing to renew their vision of teaching and learning if they are to fully realize the potential of educational technology. ICT is extremely useful for professional development of teachers.

Keywords: *ICT, Professional development, Teachers*

Role of ICT in Professional Development of Teachers

Professional Development of Teacher is any type of continuing education effort for educators. It's one way teachers can improve their skills and, in turn, boost student outcomes. Learning can take place in formal or informal settings. Formal settings include conferences, courses, seminars, and workshops. Informal opportunities for teacher professional development include independent research or investigation, peer learning initiatives.

The introduction of ICT in the real m of education unleashes a Plenty of possibilities in the process of learning. Teachers can make use of different ICT tools like computers, laptops etc, to make conceptual comprehension easier for students. It aids them in implementing a variety of strategies in the classroom environment to improve learning

outcomes. They can effectively present ideas to the students using ICT and leave a long-lasting impact on them. For the learning process to be effective, it has to be a two-way process. ICT makes this possible. It enables students to refine their soft skills along with their technical skills. ICT tools provide students with the opportunity to speak up their minds through discussion forums. Performance analytics provided by different software assist teachers in understanding their students in a better way. Analytics reports of students help teachers to check for understanding of the students.

Teachers are the national builders responsible to train future generation to be able for facing challenges of present era, but this is not possible without having full command in utilization of ICT instructional devices properly. It is a fact that knowledge of ICT helps teachers to keep knowledge updated to use modern instructional technology in classrooms. Recently, ICT has become a basic need of human life across the world and no field can work effectively without its support. In education and training, it plays vital role to uplift teaching and learning process. The use of ICT facilities in teacher training programs has become necessary in classrooms and teachers are considering it most important pillar for better students learning.

ICT is extremely useful for professional development of teachers and helps the teacher in many ways.

ICTs can be used to reinforce existing pedagogical practices as well as to change the way teachers and students interact.

Effective ICT use in education increases teachers' training and professional development needs. However, ICTs can be important tools to help meet such increased needs, by helping to provide access to more and better educational content, aid in routine administrative tasks, provide models and simulations of effective teaching practices, and enable learner support networks, both in face to face and distance learning environments.

Effective teacher professional development should approximate the classroom environment as much as possible. "Hands-on" instruction on ICT use is necessary where ICTs are deemed to be vital components of the teaching and learning process.

Professional development activities should model effective practices and behaviors and encourage and support collaboration between teachers.

ICT enriches teaching by enhancing the initial preparation by providing good teaching and training materials, recording and feedback mechanisms.

ICT has removed the barriers of space, time and place between teacher and learner. It has established a healthy and interactive relationship between teachers and students.

ICT provides lifelong professional development by providing courses in a virtual situation, training in demand, orientation and refresher courses through video conferencing and online.

By the exchange of materials through virtual communities, sharing of ideas and experiences and collaborating on projects the ICT can revolutionize the whole teaching profession.

Conclusion

Due to the latest developments in the information and communication technology the role of teacher in the process of teaching and learning has increased many fold and has become more complex as such teachers are to equip themselves with latest technology then only they coup up the new challenges in the field.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

Volume - 1

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

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FINANCIAL INCLUSION FOR MSMEs

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Abstract

MSMEs, or micro, small, and medium-sized businesses, are the foundation of all economic growth. Through the improvement of household wealth, the creation of jobs, and the eradication of poverty, they support local economic development. Despite playing such a crucial role, MSMEs have limited access to financing, and research on the positive effects of financial inclusion on the performance of micro, small, and medium-sized businesses is few. The vast majority of MSME business owners that use fintech products in their operations demonstrate how these owners have used financial services, namely savings accounts, to have an influence on expanding financial inclusion. Micro, small, and Medium Enterprises (MSMEs) are important resources for generating employment and driving economic growth, but they are still too tiny and unorganized to have much of an influence. In India, almost 95% of businesses are categorized as tiny, which creates the odd "missing middle" problem. Lack of accessible financing is one of the main obstacles to MSMEs expanding.

Keywords: *MSMEs, Economic Development, Economic Growth, Employment.*

Introduction

India's social fabric has undergone a series of transformations since Independence. After the liberalisation of the economy in the 1990s, the market opened up and employment opportunities grew, as did the spending power and standard of living of the average Indian.

As financial access grew, so did social mobility. However, certain sections have lagged behind due to myriad reasons ranging from social barriers to a lack of access to education and financing. One of these sections is made up of a multitude of micro, small and medium enterprises (MSMEs), which form the foundation of the economy.

Financial inclusion refers to providing good quality financial products and services everyone can access and afford. Such provision should be irrespective of company size or an individual's financial condition. It aims at providing an equal economic opportunity for sustainable growth.

The micro, small and medium enterprises (MSMEs) sector contributes significantly to the manufacturing output, employment and exports of the country. The contribution of MSME to total GDP has been steadily rising. The table below shows the significance of MSME to the economy.



Recognizing the contribution and potential of MSME sector, the definitions and coverage of the MSE sector were broadened significantly under the Micro, Small and Medium Enterprises Development (MSMED) Act, 2006 which recognized the concept of “enterprise” to include both manufacturing and services sector besides, defining the “medium” enterprises. Government of India has taken different institutional and policy measures for facilitating credit to MSMEs in the last few decades. Institutional measures include creation of institutions such as Industrial Development Bank of India (IDBI), Small Industries Development Bank of India (SIDBI), National Bank for Agriculture and Rural Development (NABARD), Export Import Bank of India (EXIM Bank), State Finance Corporation (SFC)s, State Industrial Development Corporation (SIDC)s, National Small Industries Corporation (NSIC) and various other facilities.

Barriers to MSME Growth

The MSME sector faces several barriers to their growth and to realizing their full potential.

- Lack of availability of adequate and timely credit
- High cost of credit
- Collateral requirements
- Limited access to equity capital
- Problems in supply to government departments and agencies
- Procurement of raw materials at a competitive cost
- Problems of storage, designing, packaging and product display
- Lack of access to global markets
- Inadequate infrastructure facilities, including power, water, roads, etc.

- Low technology levels and lack of access to modern technology
- Lack of skilled manpower for manufacturing, services, marketing, etc.
- Multiplicity of labour laws and complicated procedures associated with compliance of such laws
- Absence of a suitable mechanism which enables the quick revival of viable sick enterprises and allows unviable entities to close down speedily
- Issues relating to taxation
- While the above list provides key barriers for MSME growth in general, these constraints play out more severely for microenterprises, particularly access to finance.

Challenges Faced by Msme in Securing Financing in India

Lack of Credit History: One of the primary challenges faced by MSMEs in securing financing is the lack of a credit history. Unlike large companies, MSMEs do not have an established track record and hence find it difficult to secure loans from banks and other financial institutions. This lack of credit history makes MSMEs a risky investment for lenders, which makes it challenging for them to obtain financing.

Inadequate Collateral: Another significant challenge for MSMEs is inadequate collateral. Banks and other financial institutions often require collateral for loans, which can be a challenge for MSMEs as they may not have assets to pledge as collateral. This requirement can limit the amount of financing that MSMEs can secure, which can hinder their growth and development.

Lack of Awareness About Government Schemes: The Indian government has launched various schemes and initiatives to promote MSME financing, but lack of awareness about these schemes remains a significant challenge. MSMEs often do not have access to information about these schemes, which can limit their ability to take advantage of them.

High Interest Rates: MSMEs also face high interest rates on loans, which can make it difficult for them to repay loans and can limit their ability to invest in their businesses. High-interest rates can also make it difficult for MSMEs to secure financing in the first place, as lenders may perceive them as risky investments.

Initiatives Taken by the Government and Private Sector: To address the challenges faced by MSMEs in securing financing, the Indian government and private sector have taken various initiatives.

Government Initiatives

The Indian government has launched several initiatives to promote MSME financing. Some of these initiatives include:

- **Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE):** The CGTMSE scheme provides collateral-free credit to MSMEs. The scheme guarantees up to 85% of the loan amount, which reduces the risk for lenders and makes it easier for MSMEs to secure financing.
- **Pradhan Mantri Mudra Yojana (PMMY):** The PMMY scheme provides loans up to Rs. 10 lakhs to MSMEs. The scheme has three categories of loans: Shishu (up to Rs. 50,000), Kishore (up to Rs. 5 lakhs), and Tarun (up to Rs. 10 lakhs). The loans do not require collateral and are available to both new and existing MSMEs.
- **Stand-Up India:** The Stand-Up India scheme provides loans up to Rs. 1 crore to SC/ST and women entrepreneurs for setting up new ventures in the manufacturing, services, or trading sectors. The scheme aims to promote entrepreneurship among these communities and provides support through the entire loan process.
- **Private Sector Initiatives:** Apart from government initiatives, the private sector has also taken steps to promote MSME financing. Some of these initiatives include:
 - **Online Lending Platforms:** Several online lending platforms have emerged in recent years that offer MSMEs an alternative to traditional bank financing. These platforms use technology to assess creditworthiness and provide loans quickly and efficiently.
 - **Collaborations with Government Initiatives:** Many private sector entities have partnered with government initiatives such as the CGTMSE scheme to provide financing to MSMEs. These collaborations have helped increase awareness about government schemes and make it easier for MSMEs to access financing.

Financial Inclusion and MSMEs

The lack of financial capital accounted for 21% of the weight out of 100 causes of illness. In 2006, Rakesh Mohan clarified. Regarding the critical evaluation of the investment cap, loan support, and fiscal incentives to priority sectors in the Small Scale Industries (SSI) strategy. He drew attention to the fact that India is not in a better situation than other developing countries and proposed that banks may enhance the financing of economic activity in the nation by liberalizing financial services more. They must establish a financing foundation from a larger deposit base and make profitable investments on (SSI) in order to meet the rising demand for credit.

Basic Pillars of the MSME Finance Policy Model

1. Legal and Regulatory Framework
2. MSME's Access to Financing Policy
3. Credit Infrastructure

4. Alternative Financing Infrastructure
5. Market Efficiency
6. Priority Sectors.

Digital Financial Inclusion of Women in MSMEs

Digital financial inclusion (DFI), especially for vulnerable groups like women, youth and micro, small and medium enterprises (MSMEs) is a core topic for discussions in international forums such as the G20. With a growing focus on the adoption of financial technology and digital payments systems by both individuals and businesses, the global digital payments market is expected to grow at an estimated compound annual growth rate (CAGR) of over 13 percent between 2022 and 2026. As access to, and usage of digital financial services increases, it can help promote gender equality by enabling affordable transfers, increasing women's bargaining power in case of social security transfers, increasing women's resilience to financial, economic and health shocks.

Yet, there continues to be several gaps in DFI of women, and thus, there has been growing prioritisation of DFI for women at a policy and programmatic level across G20 countries and in the G20 forum. With India entering the Troika in 2021 and taking over the G20 Presidency for 2023, there is a need for the country to focus on both the achievements and the issues related to DFI of women and MSMEs in India. To participate actively in the discussions, there is need to have a clear understanding of the issue and India's strengths. The Centre and state governments, the Reserve Bank of India (RBI), and National Bank of Agriculture and Rural Development (NABARD) have introduced several schemes and initiatives to facilitate DFI of women and MSMEs. Some of these schemes, such as the Pradhan Mantri Jan DhanYojana (PMJDY), Stand-Up India, and Pradhan Mantri MUDRA Yojana (PMMY), which have provided better access to digital finance to women, can also be showcased in the G20. Yet, there are hardly any survey-based studies on where the country stands, its achievements and gaps in DFI, especially with reference to the MSME women entrepreneurs and employees.

MSME-Financial Inclusion Base Set

Financial inclusion is measured across several dimensions. The dimensions are accessibility, corresponding to the range of financial services available, next is the usage, the extend to which customers make use them, and last one is the quality of the services, how well it caters to the needs, yet another addition to the last one is how does financial inclusion influence the decision of economic agents and increase economic well-being. The data are classified into demand-side and supply -side data. The demand-side comes from the needs from individuals and supply-side comes from the providers of financial service.

The Base Set is intended to be used in conjunction with at least the AFI Core Set of Financial Inclusion Indicators to provide an overall assessment of the state of financial

inclusion in a country. Over the two decades, three key aspects in economic development have created the conditions to develop the basic set of MSME finance indicators based on the growing recognition and emphasis on 1. The evidence-based policy that policy decisions will achieve expected outcomes. 2. Wider recognition of the important role that MSMEs play in the economic growth 3. Inability of MSMEs to harness their potentialities, due to lack of access and usage of appropriate financial products and services. Hence, to improve MSMEs access to financial services in order to promote inclusive economic growth, there is a need for rigorous and timely data on financial access and usage. The effective policies can be drafted if the financial inclusion status can be assessed. The MSME finance Base set is a limited set of indicators that aims to give a comprehensive view of the state of financial inclusion for MSMEs in a given country, with an emphasis on access to credit.

Present Challenges of MSME Finance to Rural Entrepreneurs

The response of Indian MSME sector and RBI through Financial inclusion strategies for the challenges during post COVID period can be based on the study done by a Foundation 6 on the "Third National Multi-Institutional Survey on MSMEs in India highlights green shots in MSME sector", which says that the emergency fund need has gone up to 82% in June 2021 from 68.6% in April 2020, although 79% have not yet availed the scheme of Rs.3 lakh crore of collateral free loans for MSMEs. Few other major challenges faced by MSME include physical infrastructure bottlenecks; absence of formalisation; inertia to technology adoption; capacity building; backward and forward linkages; lack of access to credit and risk capital; and the perennial problem of delayed payments, among others. However, to counteract these challenges, additional advantages like giving additional incentives, moratorium, restricting of loans, etc.,

Conclusion

Financial inclusion requires particular attention by every developing economy, like India and a continuous focused concentration by the Financial sector consisting of RBI and MSME sector in order to sustain the development process taking place through their continued efforts on the availability of credit first to the financially excluded sections of the society in general and to the MSME Entrepreneurs. This study concludes that the financial inclusion index year after year reflects that there is reduction in the financial exclusion and MSME sector makes continued efforts to reduce financial exclusion through provision of credit to the MSMEs entrepreneurs and the role of National Financial policy reduces the financial exclusion and also helps in reducing MSME financial inclusion.

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G20 TECHNOLOGICAL TRANSFORMATION & DIGITAL PUBLIC INFRASTRUCTURE

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G20 AND ITS IMPACT IN THE INDIAN ECONOMY

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INTRODUCTION

The G20 is an intergovernmental forum comprising 19 sovereign countries, the European Union and the African Union. It works to address major issues related to the global economy, such as international financial stability, climate change mitigation and sustainable development. The G20 is composed of most of the world's largest economies finance ministries, including both industrialized and developing countries; it accounts for around 80% of gross world product, 75% of international trade, two-thirds of the global population, and 60% of the world's land area.

The G20 was founded in 1999 in response to several world economic crises. Since 2008, it has convened at least once a year, with summits involving each member's head of government or state, finance minister, or foreign minister, and other high-ranking officials; the EU is represented by the European Commission and the European Central Bank. Other countries, international organizations, and nongovernmental organizations are invited to attend the summits, some permanently. The G20 Summit is held annually, under the leadership of a rotating Presidency. The G20 initially focused largely on broad macroeconomic issues, but it has since expanded its agenda to inter-alia include trade, climate change, sustainable development, health, agriculture, energy, environment, climate change, and anti-corruption.

India assumed the presidency of the G20 grouping from Indonesia, on December 1, 2022, and holds the post for a year. This offers a unique opportunity for India to contribute to the global agenda on pressing issues of international importance. G20 summits started focusing not only on macro economy and trade; but also on a wide range of global issues which have an immense impact on the global economy. Those issues included Globalization, overall development, climate change and energy, health, and migration. The G20 has sought to realize an inclusive and sustainable world through its contributions towards resolving these global issues. The Group does not have a permanent secretariat. The Presidency is supported by the Troika - previous, current and incoming Presidency. During India's Presidency, the troika will comprise Indonesia, India and Brazil, respectively.

G20 COUNTRIES

1. Argentina
2. Brazil
3. China
4. Germany
5. Indonesia
6. Japan
7. Republic of Korea
8. Russia
9. Turkey
10. United States of America
11. Australia
12. Canada
13. France
14. India
15. Italy
16. Mexico
17. Republic of South Africa
18. Saudi Arabia
19. United Kingdom
20. European Union (EU)
21. African Union (AU)

INDIAN PRESIDENCY IN 2023

The G20 Presidency for 2023 passes to India from Indonesia. India takes over the G20 Presidency on December 1st, 2022.

- India hosts nearly 200 meetings in 32 different sectors at various places all over the nation while it holds the G20 presidency.
- G20 Theme: “**Vasudhaiva Kutumba-Kam,**” or “**One Earth, One Family, One Future,**” is the focus of India’s G20 Presidency.
- India will work to ensure that there is “just one world,” not a “first world or third world.”

- The G20 Theme embodies India's efforts to realise its vision of uniting the entire world in pursuit of a common goal and a better future.
- India's G20 Presidency is a special opportunity for India to contribute to the global agenda on urgent issues of global significance.
- The first step toward a new world order for the post-Covid age was to build an international agreement on reforming multilateral organisations like the UN.
- It is an opportunity to take on the role of Global South leader.
- The increasing importance of G20 in a world where issues like global warming, the COVID-19 pandemic and the conflict in Ukraine are pressing issues.

G20 THEME



SIGNIFICANCE OF INDIA'S G20 PRESIDENCY

- G20 is the premier forum for international economic cooperation representing around 85% of the global GDP, over 75% of the global trade, and about two-thirds of the world population.
- During the course of its G20 Presidency, India host about 200 meetings in 32 different sectors in multiple locations across India.
- The G20 Leaders' Summit at the level of Heads of State/Government is scheduled held on September 9 and 10, 2023 in New Delhi.
- According to Prime Minister Modi, this can be an opportunity for India to share its expertise with the world in areas of women empowerment, democracy and digital technologies.

- As a country with core democratic values, India can show the world that the scope of conflict can come to an end when democracy becomes a culture. This gains significance amidst ongoing Russia-Ukraine conflict.
- India's foreign policy is focusing on the 'global common good'. Through its G20 leadership, India hopes to extend this principle towards finding sustainable solutions to some of the key global challenges emerging out of the interconnectedness of the world, such as climate change, new and emerging technologies, food and energy security, etc.

IMPACT OF G20 IN THE INDIAN ECONOMY

With the commencement of the G20 Summit 2023 in India, the global leaders encountered the diversity in Indian culture. Diplomats and Ministers from the member nations visited the marketplaces in New Delhi and bought locally-made products. This created an opportunity for Indian manufacturers to increase their production as the demand for their products increased overnight. It would have a positive impact on the Indian economy. Following are the factors which will create an impact on the Indian economy in the post-G20 Summit period.

- Since India had the G20 presidency, it fostered the growth of products in demand in the domestic market.
- International trade can work in India's favour, as there is food and fuel shortages, the supply chains are disrupted, and there is a need for a new trading system.
- The G20's Trade and Investment Working team has been promoting resilient trade to enhance the participation of MSMEs in trade.
- India's growth in innovation and technology has gotten a boost as multi-billion dollar companies like Apple, Tesla, etc. want to set up their manufacturing hubs in India.
- The tourism industry in India will grow as the number of international tourists is increasing every year.
- New opportunities will be created for MSMEs, both in India and abroad, which will play a significant role in the country's economic growth.
- The government organised the meeting of the G20 in different parts of the country to showcase India's culture and traditional values and its rich heritage sites.

CONCLUSION

The purpose of establishing G20 is to create an atmosphere that supports equitable global growth and development. They bring together the most powerful economies in the world, both developed and emerging, to talk about global financial and economic stability.

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AN OVERVIEW OF IMPACT OF G20 AND MARKETING STRATEGIES IN INDIA

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INTRODCUTION

Marketing agencies must remain aware of the changing landscape as India continues to lead discussions on global economic issues. These organizations can position themselves

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Challenges of Green Marketing

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Abstract

Green marketing is the marketing of products that are presumed to be environmentally safe. It incorporates a broad range of activities, including product modification, changes to the production process as well as modification in advertising. Green marketing involves developing a Products and Services that satisfy customer needs and wants with high quality, good performance, affordable price and convenience without any impact on the environment. Green marketing is otherwise called as Environmental Marketing and Ecological Marketing. In implementing green marketing, consumers, Corporate and the Government play a very important role. But there are few constraints in implementing it. Green marketing assumes more importance and relevance in the developing countries like India. This paper examines the green marketing strategies, golden rules of green marketing, benefits of green marketing and challenges of green marketing.

Keywords: Green marketing, Products, Services, Environmental Marketing, Consumers.

Introduction

The term Green Marketing came into prominence in the late 1980s and early 1990s. The American Marketing Association held the first workshop on “Ecological Marketing” in 1975. The proceedings of this workshop resulted in one of the first books on green marketing entitled "Ecological Marketing". Green marketing is the practice of promoting products or services that are environmentally friendly or have a positive impact on the planet. It involves incorporating sustainability principles into various aspects of marketing, such as product design, packaging and promotion. Not only companies, Marketers also have the responsibility to make the consumer to understand about the need and benefits of the green products as compared to non-green ones. But there are few constraints in implementing it like lack of consumer awareness, financial constraints, limited scientific knowledge, and competitive pressures. Green marketing is a tool for protecting the environment for the future generation. . Green marketing is otherwise called as as Environmental Marketing and Ecological Marketing.

Green Marketing Strategies

1. Creating eco-friendly products
2. Using eco-friendly product packaging made from recycled materials
3. Adopting sustainable business practices
4. Marketing efforts communicating a product's environmental benefits
5. Investing profits in renewable energy

Golden Rules Of Green Marketing

1. **Know the Customer:** Make sure that the consumer is aware of and concerned about the issues that the product attempts to address.
2. **Educating the customers:** It is essential of letting people know what the activities are carried out to protect the environment otherwise green marketing campaign goes nowhere.
3. **Being Genuine & Transparent:** Green marketing campaign and business policies to be tuned according to environmentally friendly.
4. **Reassure the Buyer:** Consumers must be made to believe that the product performs the job it's supposed to do-they won't forego product quality in the name of the environment.
5. **Consider Pricing:** If you're charging a premium for your product-and many environmentally preferable products cost more due to economies of scale and use of higher-quality ingredients-make sure those consumers can afford the premium and feel it's worth it.
6. **Giving customers an opportunity to participate:** personalizing the benefits of environmentally friendly actions through letting the customer take part in positive environmental action
7. **Pocket friendly:** Leading brands should recognize that consumer expectations have changed. It is not enough for a company to green its products consumers expect the products that they purchase pocket friendly and also to help reduce the environmental impact in their own lives too.

Benefits Of Green Marketing

Improves Credibility: The first and most important benefit is the improved credibility of the organization. An organization needs to have an excellent image to draw profits in the long run. A company with a positive vision in the market will not only attract more customers but also attract business partners who value its credibility. An organization looking for methods to improve the credibility green marketing is the best option.

An opportunity to enter a new market: It opens a new market segment for the organization. In order to produce and sell green products, companies are required to make changes in their production process, replace the material used in production with eco-friendly material, and are required to opt for environmental-friendly packaging for the products.

Long-Term Growth: Opting eco-friendly methods might be expensive initially, but it is worth for long term growth. Green marketing is a good option for long term growth because in the present times, more and more people prefer eco-friendly products, and their number is going to increase in the future.

Offers a Competitive Edge: A company which turns into an eco-friendly company will get a competitive advantage over all those organizations.

More room for innovation: Green marketing required to recreate production process and change raw material with eco-friendly raw material. This provides an opportunity to innovate product.

More Profit: Eco-friendly methods are expensive, and thus it is ok to increase the price of products. People don't mind to pay a little extra as long as they are getting the right quality product and the satisfaction of doing their part to protect the environment.

Good for the Environment: The last benefit where the money is not concerned is the benefit of satisfaction will get by saving environment. Small effort can do huge. Leaving a better place for future generations to live.

Challenges In Green Marketing

Need for Standardization: It is found that only 5% of the marketing messages from "Green" campaigns are entirely true and there is a lack of standardization to authenticate these claims. There is no standardization currently in place to certify a product as organic. Unless some regulatory bodies are involved in providing the certifications there will not be any verifiable means. A standard quality control board needs to be in place for such labeling and licensing.

New Concept: Indian literate and urban consumer is getting more aware about the merits of Green products. But it is still a new concept for the masses. The consumer needs to be educated and made aware of the environmental threats. The new green movements need to reach the masses and that will take a lot of time and effort.

Patience and Perseverance: The investors and corporate need to view the environment as a major long term investment opportunity, the marketers need to look at the long-term benefits from this new green movement. It will require a lot of patience and no immediate results. Since it is a new concept and idea, it will have its own acceptance period.

Avoiding Green Myopia: The first rule of green marketing is focusing on customer benefits i.e. the primary reason why consumers buy certain products in the first place. Do this right, and motivate consumers to switch brands or even pay a premium for the greener alternative. It is not going to help if a product is developed which is absolutely green in various aspects but does not pass the customer satisfaction criteria. This will lead to green myopia. Also if the green products are priced very high then again it will lose its market acceptability.

Conclusion

Marketers also have the responsibility to make the consumers understand the need for and benefits of green products as compared to non-green ones. In green marketing, consumers are willing to pay more to maintain a cleaner and greener environment. Green marketing assumes even more importance and relevance in developing countries. So, green marketing is considered as a tool used for protecting the environment for future generations. Green marketing has a positive impact on environment safety, because of the growing concern of environmental protection, and there is an emergence of a new market which is the green market. Therefore, if you haven't yet adopted green methods, then it is still not too late to do so.

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NAVIGATING METAVERSE IN SHAPING THE FUTURE OF BUSINESS

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AN OVERVIEW OF GREEN MARKETING

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ABSTRACT

Green marketing is the practice of promoting products or services that are environmentally friendly or have a positive impact on the planet. It involves incorporating sustainability principles into various aspects of marketing, such as product design, packaging, messaging, and promotion. Now a day there is growing interest among all sections of public regarding protection of environment and promotes social development. Worldwide evidence indicates that people are concerned about the environment and are changing their behaviour. As a result the concept of “eco friendly” has come into existence. This concept is not only limited to the production activity, but also spread to all functions of business. Application of eco friendly function in marketing is simple called as “Green marketing”, Environmental Marketing”, Ecological Marketing”. As a result, green marketing has emerged a means for sustainable and socially responsible business. The object of this study is to understand the concept of green marketing, Green Marketing Mix, Advantages and Procedures to be followed to implementation green marketing.

Keywords: Green marketing ,Green Marketing Mix, Sustainability, Environment

INTRODUCTION

The term Green Marketing came into prominence in the late 1980s and early 1990s. The American Marketing Association (AMA) held the first workshop on “Ecological Marketing” in 1975. The proceedings of this workshop resulted in one of the first books on green marketing entitled "Ecological Marketing".¹ Green marketing is a new phenomenon which has developed in the global market and has become an important concept in India and other countries.

During recent times consumers prefer more environmental friendly products over traditional products and their opinion and preferences has been changed towards the green products because of environmental issues. Green Marketing refers to the process of green production of goods and services. Green marketing consists of eco-friendly activities. It includes many ranges of activities such

as product modification according to the environment, changes in the production process into green process, changes in packaging into green packaging and changes in advertising into green advertising.

GREEN MARKETING MIX

Green marketing mix contains four "P's":

- **Product:** A producer should offer ecological products which not only must not contaminate the environment but should protect it and even liquidate existing environmental damages.
- **Price:** Prices for such products may be a little higher than conventional alternatives. But target groups like for example LOHAS are willing to pay extra for green products.
- **Place:** A distribution logistics is of crucial importance; main focus is on ecological packaging. Marketing local and seasonal products e.g. vegetables from regional farms is easier to be marketed “green” than products imported.
- **Promotion:** A company spends expenditures on environmental protection should be advertised. Third, sponsoring the natural environment is also very important. And last but not least, ecological products will probably require special sales promotions.

ADVANTAGES OF GREEN MARKETING

Appeals to a new market

Businesses may attract in a wide range of populations by implementing green marketing techniques. Customers are becoming more and more worried about the environmental impact of big businesses. Green marketing helps a company draw in customers who are interested in learning about the production process of items and how consuming them can affect the environment. These campaigns aid organizations in competing with other businesses that might not follow eco-friendly procedures.

Increases profitability and brand loyalty

Green marketing greatly assists companies which are the first in their field to offer green products or services. Businesses can differentiate themselves from competition by using this technique, as customers who care about the environment actively seek out businesses that make sustainable promises. In order to boost revenue and brand loyalty, companies can effectively redesign their products with the use of green marketing.

Reduces overhead expenses

Company's overhead expenses might be reduced by implementing sustainable materials or environmentally conscious manufacturing techniques. A corporation can significantly reduce its monthly operating costs by preserving energy and water. Reducing the cost of waste disposal is another

benefit of using sustainable materials. Even employing environmentally friendly building materials can result in long-term cost savings for businesses since they require less upkeep and maintenance whether constructing offices, warehouses, or manufacturing facilities.

Saves the Environment

Green marketing helps the environment in addition to enabling businesses make more money and attract customers who are more committed. Businesses that keep their word can greatly reduce global warming and promote environmental preservation. Since consumers' views and preferences have altered because they want businesses to practice accountability, this should be the primary focus of green marketing approaches.

PROCEDURES FOR IMPLEMENTING GREEN MARKETING

Product Innovation

Developing new products is one of the best ways to practice green marketing. This involves producing environmentally friendly items or altering already-existing ones to decrease their influence on the environment. For instance, businesses can reduce waste generated by packaging, use recyclable materials, or create energy-efficient products.

Transparent Communication

When it comes to green marketing, transparency is essential. Companies should give customers accurate and validated information on the environmental advantages of their goods and services. Eco-labeling, sustainability reports, or specialized sections on business websites can all help achieve this.

Consumer Education

A lot of people don't realize how their purchases affect the environment. Green marketing is informing customers about the value of sustainability and giving them the tools they need to make intelligent choices. Advertising campaigns, instructional materials, or collaborations with environmental organizations can all be used to achieve this.

Supply Chain Optimization

Sustainability includes the whole supply chain, not just the finished product. Reducing transportation-related carbon emissions, supporting fair labor standards, and sourcing materials sustainably are all ways that businesses may put green marketing tactics into effect. Businesses can improve the credibility and reputation of their brands by partnering with suppliers who share their commitment to sustainability.

Corporate Social Responsibility

Another powerful tool for promoting an entity's dedication to environmental sustainability is participation in CSR programs. CSR initiatives, like as investing in renewable energy, assisting with community cleanup projects, or sponsoring forestry initiatives, can increase brand loyalty and draw in socially conscious customers.

CONCLUSION

Green marketing is an instrument for protecting the environment for future generation by conserving the natural resources and use the alternative sources of energy for production of goods and services. Business firms and companies implement rules and regulations to achieve the goals of green marketing strategy and earn more profits. Evolution of green marketing is still in early stage in the market. Green marketing may not be achieved in the short run, but in the long run it will have a positive impact on the environment as well as on business firms and society. To conserve the natural resources and to solve the problems related to environmental issues it is necessary to adopt green strategy. Green marketing is only a solution for sustainable development. This study shows that there is a positive impact of green marketing on indian market as well as global market.

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VISION FOR VISHWA GURU INDIA: INITIATIVES FOR GLOBAL LEADERSHIP BY 2047

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Volume – II

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WOMEN ENTREPRENEURS SHAPING THE FUTURE OF INDIA

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Abstract

This conceptual paper indicates and emphasizes the women entrepreneurs as the potentially emerging human resource in the 21st century. The primary objective of this paper is to find out the status of women entrepreneurs in India and also studies the success story of Hina Shah the most successful women entrepreneurs of India in plastic packaging and Founder of ICECD. Women of 21st century is no more a traditional resource confined to homes only rather an educated, knowledgeable and innovative part of the overall population possessing the capacity to transform economies into thriving enterprises. On the basis of this analysis some recommendations are given to promote spirit of women entrepreneurship and helping the women to become a successful entrepreneur.

Keywords: *women entrepreneurs, Indian Economy, Business, Government Initiatives.*

Introduction

In India's economy, women entrepreneurs are growing more substantial, and their contributions shouldn't be undervalued. These female entrepreneurs play a crucial role in the Indian economy and have a significant effect on it by generating employment, accelerating development, and fostering prosperity. As per recent figures, women comprise 14 per cent of the total entrepreneurs in India, which works out to 8 million. Also, 10 per cent of all formal enterprises are owned by women.

About 20.37 per cent of the MSME industry in India is made up of women-led businesses, which also employ about 23.3 per cent of the labour population. Between 13.5 and 15.7 million businesses are owned by women, who also hire between 22 and 27 million individuals. They are thought of as the economic foundation of India. Not only can women's employment opportunities be expanded, but also the strain of working two shifts per week for women can be lessened. All areas of legislation must adopt the 3Rs approach, which involves Recognising, Reducing, and Redistributing unpaid care work provided by women.

The inclusion of women in the workforce has created jobs and assisted millions of families in escaping destitution. Because of their superior leadership abilities and higher levels of output, women predominate in new-age sectors where they make up a sizable portion of the workforce. This work ethic and admirable business acumen have also highlighted the significance of women in the contemporary workforce.

Manu Awasthy, CEO and founder, Centricity Wealthtech, said, “Women entrepreneurs and their increasing presence in India have significantly influenced the social and economic demographics of the country. Women entrepreneurs are empowering 50 per cent of India’s start-up ecosystem, driven by Recognition, Results, Fulfilling unmet needs and Education. According to a survey by Bain & Company, more than 45 per cent of Indian women in rural areas were driven to start a business to gain recognition and Women-led start-ups provide 35 per cent higher ROI compared to those led by men. The inherent need in women to provide for the family is a key factor. As they make 85 per cent of purchase decisions, the need to provide a better lifestyle motivates women. With up to 40 per cent of women finishing in the area of science and technology, India is among the top countries in the world for creating these professionals. Businesses that have women at the helm are considered to run very efficiently because businesses led by women require less investment but generate higher net revenue, women are great multi-taskers, women entrepreneurs are known to take more risks and Women have a dynamic ability to adapt.”

Women entrepreneurs and their increasing presence in India have significantly influenced the social and economic demographics of the country. The participation of women in the labour force has helped millions of families to pull out of poverty and has led to job creation. Women are well known for their leadership skills and hence dominate in new-age industries such as electronic manufacturing, where more than 50% of the employees are women because of their high-precision work and better productivity levels. This attitude towards work and commendable business skills have also emphasised the importance of women in the modern workforce.

Role of Women in India's Economy

In India 20.37% of women are MSME owners which account for 23.3% of the labour force. They are considered to be the backbone of the economy. According to McKinsey Global, India can potentially add US\$ 700 billion to global GDP by increasing women’s participation in the labour force. The percentage of women working in the manufacturing and agriculture sectors is higher than that of men. These sectors are usually credited with helping families come out of poverty and

contributing to higher household income. Moreover, literacy rates among women grew at 8.8% in FY21, which further highlights the bright prospects of the country.

Women-led Business Impact

Women-led businesses provide a great impetus to the economy. India has 432 million working-age women and 13.5 –15.7 million women-owned businesses that provide direct employment to 22–27 million people. In addition, a number of businesses are being controlled by women. Indian women are independent and have a strong motivation to start their own business. According to Boston Consulting Group, start-ups founded or co-founded by women generate 10% more cumulative revenue over a five-year period. These start-ups have a more inclusive work culture and employ 3x more women than men. Moreover, women-led businesses are estimated to grow 90% in the next five years.

Factors Driving Women to Start Businesses or Join Workforce

Women entrepreneurs are empowering 50% of India's start-up ecosystem, driven by:

- **Recognition:** Recognition in the form of admiration, regard, esteem and renown motivates women entrepreneurs. According to a survey by Bain & Company, more than 45% of Indian women in rural areas were driven to start a business for gaining recognition.
- **Results:** Women-led start-ups provide 35% higher ROI compared to those led by men. This ability to generate more returns encourages women to start their own businesses.
- **Fulfilling unmet needs:** The inherent need in women to provide for the family is a key factor. As they make 85% of purchase decisions, the need to provide a better lifestyle motivates women.
- **Education:** India ranks among the top worldwide for producing female graduates in the science, technology, engineering and mathematics (STEM) industry, with as many as 40% of women graduating from this field. Indian women are game changers in the fields of science and technology.

Women-run Businesses Operate Efficiently

Businesses that have women at the helm are considered to run very efficiently, and some of the compelling reasons to invest in a such a business are:

- **Higher return potential:** Businesses led by women require less investment but generate higher net revenue. For every dollar invested, women-led start-ups provide 78 cents return compared to 31 cents by men-led start-ups.
- **Multi-tasking:** Women are great multi-taskers as majority of them juggle multiple things at once. These women could prove highly valuable in

generating various income streams and helping to nurture start-ups. As per a survey conducted by psychologists at the University of Hertfordshire, When women and men were given two tasks at the same time, women slowed by 61%, whereas men slowed by 77%.

- **High risk appetite:** Women entrepreneurs are known to take more risks, as per a survey taken by KPMG 43% of women are willing to take more risks. Moreover, women are found to be better than men at envisioning opportunities.
- **Adaptability and higher EQ:** Women have a dynamic ability to adapt. A survey conducted by Bain & Company, Google and AWE Foundation of 350 women solopreneurs and small company owners in urban India found that companies run by women founders were resilient and fast to adapt. The results also showed that women also had a higher emotional quotient (EQ).

Major Businesses Run by Women in India

In India, 45% of the start-ups are run by women, of which over 50,000 are recognised by the government. The country witnessed the most women-led start-ups turning into unicorns in 2021. Major start-ups run by women are listed below.

Brand	Founder / Co-founder	Date of Establishment	Total Funds Raised	Market Valuation
 BYJU'S The Learning App	Divya Gokulnath	2011	US\$ 8.5 billion	US\$ 18 billion
 NYKAA	Falguni Nayar	2012	US\$ 148.5 million	US\$ 12.5 billion
 Mobikwik	Upsana Taku	2009	US\$ 380 million	US\$ 750 million
 zolo	Isha Choudhry	2015	US\$ 90 million	US\$ 100 million
 thrillophilia	Chitra Gurnani Daga	2009	US\$ 1.24 million	US\$ 4.48 million

Government Initiatives to Encourage Women Participation

The Indian government has increased the budget for Women and Child Development by 14% in 2021. It has set aside over Rs. 30,000 crores (US\$ 3.97 billion) in FY21. This budgetary allocation also includes various development schemes as listed below.

- **Bharatiya Mahila Bank Business Loan**

This type of business loan was set up in 2017 to help women access cheap loans and dream big despite their lack of resources. The scheme provides loans of over Rs. 20 crores (US\$ 2.46 million) for women entrepreneurs. A collateral-free loan can also be availed of for loans worth less than Rs. 1 crore (US\$ 0.13 million).

- **Dena Shakti Scheme**

This scheme was launched for women entrepreneurs looking to start their business in certain sectors such as agriculture, retail and manufacturing. The scheme provides loans at an interest rate that is 0.25% below the base rate. The maximum loan application is Rs. 20 lakhs (US\$ 26,468).

- **Udyogini Scheme**

This scheme is for women with an annual income of Rs. 1.5 lakh (US\$ 1,985). It provides loans of up to Rs. 3 lakh (US\$ 3,890) for women wanting to start a business but have no capital.

- **Women Entrepreneurship Platform**

This is a flagship platform started by NITI Aayog to promote women entrepreneurship. The platform hosts various workshops and educational events to motivate women to start their own business.

- **Pradhan Mantri Mudra Yojana**

Even though the scheme was started to help anyone looking to set up a micro/small enterprise get an institutional credit of up to Rs. 10 lakhs (US\$ 13,240), it was mostly availed of by women.

Conclusion

India was a country where a woman even owning a bank account was considered a major benchmark. However, it currently has over 15.7 million women-owned enterprises, with women leading the start-up ecosystem. This drastic transformation clearly underlines the potential of Indian women and their determination. In the coming decades, India is set to witness a major shift, with women dominating the workforce as well as shaping and enhancing the future of the country. It is estimated that over 30 million more women-owned businesses are expected to provide 150–170 million jobs by 2030. This could be a game changer and help the economic outlook look brighter than ever.

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PERSPECTIVE OF ICT TOOLS IN EDUCATION

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A STUDY ON ROLE OF ICT IN EDUCATION

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Abstract

ICT stands for information and communication technology. ICT include the use of hardware and software for efficient management of information and it also includes communication devices like radio, television, cell phones, computer, satellite systems and many more. It refers to that technology which is used to transmit, store, share, create or exchange information. Innovations in technology and globalization have leaded to an enlarged the use of ICTs in all sectors. In modern era, the world is moving rapidly towards digitalisation such as e-governance, e-health, e- education etc. 21st century. In the present era, everyone can have access to teaching material at own level and consult many experts by video conferencing from all over the world. Currently, a teacher is been teaching his students through the use of ICT even though they are geographically scattered. We can't imagine a day without ICT. Today, world without ICT means we do not have any information about the events that are occurring around. It has become a part and parcel of life. Thus, present paper will highlight the role of ICT in Education.

Keywords–Technology enhanced learning, schemes, Teacher, Student, and ICT Initiatives.

Introduction

ICT will not only include hardware devices connected to computers, and software applications, but also interactive digital content, internet and other satellite communication devices, radio and television services, web based content repositories, interactive forums, learning management systems, and management information systems. These will also include processes for digitisation, deployment and management of content, development and deployment of platforms and processes for capacity development, and creation of forums for interaction and exchange.

The National Policy on Education 1986 , as modified in 1992, stressed the need to employ educational technology to improve the quality of education.

The policy statement led to two major centrally sponsored schemes, namely,

- a) Educational Technology (ET) and
- b) Computer Literacy and Studies in Schools (CLASS)

Thus, paving the way for a more comprehensive centrally sponsored scheme – Information and Communication Technology at Schools in 2004. The significant role ICT can play in school education has also been highlighted in the National Curriculum Framework 2005 (NCF) 2005.

The ICT Policy in School Education aims at preparing youth to participate creatively in the establishment, sustenance and growth of a knowledge society leading to all round socioeconomic development of the nation and global competitiveness.

Objectives

- To know the importance and role of ICT in Education.
- To study the Importance of Students Engaging with ICT

Review of Literature

Olivier (2014) found that theology took up the challenge to utilise the printing press and should do the same with the new technology. The impact of theology is directly related to the medium used throughout the ages, Tegos et al. (2016) research indicated that the effectiveness of flexible conversational agent in productive online peer dialogue, Barak (2017) from his study found that how teacher integrate web-based technologies and their perceptions of cloud pedagogy. He found that cloud pedagogy framework facilitates individual and collaborative, synchronous and asynchronous active learning, in class.

Methodology

The study has a descriptive nature. Secondary data have been collected in order to prepare this document in a comprehensive manner. Data are obtained through publications in various journals, periodicals, conference papers and websites.

Objectives of using ICT in Education

The objectives of ICT in education include:

- Providing accessibility through online medium of education.
- Improving the quality of teaching, especially in remote areas.
- To increase transparency in the education system.
- To strengthen the policies, rules, and laws in the education system.
- To analyze the learning and participation of the students and measure its effectiveness.
- Measuring and evaluating students' behavior, involvement, and retention in the learning process.
- To analyze students' performance, placement, and application of knowledge.

The Importance and Role of ICT in Education

Online Learning

ICT and its tools had led to the emergence of online learning. Through this, the teachers and the students are learning innovative ways in the education process. Online learning has gained popularity amidst the corona pandemic to ensure that the learning continues. ICTs have looked after that education reaches through it worldwide and even in remote areas. No matter where the students are, but it has ensured that every learner derives its benefits.

Accessible to all

ICT in education allows accessibility to all types of learners. All students can learn through the material provided. Even the special needs students can maximize the benefits through the

usage of it. ICT has also covered issues like the —digital divide and allows even less fortunate people to access the tools for their educational needs and enhance learning.

Higher-Order Thinking & Skill Developments

ICT promotes high order thinking and reasoning skills. These skills enabled the process of evaluation, planning, monitoring, controlling, reflecting, etc. To use ICT tools effectively, one must be able to explain and justify the solutions to the problems. For using ICTs, the students should be able to discuss, test, and evaluate the strategies and methods they use.

Develops ICT Literacy and Capability

Literacy and capability are the 21st-century skills that are needed. One of the best ways to develop these is to equip the subject-matter with purposeful activities.

Encourages Collaboration

ICT fosters collaboration as children work collectively. It also enhances communication skills as they discuss, talk, and learn together. All you need is a laptop, tablet, or desktop computer to understand it's working. ICT tools open up the doors for developing language through fostering communication.

Motivates Learning

ICT motivates children towards learning. Children learn better through the usage of technology. They get mesmerized with technology tools and get motivated to learn effectively in the classroom or at home.

Improves Engagement and Knowledge Retention

With the inclusion of ICT in education and its tools, children get more engaged and show greater participation in learning. It is all because of technology. It has made learning fun-filled with creativity and games. It enhances learning in multiple ways. Because of it, the students learn better, leading to knowledge retention.

A Key Part of the Curriculum

As per the latest curriculum, ICT plays an important part in the education system. So, many governments across the globe have started using ICT as a major part of education and the curriculum.

The rise of the Knowledge Economy

We live in an economy that is a thirst for the production and dissemination of information properly. ICT pervades at all levels and sectors like health, education, environment, or production. So, its use is needed everywhere at all levels.

Therefore, we cannot deny the fact that ICT is an important part of our lives. It fosters collaboration and connectivity around the world. Technology is ever-changing. It is likable due to certain features like growth, creativity, joy, fun, and consumption.

Importance of Students Engaging with ICT

ICT in Education

Students should engage with ICT in order to:

- To develop 21st-century skills like ICT Literacy and capability.
- To improve retention levels.
- Make them prepared for an integrated society that is taking advantage of the ICT developments.
- Adapt ICT tools as a lifelong partner.

Advantages of ICT in Education

Individualization of learning

It means that people learn as an individual and not as the same group. As learners are varied, ICTs provide flexibility so that learners learn according to their own pace.

Interactivity

Through this feature of ICT, learners can learn properly at any point. They do not need to follow a proper sequence. Learners can learn effectively through this feature.

More economical, the higher speed of delivery and wider reach

ICT tools are more economical, and the speed of delivering content is also high. Through ICTs, the number of learners increases, thereby reducing the overhead cost of investment.

Multiple teaching functions and diverse audiences

ICT involves multiple functions like diagnosing and solving problems for accessing information and knowledge about various contents. It can be useful in drills and practices also.

Uniform quality

ICTs act as a great equalizer by producing uniform quality content for the rich and the poor, the urban and rural people. It produces good quality content for all.

Facilitates cooperative learning

ICT facilitates cooperative learning by encouraging dialogue, discussions through a more participative classroom environment.

Act as a motivating tool

ICT tools act as a motivator and encourage children to enhance their learning. Children get fascinated with technology. Teachers should use their skills to arouse interest, fun, and creativity to learn in a better way.

Distance and climate insensitive

- Regardless of the distance and climatic conditions, ICT tools provide access to all.

- These were some advantages of ICT in the education sector.
- Now let's get an insight into certain disadvantages of ICT.

Current Situation of ICT:

1. Online education: Due to Covid-19, there is no option without online education. As lockdowns don't allow to open schools, colleges, so online education is only one option through which education can be continued.
2. Use of apps: Different apps nowadays are used for online education. These apps are helpful for students and teachers to reach. Such type of apps are also used for meetings, online teaching learning process. Ex. Zoom, Google meet, Webex etc.
3. Platforms for online education: There are different platforms available for online education. Through these platforms, online classes can be taken, videos can be uploaded, recorded videos can be send. So these platforms are helpful to the students as well as teachers. Ex. Swayam, Webex, Impartus etc.
4. Use of different e-content : Due to online education there is no time limit as well as place restriction for learning. Anyone can learn from any place and at any time. So many type of education any one can take. And different e-contents are also prepared for students. These are helpful for them to enrich their knowledge.
5. Tools for teachers[iii]: GeoGebra can construct almost every conceivable geometrical object, even in 3D, Object drawing is interactive and can be moved around, modified, measured. PhET Simulations are interactive computer programs which allow a user to change variables and see the effect of the changes on the system. These are very useful in helping students explore the subject, solve problems and can also become a useful self-assessment tool.

Conclusion

The intervention of information and communication technology is redefining the way students learn. It is making the process of learning more efficient and effective for students and teachers. ICT tools in education make it easier for teachers to use the best strategies to bring out the best in their students. ICT in education sector is beneficial for the students, in addition to this, it is making it possible for schools to impart education in the finest way. Moreover, the technology enables them to manage all the management and administration functions in a seamless manner. Hence, there is no doubt that it is a boon to the education industry.

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INTRODUCTION TO G20

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Introduction

Prime Ministers) in 2008. At the September 2009 hosted by the US (in Pittsburgh), the Leaders declared that the G20 would be the “premier forum for international economic cooperation.” (See Box, Timeline.) In many ways, it has not lived up to this exalted title. However, the G20 is more inclusive than the Group of 8 (G8); its member countries represent about 85% of global output and trade and two-thirds of the global population. The creation of the G20 at the Leaders’ level symbolizes the beginning of the end of Western domination and a decisive shift in the balance of power from “the West to the rest.” Importantly, the G20 sits at the apex of the global governance system with a growing agenda of issues and the power to give mandates to dozens of international organizations. Therefore, it should not be

underestimated. This article introduces the G20 – its leadership, membership, origin, agenda, and constituency groups.

Leadership and Membership of the “Club”?

As of December 1, 2013, Australia assumed the G20 presidency and began to govern the Group in coordination with its Troika partners – namely, the former and future G20 presidents: Russia and Turkey. Australia presides over the G20 Summit on November 15-16, 2014 in Brisbane. The G20 membership, which includes 19 countries and one region, are among the 30 countries with the highest absolute GDP (in nominal prices). • The G8: Canada, France, Germany, Italy, Japan, Russia, U.K., and U.S. • The “Rising 9”: Argentina, Brazil, China, India, Indonesia, Mexico, South Africa, South Korea, and Turkey • Australia and Saudi Arabia • The European Union Invited Participants: Each G20 President is asked to invite four guests in addition to Spain, which is a “permanent observer.” In 2014 Australia has invited Mauritania, as the 2014 chair of the African Union; Myanmar, as the 2014 Chair of ASEAN; New Zealand; Senegal, representing NEPAD; Singapore. In addition, representatives of international organizations attend the International Monetary Fund (IMF), the World Bank, the United Nations, the World Trade Organization, the Financial Stability Board, the Organization for Economic Cooperation and Development (OECD) and the International Labor Organization.

Origin and Background of the G20

In 1999, the G20 was created as a forum for finance ministers and central bankers to deal with the aftershocks and implications of the 1997- 1998 East Asian financial crisis, which had ripple effects throughout Asia and the world (e.g. Russia, Brazil, Argentina). The finance ministers of the U.S. and Canada dominated the selection of G20 member countries. The crisis demonstrated that a worldwide economic meltdown was possible due to financial contagion. It also created a backlash against the prescriptions of the IMF which were widely perceived as contributing to the crisis and deepening its recessionary aftermath. At the first G20 meeting (in Berlin, Germany), Asians sought help from the West. In 2007, the US-triggered a profound global financial and economic crisis and, in 2008, the G20 Leaders (i.e. presidents and prime ministers) met for the first time in Washington, D.C. At this G20 Leaders’ Summit, the “tables were turned” – insofar as Western countries sought help from Asian and other emerging market economies. Particularly in the East (e.g., China), countries could help because they had massive levels of foreign reserves. Why? Not only because of the revenues from export sales, including to “deficit countries,” such as the United States, but also because the East Asian financial crisis taught them that, in the event of another financial panic, high levels of reserves would protect them from ever again going to the IMF on “bended knee” with a “begging bowl.” Indeed, the IMF was widely viewed as a colonial power that was implementing Western-inspired reforms. The G20’s coordinated stimulus policies of 2008-2010 began a recovery process. However, since 2010, the fragile global economy has been threatened by a meltdown in the eurozone, the deceleration of the BRICS’ economies, and weak global growth. The G20 has failed to blaze a path that balances fiscal

prudence with the need for growth and job creation. Nevertheless, as discussed below, the body is not doomed to irrelevance, as some would claim.

Agenda and Governance Bodies

The G20 Presidency has considerable control over the Summit agenda, particularly since the Troika countries have not always worked well together. In 2014, the Australian's new, conservative Prime Minister has launched the G20 into the past by, among other things, ignoring climate change. In 2015, Turkey ascends to the G20 Presidency. The mandate of the G20 has expanded to include a wide range of issues: e.g. economic recovery and rebalancing, financial regulation and oversight, corruption, trade and investment, development, infrastructure, food security, green growth, energy and commodities, and climate finance. Although the G20 Leaders meet annually, there are many bodies that work throughout each year and report to the Leaders. Please see diagram below for details about the G20 governance bodies.

- **Sherpas:** Each Head of State has a representative called a “sherpa” and, for each Summit, these individuals meet regularly to do the heavy work of negotiating the agenda, the analyses of issues and the outcome documents.
- **Ministerial Meetings:** In addition to the meetings of the powerful G20 Finance Ministers and Central Bank Governors, the G20 troika may convene meetings of other ministries. To date, there have been meetings of Agriculture Ministers, Labor/Employment Ministers, Foreign Ministers, Trade Ministers, Energy Ministers, and Tourism Ministers.
- **Working Group Meetings:**
 - › The Framework Working Group on “Strong, Sustainable and Balanced Growth,” which contains the policy commitments of each G20 member country
 - › The Investment and Infrastructure Working Group
 - › The Development Working Group, which emphasizes infrastructure, taxation, and financial inclusion
 - › The Anti-Corruption Working Group
 - › The Task Force on Employment
 - › The G20 Trade Contacts Meeting
 - › The Energy Sustainability Working GroupThe Working Groups are generally co-chaired by a developed and a developing country member. The co-chairs sometimes invite experts from relevant international financial institutions, standard setting bodies, non-G20 countries, business, and academia to advise the working groups. Except for rare occasions, members of civil society are largely excluded from these processes. With few exceptions, members of parliament are excluded and uninformed.

G20 Constituency Groups

The G20 is increasingly seen as the “sun” in the “solar system” of international organizations around which international organizations and constituency groups rotate like “planets” or “moons.” However, since the G20 is an “informal” organization without Secretariat or a charter, it has few mechanisms to build accountability to the 173 countries that are excluded from its membership or from constituency groups. Some excluded UN member countries have organized themselves as the Global Governance Group (3G) which Singapore has sometimes represented at the G20. The number and type of constituency groups that seek to influence the G20 has grown over time to include: the Business 20 (B20); the Labor 20 (L20); the G20Y of young business leaders; the Think Tank-20 (T20); Civil Society Organizations (C20); and the Girls 20. The work of the B20, L20, T20 and C20 can be viewed here. <http://us.boell.org/categories/group-20-brics> The G20 has formal relations with

business, but not civil society groups since some G20 governments do not believe that civil society groups are legitimate participants in their deliberations.

Challenges for the G20

The G20 can realize the potential for democratizing global governance and achieving sustainable development by taking actions such as: • Democratizing Global Governance. Challenges facing the G20 in this area include: › Enhancing transparency. The G20 lacks transparency (many documents are not publicly disclosed; others are disclosed, but only in final drafts). › Respecting the governance of global institutions. The G20 often gives mandates to dozens of international organizations (e.g. the IMF, the World Bank, the Financial Stability Board, and United Nations agencies). Where these mandates evolve from the full membership of international organizations, they can reinforce participatory governance. Otherwise, they bypass and undermine existing governance structures. › Relinquishing “veto power.” The G20 can paralyze decision making in other global bodies. For instance, the G20 commissioned a report from ten international organizations on the volatility of food prices, which called for an end to mandates and subsidies for biofuels. Because the G20 rejected this advice, the World Committee on Food Security (CFS) will not contradict the G20. The G20 now exercises a policy “veto” on this issue and others. › Ensuring Accountability. The G20 is not accountable to more democratic institutions, such as the United Nations, the International Monetary Fund or the World Bank, with universal or nearly-universal memberships.

• Achieving Sustainable Development: › Implementing commitments. Where the G20 has positive sustainable development policies (e.g. the call to remove fossil fuel subsidies), implementation is a problem. › Valuing public goods. In general, the G20 puts a higher priority on austerity than on investing in public goods, including creating decent jobs, protecting the environment, and regulating the financial system.

Conclusion

Mobilizing financial support for mega-projects. The G20 is mobilizing support, particularly long-term institutional investments, in large-scale infrastructure, particularly in the energy, water, transport, and ICT sectors. To date, the G20 has paid insufficient attention to the need for infrastructure projects to be selected and designed with attention to: appropriate scale, participation (especially by affected communities), transparency, job creation, carbon footprint, and norms (environmental, social, gender, and human rights impacts).

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Introduction

Agriculture as a sector has tremendous growth opportunities. Robust infrastructure and value chain can yield good returns to the economy making it attractive for employment and investment, globally. It is the largest employment sector across the world which currently provides income for 40% of the world’s population. The Indian government is taking steps to provide farmers with farm-gate infrastructure. Agricultural finance is crucial to support the growth of the agricultural sector. Indeed, it is essential for food security, job creation, and overall economic growth.

INDIA 2.0: VISION FOR INDIA 2047 – DIGITAL ECOSYSTEM & HARNESSING ARTIFICIAL INTELLIGENCE

Volume – 1



Editor in Chief - Dr. B. Rohini

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India 2.0: Vision for India 2047 - Digital Ecosystem & Harnessing Artificial Intelligence

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IMPACT OF DIGITAL INDIA ON INDIAN ECONOMY

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Abstract

Digital Economy refers to an economy that is based on digital technologies. Digital India programme is one of the foundation programmes of Indian Government, it was launched by the Government of India on July 1st, 2015. Today Digital technologies is playing significant role in our nation, in order to create more job opportunities among the youths in rural and urban areas. It essentially covers all business, economic, social, cultural etc. activities that are supported by the web and other digital communication technologies. The digital economy is also sometimes called the Internet Economy or Web Economy. Digital networking and communication infrastructures provide a global platform over which people and organization devise and employ new business strategies, the main aim of the digital India is to educate every people and increase awareness about digital process. The digital economy became the model global economy as the last stage for the devolvement of the economy. The digital economy is growing fast in India. Digital Economy refers to an economy that is based on digital technologies. The growth, integration and sophistication of information technology and communications are changing our society and economy. Digital technology in the form of the Personal Computer and the Internet has already transformed work, education, and government, entertainment, generating new market opportunities and having a major economic impact across a broad range of sectors. In the ICT of the digital economy, India appears to have comparative advantage to grow to global stature. No doubt, the digital economy has the risks and problems of Security and Privacy which are more in the case of India subject to internal and external risk. The roll out of e-Government services in India is currently lightly well, but policies of digital inclusion should play an advanced role in this development, Digitalization will lead to cost savings, increased output, better employment, enhanced productivity & literacy, etc. In the agricultural sector and in Industrial sector, digitalization will help in betterment of all the processes, be it, purchasing, selling, inventory control, trade relations, employment, product innovation & development, etc. Automation of Service Sector will help in growth of the sector by increasing the ease in access to and rendering of the services.

Keywords: Digitalization, Government, Payment, Internet and Country

Introduction

Digital India is a dream scheme of government of India. The objective is to provide the government services to Indian citizens digitally and connect rural area with internet so that the people get benefits of all the government services and can also improve their digital literacy. Government of India wants to co-ordinate with common public by connecting digitally so that they can digitally empower the society. Now in the present era when people live in digital era, it has to be technologically advanced.

Individual should learn how to use digital technology in daily life including communication, transaction, business and many other daily works. With the help of Digital technology people can manage day to day work and share information in a far better and graceful way. The term “Digital India” speaks so much about itself. Digital India campaign is an initiative to transform India into a digitally empowered country and knowledge economy. An initiatory step in the direction of the digital India is to join rural areas with high-speed internet networks. It was propelled for the first time by Prime Minister Shri Narendra Modi on 2 July 2015. It has three crucial factors: 1. Universal digital literacy, 2. conveying government services digitally 3. Development of safe and stable Digital Infrastructure. In this digital age when use of technology is growing day by day in everyday life with reference to communication to transactions including retail stores to government offices. It provides the facility to connect with each other and share the information. With the launch of Digital India Programme, the government is taking a big step forward to transform the country into a digitally empowered knowledge economy. Includes various schemes worth over Rs 1 lakh crore like Digital Locker, eeducation, e-health, e-sign and national scholarship portal.

Digital India

Digital India” as term defines something which is provided digitally using Information and Communication Technologies (ICTs) and contributing to improve growth in employment, economy and productivity. The vision of this scheme is “Digital India: Power to Empower”. It will be able to provide the facility for electronic manufacturing on a broad scale to match the increasing needs of the country. Digital India is a bridge between digital “haves and not-haves”. It also ensures that government services are availed by each and every Indian citizen so that it achieves a long-durable development in the country. There are three key visions and nine pillars aiming to be implemented by 2019.

Aim and Vision of Digital India

Aim of digital India is to bring together several existing schemes and restructure them. These schemes also need to be brought into focus and implemented in a synchronized way. Many existing schemes only require the process improvement with less cost effect. In this context Government has already provided a platform to make easier collaboration and participation in governance named as “MyGov”. 1. Governance and Services on Demand 2. Easy access to the common service center 3. Digital empowerment of citizens The vision of digital India is providing high speed secure internet so that all the records, certificates and many other important documents will be made available on cloud computing which is safe as well. In this vision each and every government service and information will be conveyed in real time through internet globally. Digital transaction will ensure cashless economy. Under this vision all digital technology will be available in Indian languages.

Advantages of Digital India

Digital connectivity is an emerging concept to connect with people across demographic and socio-economic sectors. Digital India program assures to renovate India into digitally empowered country by emphasizing digital literacy, providing digital resources, and combining digital platforms. To provide accessibility of digital resources for citizens is a commitment of Digital India programme. For example, the program is to provide accessibility of phones, tablets and computers for those who are having visual or hearing impairment (either partial or complete) learning or cognitive disabilities or physical disabilities etc. CDAC, Bangalore with CDAC Hyderabad, implemented Adaptable e-Learning Accessibility Model for the Disabled. It is an education framework for those children with autism and mild mental retardation. Government of India is planning to generate 28,000 BPOs Jobs in various states and one Common Service Centre (CSC) in each of the gram panchayat in the state. India is seen as the rebellion of digital generation against established traditions. The aim of digital India is to transform and travel the paths of both rural and urban India.

E-education is playing a significant role in current scenario in the development of rural areas. In India, digital literacy is about 6.5% and internet services accessibility was about 20.83%. After Digital India come into existence, high speed networks provide internet accessibility and mobile transactions to the people. In addition to rural areas, healthcare services and education facility is improving day by day. It is also provides a platform to Indian farmers (E-farming) so that they can select best crop according to weather, plant protection and marketing information etc.

Impact of Digitalization on India

Impact on Economy

In any geography, the factors related to adoption and reliability, speed, and ease of use of digital technology determine the level of digitalization. This has an impact on reducing unemployment, improving quality of life, and boosting citizen and access to public services. Digitization allows governments to operate with greater International Journal of Digital Library Services, transparency and efficiency, and it has a dramatic effect on economic growth, but not all at once. In the current sluggish worldwide economy, the use of digital technologies is served as a means of boosting economic activities.

Impact on Employment

The introduction and advancement in Information and Communication Technology has a great impact on employment, as it creates more jobs in the IT sector, which may be related to software development, Outsourcing, hardware manufacturing and other IT related businesses. In addition, the impact of these technologies has been realized on other service sectors, like trade, industry, financial and health care services. By the advancement in digitization related activities, an estimated 19 million jobs were added to the global

economy from 2009 to 2010. During 2007 to 2008, a mere 5 % increase is seen in estimated 18 million jobs.

Social Impacts of Digitization

One of the most interesting and important factors related to digitization is the link to overall societal welfare. Digitization, as a social process, enables the institutions to generate, cooperate and create larger for the benefits and progress of the society through digital communications and applications. The process of digitization involves the mass digitization of books and older and rare materials. For the purpose of preserving the knowledge contents for future generations or making them available to a much wider community than could ever access the physical objects, many of the institutions (libraries and cultural archives) have started digitization initiatives to provide access to the history of societies, countries, cultures and languages.

Ecological Impacts of Digitization

During the last few decades, healthy living has become the major concern of society. There has been an increased focus on health related matters. This has led to more people exercising, eating right and using things like cars and power strips less and other techniques to benefit the environment. The initiative has resulted in individuals taking a closer look at the environment and examining their part in making the —Earth|| more sustainable for years to come. As this trend spreads, the sentiment is now being felt at organizations and institutions. Some innovative employees have spearheaded campaigns for workers to use less power by shutting down machines at night, paying more attention to reusing coffee and water cups and numerous other things such as going paperless.

Conclusion

Introducing the concept of Digital India is the step towards a drastic and far-reaching change in ways of making a new India where citizens are digitally empowered and economically well. Digital India project will help in evolution of employment and also develop economy. It is providing digital literacy and knowledge of technology in rural as well as urban areas. If a continuous approach is made in this project with trustworthiness it will absolutely Make India a Digital India. Digital conversion of print sources has improved rapidly in the past few years. Digitization is the social transformation started by the massive adoption of digital technologies to generate process, share and manage digital information utilizing the full benefits from digitization organizations should select the material carefully for digitization and digitize only those items that will provide the maximum benefit to both administrator and user. Because, successful digital projects are the outcome of careful evaluation of collections, and also, careful assessment of the institution's goals and priorities and development of thoughtful strategies will assure that meaningful, high-quality digital versions are created, and that both original and digital assets are managed well over time.

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IMPACT ARTIFICIAL INTELLIGENCE (AI) IN EDUCATION

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Abstract

In recent years, there has been a growing trend in higher education to incorporate modern technologies and practices in order to improve the overall educational experience. Learning management systems, gamification, video assisted learning, virtual and augmented reality, are some examples of how technology has improved student engagement and education planning.. The classroom response system allowed students to answer multiple-choice questions and engage in real-time discussions instantly.

Despite the many benefits that technology has brought to education, there are also concerns about its impact on higher education institutions. With the rise of online education and the growing availability of educational resources on the internet, many traditional universities and colleges are worried about the future of their institutions. As a result, many higher education institutions need help to keep pace with the rapid technological changes and are looking for ways to adapt and stay relevant in the digital age.

Keywords: Artificial intelligence, Gamification, AI in education.

Introduction

AI and Its Role in Education

Artificial Intelligence (AI) is changing the world as we know it, and the education system is no exception. AI has become an effective tool for addressing challenges in education and accelerating progress towards SDG 4. With its ability to collect and analyze data, AI can inform educators of students' engagement, learning progress, and well-being. It also has built-in digital apps and tools that allow for teacher interaction and individual progress monitoring.

AI has the potential to transform education by optimizing teaching and learning processes through personalized learning algorithms. By identifying strengths and weaknesses of each student, AI can tailor educational materials to suit individual needs better. Virtual reality experiences could be created without leaving the classroom to engage with students from far countries or showcasing historical sites that endanger undue ecological harms if used a long time ago; this provides learners with an interactive learning environment that improves understanding retention.

Augmented reality technology implemented using AI promises a more engaging learning experience for students, allowing them to interact with virtual objects in ways previously impossible. By placing real-time information onto what people see around them using devices or smartphones on smart boards or screens within classrooms create new immersive experiences transforming how people share information effectively.

While the benefits of AI in education are profound, policymakers need to identify risks associated with implementing these technologies fully effectively. The use of sensitive data raises questions on privacy or equity considerations necessitating transparent policies on how such data is collected stored secured shared among stakeholders which must consider critically if they are expanding their pedagogical objectives through technological innovations rather than amplifying existing biases habits entrenched within curricula schooling methods which limit creativity critical thinking or diversity among other concerns when initiating incremental improvements leveraging machine-generated insights or conclusions.

Current State of AI in Education

Currently, AI is being used in education in various ways, from chatbots that provide 24/7 student support to personalized learning algorithms that adapt to each student's needs.

AI market research tools are also being used to automate administrative tasks, such as grading assignments and providing feedback. Additionally, AI is being used to analyze large amounts of data to identify patterns and insights that can inform the development of new educational strategies and policies.

There are many examples of successful AI-powered educational tools and platforms currently in use. Some of the most popular include:

- **Duolingo:** a language learning app that uses AI to personalize lessons for each user
- **ALEKS:** an AI-powered math learning platform that provides adaptive assessments and personalized learning plans
- **Coursera:** which uses AI to recommend courses to students based on their interests and previous learning history.

QuestionPro: Recently, QuestionPro has announced QxBot, a feature that will allow you to create surveys and evaluations in seconds. Here's a quick demonstration of this amazing feature that will be a huge help in your next academic research:

While there are many benefits to using AI in education, limitations and challenges need to be addressed. One of the biggest challenges is ensuring that AI-powered tools and platforms are accessible to all students, regardless of their socioeconomic status or location. Additionally, there are concerns about the potential for AI to perpetuate existing biases and discrimination in education.

Additionally, many educators worry that AI-powered tools may replace human interaction and affect classroom teaching quality. Ensuring that AI is used in a way that complements, rather than replaces, human educators will be important in the coming years

The Future of AI in the Classroom

As technology continues to evolve, AI is expected to play an increasingly important role in the classroom. Some emerging trends in the use of AI in education include:

- **Adaptive Learning:** AI will enable the creation of adaptive learning systems that automatically adjust to each student's skill level and knowledge. This ensures that each student receives personalized education and is presented with challenges according to their level of competence.
- **Virtual Assistants:** AI-based virtual assistants will become learning companions for students, providing support, answering questions, and offering real-time guidance. These assistants will be able to adapt to each student's learning preferences and provide personalized recommendations.
- **Collaboration and Teamwork:** AI will also facilitate collaboration and teamwork among students. AI tools will be able to analyze each student's working style and skills to form complementary teams, fostering effective collaboration and knowledge exchange.

Advantages of AI In The Education System

One of the most significant advantages of AI in the education system is personalized learning. AI-powered systems can generate customized lesson plans and assessments for each student, based on their unique learning abilities and needs. This ensures that students receive an optimized learning experience, leading to increased engagement and better performance.

Additionally, AI can provide better access to learning for students with special needs. With intelligent tutoring systems, AI-powered devices can identify the areas where a student needs additional support and provide tailored guidance accordingly. This helps students who may require extra time or help in certain subjects to keep up with their peers.

Another advantage of AI in education is that it allows for real-time problem-solving assessment. Teachers can use this technology to track how well their students are understanding concepts by monitoring individual progress throughout a lesson or course. By doing so, they become aware of areas where more attention is needed and thus provide specific solutions.

AI-Powered Personalized Learning

AI is transforming the education landscape by providing personalized learning methods to students. Personalized learning enhances engagement and motivation for students which are key factors in their academic success. AI can capture, aggregate, and analyze data to build student learning profiles. By analyzing the data of each individual's learning preferences, strengths, and weaknesses, AI can suggest personalized learning methods and provide additional tutoring when needed.

Apart from personalized learner support, AI analysis can also enable better-informed decisions for educators and administrators. Through the collection of large amounts of student data from grading patterns to test scores presented in user-friendly dashboards or reports by AI platforms, educators can gain insight into critical

areas that need improvement such as tracking student progress effectively over time, optimizing curriculums based on real-time analysis of a class's needs or understanding which topics pose the greatest challenge.

The ability for AI-powered personalized learning systems to evaluate massive amounts of information about learners has made it more clear that equitable access should be provided to information resources so as not to increase inequities between learners from various income levels or backgrounds through increasingly supportive technologies rather than isolating tools used outside instructional settings.

AI-Powered Assessment and Evaluation

AI-powered assessment and evaluation is a game-changer in the education system. AI has the potential to improve accuracy, efficiency, and fairness in assessments and evaluations. With AI, student learning can be measured more accurately, providing deeper insights and facilitating individualized learning processes.

AI can automate administrative tasks such as test evaluation, allowing teachers more time to focus on teaching rather than grading tests. The use of AI in grading essays can not only save time but also provide instant feedback to students. Additionally, AI-powered evaluations can improve physical and cyber security through biometric solutions.

One of the most important benefits of using AI for assessments is its ability to favor candidates based solely on their merit while minimizing human bias towards students' demographic information such as race or gender. This fosters a fairer system where students are evaluated based on their skills rather than any other discriminatory factors.

AI-Powered Student Support and Engagement

With the rise of artificial intelligence (AI), the education system has embraced technology to improve student engagement and support. One way AI is being used in classrooms is through chatbots. These chatbots offer personalized and interactive learning experiences to students, providing 24/7 support while improving accessibility. By generating unique conversations with each student, AI-powered chatbots can help instructors manage huge class sizes.

AI technology also provides data analytics that can help educators stay informed about their students' progress, engagement, and well-being. With this information at hand, teachers can tailor their lessons to meet individual needs and identify areas where students require additional assistance.

Furthermore, introducing the concept of AI at an early stage can help students be digitally ready for future academic success. Educators have a role in educating learners on the ethics of AI use while demonstrating practical applications of its uses in academic fields such as emotional wellbeing and streamlining educational procedures.

In summary, it is evident that AI technology has immense potential to improve student engagement and support. From generating unique conversations with every learner through chatbots to enabling advanced data analysis for educators to track every student's learning journey- these tools constitute resources that build personal connections between disruptive technologies as well as human interaction for optimal learning outcomes in classrooms today.

Challenges and Concerns Of AI In Education

The integration of Artificial Intelligence (AI) in education has brought different challenges and concerns that have surpassed policy debates and regulatory frameworks. Privacy breach is one of the main risks; students and instructors may view AI systems negatively. Therefore, measures must be taken to ensure data security while taking advantage of technology's benefits.

Another significant challenge is the accessibility of AI-powered tools and platforms. To make technology inclusive, we must provide equal opportunities regardless of socioeconomic status or location. However, there are concerns about AI perpetuating existing biases and discrimination in education. This mainly happens with personalized learning materials that can reinforce values associated with cultures or ethnic groups, whether intentionally or not.

Policy makers and district leaders need to ensure they are implementing AI applications while considering potential benefits and risks without including ethical issues. They should promote informed consent as it is fundamental when using certain types of personalized learning technologies that involve collecting personal data from learners. The best way to address these ethical dilemmas is by following transparency principles within educational institutions.

Artificial Intelligence has the potential to overcome different obstacles in education like innovating teaching practices effectively. Still, it represents countless unknowns since a successful evaluation cannot currently be measured based solely on conventional parameters such as grades or class performance evaluations by teachers alone considering all the considerations needed before implementing Automatic grading systems effectively across National Education System today

Potential of Artificial Intelligence in Education

Artificial intelligence (AI) has the potential to revolutionize the way we think about education. From personalized learning algorithms to virtual and augmented reality, AI-powered tools and technologies are helping to enhance the learning experience for students in ways we never thought possible.

AI has the potential to provide a wide range of benefits for education. One of the most significant is the ability to personalize each student's learning experience. With AI, educators can analyze student performance and preferences data to create customized lesson plans and assessments that align with each student's unique strengths and

weaknesses. Additionally, AI can automate administrative tasks such as grading, freeing up time for educators to focus on other important aspects of teaching.

AI-powered tools and technologies can also enhance the learning experience for students in a number of ways. For example, virtual and augmented reality can make learning more interactive and immersive, while chatbots and other AI-powered tools can provide 24/7 student support. Additionally, AI can be used to create personalized quizzes and games that help students to engage with the material in a fun and interactive way.

Personalized learning is one of the most exciting potential benefits of AI in education. With the ability to analyze data on student performance and preferences, AI can help educators to create customized lesson plans and assessments that align with each student's unique strengths and weaknesses. This can improve student experience and motivation, and ultimately lead to better academic outcomes.

AI and ChatGPT can revolutionize academic research by processing and analyzing large amounts of data quickly, uncovering new discoveries, generating hypotheses and conducting literature reviews faster than traditional methods. ChatGPT can assist researchers in writing papers by providing feedback and suggestions, and even generate parts of the text. Additionally, it can be used in natural language processing such as text summarization, sentiment analysis, and language translation for analyzing unstructured data.

Conclusion

While AI has the potential to revolutionize the way we think about education, there are still many challenges and concerns that need to be addressed. It is important for researchers and developers to continue to explore the potential of AI in education and to work towards addressing the challenges and concerns that may appear as this kind of technology keeps improving and being implemented in the current education system.

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DIGITAL INDIA: TRANSFORMING INDIA THROUGH TECHNOLOGY AND CONNECTIVITY

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Abstract

India's government launched a program called "Digital India" with the goal of making the country more technologically advanced. The program's main goals include building a national digital infrastructure, giving citizens digital empowerment, and offering government and services on demand. This essay is the result of study into the Digital India program and its potential effects on preparing India for the digital age. The nine pillars of Digital India – Jobs in IT, Electronics Production, Information to All, Early Harvest Programme, Broadband Connections, eKranti, E-Governance, Public Internet Access, and Universal Access to Phones – are examined in the paper along with various initiatives, opportunities, and challenges. Each of these initiatives appears to be benefiting and assisting the Indian people. The inhabitants are still dealing with various difficulties. Illiteracy, socioeconomic disparities, and cultural and technical limitations are a few.

Keywords: Digital India, Digital payment, Digital Transformation.

Introduction

The key to maximizing the benefits of digital finance and financial inclusion can be found in a comprehensive partnership between the government and the general public. The use of technology can make the payment process more streamlined and open. One component of the ambitious flagship program Digital India has as its goal digital funding. The future of digital finance is really bright. Financial independence would empower women and other underprivileged groups in society, which is a core goal of financial inclusion and digital banking. Adopting d financial services and bringing the majority of the population into system will contribute to the country's growth and development.

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Every financial institution believes that online service delivery is the future, with the number of smart phone users in India set to reach 450 million by 2022. For financial services to change quickly, broadly, and for the better, technology-led innovation is required. The goal of financial inclusion through digital banking can be achieved with the support of the digital India. Digital financial services have a great deal of promise to offer a variety of accessible, practical, and safe banking services to

the underprivileged in developing nations. Public education about the fundamentals of digital finance services is urgently needed, especially in rural and semi-urban areas.

Cash will no longer be used in India. To lessen the country's reliance on cash and combat money laundering, the Indian government started the "Digital India" campaign. Various digital payment systems appropriate to different sectors of the economy are being coordinated to make them accessible and user-friendly in order to achieve expedited movement into the cashless, digital payments economy across all states and sectors and to promote rapid adoption of digital payment systems. The country needs to become digital if it wants to compete with developing nations and expand the financial sector to meet the demands of the modern world.

Digital payment is a method of payment which is made through digital modes. In digital payments, payer and payee both utilize digital modes to send and get cash. It is likewise called electronic payment. No hard money is engaged with the digital payments. All the exchanges in digital payments are finished on the web. It is a moment and advantageous approach to make payments. In the event that we talk about money payments, you need to initially pull-out money from your record. At that point you utilize this money to pay at shops. Businessperson goes to the bank to store the money which he got from you. This cycle is tedious for you and furthermore for the retailer. Be that as it may, in digital payments, the cash moves from your record to the retailer's record right away. This cycle is programmed and neither you nor the retailer is needed to visit the bank

Digital payment services offer convenience, ease of transactions and security while transacting. This analytical study focuses on growth of digital payments with respect to its volume and value of transactions. A digital transactional platform enables a customer to use a device to make or receive payments and transfers and to store value electronically with a bank or nonbank permitted to store electronic value. Retail agents armed with a digital device connected to communications infrastructure to transmit and receive transaction details enable customers to convert cash into electronically stored value and to transform stored value back into cash. Depending on applicable regulation and the arrangement with the principal financial institution, agents may also perform other functions. The customer device can be digital (e.g., mobile phone) that is a means of transmitting data and information or an instrument (e.g., payment card) that connects to a digital device (e.g., POS terminal).

Digital Payment Methods

1. Banking card:

Banking sector provides various cards to avoid the time spend over the banking transaction. It offers consumers more security, convenience, and control than any other payment method. There are many types of cards Rupay, mastercard, visa etc. they provides more security to the customer while using it. Payment cards give people the power to purchase items in stores, on the Internet, through mail-order catalogues and over the telephone. They save both customers and merchants' time and money, and thus enable them for ease of transaction.

2. USSD:

The innovative payment service works on Unstructured Supplementary Service Data (USSD) channel. This service allow to users mobile banking without internet facility available to make money transfer from one person to another without using internet and smart phones. Service has been launched to take the banking services to every common man across the country. The Common number across all Telecom Service Providers on their mobile phone and can make transaction using an interactive menu on the mobile screen. Using this customer can check balance, transfer money, can get mini statement etc.

3. Adhar enabled Payment system:

AEPS is a bank led model which allows online interoperable financial transaction at PoS (Point of Sale or Micro ATM) through the Business Correspondent or Bank Mitra of any bank using the Aadhar authentication.

4. UPI:

UPI is a Unified Payments Interface system that allow to multiple bank accounts into a single mobile application, merging several banking features. It is use to transfer money receive money, bill payments and others. Now it is getting popularity among the Indian people. It is interesting and easy to use and not need to remember frequently use beneficiary's account number. The customer can get transaction history quick payment.

5. Mobile Wallets:

There are several mobile wallets are available and each bank ha
application. The customer can carry digital cash trough mobile wallet. by use of wallet customer can link credit card or debit card in mobile device to make transaction. An individual's account is required to be linked to the digital wallet to add the money. The Paytm, Freecharge, Mobikwik, Airtel Money, Jio Money, SBI

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Buddy, itz Cash, Vodafone M-Pesa, Axis Bank Lime, ICICI Pockets, Speed Pay etc. are the mobile wallets use in India.

6. Point of Sales:

A point of sale (PoS) is where sales are made. It allow to PoS holder to collect money from their customer by the way of swap Also and no need to go bank for making transaction of purchase and selling. On a micro level, retailers consider a PoS to be the area where a customer completes a transaction, such as a checkout counter. But its require GPS system internet and bank account of merchant.

7. Internet banking:

Internet banking, also known as online banking, e-banking or virtual banking, is electronic payment systems that allow customers of a bank to make transaction using website of the bank using ID and password.

8. National Electronic Fund Transfer:

(NEFT) National Electronic Funds Transfer is a nationwide payment system which provides funds transfer from any bank any branch to any bank. Using the system individual firms and corporate can electronically transfer funds from any bank branch to any individual, firm or corporate having an account with any other bank branch in the country. Not only account holders but also without having account people can sent money to others account by depositing money from anywhere. However, such cash transaction have limit of Rs. 50000/- using this service individual can deposit money on 50000/- and this facility can use in working days only.

9. Real Time Gross Settlement (RTGS):

RTGS is settlement of funds transfers individually on an order by order basis. 'Real Time' means the processing of instructions at the time they are received rather than at some later time. Considering that the funds settlement takes place in the books of the Reserve Bank of India, the payments are final and irrevocable. Transferring large amount RTGS is used. Customers can send minimum 2 lakh and maximum have no limit. RTGS can use in banking hours.

10. Electronic Clearing System (ECS);

ECS is an alternative method for the payment transactions li' payments such as telephone bills, electricity bills, insurance p payments and loan repayments, etc.,

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11. Immediate Payment Service (IMPS):

IMPS offers an instant, 24x7x365, interbank electronic fund transfer service through mobile phones. IMPS are a tool to transfer money instantly across India using mobile, internet and ATM it is safe and cost-effective.

12. Mobile banking:

Mobile banking is a portable system provided by banks to customer on their mobile phones, smart phones with a special application using software. It provided by the banks or financial institution for the purpose. Each Bank provides its own mobile banking App for Android, Windows.

13. Micro ATM:

Micro ATM meant to be a device that is used by the million Business Correspondents to deliver basic banking services. The micro ATM enables Business Correspondents to make instant transactions. It helps to withdrawals, transfers transaction instantly.

Advantages of Digital Payment System

1. **Time Sever:** Using digital payment system customer can pay to merchant transfer money quickly and no need to make payment by cheque and waiting for clearing. Because Digital Payment system take less time than traditional payment system.
2. **Availabilities:** Digital payment system can use by customer from anywhere and anytime there is no need to go banks for every transaction.
3. **Easy Purchasing:** The Digital payment system provides facility to user for purchasing by using ATM card Credit card and POS therefore it is easy for making transaction and no hard cash required to travel with us.
4. **Use of Wallet:** The Digital Payment system includes digital wallets which make payment easy and with that wallet customer can get discount as well as cash back.
5. **Less Risk:** In digital Payment system it provides us securities for every transaction it require MPIN or OTP which can be avoid frauds in t¹

Conclusion

The concept of a digital India is enormous. A significant step toward creating an empowered nation is Digital India. If this concept is a success, it will unquestionably change India by granting Indian citizens access to multimedia information, content, and services. The Digital India initiative offers a lot of prospects, but we must acknowledge that it is still a long way from reaching its goals because most of the

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nine pillars are having difficulty being implemented. In order to prevent the failure of this program, it is crucial that each and every pillar receive focused, sustained attention. In reality, as Indian citizens, we should all mentally prepare for this significant change.

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ICT FOR PROFESSIONAL DEVELOPMENT

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Abstract

In society, teaching has a prestigious place. ICT enables teachers to keep up with new information and techniques for utilizing cutting-edge digital tools and resources. Teachers will become successful teachers by using and learning about ICT. ICT is one of the key elements causing our society to develop so quickly. It may alter the nature of education and the roles that students and teachers play in the transmission of knowledge. Technology is now being used in the classroom by teachers. Common media includes laptops, LCD projectors, desktop computers, EDUCOM, Smart classrooms, and memory sticks. Since teachers are currently the only ones who can create a bright future, teaching community must

Keywords: *ICT, Professional Development, Effects, Higher Education.*

The dramatic developments brought about by information and communication technology (ICT) have improved teacher professional development. Computers, smart phones, laptops, tablets, LCD screens, multimedia players, and projectors are just a few of the ICT-related educational tools that are being employed in classrooms to make teaching and learning more engaging and effective. Information and communication technology (ICT) is a key component of teacher preparation programs that teach educators how to improve both their subject and pedagogical skills. ICT expertise helps teachers create effective lesson plans for both teaching and learning.

ICT contributes to our information and communication processes and the results in the same way that other technologies do in enhancing our quality of life. ICT in education has a great deal of potential to benefit and assist those involved in the process and outcome of education in a variety of ways.

- ICT use has the potential to transform conventional ideas and approaches to the teaching-learning process. Here are a few of the changes:
- It will aid in the changeover to an interactive learning approach from a broadcast model. Thus, the teaching-learning process involves the pupils actively.
- Aids in the process of changing instruction from being teacher-centered to being learner-centered. Students develop self-reliance and self-direction in their knowledge and skill acquisition and application.
- Changes the focus from teaching to learning, making the learning process more dynamic and interesting for both teachers and students.

- Helps teachers transition from being merely knowledge transmitters to being learning facilitators, knowledge navigators, and active co-learners alongside their students.
- ICT has the power to integrate the current educational system with the knowledge-based, information-rich society by giving it access to high-end tools, approaches, and methodologies

Information and communication technology (ICT) is a field that includes cutting-edge computer software used in education and training to improve teachers' professional competence and students' capacity for learning. The retrieval, processing, creation, and transfer of instructional technological information fall under this category of information technology. At the moment, all teaching, administrative, and supporting staff members, as well as students, use ICT resources to successfully accomplish educational goals and carry out their daily tasks more effectively. Teachers employ a variety of ICT-related educational tools in the classroom, such as computers, LCDs, projectors, laptops, multimedia, smart phones, etc., to enhance students' learning.

All these expectations may be met only through need-based, goal-oriented and meaningful in-house discussion, conferences, symposia, workshops, refresher and orientation courses, crash courses, capsule courses and subject-based courses, interdisciplinary and holistic approaches to education and quality research and by enriching the existing libraries and making use of the user-friendly ICT with contextually appropriate and firm pedagogical scaffolding. The teacher educators and individual teacher ought to sincerely and persistently work hard toward this goal. By the latest developments in the information and communication technology the role of teacher in the process of teaching and learning has increased many fold and has become more complex as such teachers are to equip themselves with latest technology then only they cope up the new challenges in the field.

ICT is extremely useful for professional development of teachers and helps the teacher in the following ways:

- The use of ICTs as presentation tools (through overhead and LCD projectors, television, electronic whiteboards, guided "web-tours", where students simultaneously view the same resources on computer screens) is seen to be of mixed effectiveness. While it may promote class understanding of and discussion about difficult concepts (especially through the display of simulations), such uses of ICTs can re-enforce traditional pedagogical practices and divert focus from the content of what is being discussed or displayed to the tool being utilized.
- In OECD experience, the use of technology in everyday teaching and learning activities appears to be more important than specific instruction in "computer classes". While the development of technology skills is seen to have a role in the teaching and learning process, it is more important as an enabler of other teaching and learning practices, and not too important in and of itself. Schools that report the highest levels of student ICT-related skills and experience are often not those with heavy computer course requirements, but rather ones that made use of ICTs on a

routine basis throughout the teacher professional development and the teaching and learning process.

- Effective ICT use in education increases teachers' training and professional development needs. However, ICTs can be important tools to help meet such increased needs, by helping to provide access to more and better educational content, aid in routine administrative tasks, provide models and simulations of effective teaching practices, and enable learner support networks, both in face to face and distance learning environments, and in real time or asynchronously.
- Effective teacher professional development should approximate the classroom environment as much as possible. "Hands-on" instruction on ICT use is necessary where ICTs are deemed to be vital components of the teaching and learning process. In addition, professional development activities should model effective practices and behaviors and encourage and support collaboration between teachers. On-going professional development at the school level, using available ICT facilities, is seen as a key driver for success, especially when focused on the resources and skills directly relevant to teacher's everyday needs and practices.
- ICT enriches teaching by enhancing the initial preparation by providing good teaching and training materials, simulators, recording and feedback mechanisms.
- ICT has removed the barriers of space, time and place between teacher and learner.
- It has established a healthy and interactive relationship between teachers, schools, institutions, and universities and enabled teachers to expertise rich resources in cyber space.
- Pedagogical practices of teachers using ICTs can range from only small enhancements of teaching practices, using what are essentially traditional methods, to more fundamental changes in their approach to teaching. ICTs can be used to reinforce existing pedagogical practices as well as to change the way teachers and students interact.
- The cost of teacher training has been reduced by the didactic software and intelligent tutoring systems.
- ICT provides lifelong professional development by providing courses in a virtual situation, training in demand, orientation and refresher courses through video conferencing and online.
- By the exchange of materials through virtual communities, sharing of ideas and experiences and collaborating on projects the ICT can revolutionize the whole teaching profession.

Role of ICT in Curriculum and Teacher Development

Technological development and the changing competencies required in the present scenario for both students and their teachers, it is necessary to design a state-of-the-art curriculum and appropriate teacher development. Teachers need to be adequately prepared to implement a state-of-the-art ICT curriculum. Indeed, introducing any new curriculum calls for careful preparation, management, resourcing, and continuing support.

In the case of an ICT curriculum, even more concerns have to be considered. Educational research studies show that programmes of professional development for teachers are most effective if directed to the stage of ICT development reached by professional students. The implications of these research findings are that teacher development is best conceived as an ongoing process, with many professional development activities conducted in professional colleges. In any educational system, the level of available resources places a restriction on the degree to which any new subject can be introduced into the college curriculum, especially where only the most basic facilities have so far been provided. But ICT is of such importance to the future industrial and commercial health of a country that investment in the equipment, teacher education, and support services necessary for the effective delivery of an ICT-based curriculum should rank high in any set of government priorities. The curriculum proposed takes account of these resource issues and specifies minimum requirements for effective delivery in different circumstances. Information and communication technology, or ICT, is defined as the combination of informatics technology with other, related technologies, specifically communication technology.

Recent Trends in Teacher Education

Based on various changing needs of our society now emphasis is also given to the various educational theory and educational practices. According to these theories and practices changes are also undergo in teacher education also. It is natural that teacher education must include new technology. Teachers should also know the right attitudes and values, besides being proficient in skills related to teaching. As we know the minimum requirement of any training programme is that it should help the trainee to acquire the basic skills and competencies of a good teacher. Now-a-days new trends in teacher education are Inter-disciplinary Approach, Correspondence courses, orientation courses etc. Simulated Teaching, Micro Teaching, Programmed Instruction, Team Teaching are also used in teacher education. Now-a-day Action Research also implemented in Teacher Education. ICT acts as the gateway to the world of information and helps teachers to be updated. It creates awareness of innovative trends in instructional methodologies, evaluation mechanism etc. for professional development.

The Various ICT Initiatives

- **E-pathshala:** The digital India campaign has promoted extensive use of ICTs in the teaching learning process. The **E-pathshala**, a joint initiative of Ministry of Education, Govt. of India and National Council of Educational Research and Training (NCERT), has been developed for showcasing and disseminating all educational e-resources including textbooks, audio, video, periodicals, and a variety of other print and non-print materials for Students, Teachers, Parents, researchers and educators. It provides access to digital textbooks for all classes, graded learning materials and enables participation in exhibitions, contests, festivals, workshops, etc.
- **NROER:** The National Repository of Open Educational Resources (NROER) is developed by CIET, NCERT. It was launched during the National Conference

on ICT for School Education. NROER hosts large number educational resources in many subjects and in different Indian languages for Primary, Secondary and Senior Secondary classes. Resources are available in different formats like Video, Image, Audio, Document and Interactive. Apart from this all NCERT books are available in Flip book format. NROER is an collaborative platform, intend to reached the un-reached and institutions like SCERT, SIERT, SIE, Vigyan Prasar, CCERT, Gujarat Institute of Educational Technology (GIET),

- **Swayam MOOCs:** SWAYAM (Study Webs of Active-Learning for Young Aspiring Minds) is a programme initiated by Government of India and designed to achieve the three cardinal principles of Education Policy viz., access, equity and quality. SWAYAM seeks to bridge the digital divide for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy. This is done through an indigenous developed IT platform that facilitates hosting of all the courses taught in classrooms to be accessed by anyone, anywhere at any time. All the courses are interactive, prepared by the best teachers in the country and are available, free of cost to the residents in India.
- SWAYAM platform is developed by Ministry of Human Resource Development (MHRD) and NPTEL, IIT Madras with the help of Google Inc. and Persistent Systems Ltd. It would be ultimately capable of hosting 2000 courses and 80000 hours of learning: covering school, under-graduate, post-graduate, engineering, law and other professional courses.
- **Swayam Prabha:** SWAYAM Prabha is an initiative of the Ministry of Human Resources Development to provide 32 High Quality Educational Channels through DTH (Direct to Home) across the length and breadth of the country on 24X7 basis. It has curriculum-based course content covering diverse disciplines. This is primarily aimed at making quality learning resources accessible to remote areas where internet availability is still a challenge. The DTH channels are using the GSAT-15 satellite for programme telecasts.
- **ICT in education curriculum:** The National Policy on ICT in School Education has set the goal of preparing youth to participate creatively in the establishment, sustenance and growth of knowledge. Teachers and Children must not be treated merely as consumers but also as active producers.

Conclusion

The intervention of information and communication technology is redefining the way students learn. It is making the process of learning more efficient and effective for students and teachers. ICT tools in education make it easier for teachers to use the best strategies to bring out the best in their students. ICT in education sector is beneficial for the students, in addition to this, it is making it possible for schools to impart education in the finest way. Moreover, the technology enables them to manage all the management and administration functions in a seamless manner. Hence, there is no doubt that it is a boon to the education industry.

Teachers are the national builders responsible to train future generation to be able for facing challenges of present era, but this is not possible without having full command in utilization of ICT instructional devices properly. It is a fact that knowledge of ICT helps teachers to keep knowledge updated to use modern instructional technology in classrooms. Recently, ICT has become a basic need of human life across the world and no field can work effectively without its support. In education and training, it plays vital role to uplift teaching and learning process. The use of ICT facilities in teacher training programs has become necessary in classrooms and teachers are considering it most important pillar for better students' learning.

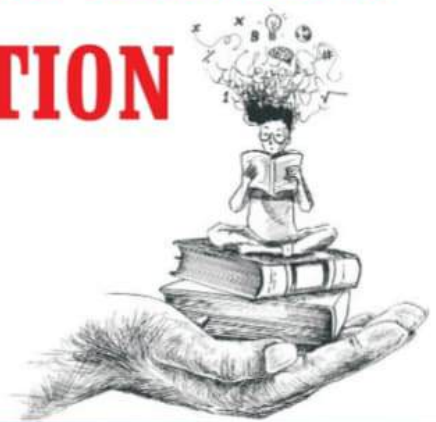
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IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

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WOMEN EMPOWERMENT THROUGH NATIONAL EDUCATION POLICY

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Abstract:

Education is the basic ingredient for achieving full human potential. Women education is a long-standing worldwide issue as no nation can talk of development when half of its population is disabled. Time and again, the issue of women education is put forth so that nation's human resource irrespective of gender can be harnessed and attend gender balance. The National Policy on Education 1986 recognizes 'Education' as the major tools that can help liberate the country from backwardness and lead it onwards to progressive developed nation. "Free and Compulsory Education for All" was initiated but the implementation aspect is yet to be realized in practice.

After 34 years, there is a change in the education policy in India with the introduction of the New Education Policy 2020 (NEP). This new policy aims at universalization of education in India with 100% gross enrolment ratio by 2030 for school education and 50% by 2035 for higher education. The first such move as the formation of a Gender Inclusion Fund toward equitable education for girls who are underprivileged and creating Special Education Zones is included in the provision. Within the goal, it also intends to improve women leadership capacity through positive civil dialogues with women leaders involved in the education system. If implemented, this will bring a record participation rate in higher education, decrease gender gaps at all levels and ensure the practice of gender equity and inclusion in society. In this study, an attempt has been made to study the New Education Policy 2020 on women education.

Keywords: NEP, Women Education, Gender Equality

Introduction

Women play a vital role in a nation's development. They play a very significant role in the society- a wife, a mother, a sister, a caretaker, a nurse, etc. No nation can sustain its development if it underutilizes its woman, who constitutes almost half the population. A famous anonymous African proverb states the importance of education for women in society- "If you educate a man, you educate an individual. If you educate a woman, you educate a nation". Education is a weapon that carves a progressive path for women and their families in the society. An educated woman can weigh the importance of female education to that of male counterpart. Education is a powerful tool that builds confident and ambitious women through which they become aware of their rights and raise their voice against exploitation, discrimination or any form of injustice meted out to them. A nation loses its goal of

integral and sustainable developments when women remain uneducated and underpowered.

Women's education will help to eradicate the discrimination and stigma that women face today through realization of their rights. The education of women will help to eliminate social evils as female infanticide, dowry, child marriage, harassment, etc. This will not just help the women of today but of the future generations who can live in a world where gender equality exists. Educated women can contribute to family's economy, social advancement of society and raise the standard of living. They can add to the workforce which in turn can contribute and reflect on the country's economy. Empowering women helps in the development of the nation. The government, over the years has introduced many schemes to promote women's education in India such as Beti Bachao Beti Padhao Yojana, Sarva Shiksha Abhiyan, Rashtriya Mahila Kosh, Mahila Shakti Kendra, etc. The central and the state governments should join hand and seek the cooperation of different organizations for the expansion of girls' education which should be considered on a priority programme in education. The right to education is granted to every Indian Citizen. We need to ensure that learning is available for all and not just for the privileged few

Importance of Women Education

"If you educate a man you educate an individual, however, if you educate a woman you educate a whole family. Women empowered means mother India empowered". PT. JAWAHARLAL NEHRU. Women education in India plays a very important role in the overall development of the country. It not only helps in the development of half of the human resources, but in improving the quality of life at home and outside.¹ If it is said that education is the key to all problems, then it won't be improper. Thinkers have given a number of definitions of education but out of these definitions, the most important definition is that which was put forth by M. Phule. According to M. Phule, "Education is that which demonstrates the difference between what is good and what is evil". If we consider the above definition, we come to know that whatever revolutions that have taken place in our history, education is at the base of them. ² Education means modification of behaviour in every aspect, such as mentality, outlook, attitude etc. Educated women not only tend to promote education of their girl children, but also can provide better guidance to all their children. Moreover educated women can also help in the reduction of infant mortality rate and growth of the population.

Girls need to be educated because it is their Right, it is their basic entitlement. Education is 'sure way of giving them much greater power -- of enabling them to

make genuine choices over the kinds of lives they wish to lead'. Educated girls will have skills, information and self-confidence that helps her be a better worker, citizen and a parent. Education transforms lives of girls, she is safer, is better nourished, experiences less discrimination, makes her own decisions and has control on her productive and reproductive life. Education helps girls to play a leadership role in her community and society at large.

NEP 2020 on Women Education:

Providing bicycles and organizing cycling and walking groups to provide access to school for female students. – Appointing counsellors and social workers to connect with students and parents to improve attendance and prevent dropout rates among female students to uplift the SEDGs – Providing quality education to girls.

Girl's education has always been a significant challenge to overcome in India. We have witnessed how prejudice and inequality against girls translate to uneven possibilities. India has big potential to socially and economically improve through the education of girls and in recent years a positive transformation has been seen. According to government data, the dropout rate among female students in school has decreased dramatically over the last four years, with the major decrease occurring at the secondary level among those aged 11 to 14 years. The dropout rate for girls in secondary school (Class 9-10) has decreased by approximately 5%, falling from 18.4 percent in 2017-18 to 13.7 percent in 2020-21. NEP 2020 is turning out to be one of the tools to further improve the situation.

Gender Disparity in Society

In most Indian families, a son's education is prioritised over a daughter's schooling. Girls are more likely to be engaged in domestic activities such as childcare and household work to provide economic support. This is more pronounced in lower-income households, rural families, and households where both parents work. In most Indian families, a son's education is right of way over a daughter's education. This has been manifested today in online classes as well where girls are often abstaining from class for the sake of brother's classes. Girls are more likely to be engaged in domestic activities such as childcare and household work to provide economic support. The presence of younger siblings affects a girl's education negatively – in terms of gross attendance, time spent on learning activities, learning performance, etc. Early marriage is one of the chief reasons for juvenile girls dropping out of schools and prevents their access to education and development. Also, parents anticipate relying on their sons during their old age.

This leads to differential treatment in their school enrollment, educational expenditure, and access to learning resources

Gender Inclusion Fund

The Government of India constituted a "Gender Inclusion Fund" to provide quality and equitable education for all girls. The fund will focus on ensuring 100% enrolment of girls in schooling and a record participation rate in higher education, decrease gender gaps at all levels, practice gender equity and inclusion in society.

"Women empowerment is of prime importance. The girls/women are the backbone of a growing nation. Their upliftment directly impacts the growth and all rounded development of India. "According to the United Nations Educational, Scientific and Cultural Organisation (UNESCO) over 20 percent of girls drop out of school completely after reaching puberty in India. It has also been observed that a lot of girls drop out of schools when they hit puberty, since the school infrastructure is not conducive for their menstrual hygiene," (Shikha Jain, an educationist). Jain also asserted that the government should specify the amount available as part of the fund and lay down clear guidelines on how the corpus would be spent to address gender specific issues. "Gender should be used as a lens to look at initiatives such as digitisation of classrooms, increasing numeracy and literacy (since many girls are discouraged by the families to study maths and science from the beginning), rather than being treated as a standalone issue," she said. (IANS, 2019)[7] Stressing on providing a safe environment for the girls in school, the policy also advocates laying down guidelines for ensuring school safety and security of girls. These guidelines will be developed and made a part of the eligibility conditions for institutional accreditation. "This framework will include mandatory training for educators and administrators on efforts to prevent and respond to schoolrelated gender-based violence. Working female-only toilets with a regular stock of menstrual hygiene products will be constructed and made available," The policy recommends that schools develop credible mechanisms to ensure that they remain free of discrimination, harassment and intimidation especially for women and girls. It also emphasises upon providing a safe environment outside the premises of the schools for attainment of education of girls. "Girls' safety outside of school is also recognised as critical to their attendance and overall educational attainment; unfortunately, transportation .to and from school can sometimes infringe on their personal safety in some areas. Efforts will be made to ensure girls benefit from initiatives that promote access to safe and reliable transportation, including bicycle access programmes" .

Against such a backdrop the National Education Policy-2020 (NEP 2020) was approved by the Union Cabinet of India on 29 July 2020, which outlines the vision of

new education system of India. The National Education Policy -2020 has been designed by the K Kasturirangan Committee to deal with various issues aggravating educational scenario across India and to curb the menace of women illiteracy. The policy envisions equitable and inclusive education for all, with special focus on children and youth, especially girls, from socially and economically disadvantaged groups. The policy, which has come to the fore recently, is expected to usher in a new era in women education. The policy is a comprehensive framework for elementary education to higher education as well as vocational training in both rural and urban India. It is pointed out that the policy does not pronounce much on the gender issues, yet certain proposals made in the policy may be expected to bring about remarkable changes into the bleak scenario.

Conclusion

Women play an imperative role in making a nation progressive and guide it towards development. They are essential possessions of a lively humanity required for national improvement, so if we have to see a bright future of women in our country, giving education to them must be a pre-occupation. Empowerment means moving from a weak position to exercise a power. The education of women is the most powerful tool to change the position of society. Education also brings a reduction in inequalities and functions as a means of improving their status within the family. To encourage the education of women at all levels and for dilution of gender bias in providing knowledge and education, established schools, colleges and universities even exclusively for women in the state. The education develops the idea of participation in government, panchayats, public matters etc for elimination of gender discrimination.

NEP would transform the education sector in the country as it focuses on making education accessible, equitable and inclusive. The vision laid in the New Education Policy is to build the education system into high-spirited on acquiring key 21st century skill. New Education Policy has laid many favorable provisions to foster gender equity and to do away with gender stereotype which plays a crucial role in consideration for the layout will not work efficiently instead of actions

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Editor

Dr. R. Ramya

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CHALLENGES AND NEEDS FOR WOMEN ENTREPRENEURS IN INDIA

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Abstract

Entrepreneurship and self-employment represent a viable career choice for women and should be recognized as a major, but underutilized, source of economic growth, competitiveness and innovation. Promoting women's entrepreneurship, improving access to finance, providing training and setting up mentorship networks must become policy objectives in their own right. Although both men and women increasingly recognize the opportunities of entrepreneurship and see it as a viable alternative to wage employment, women still appear to face more barriers to an entrepreneurial career as a result of a variety of educational, cultural and institutional factors. Women's entrepreneurship needs urgent attention from governments and society as a whole. Women represent a tremendously underused source of growth and national competitiveness.

Keywords: Women Entrepreneur, Problems, needs.

Review of Literature

Bowen & Hisrich, (1986), compared & evaluated various research studies done on entrepreneurship including women entrepreneurship. It summarizes several studies in this way i.e female entrepreneurs are generally relatively well educated, but perhaps not in management skills; they have a high internal locus of control; their values are more masculine or instrumental than those of other women; they are more likely to have had entrepreneurial fathers; they are more likely to be firstborn or only children; and they need more managerial training.

Tovo, (1991) found that women entrepreneurs had less access to finance, inputs, and markets also independent women faced a variety of challenges in small businesses. The study also demonstrates that there is intense rivalry and low costs because many small businesses operate in the same market segment. As a result, a small number of suppliers and distributors are very dependent on the products of small businesses. Due to this, the female entrepreneur became monetarily weak and was frequently prey to exploitation.

Papisetty Rama & Mohana Rao, (2004), found in the research study that Inadequate infrastructure, high labour mobility, shortage of electricity and delayed realization of debtors were the main problems faced by women entrepreneurs.

Damwad, (2007), covers the experiences, activities, and challenges experienced by women entrepreneurs in five Nordic nations, including Finland, Denmark, Iceland, Norway, and Sweden. It broadly outlines a few barriers, including funding, a lack of business knowledge and skills, markets, entrepreneurship, work-life balance, a lack

of growth and a desire to expand, and most crucially, women because other groups are varied. The study compares male and female early-stage entrepreneurial activity in the Nordic countries with that in the USA. Additionally, it contrasts various programs and plans created by Nordic nations and the organizations that support them

Singh, (2008), identifies the reasons & influencing factors behind entry of women in entrepreneurship. He explained the characteristics of their businesses in Indian context and also obstacles & challenges. He mentioned the obstacles in the growth of women entrepreneurship are mainly lack of interaction with successful entrepreneurs, social unacceptance as women entrepreneurs, family responsibility, gender discrimination, missing network, low priority given by bankers to provide loan to women entrepreneurs. He suggested the remedial measures like promoting micro enterprises, unlocking institutional frame work, projecting & pulling to grow & support the winners etc. The study advocates for ensuring synergy among women related ministry, economic ministry & social & welfare development ministry of the Government of India.

Lall&Sahai, (2008), conduct a comparative assessment of multi-dimensional issues & challenges of women entrepreneurship & family business. The study identified Psychographic variables like degree of commitment, entrepreneurial challenges and future plan for expansion, based on demographic variables. Through stratified random sampling & convenience sampling the data have been collected from women entrepreneurs working in urban area of Lucknow. The study identified business owner's characteristics as self perception self esteem, Entrepreneurial intensity and operational problem for future plans for growth & expansion. The study suggested that though, there has been considerable growth in number of women opting to work in family owned business but they still have lower status and face more operational challenges in running business.

Definition of Women Entrepreneurship

According to Government of India, "A Woman enterprise is the one owned and controlled by a woman having minimum financial interest of 51% of the capital and giving at least minimum 51% of generated employment to women.

Women Entrepreneurship Areas

Women entrepreneur in earlier years after independence were confined to entrepreneurship in traditional areas like food, fruits, vegetables, pickles, papads, tailoring, hosiery etc. However, often, Women entrepreneurs have branched out to several new areas like engineering, beauty parlours, jewellery, handicraft, electrical, electronics, chemical and other manufacturing. This shows that entrepreneurial base of women expanded from traditional 3Ps – pickle, powder and papad to modern 3ES – Engineering, Electrical and Electronics.

There are vast numbers of industries under small business sector where women are playing a major role.

Such industries can be listed as under:

- Agriculture and Allied industries – such as sericulture, horticulture, dairying and animal husbandry etc.
- Home based industries-such as handicrafts, Agarbati, Candle making, bidi industry, hosiery, and textile, doll making, jewellery, pottery, designing etc.
- Outside home industries – such as electrical and electronics, food processing etc.
- Apart from the above, most Indian Women have performed well in both organized and unorganized sector.
- Involved in family business such as agriculture, horticulture, animal husbandry, dairy, fisheries, agro forestry, handloom, power loom etc

Categories of Women entrepreneurs

- Women in organized and unorganized sector
- Women in traditional and modern industries
- Women in urban and rural areas
- Women in large scale and small scale industries
- Single woman and joint venture

Categories of women entrepreneurs in practice in India 1st category

- Established in big cities
- Having higher level technical and professional qualifications
- Non- traditional items
- Sound financial position

2nd Category

- Established in cities and towns
- Having sufficient education
- Both traditional and non- traditional items
- Undertaking women services – kindergarten, crèches, beauty parlours, health clinic

3rd Category

- Illiterate women
- Financially weak

Women Entrepreneurship -Need and Factors

In modern days, particularly in India, there is a great need for women entrepreneurs. Several factors are responsible for compelling the women members of the family to set up their own ventures.

These factors suggesting their need can be broadly classified into two groups:

- Motivational factors or needs and
- Facilitating factors or needs.

Motivational Needs

The following are the motivational needs for which modern women are motivated to become entrepreneurs:

Economic Necessity:

The introduction of women into business is a relatively recent development. Women have begun to enter the most competitive field of business due to the breakdown of the joint family system and the necessity for additional money to sustain living standards in the face of inflation or rising prices. As a result of this economic necessity, women have started working in the business world to supplement their income and raise their family's standard of living in today's inflationary times.

Desire for High Achievement:

The tremendous desire for great performance in their lives is another factor driving women into the business sphere. Despite their education, women in the modern world often struggle to find work in the market or are unable to leave their homes to find employment elsewhere due to family issues. As a result, a woman is strongly drawn to the desire to accomplish something great and significant in order to establish her value to the family as an asset rather than a problem. This is what spurs women to start their own businesses the most.

Independence:

A woman's desire to live independently with self-confidence and respect is another powerful driver for starting her own business. A woman entrepreneur gains a respectable status, a solid personal reputation, and a sense of independence in the community when she owns and controls a lucrative firm

Government Encouragement:

The Government and non-government bodies have started giving increasing attention and encouragement to women's economic conditions through self-employment and business ventures.

Education:

Women have been taking up various kinds of technical, vocational, industrial, commercial and specialized education so as to qualify themselves to be self-employed in some kind of trade, occupation, vocation or business. Facilities are also being provided to women in areas where they can grow and blossom as persons in their own right. Women have proved in modern days that they are no less than men in efficiency, hard work or intelligence or even they can surpass men in several fields.

Model Role:

Women, like men, are also desirous of contributing their might to the economic development of their country. Similarly, our women in India would like to play a key role model. They have already entered other fields like politics, education, social field, administration, etc. Now they have started entering the business field where they can also show their importance as in other fields.

Family Occupation:

Family occupation is an important factor motivating a woman member to participate in the family business, along with her husband and other members of the family. There is a great need for women to undertake economic activity or business of the family and support their families in family occupation or family business so as to reduce the expenses of the family business and increase its income.

Employment Generation

Another influencing factor that motivates women to become entrepreneurs is the creation of employment opportunities. Women entrepreneurs generally take up labour intensive small scale and village industries or handicrafts and they have high potential in employment generation. Therefore, they serve as a solution to the widespread problem of women unemployment to some extent.

Facilitating Needs

Facilitating needs are the needs for providing various facilities for the successful working of the women enterprises.

Problems of Women Entrepreneurs

The greatest problem faced by women entrepreneurs is that they are women. We are living in a male dominated society where women are treated as 'abalas'. They have to face several economic and social problems. Usually they will not get any support or co-operation from various financial institutions, male entrepreneurs or even from their families.

They have to face resistance not only from men but also from elderly women who are ingrained with this attitude of inequality.

Women entrepreneurs have to face two types of problems viz., general problems of entrepreneurs and problems specific to women entrepreneurs.

The following are the important problems faced by women entrepreneurs:

Financial Constraints:

Finance is the life blood of every business. Both long term and short term funds are required for business. For obtaining loans and advances from financial institutions, they have to provide collateral securities. But, usually women do not have property in their names and this hinders them from obtaining external sources of funds.

The banks also consider women as less credit worthy and discourage women borrowers on the belief that they can at any time leave their business and become housewives again. Under these circumstances, women entrepreneurs are bound to rely on their savings and loans from friends and relatives. The quantity of such funds is often negligible leading to the failure of women enterprises.

Over Dependence on Intermediaries:

Women entrepreneurs have to depend largely on intermediaries for the distribution of their products. These intermediaries take a major portion of their profits. It may be possible for the women entrepreneurs to eliminate the middlemen, but it requires additional investment of capital and a lot of travel. Women entrepreneurs find it difficult to capture market and popularise their products.

Stiff Competition:

Women entrepreneurs have to face stiff competition for the products from the organised industries and male entrepreneurs. They do not have organisational set up to spend a lot of money for canvassing and advertisement. The society has a feeling that the products manufactured by women are inferior in quality on account of the fact that they are manufactured by women themselves. These factors will lead to the liquidation of women enterprises.

Scarcity of Raw Materials:

Scarcity of raw materials is yet another important problem faced by the women entrepreneurs. The price of raw materials is very high and women entrepreneurs usually get the raw materials at minimum discount. The failure of many women co-operatives engaged in basket making in 1971 is an example of how the scarcity of raw materials affects entrepreneurship.

High Cost of Production:

Another problem faced by women entrepreneurs is the high cost of production. The government grants and subsidies help them tide over this difficulty, but these grants and subsidies are available only at the initial stages of its setting up. For expansion and diversification activities these assistances will be negligible.

Limited Mobility

Unlike men, women mobility in India is highly limited due to various reasons. Physically they are not fit enough to travel a lot. A woman running an enterprise independently and alone is often looked upon with suspicion. The humiliating attitude of officials towards women compels them to give up the idea of starting an enterprise.

Conclusion

The different research studies examined have brought to light a number of issues that women entrepreneurs face. Achieving a work-life balance is one of them, as are sociocultural hurdles, a male-dominated society, low literacy rates or educational attainment, a lack of financial support, a lack of technical expertise, a lack of marketing and business abilities, a lack of self-confidence, and mobility restrictions. The moment has come for women to free themselves from the burden of household duties and make room for their creativity and entrepreneurship, which will revolutionize how women are viewed in society. The position of women in a developing society in India has also been influenced by social and political developments. Women entrepreneurs have been encouraged and supported by government programs, incentives, and subsidies. A significant number of women are becoming self-employed as a result of the rise in the number of educated women, which is changing the position of women in society.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

Volume - 1

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ROLE OF MSME IN ECONOMIC SELF RELIANCE

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Abstract

The MSME industry plays a crucial role in the development of the Indian economy. Its contribution to the country's GDP is nearly a third of the country's GVA and it contributes nearly half of the country's exports. Moreover, the sector is a major employer, especially in the rural and less developed areas helping reduce regional imbalance. The sector also strengthens other industries by providing them raw materials and ancillary products. The MSME sector has always acted as a bulwark for the Indian economy, providing it resilience to ward off global economic shocks and to face adversities. The MSME network in India is vast and covers around 630 lakh units manufacturing 8000+ products contributing about 45% to manufacturing output and about 40% to direct and indirect exports. The MSME sector is reportedly the second-largest employer in the country after agriculture.

Keywords: *Self-Reliant India, MSME, Government Scheme, Self-Reliant India Fund*

Introduction

MSMEs form the bedrock of India's industrial landscape, encompassing a vast array of enterprises across various sectors. According to the Ministry of Micro Small and Medium Enterprises, MSMEs contribute significantly to India's GDP, employment, and exports. The sector is a major generator of employment, providing livelihoods to millions, particularly in rural and semi-urban areas. MSMEs are a vital part of the Indian economy. They account for approximately 45% of India's industrial output and around 40% of total exports. This means that MSMEs are responsible for a significant portion of the country's economic growth.

In the textile industry, MSMEs account for around 60% of the total employment. They also play a significant role in the manufacturing of garments, footwear, and other products. In the agricultural sector, MSMEs are involved in the production of a wide range of products, such as processed foods, fertilizers, and agricultural machinery. They also play a key role in the supply chain for agricultural products. In the services sector, MSMEs are involved in a wide range of activities, such as transportation, tourism, and retail. MSMEs are a major source of employment in India and employ a great number of women and youth. They employ around 111 million people, which is about 40% of the country's workforce.

The Impact of MSME's on India's Self- Reliance

MSMEs act as catalysts for India's self-reliance, driving economic independence through various means. These enterprises play a pivotal role in reducing the country's dependency on imports, fostering domestic innovation, and building a robust and self-sustaining economic ecosystem.

One of the primary ways MSMEs contribute to self-reliance is by reducing India's reliance on imports. By producing goods and services domestically, MSMEs help curb the nation's dependence on foreign products. This localized production not only strengthens the Indian economy but also bolsters its resilience against global economic fluctuations and disruptions. By fulfilling local demand and reducing imports, MSMEs contribute to a more self-sufficient economy that can better withstand external shocks.

MSMEs are also instrumental in supply chain development, creating a web of interconnectedness across industries. They account for 60% of the total number of enterprises in the country, and as key players in various supply chains, these enterprises support both upstream and downstream activities. Their engagement in supply chains fosters domestic production and distribution networks, reducing the need to rely on foreign suppliers. This interdependence within the country's supply chains enhances the overall efficiency of the economy and contributes to its self-reliance.

Small-scale businesses have been a hallmark of the Indian economy since independence. Over the last five decades, the MSME sector has evolved to show itself as a vibrant and dynamic component of the economy. Initially, the non-agricultural MSME sector was heterogeneous and consisted of traditional industries. These included khadi, silk, coir, cottage and village industries, Small Scale Service and Business Enterprises (SSSBs), and Small Scale Industries (SSIs). Today, all these industries are clubbed together under the umbrella term of Small Scale Industries (SSI). In 2006, the Micro, Small, and Medium Enterprises Development (MSMED) Act was enacted. This statute aimed to incorporate all the diverse industries, the service sector, and medium enterprises.

As a result, the MSME sector in India is classified into two categories: the manufacturing and service industries. Furthermore, the industries are classified as micro, small, and medium based on the investment made toward machinery and equipment. MSMEs contribute towards exports, entrepreneurial development, upliftment of rural and backward areas, and employment generation. The MSME sector has been creating over 110 million jobs in areas such as manufacturing, non-captive electricity generation and transmission, trade and other service, across rural and urban areas in the country.

Challenges for the MSME Sector

The sector is expected to shoulder a substantial portion of the country's economy. But there are some challenges that lie ahead:

Need for digitization: Owing to problems like the dearth of proper infrastructure, finance, and limited knowledge, the MSME sector has been slow in going digital. Digitizing the sector could help in enhancing efficiency and reliability, cutting costs, and keeping up with trends.

Importance of business knowledge: With growing competition, it is imperative for MSMEs to have a thorough grasp of the opportunities, challenges, in-depth know-how, trends, and risks of the industry to run a successful business. The right business strategy can help a company scale up.

Problems related to funding: Many MSMEs may not have all the financial documentation in place or enough access to digitization in order to take advantage of government schemes. There is also a challenge with collateral as the perceived risk of funding MSMEs is higher. Cash flow and working capital issues are challenging, especially in instances where payments are delayed. While protections exist under the MSMED Act, such as penalties for delayed payments, the fear of losing long-term business means that these protections are rarely ever invoked.

Self-Reliant India Fund for MSMEs

As part of the Atmanirbhar Bharat package, the Indian government announced the allocation of Rs. 50,000 crore for equity infusion in MSMEs through the Self-Reliant India (SRI) Fund. SRI fund operates through a mother-fund and daughter-fund structure for equity or quasi-equity investments.

The National Small Industries Corporation (NSIC) Venture Capital Fund Limited (NVCFL) was designated as the Mother Fund for the implementation of the SRI Fund. It was registered as a Category-II Alternative Investment Fund (AIF) with SEBI.

Objectives of the Sri Fund

To provide equity funding to viable and high-potential MSMEs, fostering their growth and transformation into larger enterprises. To bolster the MSME sector's contribution to the Indian economy by promoting innovation, entrepreneurship, and competitiveness. To create an environment conducive to technological up gradation, research and development, and increased market access for MSMEs.

Composition of the SRI Fund

The Rs. 50,000 crore SRI Fund comprises: Rs. 10,000 Crore from the Government of India to initiate equity infusion in select MSMEs. Rs. 40,000 Crore sourced through Private Equity (PE) and Venture Capital (VC) funds, leveraging private sector expertise and investment.

Status of MSME Sector in India

The MSME sector of India contributes around 33% of the country's total GDP and is predicted to contribute worth USD 1 trillion to India's total exports by 2028. MSMEs provide about 110 million jobs which is 22-23% of the total employment in India. It contributes to reducing unemployment and underemployment, supporting inclusive growth and poverty reduction. The MSME sector fosters a culture of entrepreneurship and innovation. It encourages individuals to start their own businesses, promotes indigenous technologies, and contributes to the development of new products and services. Compared with large-scale companies, MSMEs aided in the industrialization of rural areas at minimal capital cost.

Government Initiatives for the MSME Sector

MSME Champions Scheme: Comprising MSME-Sustainable (ZED), MSME-Competitive (Lean), and MSME-Innovative (for incubation, IPR, Design, and Digital MSME), this scheme provides financial assistance to MSMEs to enhance their competitiveness and innovation capabilities.

Infusion in Credit Guarantee Fund: As part of the Budget 2023-24, the government announced an infusion of Rs. 9,000 crore in the corpus of Credit Guarantee Fund Trust for Micro & Small Enterprises.

Raising and Accelerating MSME Performance (RAMP): This initiative focuses on strengthening institutions and governance of MSME programs at both the central and state levels.

Conclusion

The journey towards economic independence and self-reliance is a dynamic process, and MSMEs are at their heart. Their resilience, innovation, and inclusivity have been crucial in driving India's progress on the path to self-reliance. As the government continues to implement policies and provide support, Indian MSMEs are poised to play an even more significant role in shaping the nation's future and elevating India's standing on the global stage. By nurturing these enterprises and enabling their growth, India can truly achieve its dream of becoming an economically independent nation.

There is no doubt that MSMEs play a critical role in Nation Building and growth of the economy. It is necessary that the support to this segment is accelerated, and government targets its ease of doing business initiative towards MSMEs. The targeted government policies can be a major catalyst in guiding MSMEs to the desired sectors of the economy to fuel growth of the economy. This could be done by framing conducive policies, offering incentives and most important, removing the on-ground hurdles, easy access to credit being a prime example. No doubt there is a long road to traverse but it is also beyond doubt that with entrepreneurship, innovation and agility at its core, the MSME sector can

not only play a vital role in making India a US\$5 trillion economy in the next five years but can also become a growth engine for making India a developed country by 2047.

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ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT

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SKILL DEVELOPMENT THROUGH EDUCATION

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Abstract

In today's world where the survival of the fittest is the norm, it has become critical to sharpen soft skills along with hard skills. Soft skills play a vital role in the success of an organization and therefore, their significance cannot be overlooked in this age of information and technology. While education holds greater significance, skill is paramount. It is true that in order to get work, members of the current generation must possess certain skills. Developing one's skills is essential before a nation may consider its promising future. These days, many nations – India foremost among them – face the issue of having people who are aware but not qualified enough to perform a certain job. India benefits from having the world's largest youth population. The secret to realizing the demographic dividend in higher education is integrating skills. Incorporating skill-based courses into normal coursework can enhance students' employability. Employment chances will rise if normal courses incorporate skill-based training. The capacity to carry out an activity competently and within a set time frame is referred to as a skill.

The capacity to carry out an activity competently and within a set time frame is referred to as a skill. There are two categories of skills: general and particular. For instance, in the workplace, some general talents are self-motivation, teamwork, leadership, and time management. Conversely, certain jobs simply demand a certain set of talents. Ability needed certain environmental cues and circumstances to gauge the degree of proficiency being demonstrated and applied.

Keywords: Skill, Skill development, Soft Skills.

Skill Development Programme

PMKVY, or the Pradhan Mantri Kaushal Vikas Yojana, is the Ministry of Skill Development & Entrepreneurship's (MSDE) flagship program. The goal of the Skill Certification Scheme is to make it possible for a large number of young Indians to enroll in industry-relevant skill training, which will improve their chances of finding employment. In the current globalized era, skill development is a crucial instrument for boosting labor strength and quality for higher productivity and economic expansion. Any nation's ability to develop its people and economy depends critically on their ability to acquire new skills and information. Developing one's skills might help people feel more powerful and more accepted by society. To fulfill the growing ambitions of young people, it needs to be supported by economic expansion and job possibilities. It is a crucial component to propel the economy's growth rate upward and to push the production potential front line outward. Raising the quality of these facilities as well as their massive quantitative

expansion are the challenges involved in skill training. India might eventually develop into a global hub for skilled labor procurement. India wants to emerge as a major player in the world economy. To achieve this, it should provide its employees with information and skills that are marketable.

Importance of Skill Development in Education

For India to produce the kind of workers that will be ideal in the twenty-first century, skill development must begin at an early age. There is currently a huge demand for trained individuals due to changes in the global economy and job market. It is crucial to educate and teach today's youngsters to gain the necessary skills in order to improve their employability. Approximately 90% of job opportunities demand vocational qualifications, according to market surveys. Merely 20% of our grads secure employment. The absence of employable skills prevents the others from finding acceptable employment. There is a greater need for trained and multiskilled personnel in the current globalization setting. Thus, there is an urgent demand for high-quality skill development and training in developing nations like India.

A few of the most important employable skills that companies look for are: written and verbal communication skills; commercial awareness; work attitude; continuous learning; self-management; teamwork; problem solving; initiative; self-motivation; flexibility; stress management; creativity; interpersonal sensitivity; and technology/IT skills, among others.

Soft Skills and Personality Development Skills for Students

1. **Leadership:** Those who take the initiative, provide direction when needed, motivate others, facilitate smooth coordination, and have a problem-solving mindset are considered leaders. The value of leadership abilities extends beyond your time in college; they help to mold your entire character. As a result, you should genuinely try to develop your leadership abilities throughout your time at college by taking part in different competitions, planning intercollegiate activities, and other activities..
2. **Interpersonal skills:** ability to communicate with others and comprehend behavior will be aided by your interpersonal abilities. Pupils who possess good interpersonal skills find it easy to form bonds with others, engage in empathy-based interactions, effectively handle dispute resolution, and lead fulfilling lives.
3. **Adaptability:** Adaptability is a crucial soft skill that will enable you to be flexible in your day-to-day activities. It demonstrates openness to taking on new tasks, responsibilities, or surroundings. Therefore, no trouble adjusting to the various teaching and learning styles employed by other colleges intend to study abroad and are flexible enough to cope with change.
4. **Effective communication abilities:** Possessing these abilities will help you succeed both professionally and academically. The reason for this is that having strong written and vocal communication skills makes it easier for you to convey your

ideas and opinions in speeches, presentations, and group debates. In addition to giving you confidence, effective communication skills help you comprehend topics and people more fully.

5. **Teamwork:** Information sharing and smooth communication between various groups is made possible through teamwork, which eventually aids in the accomplishment of predetermined objectives. Developing this habit during the academic years is a definite approach to job success because working in teams or groups is an integral aspect of degree courses.
6. **Problem-Solving:** Throughout the course of a student's education, problem-solving abilities are always appreciated, regardless of the subject matter. These abilities assess your capacity for critical thought, problem identification, and solution development. Furthermore, the ability to solve problems creatively and effectively using unconventional solutions is implied by the trait of problem solving. It will be especially beneficial because, according to LinkedIn, creativity is one of the soft talents that employers value most, along with flexibility and teamwork.
7. **Time Management:** Students who have a stronger grasp of time management can work and study without difficulty. Pupils who are adept at managing their time can manage several assignments and excel in all areas of their lives.

The Importance of Soft Skills

Collaboration

First and foremost, recent graduates must be able to work collaboratively with their new colleagues. This includes operating efficiently in groups, following the lead of others, leading when called upon, accepting and giving constructive feedback, and generally working together as a team with their office peers. Students who can only be successful working in solitude may be in for a rude awakening when they begin working. If they cannot succeed in collaboration, they will find it incredibly challenging to succeed in most careers.

Communication

Communication skills are also very important for students to develop while in school. Employers expect new hires to interact well with clients and coworkers, ask questions, listen carefully, and carry on respectful and productive conversations. Many students today are equipped with innate electronic communication skills and excel at email, instant messaging, social media, and texting. But employers need and expect them to communicate well via telephone, video conferencing, and face to face. Students must enter the workforce comfortable with all these communication channels and the etiquette that goes along with them.

Challenge

Every job, no matter the field, has its unique set of challenges and setbacks. Students who are unprepared to think creatively and solve problems may find they struggle when faced with tasks that require critical thinking. Often, the learning process is straightforward and predictable — memorizes the formula, solve the equation, or pass the test and you succeed. In life, however, rote memorization is not enough to be successful. Parents and educators must work together to help students grow and pursue opportunities for experiential learning.

Conclusion

In today's world, skill development has become increasingly important. Skill development has emerged as a crucial component of education due to the need to empower the youth, enhance their employment opportunities, and boost the national economy. It is becoming a part of the curriculum of schools, which formerly prioritized academics. To increase their chances of a better future, however, the emphasis is now also on teaching life skills to schoolchildren and vocational training to high school students. Not only does skill development benefit individual students, but it also benefits the community as large. It contributes to the development of a better world where diversity and cultural variances are respected, and where imagination and creativity are given the credit they merit.

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IMPACT OF G20 IN AGRICULTURAL FINANCE

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Introduction

Agriculture as a sector has tremendous growth opportunities. Robust infrastructure and value chain can yield good returns to the economy making it attractive for employment and investment, globally. It is the largest employment sector across the world which currently provides income for 40% of the world’s population. The Indian government is taking steps to provide farmers with farm-gate infrastructure. Agricultural finance is crucial to support the growth of the agricultural sector. Indeed, it is essential for food security, job creation, and overall economic growth.

In July 2020, the finance minister launched the Rs 1 trillion Agri Infrastructure Fund for this purpose. With more than `1 trillion of financing in the next 10 years, farm-gate and aggregation point agriculture infrastructure projects have been given the funds to support Primary Agricultural Cooperative Societies, Farmers Producer Organizations, Agriculture entrepreneurs, Start-ups, etc.

Some of the Sustainable Development Goals are intrinsically linked to food, nutrition and agriculture. In the Post-COVID situation these goals assume more importance as the emphasis would shift from GDP driven economic goals to the Well Being driven social goals. Agriculture, Nutrition and Food form the bed rock of the well-being of people across continents. Governments of G20 countries have a responsibility to make the SDGs achievable by 2030. Food, nutrition and agriculture will play a crucial role in that endeavor. Such an important topic deserves to be at the centre of the agenda of G20.

Agriculture has made great progress in many countries in the last 50 years, starting with Green Revolution followed by hybrid technology and biotechnology. Yield increases helped the world to feed the ever growing population. However, tragically hunger still exists in the world. More than 5 million children died last year due to lack of food, clean water and health care. About 160 million children of below 5 years age are found to be malnourished in the world. These numbers can go up if immediate action is not taken. Diffusion of knowledge and technology has not been uniform across the world. Progress has not benefited people in different countries uniformly which has resulted in a fractured social fabric of the world. This is to be addressed urgently by the world leaders by paying specific attention to the following specific subjects. Equity is a victim of our growth so far. Lack of purchasing power has deprived certain sections of the world community from accessing food while on the other hand there is abundance of food in most of the advanced countries.

Drivers of Change and Innovation in Improving Agriculture Finance

Innovations in technology and the structure of agricultural markets enable the evolution of approaches and products that can help agricultural finance. As noted in the 2012 G20 report, sustainable agricultural finance requires an assessment of: a) risks, b) costs/distribution channels, c) bankable opportunities, and d) the right product to the right people. The five areas of research undertaken by the GPFI, as summarized in the present report, contribute to solutions in these areas. Value chain finance is most relevant to address points a), b) and c). Insurance focuses on a), but is also confronted with b). Demand assessment is critical for d). Technology is driving innovation for b), and financing for women is relevant for c) and d). While not comprehensive, innovation in these five areas makes an important contribution to global learning.

Digital Financial Services: Developments in Serving Smallholder Farmers

A number of private-sector actors and other stakeholders are experimenting with digital financial services (“DFS”), particularly those enabled by mobile phones, to overcome the specific challenges of serving smallholder farmers and their families. Buoyed by the relative success of DFS in the non-agricultural context, a range of DFS deployments have been launched in recent years aimed at extending financial services to smallholders. The efforts are still nascent and the challenges plentiful. Nonetheless, there is widespread interest in exploring the potential of DFS to overcome a number of traditional economic and cultural barriers that currently limit smallholder use of formal financial services.

Agricultural Credit

Credit is critical to agricultural finance, whether to purchase inputs (seeds, fertilizer), tools, or to cover ongoing operational costs prior to harvest time. Yet for smallholders, credit is relatively rarely drawn from financial institutions. The cost of assessment of the client risks and transactions costs of providing loans by conventional means is too high for most financial institutions

Insurance

Insurance can reduce the negative impacts of crop failure and livestock illness. It may also improve a farmer’s ability to access credit and willingness to invest in labor and inputs. There are several types of agriculture-related insurance, including weather index insurance (for example, drought, excessive rain), area yield, livestock mortality, and price insurance. The operational costs of making and receiving payments for insurance, issuing payouts and verification often make the costs prohibitive for smallholders. As such, insurance providers innovated using index insurance for weather risks coupled with mobile registration and payments.

Payments

There is a fast-growing trend in mobile money transfers. Where available, some smallholder farmers are customers of a digital payment provider and make transfers and/or payments outside of their agricultural activities. There are also newly-developed platforms that enable organizations and government agencies to make payments for specific agricultural purposes, including for fertilizer and seed subsidies.

Financing to Support Women in the Agricultural Sector

Providing financing to agriculture is challenging for both male and female farmers, however women face some unique challenges. These challenges relate to the role of women in the household that often restricts their control over assets and constrains their available time for productive activities. Their role in the household is often invisible, particularly when it comes

to their economic and financial contributions. As such, women have lower access to economic and financial services (World Bank 2015)

New Trends in Financing Agricultural Value Chains – Promising Practices and Emerging

Recommendations for Policy Development

With increasing market liberalization and the integration of the agricultural sector of developing economies into world markets, rural transformation is accelerating. Commodity and financial flows and the processing of agricultural goods up to the final consumers have become more sophisticated. This integration of agricultural and food product markets is likely to grow further as obstacles to the free flow of agricultural goods on international markets diminish (GIZ 2015b).

Innovations and Emerging Trends in Agricultural Insurances

Agriculture is a risky business and farmers face a host of market and production risks that make their incomes volatile from year to year. These risks include yield losses due to bad weather, pests and diseases; post-harvest losses during storage and transport; and unexpectedly low market prices. Traditional risk management arrangements frequently fail to provide an adequate safety net for the poor. They are also limited in their ability to manage catastrophic risks that affect many farmers within a region at the same time (for example, regional droughts or floods). Covariant risks are also a problem for financial institutions and input suppliers, since they can be faced with widespread defaults on loans and unpaid bills (GIZ 2015a).

Food security

Food security deals with availability, accessibility and affordability of food for all the citizens of each country. It is imperative that epidemics, pandemics, politics, natural disasters and wars do not disturb the food security of any nation. Sufficient safeguards are to be put in place to ensure that affordable food is made available to the poorest of the poor in every country irrespective of other obstacles.

Nutritional security of the citizens of the world assumes significance now because the food choices of the people will be increasingly dictated by the need for healthy diet that gives them immunity to diseases. The realization that consuming the right food will avoid expenditure on medicines and hospitals makes people look for affordable healthy food. Shifting people to plant-based nutrition is a key task in front of the world. Sustainable dietary habits of people lead to sustainable food production systems which in turn promote environmental sustainability and nutritional sustainability.

Small holder farmers and their welfare need to be at the top of the priority list for governments around the world. Unprofitable agriculture, in many parts of the world, has left the farmers poor and vulnerable to several risks. In most of the developing countries more than 80 per cent of the farmers are small and resource poor and many of them are women. They lack access to high quality inputs, finance, technical advice and access to markets. They are unable to practice sustainable and good agricultural practices. Distress among farmers leading to increased suicide rate is a big challenge for the world. Can agriculture survive if farmers die? If youth does not have interest in agriculture how will the future of agriculture look? Leaders have to look at this serious problem that cuts across most of the world and G20 countries. They have to find answers that can improve the financial wherewithal of the farmers and increase their risk bearing capacity.

Depletion of natural resources has become a very serious issue in most of the countries. Soil, water and biodiversity have depleted due to continuous and intensive agriculture followed in the last 50 years. Our food production systems in each country have to be measured against a natural resource use efficiency index. Diffusion of technology across the nations to help them in improving their natural resource use efficiency index has to be given priority as a humanitarian effort to conserve environment. The leaders have to take policy decisions to promote this collaborative approach.

Climate Change is the biggest threat to global agriculture whose impact is increasing year after year. Droughts, floods are increasing in intensity. Potential yields could drop and food availability could be severely restricted by 2050 due to climate change unless we start responding now. Sustainable agricultural practices and cultivation of climate resilient crops may help us in fighting this but how to make it a part of our life and how to handle possible immediate yield losses? Is it possible to have a collaborative policy across a nation which helps the total global population? This needs the attention of the world leaders to find a collaborative effort.

Financial systems, consisting of credit and insurance products and services, have to be made available to farmers so that their risks are covered and their financial wherewithal is built over a period of time. Using modern digital technologies the financial institutions should be able to offer these services in a seamless manner to the farmers as they offer to their urban counterparts. Digital land records, collateral management, digital market linkages for the produce and similar infrastructure are essential for the success of this effort.

Farmer's incomes have to be strengthened through diversification. Livestock, dairy, fisheries, birds and other sources of non-farm income for the farmers are to be built on a strong platform with funding, insurance, technical advice, linkage to markets and digital support systems. This will reduce vulnerability of farmers' lives due to crop failure for reasons like abiotic and biotic stresses. A robust structure of farmers cooperatives and farmer producer organizations is to be built covering the farm and non-farm activities of the farmers in a comprehensive way. India has a huge role to play in bringing all these aspects of food, nutrition and agriculture to the centre stage during its tenure of leadership of G20. India is a major contributor to the pool of agricultural land, number of small holder farmers, crop

diversity, agro-climatic conditions and food systems of the world. India can benefit from bringing all the above aspects into a seamless stream of knowledge and experience sharing across countries but at the same time India can also contribute towards making this work for many other developing countries. India should take lead in getting some of the policy level decisions on the above aspects hammered out among G20 countries during its tenure. The G20 leaders have to show unflinching commitment to achieving the Sustainable Development Goals by 2030, especially those impacting food, nutrition and agriculture - which kept the world going during COVID-19 pandemic. They have to build a more equitable world in the post-COVID situation.

Conclusion:

It is important to recognize the trends in agriculture and financing, often in response to sector changes and changes in technologies and approaches. The growing importance of stronger value chain relationships is due largely to the trend of increasing qualitative and quantitative demands for processed food products and higher value products. The need to fulfill higher standards and time-driven deliveries will undoubtedly continue and lead to a much higher proportion of agricultural production organized in value chains. The impacts of these dynamics on the structure of agricultural markets have to be understood by all actors in the chain, as well as by service providers, and especially financial service providers. The risks of noncompliance also multiply, thereby increasing the needs of insurance and innovations in ITC. Hence, by understanding and using the value chain and knowing the clients, and their clients, financial services and other complementary support services can be offered in a more systematic way at lower cost and risk.

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- Ulrich Hess, Peter Hazell and Saskia Kuhn “Innovations and Emerging Trends in Agricultural Insurance”

INDIA 2.0: VISION FOR INDIA 2047 – DIGITAL ECOSYSTEM & HARNESSING ARTIFICIAL INTELLIGENCE

Volume – 1



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IMPACT OF THE DIGITAL ECONOMY ON THE DEVELOPMENT OF ECONOMIC SYSTEMS

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Abstract

The modern economy depends on the use of information networks and platforms, renews factors and resources, and is powered by rising technology and new development concepts. Seeks to achieve high-quality, sustainable development as a crucial pillar in the construction of a contemporary economic structure. The majority of economic activities and production processes are impacted by digitalization. The significance of the digital economy during this age of rapid expansion is demonstrated by its deep integration with social and economic industries, promotion of digital transformation, and ongoing introduction of new models, technologies, and industry processes. This results in the modernization and transformation of businesses, industry, and society as a whole, supporting innovation-based sustainable economic development.

Keywords: Digital and Economy," "Internet and economy, Digital Strategy, digital ecosystem.

Introduction

Digital technologies, typically represented by the Internet, big data, 5G, artificial intelligence, accelerate the deep integration with industries, bringing the world into the era of digital economy Since the "Belt and Road" initiative was proposed, the digital economy has also gradually become a crucial cooperation area for the countries.

The digital economy can further optimize the industrial structure and increase jobs through information and communications technologies (ICT), Internet and other intelligent means, greatly improving the economic development in countries along the "Belt and Road." In particular, the digital economy has played an active role in mitigating economic losses and promoting economic recovery during the fight against Corona Virus Disease 2019 (COVID-19). Specifically, COVID-19 brought serious shocks to the world economy by directly affecting production, disrupting the supply chain and having an adverse impact on firms and financial markets . Additionally, the stringency measures implemented by policymakers to minimize social mobility also decrease macroeconomic activity On the contrast, the digital economy, with its advantages of high technology and integration with other industries, has become a new opportunity for digital transformation of industries. Compared with the real economy, digital technologies, industries and services play an important role as stabilizers, lubricants and boosters

Thus, they are considered as important measures to combat the crisis and engines to drive economic growth.

Digital Strategy explains that a digital ecosystem comprises stakeholders, systems, and an enabling environment that, together, empowers people and communities to use digital technology to access services, engage with each other, and pursue economic opportunities. Building on this concept, the Agency created a framework that refines the ecosystem into a practical structure for development practitioners.

Challenges in Measuring an Increasingly Digitalized Economy

From the statistical perspective, the issues around the digitalization of the economy and society are fundamental. There has been significant international debate and discussion in recent years about measuring the economy in an increasingly digitalized world. The debate has centred on two questions. The first is whether the statistical frameworks used to measure the economy, such as the *Balance of Payments and the International Investment Position Manual* (International Monetary Fund [IMF] 2009) and the *System of National Accounts* (European Commission et al. 2009) adequately capture economic activities related to the digitalization of the economy. The second, less discussed, question is whether statistical agencies have the proper statistical infrastructure to capture, categorize and process the information into meaningful statistics. This essay explores both issues. First, it argues that, for the most part, the goods and services are not new – they are just being delivered in new ways and therefore the conceptual and statistical frameworks are adequate and up to the task. Second, the changing nature of digital goods and services is a major challenge for statistical agencies as these products and services are increasingly difficult to measure. Statistical infrastructure must be adapted to capture changes, otherwise there could be a significant deterioration in the quality and related detail of key official statistics such as GDP, the Consumer Price Index (CPI) and the unemployment rate.

India's digital divide is narrowing fast, as less affluent states leapfrog to catch up with more affluent states. India can create up to \$1 trillion of economic value from the digital economy by 2025, with half of the opportunity originating in new digital ecosystems that can spring up in diverse sectors of the economy. E-commerce platforms are expected to drive recovery of consumer electronic products – mobile devices, smart TVs, LED lighting, etc. – faster and having a robust manufacturing ecosystem is essential to adequately address the indigenous demand. An immediate need to develop local supply chain networks has been recognized and efforts in this direction could adequately support the indigenous electronics manufacturing. Industry should develop short term strategies on quarterly basis and calibrated decision-making, to address disruptions caused due to the COVID-19 pandemic. The 'Atmanirbhar Bharat' policy could give the much-needed fillip to the country's disrupted business operations by promoting indigenous manufacturing encouraging substitution of imports of low-technology goods, and encouraging local produce at lower prices.

As more and more businesses across various industries embrace new digital technologies, the economy is becoming increasingly digitalized (or digitally enabled).

Online shopping and e-commerce are mainstream channels for consumption, and products themselves are moving from tangible mediums (CDs, videos, books) to digital ones. With the proliferation of digital intermediary platforms, the actors involved in a typical online transaction are also changing. While there used to be two primary factors involved in any given transaction (for example, the buyer and the seller), online transactions increasingly involve multiple actors, including but not limited to the one that facilitates the transaction, the one that processes the payments between buyers and sellers, and the one that distributes the final products. In addition to increasing the number of actors involved, digital intermediary platforms are also enabling private individuals, which have typically been consumers, to more easily produce goods and services themselves.

The term digital economy is being put forward to try and capture or put a box around the new ways consumers, producers and markets are interacting and exchanging goods and services. While the term has gained significant prominence, there is not yet a definition that encapsulates what is meant by the digital economy. It is unclear if such a definition will ever emerge, in part because the digital economy is pervasive – it is not so much a piece or sector or industry of the economy, rather it is transforming the entire economy. Accordingly, it is more appropriate to refer to the digitalization of the economy rather than the digital economy.

While the digitalization of everything is transforming both our business and personal lives, there is little information currently available that helps us understand the economic, social and environmental impacts. It is rather ironic that in a digital age, where information is all around us and can be obtained from a simple command such as “hey, Google” or “hey, Alexa,” we lack basic statistics that help us understand the transformation that is occurring.

Conclusion

The digital economy, which is based on new development concepts and driven by emerging technologies, relies on the application of information networks and platforms, renews factors and resources, and aims at high-quality and sustainable development as an important cornerstone for building a modern economic system. Digitalization affects most of the production processes and activities in the economy. In a period of rapid development of the digital economy, its significance is manifested in deep integration with economic and social industries, promoting digital transformation and constantly introducing new technologies, new models and new industry processes. This leads to the transformation and modernization of society, industry and enterprises, contributing to sustainable economic development based on innovation models.

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Volume 1

**ICSSR SPONSORED
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RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT

Editor

Dr. R. Ramya

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SKILL DEVELOPMENT SCHEMES AND ITS IMPACT

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Abstract

*Skill India Program Development will encourage and groom professionals to contribute substantially to India's industrialization and economic growth. It is estimated that over 400 million women and men in the nation will be made competent in various industrial and trade skills by the year 2022. It is definitely going to be a positive foray to remove poverty, and reducing unemployment on a large scale. Certificates will be delivered to those who complete a particular skill or programme and this certificate has to be accepted by all public and private agencies and entities, including overseas organizations. Skill India mission is a programme designed for the entire nation. Union Budget 2023-2024 adopts seven priorities, which complement each other and act as the 'Saptarishi' guiding us through the Amrit Kaal. **Youth Power** is one of the priority areas which include Skill Development.*

Keywords: Skill India, Development, Economic Growth

Introduction

Skills and knowledge are the driving forces of economic growth and social development for any country. Countries with higher levels and better standards of skills adjust more effectively to the challenges and opportunities in domestic and international job markets.

The Skill India Mission was launched in 2015 by the Central Government to make Indian youth belonging to rural and urban areas competent for employment. Skill India campaign was launched by Prime Minister Narendra Modi on 15 July 2015. The initiative aims to educate more than 40 crore individuals and create a workforce by 2022. It does so by offering different courses and classes for free.

It aims to empower India's youth by offering necessary skills and training to increase their chances of getting jobs in various sectors. This also boosts an individual's productivity and knowledge. The National Skill Development Mission

takes account of the proceedings through a result-oriented structure that connects with modern business requirements. Technically, this scheme takes care of convergence, institutional training, overseas employment, leveraging public infrastructure and sustainable livelihoods.

Features of the National Skill India Mission

The features of the Skill India Mission are as follows.

- It creates a lucrative scheme for the development of rural youth.
- This scheme focuses on improving the entrepreneurship and service skills of Indian youth.
- National Skill India Mission supports and offers training to individuals working in both organised and unorganised sectors. For instance, cobblers, nurses, masons, kiln workers, etc., can apply for this scheme.
- Skill India Mission also focuses on developing sectors, such as designing, textiles, gems industry, transportation, real estate, textiles, etc. These areas need adequate training for growth.
- It trains youth and makes them capable of finding a job in both India and abroad.

Benefits of Skill India Mission

The Skill India Mission offers beneficiaries the following benefits.

- With appropriate skill development, one can get better job positions and appropriate salaries.
- They can improve their standard of living and support their family.
- The development at the grass-root level will help boost the economy and attract foreign investments.
- Individuals receive a National Skill India Mission certificate which substantiates their skill training.
- Skilled employees would offer better outcomes and more productivity.
- An individual can develop his/her skills and set up a business. This again increases the scope for employment in India.
- Salaried beneficiaries can avail loans of up to ₹1 crore and ₹3.5 crores as self-employed against this scheme. With a stable income, they can easily repay the outstanding balance within the tenure of 20 years.

Pradhan Mantri Kaushal Vikas Yojana 4.0

The Finance Minister announced that **Pradhan Mantri Kaushal Vikas Yojana 4.0** will be launched to skill lakhs of youth within the next three years. The scheme will emphasize on On-job training, industry partnership, and alignment of courses with needs of industry. She further highlighted that the scheme will also cover new age courses for Industry 4.0 like coding, AI, robotics, mechatronics, IOT, 3D printing, drones, and soft skills.

Indian Skill Development Service

The Indian Skill Development Services (ISDS) is a new central government service that has been created especially for the training directorate of the Ministry of Skill Development and Entrepreneurship. It is a Group 'A' service and is expected to give a big push to the government's skilling initiatives by drastically enhancing the effectiveness and efficiency of the various schemes in this domain. The qualifying exam for this service is the Indian Engineering Service Exam conducted by the UPSC. The idea behind the ISDS is to attract young and talented people into the skill development domain and make skilling initiatives successful in the country.

The objective of Skill Development is to create a workforce empowered with the necessary and continuously upgraded skills, knowledge and internationally recognized qualifications to gain access to decent employment and ensure India's competitiveness in the dynamic global market. It aims at increasing the productivity and employability of workforce (wage and self-employed) both in the organized and the unorganized sectors. It seeks increased participation of youth, women, disabled and other disadvantaged sections of the society and to synergize efforts of the various sectors and to reform the present system with the enhanced capability to adapt to the changing technologies and the labour market demands.

Impact of Skill India

Skill India is a flagship program launched by the Indian government with the objective of creating a skilled workforce in the country. The Skill India program aims to provide vocational training to millions of young people to make them employable in various sectors. The impact of Skill India has been significant in many ways.

1. **Job creation:** Skill India has played a critical role in creating employment opportunities for millions of young people in the country. The program has trained people in various skills, including hospitality, tourism, healthcare, and construction, among others, making them employable in these sectors.
2. **Increased productivity:** The training provided under Skill India has helped to improve the productivity of the workforce. With better skills, workers can perform their jobs more efficiently, which leads to increased output and higher quality of work.
3. **Economic growth:** Skill India has contributed to the economic growth of the country by providing skilled labor to various sectors. With a skilled workforce, businesses can operate more efficiently, and this can lead to higher profits and economic growth.
4. **Entrepreneurship:** Skill India has also encouraged entrepreneurship by providing training in various business-related skills. This has led to the creation of many small businesses and startups, which contribute to the growth of the economy.
5. **International recognition:** Skill India has received international recognition for its efforts in creating a skilled workforce. The program has partnered with

several countries to share knowledge and best practices, and this has helped to raise the profile of India as a country with a skilled workforce.

6. **Empowerment:** Skill India has empowered many individuals, particularly women and underprivileged communities, by providing them with the necessary skills to earn a livelihood. This has helped to reduce poverty and improve the quality of life for many people.

In conclusion, Skill India has had a significant impact on the Indian economy and society. The program has helped to create employment opportunities, improve productivity, encourage entrepreneurship, and empower individuals. As the Skill India program continues to expand, it is expected to play an even more significant role in shaping the future of India's economy and society.

Challenges of Skill Development in India

In India the unemployment rate among youth is almost 13% as compared to 4.9% overall. Given the kind of opportunities available in the country, it is irresistible to note these dismal figures. The missing link here is skill development which is the key component to healthy economic growth. Educational qualifications are only essential for entering the job market, it is the skills that will finally determine one's employability strength. The following are the major challenges of skill development in India:

- **Examination Oriented Education System:** The current education system does not concentrate on training young people in employable skills that can provide them with employment opportunities. Today, a large section of India's labor force has obsolete skills. With current and expected economic growth, this challenge is going to only increase further, since more than 75% of new job opportunities are expected to be 'skill-based' in the coming days. Our education system is mere examination centered rather than skills and practical centered. None of the educational institutes teach practical aspects to students. This leads to scarcity of skilled youth even when have ample job opportunities in the market.
- **Restrictions in Industry Sector:** Many companies give on job training to their workers. This may take different forms:
 - The workers may be trained in the firm under the supervision of a skilled supervisor;
 - The workers may be sent for off-campus training.

In both these cases firms incur some operating cost. Thus, firms will, insist that the workers should work for a minimum-specific period of time, after their on the job training, during which it can convalesce the benefits of the improved productivity owing to the training. But the retention ratio is low thus private and Industry Participation in skill development is lacking. There are no incentives for private players to enter the field of vocational education. Present set of laws are very rigid. In service training is required but not prevalent today. There is no

opportunity for continuous skill up-gradation. There is a lack of experienced and qualified teachers to train students on vocational skills.

- **Low Women Participation:** Women participation in vocational education and training is low as compared to men. There are a few reasons limiting interest/participation may be social and cultural norms and family responsibilities. Women also tend to become discouraged due to such family and social forces, especially in rural areas. Therefore, in order to increase enrolments, the combined efforts with local NGOs and Panchayats on informing women and their families on the benefits of vocational education, which may lead to employability, is very important. Specifically, women should be targeted by explaining how inculcating income generating skills and activities within them would subsequently lead to improving their social and economic status.
- **Inadequate Scale, Limited Capacity:** In India, the existing infrastructure, both physical and human, is not sufficient considering the projected demand for skilled labour in the country. Along with creating additional capacity in the existing institutes, there is a need to create an adequate infrastructure even in small towns and villages. In terms of faculty, also, the training infrastructure is inadequate. For example, there is a need of 85,000 trainers for the seating capacity of 17, 00,000 trainees at ITIs considering 20:1 student/faculty ratio. As against this, the seating capacity for various trainers' programme of Directorate General of Employment and Training (DGET) is just 4,438, which is far from adequate to meet the requirement.
- **Awareness, Mindset and Perception Issues:** Skill development in India is far below the requirements due to a lack of awareness on the type of courses as well as information on the ensuing career prospects. More prominently we can say, there is limited acceptance of skill development courses as a possible alternative to formal education in India. Unfortunately skilling is often viewed as the last option meant for those who have not been able to excel in the formal academic system. This is partly due to increase in the aspirations for white collar jobs which require higher qualifications and skill development is often related with blue collar jobs, which are perceived low dignity jobs with low wages or salary

Conclusion

Skill development is speedily gaining importance in the present scenario and it is clear that Education and Skills are fundamental to improve employment opportunities, shrink poverty, boost productivity, and promote environmentally sustainable development in rural areas. It is urgently needed to assimilate skills development into rural development policies and strategies such as agricultural policies and private sector development and entrepreneurship policies. It is essential that in education system skill based training should be incorporated with placement

facility to link trainee with Industries. Skill development is need of the hour which would facilitate the workforce to adapt and match the new requirements for youth in rural India which results in rural development. It is only through an inclusive rural development agenda that sustainable human progress is possible (Sinha, 2007). Thus education and skill Development is an urgent and important requirement for developing countries, in particular for countries with large youth population such as India.

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G20 TECHNOLOGICAL TRANSFORMATION & DIGITAL PUBLIC INFRASTRUCTURE

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G20 AND MARKETING

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INTRODUCTION

India's G20 Presidency signifies a remarkable milestone in the nation's diplomatic journey. As India assumes this crucial role, it finds itself positioned at the heart of global economic and political discourse. While the primary focus of the G20 lies within economic realms, its impact extends across various sectors, encompassing marketing as well. This article delves into why India's G20 Presidency holds significance for marketing agencies in the country and explores the myriad opportunities it presents to this industry.

The Group of Twenty (G20) is a global forum consisting of major economies, including both developed and emerging countries. Its formation in 1999 aimed to tackle urgent global economic concerns. Representing a substantial share of the world's GDP and population, the G20 consists of 19 individual nations along with the European Union.

India's G20 Presidency began in 2022 and spans a two-year term, during which the country acts as chair and hosts meetings and discussions among G20 members. These crucial discussions cover topics such as economic growth, trade, sustainable development, and global cooperation.

IMPLICATIONS FOR MARKETING - INDIA'S G20 PRESIDENCY

1. Economic Policy Impact

An important impact of the G20 on marketing agencies in India is seen through its economic policy decisions. As India assumes the Presidency, it has the chance to shape and influence discussions pertaining to economic growth, investment, and trade policies. Favorable policy

outcomes can create more business opportunities for marketing agencies since a flourishing economy often translates into large marketing budgets.

Favorable trade agreements and investment policies can incentivize multinational companies to expand their operations in India. This expansion often entails implementing robust marketing campaigns to establish and increase their market share, which presents lucrative opportunities for local marketing agencies to form partnerships with these companies.

2. Focus on Sustainability

Sustainability has become a prominent topic in G20 discussions, with increasing importance in recent years. With India's G20 Presidency, there is a unique opportunity to champion sustainable business practices that align with the rising demand for environmentally friendly and socially responsible marketing strategies. As global awareness of climate change and environmental concerns grows, marketing agencies in India can leverage this trend by promoting sustainable brands and products.

3. Digital Transformation

Many G20 members place a high priority on digital transformation in a world that is becoming increasingly digital. Policies and initiatives that encourage digital innovation and connectivity may come up during India's presidency. Digital marketing, e-commerce, and technology-driven advertising-focused marketing firms may benefit from this.

4. Global Partnerships

India's G20 Presidency also gives people a chance to work together and form partnerships around the world. These alliances provide marketing agencies in India with access to international markets, the opportunity to share best practices, and exposure to cutting-edge marketing strategies from other nations.

5. Enhanced Reputation

India's international profile and reputation are enhanced by hosting the G20 presidency. India-based marketing agencies may indirectly gain from this elevated global standing.

Increased marketing opportunities for agencies can result from a more favorable perception of India by foreign companies looking to invest there.

6. Human Capital Development

As part of its G20 commitments, India may focus on fostering entrepreneurship and developing human capital. By ensuring a skilled workforce and a flourishing entrepreneurial ecosystem, these efforts can indirectly benefit marketing agencies. Marketing campaigns that are more innovative and successful may result from a well-educated workforce.

7. Promoting Cultural Exchanges

India frequently makes use of its G20 presidency to highlight its extensive cultural heritage. By developing campaigns and initiatives that highlight India's diversity, marketing agencies can play a crucial role in encouraging these cultural exchanges. These efforts have the potential to increase opportunities for tourism and business by fostering a greater appreciation of India's cultural offerings on the international stage.

G20 -SMART MARKETING TECHNIQUES

Digital Marketing

India leveraged the power of digital marketing and social media platforms to reach a global audience, creating a long-lasting impression. The strategy is to use digital media and social media platforms to create a digital presence, highlighting the event's significance and India's role in it on a global scale. These marketing strategies focused primarily on the dissemination of information and facilitating real-time engagement. Moreover, effective digital connectivity through proper marketing channels helped to generate immense curiosity around the event.

Social Media Campaigns

India used popular social media platforms like Instagram, Facebook, and X to share real-time updates and photos from the summit. This marketing strategy kept the public informed about the event's developments and helped build engagement. As a result, social media was buzzing with G20 updates and piqued the interest of the audience from guest countries.

The government of India also launched a social media campaign #G20India, and used it diligently to share photos and updates from the summit. This social media campaign also

focused on sharing engaging videos and infographics highlighting our economy and the country's commitment to fostering global cooperation.

Use of Marketing Channels

The mix of effective marketing mediums contributed significantly to promoting the event and its agendas. To begin with, India launched a multimedia ad campaign encompassing platforms like radio, print, and TV to reach more individuals. Additionally, collaborations with leading media outlets helped garner extensive earned media coverage in the form of feature articles and op-eds, in national and international media. These attempts stimulated interest in the summit and projected a positive image of the country as a powerful leader.

Website Launch

The Government of India launched a dedicated website for this G-20 summit that displayed details of the event, highlighting its agendas and information about the participating nations. The government used the platform proactively to promote India's mission, culture, and heritage. Recognizing the effectiveness of digital media and its scope, the official website had a dedicated section for digital marketing. It primarily displayed information on how different enterprises can get involved and promote the summit.

Traditional Marketing Methods

Besides social media campaigns, digital marketing platforms, and active website engagement, India used traditional marketing methods to draw attention to the summit. For instance, the organizers used public relations and print advertising and set up multiple posters, banners, and billboards across several cities for the G-20 summit's promotion. The government also hosted several programs, including a youth summit, a business summit, and a cultural festival to demonstrate India's strength and attract more trade and investment opportunities.

ASTUTE MARKETING STRATEGIES - G20 SUMMIT

The much anticipated G20 Summit that is going to be held in India starting from 8th September 2023 showcases not only the nation's diplomatic prowess but also its astute marketing strategies that played a pivotal role in promoting the event on a global scale.

This G20 Summit is amplifying the voices and addressing the concerns of the Global South. It is providing impetus to women-led development initiatives. As technology assumes an increasingly prominent role in shaping the future, this G20 is taking significant strides in the realms of AI (Artificial Intelligence) and DPI (Digital Public Infrastructure).

On the marketing strategies coming to life, Mariya Jamal, Head of Marketing at Dot Media commented, “The G20’s marketing strategy is well-thought-out, with a focus on collaboration, economic stability, and global governance. Drawing on its role as a forum for world leaders to tackle pressing global issues, the G20 uses diplomatic channels, engaging with the international media and strategic messaging to capture the public’s attention. The aim is to position the G20 as an essential forum for multilateral solution-building and global decision-making.”

DIGITAL MARKETING AND SOCIAL MEDIA'S ROLE IN GLOBAL

The G20 Summit requires a robust marketing plan to gain international attention. India leveraged the power of digital marketing and social media to reach a global audience, allowing for real-time engagement and information dissemination.

Amit Relan, Co-founder and CEO, mFilterIt assessed the role of digital marketing and social media stating, “Digital marketing and social media have played a pivotal role in promoting the significance of the G20 summit to the entire nation and even at a global level. Not only the Indian media has captured this strategic event, but some of the biggest names in the international media have spread the word in their respective countries. The digital connectivity has helped to generate curiosity and awareness around the event and has also captured the thoughts of the delegates visiting the country.”

CONCLUSION

In conclusion, there are numerous reasons why India's G20 presidency is significant to the nation's marketing agencies. It provides a platform for developing global partnerships, promoting sustainability, and shaping economic policies. In addition, it encourages the growth of human capital and enhances India's international reputation. Marketing agencies in India may see an increase in business opportunities as a result of any or all of these factors.

Marketing agencies must remain aware of the changing landscape as India continues to lead discussions on global economic issues. These organizations can position themselves for growth and success in a world that is interconnected by aligning their strategies with the themes and policies emerging from the G20. The opportunity to have a lasting impact not only on India's economy but also on the prospects for the marketing industry in the future is one-of-a-kind during India's G20 presidency.

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Consumer Behaviour and Fast-Moving Consumer Goods (FMCG)

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Abstract

The FMCG industry is greatly influenced by customer behaviour; changes in consumer preferences drive the sector's innovation, adaption, and expansion plans. Prices, as components of pricing strategies, are essential to coordinating these shifts. The increasing longevity of health consciousness among customers is a contributing element to this shift, as FMCG companies are shifting their emphasis to healthier product offerings. For example, the food and beverage industry has seen a significant movement towards whole grain foods, organic produce, and plant-based meals. This trend coincides with a growing emphasis on the lifespan of products. The rising sales of goods that promote healthy eating are proof of this.

Keywords:*FMCG, Consumer Behaviour, Preference, Customers, Product*

Introduction

Consumer Buying Behaviour towards selected Fast Moving Consumer Goods (FMCG) Products. Consumer behaviour plays an important role in marketing of fast moving consumer goods. This behaviour is affected by various factors. In the present era of globalisation, needs and wants of consumers change with time. The fast moving consumer goods (FMCG) sector contributes a lot to the growth of India's GDP. Therefore, it is necessary to identify the changes in consumer buying behaviour towards FMCG products. Fast Moving Consumer Goods (FMCG) goods are popularly named as consumer packaged goods. Items in this category include all consumables (other than groceries/pulses) people buy at regular intervals. The most common in the list are toilet soaps, detergents, shampoos, toothpaste, shaving products, shoe polish, packaged foodstuff, and household accessories and extends to certain electronic goods. These items are meant for daily frequent consumption and have a high return.

Fast Moving Consumer Goods(FMCG) are the commonplace products that disappear off store shelves rapidly. Because of their low cost and high repurchase rates, fast-moving consumer goods (FMCGs) have a significant position in the economy. Leading companies in the area, such as Unilever, leverage their experience to make significant contributions. Because of how quickly these products are produced, a well-organized supply chain is required, from the acquisition of raw materials to distribution and retailing, which suggests a heavy emphasis on FMCG logistics. It is crucial to strike a balance between precise and dependable transportation solutions and the significant inventory turnover typical of FMCGs.

An efficient supply chain is the foundation of any prosperous fast-moving consumer goods company. It is the catalyst for effectiveness, financial savings, and, in the end, client happiness. Consumers' worries about ethical and sustainable business practices have a significant impact on their purchase decisions, which forces companies to modify and reconsider their pricing tactics. As a result, FMCG companies place a high priority on managing the product's lifespan and sustainable sourcing, striving to produce goods while upholding openness in their operations.

Factors That Affect Consumer Behaviour In The Fmcg Sector

1. Consumers' tastes and preferences

The demand for a good is mostly determined by the tastes and preferences of its users. a good that has a strong consumer base and is in high demand. The demand for various products is influenced by the wide variations in people's likes and preferences for those products. The demand for a variety of commodities varies because of shifts in consumer preferences as well as marketing pressure from manufacturers and retailers of different products.

2. Hybrid experience

After two years of living in a world where the virtual has taken precedence, consumers now see digital tools as an integral part of the purchasing process. They predict that stores would be equipped with digital technology and that businesses will promote hybrid shopping experiences, which blend physical and digital channels. This is especially true for Generation Z, who use hybrid shopping more than any other generation. More than any other generation, 27% of consumer purchases and 36% of Gen Z purchases are made through hybrid channels.

3. Prices of the related items

Customer demand is affected by the costs of associated commodities, especially those that function as supplements or substitutes for the main good. The demand for both complementary commodities will be impacted if the price of one changes. For example, a drop in the price of milk would affect the demand for sugar. As more people drink milk or make more khoya, burfi, and rasgullas with it, their need for sugar will increase.

4. Consumer attitude

Every one of us has certain attitudes that affect our purchasing decisions, whether we are aware of them or not. For example, your acquaintance may drink more tea than coffee because they believe it is unhealthy. However, if you believe that caffeine provides you with the energy you need to get through the day, you could choose coffee. Our actions toward a product are significantly influenced by our attitudes and ideas. Thus, understanding a consumer's mindset and beliefs aids in the development of successful marketing campaigns.

5. Sustainable choices

Brands that position themselves as sustainable have an average revenue increase that is five times higher, per a survey. A 2021 global sustainability research found that one-third of consumers are willing to pay extra for sustainable items. In fact, 61% of Gen Z respondents to a GWI study stated they spend more money on eco-friendly products than

they do on non-eco-friendly ones. But this is what could set you apart from the competition, since buyers are becoming more conscious of sustainability while making decisions.

Consumer Behavior In The Fmcg Industry: Importance And Impact

Consumer behaviour is the study of how individuals make decisions about what they buy, use, and dispose of. Understanding consumer behaviour is crucial for FMCG companies because it helps them create products and marketing strategies that resonate with their target audience.

The FMCG industry relies heavily on consumer behaviour because the demand for these products is constant and ever-changing. As consumers, our preferences, needs, and habits evolve, and FMCG companies need to stay ahead of the curve to remain competitive.

Trends Shaping The Fmcg

The rise of sustainability, health, and ethical concerns among consumers is manifesting a game-changing influence on the FMCG industry. They are not just influencing purchasing decisions of fast-moving consumer goods like cosmetics and toilet paper, but also compelling businesses to rethink their strategies.

1. **Sustainability:** With the escalating environmental crisis, consumers are demanding more sustainable products. Brands, including those in the cosmetics industry, have to respond by prioritizing environmentally friendly practices such as sustainable sourcing, eco-packaging, and reducing carbon footprints [Include Unilever's example of sustainable practices].
2. **Health Awareness:** Consumers are becoming more health-conscious, shunning overly processed or chemically laden products like certain traditional cosmetics. FMCG brands, including those offering toiletries such as toilet paper, are consequently introducing natural, organic, and healthier alternatives to their existing product range
3. **Ethical Considerations:** Ethical sourcing and fair labor practices are gaining importance among consumers. Brands, especially those in the cosmetics and toilet paper sector, violating these principles face the risk of consumer backlash and loss of market share. As a result, FMCGs are being more transparent about their supply chains and labor practices

How Do Fast-Moving Consumer Goods Work?

1. **Mass Production:** FMCG companies often produce goods, such as toilet paper, in large quantities to meet high consumer demand and ensure cost-effectiveness. Services, like haircuts, are also provided in high quantities due to the recurring need for them.
2. **Extensive Distribution Networks:** FMCG businesses work on creating thorough distribution networks to ensure the broadest possible reach for their products and services, including haircuts and toilet paper. They often collaborate with various wholesalers, retailers, and e-commerce platforms.

3. **Impulse Purchasing:** Given their low cost and high utility, FMCGs like toilet paper and even quickly accessible services like haircuts often influence impulse buying. They are typically placed near store checkout counters to capitalize on this behavior.
4. **Regular Consumption:** Since these items are frequently consumed and quickly depleted (like food, drinks, toilet paper, and even personal care services like haircuts); consumers regularly replenish them, leading to consistent sales for FMCG companies.
5. **Marketing and Promotions:** Marketing plays a significant role in FMCG sales. Promotions, introductory offers, and discounts are common strategies used to attract consumers and boost sales.

Consumer Packaged Goods (Cpg) And Fast-Moving Consumer Goods (Fmcg)

Investors, marketers, and industry participants all need to understand CPG (consumer packaged goods) and FMCG (fast-moving consumer goods). FMCG products are fast-moving commodities, such as a bottle of Coca-Cola from the Coca-Cola business. Tyson Foods and other companies are major competitors in this market. Despite their frequent interchangeability, these terms refer to two different consumer market segments, each with its own trends, obstacles, and possibilities.

FMCG refers to products that sell quickly and at relatively low cost. For instance, items like toiletries, groceries, over-the-counter drugs, or even a thirst-quenching drink from the Coca-Cola company. It's a highly competitive sector, rapidly evolving in response to changes in consumer preferences, technology, and market dynamics.

In contrast, CPG typically includes durable goods that consumers buy infrequently and maintain over an extended period. These items range from electronics, clothing, and household goods.

Both FMCG and CPG companies' reactions to sweeping changes in consumer behavior, market situations, or emerging technological trends can significantly impact their business success. For instance, the dividends for Coca-Cola Company (The) (KO) could sway based on this. Therefore, understanding them, their differences and their interconnectedness is vital for effective strategy formulation and decision-making. Some subtle differences come into play:

1. **Product Use Frequency:** As the name suggests, FMCGs are products that are consumed quickly and bought repeatedly, such as soda or toothpaste. These are items that are intended to be sold rapidly, including perishable items like dairy products or daily toiletries as well. On the contrary, CPGs typically entail products such as clothes and appliances that consumers buy and use over a more extended period.
2. **Price Point:** FMCGs, such as soda and toothpaste, are generally lower-priced due to their perishable nature and high turnover rate. On the other hand, CPGs tend to be costlier and require a higher initial investment by consumers.
- 3.

4. **Sales Impact:** Given their frequent usage and fast replacement rate, FMCG sales, encompassing goods often have higher impacts on a brand's long-term prospects than CPG sales, due to consistent customer demand.
5. **Regional Use:** In North America, industry professionals typically use the term CPG, while internationally, FMCG, referring to goods like soda and toothpaste, is often the preferred terminology.

Conclusion

Successes of many businesses depend on their ability to create their customers and retaining their Consumers. Companies have attain focus to sell their products in standard price with good quality, availability of brands in all stores and are low cost to retain their valuable customers and attracting new customers. Brand Loyalty provides companies strong and competitive weapons to fight with competitors in the market place. The FMCGs sector is a very dynamic sector in India, a major goal is to satisfies their needs and wants of consumer and to target markets more effectively and efficiently. Hence the researcher hopes that the information provided in this study will assist companies in shaping their marketing strategies and better serving their customers.

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AN OVERVIEW OF FMCG IN INDIA

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ABSTARCT

The Fast-Moving Consumer Goods Sector is one of the primary engines of the Indian economy. Half of the FMCG sector's market share is accounted for by the household and personal care segment, which is the largest in the economy and ranks fourth overall. The main factors driving the expansion of FMCG are changes in lifestyle, income, accessibility, and awareness. Additionally, customer shopping behavior is impacted by the push toward sustainable products. The semi-urban and rural sectors have grown significantly over the preceding ten years, despite the fact that the urban sector accounted for the majority of the contribution.

Keywords: *FMCG, Economy, Market, Behaviour.*

INTRODUCTION

The FMCG industry in India is the largest combination of diverse product categories, such as home care, health care, personal care & cosmetics, food & beverages, and others. The segment of personal care is expected to experience significant growth due to the rise in disposable income of consumers, which will allow them to spend a substantial amount on luxury personal care products.

Changes in lifestyle drive the development of the FMCG market in India significantly. In addition, the growth of the global population, the rise in consumer awareness of FMCG products, the frequent introduction of new products, and the effective advertising of FMCG brands all contribute to the expansion of the global FMCG market.

The rise in popularity of online purchasing, the development of new brands and products, and the expansion of FMCG networks in rural areas of developing nations are expected to create new opportunities for market participants in the future.

It provides greater consumer convenience because customers can easily select and purchase their desired products via applications and websites. In addition, the option for home delivery will deliver the products to their homes. Value Augmentation: The FMCG market in India is also driven by the retail sector in rural India and the rise in rural consumption. As a consequence, 36% of its total spending is allocated to FMCG. The FMCG industry in India grew as a result of consumer-driven growth and higher product prices, particularly for necessities. Moreover, due to numerous government

initiatives, including hygiene categories, high agricultural production, reverse migration, and packaged commodities, the market grew by double digits and reached 10.6%. Multiple industries, including tobacco, food and beverage, domestic, and personal care, provide support for the FMCG sector in India.

The Importance of Technology: The FMCG industry places a strong emphasis on velocity, and technology can provide the consumer companies in India with access to this agility. As a result, the FMCG industry is preparing to leverage technology to improve operational efficiency, identify new opportunities, and manage complex supply chain requirements. The FMCG industry relies extensively on market research in order to identify consumer behavior and field sales experts. Utilizing business intelligence, the cloud, and sophisticated field service management software, enterprises can enhance the efficacy of their sales operations. **Additional Directions:** The rural market in India is expected to increase by over \$220 billion over the next few years. This is because rural India's consumption has increased, as increasing incomes have raised the aspirations of the average person. Moreover, the increasing proportion of young people in India's population is a significant factor that will increase demand for FMCG products.

The FMCG industry remains a vital and dynamic part of the global consumer market. By remaining accustomed to shifting consumer trends, addressing industry challenges, and capitalizing on emergent growth and innovation opportunities, consumer companies in India can position themselves for success in a dynamic and competitive environment. By prioritizing consumer needs, sustainability, and technological advances, the FMCG industry can continue to thrive and have a significant impact on the lives of consumers around the globe. Follow Team Lease for more such insights.

GLOBALIZATION OF FMCG

The global FMCG market is expected to reach \$18,939.4 billion by 2031, at a CAGR of 5.1% from 2022 to 2031.

- **Higher the population, greater the demands:** The world's population continues to grow, leading to an increase in the number of potential consumers. More people with diverse needs and preferences contribute to the higher demand for FMCG products.
- **Urbanization:** Urbanization is on the rise globally, with more people moving to cities and urban areas. Urban lifestyles often lead to busier schedules, increased disposable income, and a preference for convenient and readily available FMCG products.
- **Changing Consumer Preferences:** Consumer preferences are continually evolving. There is a growing demand for healthier, organic, and sustainable FMCG products, reflecting a shift toward more health-conscious and environmentally-friendly choices.

- **Income Growth:** Rising income levels, especially in emerging economies, have contributed to increased consumer spending on FMCG products. As people’s purchasing power increases, they tend to spend more on convenience goods and non-essential items.
- **Convenience and Time Constraints:** FMCG products are designed for convenience and quick consumption. In today’s fast-paced world, consumers prefer products that save time and effort, making FMCG goods more attractive.
- **Marketing and Branding:** Effective marketing and branding campaigns by FMCG companies have significantly influenced consumer behavior.
- **Globalization and Trade:** Improved transportation and trade agreements have facilitated the global distribution of FMCG products. Companies can now reach new markets more efficiently, expanding their customer base.
- **Online Retailing:** The growth of e-commerce and online retail platforms has made FMCG products easily accessible to a broader audience. Online shopping provides convenience and opens up new markets for FMCG companies.
- **Product Innovation:** The consumer companies in India are continuously introducing new products and variants to cater to changing consumer tastes and preferences. Innovation attracts consumers looking for novel experiences and better choices.
- **Primary Forces Behind the Expansion of the FMCG Sector**
The Development of E-Commerce: The technological revolution impacted India’s urban and rural areas. There has been a discernible shift in demand as a result of the availability of e-commerce across the country, whether in rural or urban areas.

SEGMENT OF FAST MOVING CONSUMER GOODS

Fast Moving Consumer Goods are inexpensive products that require little shopping efforts. These are non-durable products which are sold in packaged forms. These products are purchased by the end-consumer in small quantities and frequently. The main FMCG segments can be classified as Personal Care, Household care, Branded and Packaged food and Tobacco .

- **Personal Care:** It consists of oral care; hair care; skin care; personal wash (soaps); cosmetics and toiletries; deodorants; perfumes; paper products (tissues, diapers, sanitary); shoe care etc.

- **Household Care:** It comprises of fabric wash (laundry soaps and synthetic detergents); household cleaners (dish/utensil cleaners, floor cleaners, toilet cleaners, air fresheners, insecticides and mosquito repellants, metal polish and furniture polish).

- **Branded and Packaged Food and Beverages:** It consists of health beverages; soft drinks; staples/cereals; bakery products (biscuits, bread, cakes); snack food; chocolates; ice cream; tea; coffee; processed fruits, vegetables and meat; dairy products; bottled water; branded flour; branded rice; branded sugar; juices etc.

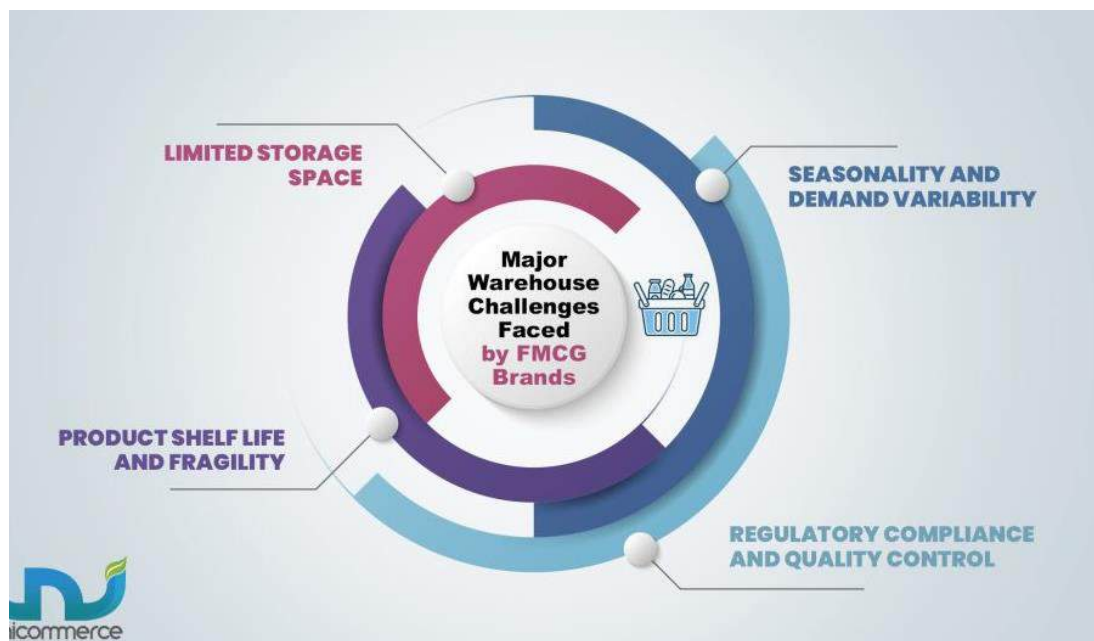
- **Spirits and Tobacco:** An exact product-wise sales break up for each of the items is difficult.

MAJOR CHALLENGES

- Limited Storage Space
- Seasonality and Demand Variability
- Product Shelf Life and Fragility
- Regulatory Compliance and Quality Control

1. Limited Storage Space

One of the primary challenges faced by these brands is the constraint of limited storage space in warehouses. With an ever-expanding product range and increasing consumer demands, finding sufficient space to store inventory becomes a critical concern. Inadequate storage capacity can lead to overcrowding, disorganized stock, and inefficient picking and packing processes. Also, it restricts the ability to maintain optimum stock levels, resulting in stock outs or overstock situations.



2. Seasonality and Demand Variability

FMCG brands often face fluctuating demand due to seasonal variations and ever-changing consumer preferences. This poses a significant challenge when it comes to forecasting and managing inventory levels. During peak seasons, brands must ensure they have enough stock to meet the heightened demand while avoiding excessive inventory that may lead to waste and additional storage costs.

3. Product Shelf Life and Fragility

Many FMCG products, particularly perishable goods, and fragile items, have limited shelf life or are sensitive to handling and storage conditions. Maintaining product quality and reducing waste are essential for businesses. Inadequate temperature control, improper handling, and suboptimal packaging can result in spoilage, damage, or expiration of goods.

4. Regulatory Compliance and Quality Control

FMCG brands operate in a highly regulated environment, subject to various industry standards, safety regulations, and quality control measures. Compliance with these regulations is crucial for maintaining consumer trust and avoiding legal consequences. For example, brands selling food products must effectively manage product expiry dates to ensure consumer safety and satisfaction.

FMCG 2024 OUTLOOK

Looking ahead, despite challenges, the FMCG market in India remains resilient and is poised for a 4.5%-6.5% growth in FY24. The industry's ability to navigate complexities and adapt to evolving market dynamics underscores its significance in the Indian economy, offering promising opportunities in the future

CONCLUSION

In conclusion, it is well known that India has the largest population of young people in the world and that in today's fast-paced society, they prefer purchasing packaged goods and food over cooking it themselves.

The FMCG sector's most significant sales contributor falls under this category. With these developments, the FMCG sector will continue on its upward trajectory.

Fast-moving consumer goods (FMCG) companies should take advantage of opportunities such as rising consumer income, changing consumer lifestyles, aspirational rural consumers, and consistent economic growth by leveraging their strengths. The unorganized sector can be a competitive advantage, but it can also be reduced through cost-sharing of resources like distribution networks and favorable developments in supply side, demand side, and systematic drivers. Today,



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Editor

Dr. R. Ramya

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ROLE OF YOUTH EMPOWERMENT IN RURAL DEVELOPMENT

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Abstract

India's rural development is essential to the nation's overall development. Youth involvement in rural development has received more attention in recent years. Young individuals who have the necessary abilities, information, and passion to make a difference must actively participate in rural community development. They support the growth of the agricultural, paramedical, education, transportation, and infrastructural sectors. These regions need to be prioritized for the welfare of the rural populace, and youth involvement is necessary for these areas' successful development. Youth's contribution to rural development has been highlighted in this research provide as being important. This research article focuses on these important areas identifying youth, skilled youth participation in rural development and nation building.

Keywords: youth rural development, Skilled Youth, Youth Development, Skill India.

Introduction

The United Nations defines 'youth' as people who fall in the age group of 15-24 years that, comprising more than a quarter of the world's population, is the largest demographic group in history [WHO 2011].

The youth as the engine of a country's future, young people have the limitless force, ingenuity, and perseverance required to form and shape a sustainable and growing rural community. Fundamentally, youth empowerment involves giving young people the information, abilities, and tools they need to take ownership of their life and actively engage in the decision-making process. It is crucial to take a multifaceted approach to the role of youth in rural development, giving them access to production factors, and providing them with support in the agricultural sector so they can become young farmers and diversify the rural economy. Rural residents' standards of living are influenced by things like access to food and nutrition, health, education, housing, leisure activities, and security. Agriculture is extremely significant, and it is seen to be especially crucial for those living in rural areas.

Youth Empowerment

The youth Empowerment is the process of giving young people the tools, knowledge, opportunity, and support they require to take charge of their lives and develop into active, self-assured, and engaged members of society is known as youth empowerment.

The goal of youth empowerment is to enable young individuals to participate in decision-making processes, grow into their potential; they make meaningful contributions to their local communities and the global community. Ensuring that

young people have access to high-quality instruction and training that will provide them the information and abilities necessary for both their personal and professional growth. Empowering youth is crucial for raising a generation of capable and responsible people who can make a good difference in their communities, take on social concerns, and promote sustainable development. Young people who feel empowered are more likely to be agents of change who have a long-lasting effect on society as a whole.

Review of Literature

Radhika Kapur (2019) According to his research, most rural residents lack even the most fundamental literacy abilities. Therefore, emphasis is placed on the creation of schools and training facilities to foster the development of fundamental literacy abilities and to produce data regarding other academic concepts as well. Youth occasionally pay visits to rural resident's homes and help them improve their educational abilities.

Mitra and Verick (2013) According to their analysis, one of India's biggest long-term problems is that many young people enter the job market too soon because of poverty and a lack of human capital. This is something that has been noted in his work "Youth employment and unemployment: An Indian perspective. They engage in low-productivity activities because they cannot afford to stay unemployed for an extended period of time.

Proctor and Lucchesi (2012) in their study "Small-scale farming and youth in an era of rapid rural change," given the employment role that agriculture currently plays and is expected to play in the future as well as the enormous number of young people living in rural areas today and expected to do so in the future, It is necessary to create new models for boosting decent employment and means of subsistence in the agricultural sector. These models should include support for employment opportunities along the entire agri food market chain and the associated service sectors.

Objective of the Study

- To Study the concept of youth Empowerment.
- To know the role of youth in rural economic development.

Research Methodology

The study is descriptive in nature. The present study is based upon the secondary sources of data; the secondary data was collected through the literature, Books, research papers, various websites, research articles, blogs, and various other publications. The main objective of this paper is to bring out the understanding of the present scenario of youth empowerment, and economic development and government initiatives.

Concepts of Youth Empowerment for Rural Development

The goal of youth empowerment is to raise standard of living. Participation in youth empowerment programs promotes young empowerment. In the process of youth empowerment, young people are urged to take charge of their life. They achieve this by first addressing their circumstances, after which they take steps to increase their access to resources and alter their awareness by changing their ideas, values, and attitudes. The concept acknowledges that young people are important resources who have the power to influence the future and make a substantial contribution to their societies.

Key components of youth empowerment include the following:

- **Entrepreneurship and innovation:** Promoting young people's entrepreneurial abilities and inventiveness can result in economic expansion and the development of jobs, giving them the chance to become economically independent and self-sufficient.
- **Education:** Access to high-quality education and training is essential for empowering young people. This gives them the knowledge and abilities they need to achieve their goals and make wise life decisions.
- **Skill Development:** Providing young people practical skills like critical thinking, problem-solving, leadership, communication, and financial literacy, which are all essential for both personal and professional development, is vital in order to empower them.
- **Confidence and self-esteem:** Building young people's self-esteem and confidence is another aspect of empowerment that enables them to have faith in their capabilities and potential.
- **Access to Resource:** In order to empower young people, they must have access to resources including healthcare, jobs, mentorship, and money for their ideas and initiatives.
- **Gender and social inclusion:** Efforts to empower young people should be inclusive and take into account the particular difficulties experienced by marginalized youth, such as girls, members of minority populations, and people with disabilities.

Role of Youth in Rural Development

Youth is the period in life, between the ages of 15 to 24, when we stop depending on other people and start making decisions for our future. Everyone wins if the transition goes well. However, a poor transition can have an adverse effect on society and the economy and lead to lifelong poverty. Increased access to people, markets, services, ideas, and information gives youngsters in rural areas opportunity to be more productive.

Everyone's chances increase when rural communities have improved information and transportation connections to markets, especially rural youths. They can

strengthen their social and human capital, gain new skills, and increase their self-confidence by becoming more connected. Their sense of agency and productivity consequently rise. Compared to adults and urban youth, rural youth tend to have less control over their life. Rural areas usually confront unique difficulties such as poor access to infrastructure, healthcare, work prospects, and education. We may address these issues and encourage sustainable development in rural regions by empowering youth.

The following are some significant ways that youth empowerment supports rural development:

- **Leadership and Development:** The development of leadership abilities and active participation in local decision-making processes are made possible by empowering youngsters in rural areas. Young people can provide new insights and creative solutions to age-old problems by getting involved in local governance and community development activities.
- **Entrepreneurship and Employment:** Youth empowerment initiatives that emphasize entrepreneurship and job training can assist youngsters in starting their own businesses or finding employment in the local economy. As a result, more employment is created, the economy grows, and poverty in rural regions decreases.
- **Technology and Digital Literacy:** The digital divide between urban and rural communities can be closed by providing technology access and digital literacy to rural youth. Young people can explore new options, access online education, and engage in the digital economy with greater access to information and communication tools.
- **Environmental Sustainability:** For rural areas, where many people depend on natural resources for their living, it is crucial to involve youngsters in environmental conservation and sustainable practices. In order to support long-term rural development, youth can actively promote environmentally beneficial programs including reforestation, garbage management, and renewable energy projects.
- **Community Engagement and Social Development:** Youth empowerment encourages a sense of ownership and accountability among youngsters toward their communities. They become agents of positive social change when they engage in community development initiatives, which improve living circumstances and promote social cohesion in rural areas.
- **Cultural Preservation:** As part of empowering youth, local cultural heritage must be celebrated and preserved. Rural communities can preserve their unique identities and promote a sense of pride and continuity by passing down traditions, stories, and skills from older generations to the youth.

Government Schemes and Initiations for Youth Empowerment

Youth empowerment initiatives are a fantastic approach to assist young people. They offer the necessary support to succeed in life as well as assistance in developing skills and confidence. In order to promote cooperation, communication, networking, and collaboration for youth empowerment and development, it is important to bring together youth groups, organizations, and movements that are distributed across the country. As the future of the nation, India's Youth Empowerment Foundation, a non-profit organization, is committed to improving the lives of the country's underprivileged youth by giving them access to fundamental education that will lay a solid foundation for their future careers.

In accordance with the Prime Minister's vision of *"Make in India"* as the global center of skill development, young Indians must be prepared not just for home markets but also for global labor markets. Another significant program to promote manufacturing in India is called Make in India. This program is focused on rural areas, which have a great deal of potential to be an attractive aspect of the nation's manufacturing exports such as handicrafts, handlooms, textiles, and herbal goods.

Government Schemes

MUDRA

The Micro Units Development and Refinance Agency (MUDRA) was established with the mission of providing financial assistance to the micro section of the Indian economy, or "funding the unfunded". The program aims to increase young people's employability and capacity for self-employment

Start-Up-India

In order to promote economic growth and job creation for youngsters for Startup India seeks to create an atmosphere that is favorable for startups. Over 75 start-up assistance hubs will be established as part of the program thanks to a partnership between the Ministry of Human Resource Development and the Department of Science and Technology.

Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)

The act is one of the government's ongoing major initiatives to guarantee rural residents, including young people, a certain number of days of employment each year.

Self-Employment and Talent Utilization (SETU)

This program supports all areas of a start-up firm and self-employment activities, particularly in the technology sector, including technology, finance, incubation, and facilitation.

Government Initiatives both Central and State

The National Rural Livelihood Mission, the Ministry of Rural Development's flagship program that trains jobless youngsters living below the poverty line in a variety of skills, has been given Rs. 1500 crore from the annual budget.

- Youth will receive market-relevant training through SANKALP (Skill Acquisition and Knowledge Awareness for Livelihood Promotion Program).
- Pradhan Mantri Kaushal Vikas Yojana is a further government flagship program designed to increase young employment in India
- The "Naam Mudhalvan" program for school and college students and young people was introduced by the Tamil Nadu government on March 1. It is a thorough facilitation and guidance program designed to open doors to employment prospects.

Conclusion

Youth empowerment is a concrete reality that holds the key to rural development, not just an ideal. We spread the seeds of progress and prosperity in rural areas by investing in the potential of our youth and giving them the resources they need to succeed. The youth, as they take on the role of leadership, become the designers of a better future, reshaping their neighborhoods and, in turn, their countries. We build the groundwork for sustainable growth, enhanced livelihoods, and empowered communities by investing in the education, talents, and opportunities of the young people. According to this study, youth empowerment is a multifaceted strategy that improves rural communities. We can construct successful, sustainable, and vibrant rural communities for the future by investing in the potential of young people and actively incorporating them in the development process.

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PERSPECTIVE OF ICT TOOLS IN EDUCATION

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ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN RURAL EDUCATION (INDIA)

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Abstract

Information and Communication technology (ICT) plays vital role in Rural Education. It provides a wide range of resources and techniques that can close the educational divide between urban and rural areas. The Indian Constitution's Article 45 mandates that all children up to the age of fourteen receive a minimally adequate elementary education. Due to a lack of infrastructure and facilities for rural education, certain Indian states still struggle to achieve universal enrolment, retention, and high-quality education. As of now, just 20% of rural Indians have access to the internet, compared to 65% of urban Indians. India's policy makers have concentrated on removing obstacles to accessing rural India. However, access to ICT devices and the internet is only one aspect of the issue when it comes to the issue of digital inclusion with regard to education in rural India. ICTs are playing a more and wider part in education as the world rapidly switches to digital information, and this role will only get more and more significant in the twenty-first century. This research article gives an idea to develop the rural education system through the information and communication technology (ICT) and it's important in rural education.

Keywords: ICT, ICT in Education, Rural Education, Students.

Introduction

ICT resources bridge the divide between learner- and teacher-centered settings. The ability of ICT to revolutionize education is one of the most important fields in which this is possible. Particularly, the use of ICT in rural education has the potential to close the gap between urban and rural learning environments, opening up a world of opportunities for students in isolated and poor locations. Information and communication technology (ICT) is one of the technological areas in the global civilization that is developing quickly. Rural education has historically struggled with a variety of issues, from insufficient access to sufficient amenities and educational resources to a teacher shortage. However, the development of ICT has given rise to new confidence for overcoming these timeless problems. ICT includes a wide range of digital technology, such as computers, the internet, mobile phones, instructional software, online learning environments, and interactive digital material. The use of these tools in rural classrooms has the potential to alter the educational experience for kids there by making it more engaging, accessible, and personalized for students in these remote areas.

There is no doubt that ICTs will play a major role in future growth. Rural residents, particularly the poorest of the poor, continue to live with a minimum of ICT facilities despite the fact that benefits of ICTs have not yet reached the projected level in these places. Governments, educational institutions, and stakeholders must work together to invest in infrastructure, digital resources, teacher preparation, and community participation for ICT to have a significant influence.

Adopting ICT in rural education is a leap toward a more inclusive and equitable educational environment as well as a step toward digital growth. ICT has an excellent future in the classroom. In the upcoming years, it is anticipated that ICT will contribute significantly more to teaching and learning. ICT can support the personalization, engagement, and effectiveness of education. Additionally, it might lead to wider access to education.

ICT Enabled Education Overview

Information and communication technology (ICT) enabled education, commonly referred to as e-learning or digital learning, and is the process of using technology into educational practices to improve the quality of teaching and learning. It includes the transmission, administration, and maintenance of educational content using various digital tools, hardware, and software programs. Digital educational resources such as interactive multimedia, e-books, video lectures, online tests, and simulations can be produced and distributed because of ICT. With the help of these resources, students may result in excitement while studying. ICT tools make communication and collaboration between students, teachers, and parents effortless. Continuous contact outside of the classroom is made possible by discussion boards, instant messaging, and email.

People in the modern information society have a right to utilize ICT to access knowledge in order to stay up to date with the latest advancements. In such a situation, education, which is always crucial to the economic and social development of a nation, assumes even more significance. Education boosts a person's earning potential in addition to their creative abilities. It improves their social interaction, allows them access to better health, and offers various other elusive benefits. Additionally, it enhances their level of wellbeing and increases their ability to accept new concepts. In this era of rapid change, students can be trained to participate in the growth process through education and the incorporation of ICT into the classroom.

Review of Literature

1. **Dr. Niva Bara, Dr. BK Jha** in their study Due to the daily, increased usage of ICT tools, education quality has increased dramatically. Online and practical learning approaches have replaced prior conventional or traditional ones. The educational system in our nation has undergone significant changes as a result of the integration of ICT.
2. **Niraj Kumar Roy** according to his study to increase connectivity in the areas of education, governance, social inclusion, access to the internet, and disaster mitigation and control in order to increase access to fundamental information in rural schools. The emphasis is mostly placed on raising the educational bar in rural communities via ICT. I want to emphasize that when implementing the national ICT for education policy, policymakers gave more consideration to rural areas and their students' educational standards.
3. **Sushmita Mukherjee** on his study ICT can undoubtedly bridge the gap between

the technologically advanced and economically backward classes. The government machinery now has easy access to technology in a far more affordable and practical way because to India's IT boom. A revolution in rural development can undoubtedly be sparked by proper training and the application of ICT programs in a straightforward manner and language that the rural population can easily grasp.

Objectives of the Study

1. To know the importance of the ICT in rural Education.
2. To study the role of ICT in rural education development.

Research Methodology

The study is descriptive in nature. The present study is based upon the secondary sources of data; the secondary data was collected through the literature, Books, research papers, research articles, and various other publications. The main objective of this study is to bring out the understanding of the ICT's important in rural education and what role ICT has playing in the Indian rural education and development.

Important of ICT in Rural Education

Information and communication technology (ICT) is essential for the growth of rural education and benefits students, instructors, and communities in a number of ways. Rural schooling is still in a poor condition today. Few government schools exist in certain villages, requiring children to travel great distances to access them, and the majority of schools there do not offer technology based education. Utilizing a variety of technologies, ICT enables users to stay updated with emerging trends. ICT plays a significant role in advancing rural education and has made a significant contribution to its growth.

a. Access to Quality of Education:

This can provide remote and underdeveloped locations with high-quality educational resources. It gives teachers and students access to contemporary educational resources, online classes, and engaging instructional content that might not be accessible locally.

b. Flexible Learning Options:

It enables a variety of flexible learning alternatives, including online and distance learning. This is crucial in rural areas where students may have to travel long for access to schools or higher education facilities.

c. Empowerment and Digital Literacy:

ICT integration in rural education equips students with digital literacy abilities, which are becoming more and more important in the current employment market. Rural adolescents who possess digital literacy can take advantage of new opportunities and participate actively in the global economy.

e. Connectivity and Communication

ICT can help students, teachers, and parents communicate better. Stakeholders can stay connected and involved in the educational process with the help of tools like email, messaging applications, and video conferencing.

d. Collaboration and Resource Sharing:

Collaboration and resource exchange between schools and educational institutions are made possible by ICT. Sharing knowledge, experiences, and educational resources can help rural schools, which will ultimately improve educational outcomes.

e. Innovation and Creativity:

Students in remote locations might be encouraged to be innovative and creative by having access to ICT tools. They can experiment with new concepts, take part in online contests, and work on initiatives that use technology to promote social and economic growth.

Role of ICT in Rural Education Development

The use of ICT in the classroom has been shown to boost students' motivation, enthusiasm, and involvement in the subjects they are studying.

- Access to a wide range of educational resources, such as textbooks, online courses, digital libraries, and instructional films, has been made possible by ICT.
- Rural students have access to high-quality educational resources that would not be accessible locally, balancing the playing field and enhancing their knowledge. If we assure communication in local languages, so that rural students can grasp easily, we can stimulate and increase learning and their skills in rural students.
- ICTs have a broad range of applications and have the potential to be extremely important to society and rural students' development.
- ICT makes it possible for students in remote areas to collaborate more actively while also learning new technology skills. It also makes it possible to employ cutting-edge educational resources and reimagine instructional techniques.
- Rural schools can embrace e-learning tools and online learning platforms with the help of ICT, enabling students to learn at their own pace, interact with interactive information, and take part in virtual classes.
- ICT enables remote learning and virtual field trips for students in rural locations, exposing them to settings and circumstances they might not otherwise have access to.
- ICT teaches digital literacy to rural students, which is crucial for the modern workforce. Their familiarity with technology assists in bridging the digital divide between rural and urban communities and positions them for future employment prospects.
- To provide employment-related education through computer technology to students in grades 8th through 12th.

In India, notable efforts integrating the use of ICT in education include:

1. Indira Gandhi National Open University (IGNOU) makes use of radio, television, and the internet.
2. The UGC initiated the "ICT for teaching and learning process" scheme to achieve quality and distinction in colleges and universities.
3. SWAYAM -Massive Open Online Courses (MOOCs)
4. e- PG pathshalaE-book gateway up to PG
5. SODHGANGA – Access Indian Institute Scholars' Research Theses.
6. e-Yantra – Initiatives for students.
7. The FOSSEE (Free/Libre and Open Source Software for Education) project supports the use of FLOSS tools to improve educational quality in our country.
8. Spoken Tutorial - It has won numerous awards for its educational material portal. Here, one can learn various Free and Open Source Software on their own.

Conclusion

While ICT provides several benefits to rural education, it also plays an important role in rural education. Policymakers, educational institutions, and technology suppliers must collaborate to promote fair access and successful use of ICT in rural education. The incorporation of ICT in rural education has the potential to transform the way students learn and teachers educate. We can bridge the gap between urban and rural education by harnessing technology and giving equitable chances for all learners, regardless of geographical location. However, for ICT to have a significant influence, governments, educational institutions, and stakeholders must work together to invest in infrastructure, digital resources, teacher training, and community participation. Embracing ICT in rural education is a step toward a more inclusive and fair educational landscape, not only a step toward digital growth. To summarize, ICT plays an essential role in rural educational development because it bridges the educational gap, empowers students and instructors, improves learning experiences, and promotes overall growth in rural communities.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

VOLUME - 2

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MICRO, SMALL AND MEDIUM ENTERPRISES IN INDIA (MSME) - SCHEMES & OPPORTUNITIES FOR SUSTAINABLE DEVELOPMENT

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Abstract

Micro, Small, and Medium Enterprises are the backbone of an Indian economy and its creating noticeable growth rate and generating job possibilities. In many established and emerging nations, this sector has been viewed as a catalyst for both social and economic progress. MSMEs have made a remarkable contribution to the Indian economy in terms of creating jobs, reducing regional inequities, promoting equitable economic growth, and increasing the nation's export potential. The MSME sector in India includes a broad range of companies and makes a substantial contribution to the GDP, exports, and job creation of the nation. But these businesses encounter a number of difficulties, such as financial availability, technology adoption, skill development, and regulatory compliance. The study aims to identify significant Schemes and provide recommendations to address the enormous growth potential and prospects for the development of the MSME sector that are present in India.

Keywords: MSMEs, Sustainable Development, National Economy, Schemes

Introduction

MSMEs (Micro, Small, and Medium Enterprises) are essential to India's efforts to achieve sustainable development. These businesses support the whole Indian economy and provide a significant contribution to job creation, GDP growth, and socioeconomic advancement. India is a developing nation with a significant number of low-capital-investment Micro, Small, and Medium-Sized Enterprises. These businesses are not up to par to compete with global quality standards. Despite this, these businesses employ a sizable workforce. Because of the numerous challenges they face with regard to raw materials, finances, marketing, and other factors, MSMEs are unable to significantly boost the Indian economy. The Indian government has implemented a number of programs and policies both before and after liberalization to advance job possibilities and expand this industry. The Indian economy is concentrating on achieving the aim of sustainability through MSMEs by using locally accessible resources for the manufacturing, labor-intensive processes, and resettlement. The article examines the growth and importance of MSMEs in India. Additionally, this study provides the sustainable an opportunity and Schemes for MSMEs developments.

Objectives of the Study

1. To know the role of the MSMEs in India.
2. To Examine the Schemes & Opportunities for MSMEs sustainable development.

Research Methodology

The study is descriptive in nature. The present study is based upon the secondary sources of data; the secondary data was collected through the literature, Books, research papers, research articles, and various other publications, Websites. The main objective of this study is to bring out the Schemes & Opportunities for MSMEs Sustainable Development in India.

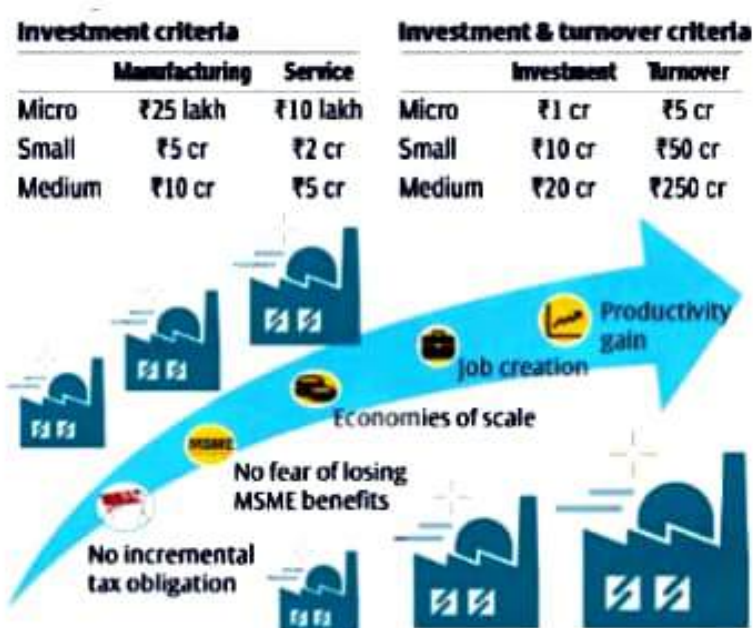
Review of Literature

1. **Rajamohan. S. and Sathish. A., (2019)** in their study the importance of MSME in sustainable society development was highlighted in Rajamohan S. and Sathish A.'s report, "MSME in India for the Sustainable Societal Development," published in 2019. According to the study, India's GDP and GVA account for around 32% and 29%, respectively, and play an essential role in the growth of entrepreneurship and job creation annually.
2. **Sarita Satpathy, Sailaja Rani, and Nagajyothi, M.L. (2017)** the study, "Study of Micro, Small and Medium Enterprises; the Backbone for Economic Development of Indian Economy," highlighted the importance of MSMEs in terms of total product, GDP, employment, and fixed investment in the Indian economy. It also focused on the MSME sector's growth rate relative to other sectors. Researchers identified and came to the conclusion that this sector has enough potential and opportunities to speed up industrial growth in programs like "Make in India," and they recommended that the government adopt further measures for the betterment of people.
3. **K.Vasanth, K. Krishna (2012-** In their study, the authors claim that networks of SMEs will become crucial for tackling the systemic issues underlying industrial ecology, organizational resilience, and global supply chain sustainability because multiple effective models of the sustainable SME are steadily evolving.
4. According to **De, Sankar (2009)**, there are many difficulties that SME's in India must overcome, but maybe none are as challenging as finding short- and long-term finance.

Growth of MSMEs in India

Micro, Small, and Medium-Sized Enterprises (MSMEs) would still be important to India's economy and society in 2023. These businesses have evolved in reaction to the shifting economic and technical environments, and they contribute to numerous parts of the nation's development. MSMEs are still an essential component of India's economic

expansion. They make significant contributions to the GDP, export revenue, and employment creation of the nation. The ability of MSMEs to quickly adapt to market changes and support settings that are economically resilient is well known. The Indian government plans to increase the number of jobs in the MSME sector by 5 crore from the current level of 11.10 crore by the year 2025, according to the National Sample Survey (NSS), which was done between the years of 2015 and 2016. As of December 2022, 9.31 crore people including 2.18 crore women were employed in 1.28 crore MSME registered industries, according to the most recent data from the Udyam portal.



Source: MSME

Role of MSMEs in India

1. **Employment Generation:** MSMEs have been a significant source of employment in India, helping to create jobs in both the urban and rural areas. They give many people, including semi-skilled and skilled employees, the chance to find employment.
2. **Encouragement of entrepreneurship:** MSMEs act as a crucible for entrepreneurship, encouraging it. They promote entrepreneurship, which promotes innovation and economic expansion. Initiatives like "Make in India" have helped to encourage manufacturing and entrepreneurship in the nation.
3. **Regional Growth:** MSMEs have the potential to encourage balanced regional development by forming industrial clusters and creating job opportunities in rural and underdeveloped areas. This aids in minimizing the movement of people from rural to urban areas.

4. **Skill Development:** MSMEs frequently offer chances for skill development and vocational training, helping to up skill the Indian workforce.
5. **Access to finance:** Through programs like the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE), the government and financial institutions have taken steps to boost MSMEs' access to credit. This makes it possible for MSMEs to obtain loans and grow their businesses.
6. **Technology Development:** To increase productivity and competitiveness, MSMEs are progressively implementing digital technology and automation. Their growth and sustainability depend on this digital change.

Schemes for MSMEs Development in India

1. The "Make in India" initiative and the "Atmanirbhar Bharat Abhiyaan" (Self Reliant India Campaign) have been instrumental in promoting trade and domestic manufacturing in the nation, particularly MSMEs, also known as the "backbone of the Indian economy."
2. The Prime Minister Employment Generation Program was established with the goal of generating employment opportunities for MSMEs in the nation.
3. MSME and Small Industries Development Bank of India established the Credit Guarantee Trust Fund for Micro & Small Enterprises (CGTMSE) to offer collateral-free loans (up to INR 1 cr.) to specific Micro and Small Enterprises (MSEs).
4. Interest Subsidy Eligibility Certificate (ISEC): This program was launched as a means of financing the khadi initiatives carried out by khadi institutions around the nation. To close the gaps between the amount of money that is available from budgetary sources and the amount that is actually needed, it mobilizes money from banking institutions.
5. Support for MSMEs through the ZED Certification Program Financially - The program's goal is to implement Zero Defect & Zero Effect (ZED) practices in Indian MSMEs' manufacturing in order to support the "Make in India" drive. The Government of India offers MSMEs a subsidy of up to 80% under the program.

Scheme & Incentives Provided for MSMEs in Tamil Nadu

One of the most important states for success in the MSME sector is Tamil Nadu. Its vibrant and active culture has spawned small- and micro-scale businesses. To further boost the sector's growth, the state government has also offered a variety of incentives and awards for the various industries. Especially in the MSME sector, Tamil Nadu is unquestionably a land of opportunity. It is full of talented individuals who can continuously provide high-caliber services. It has more than five million micro, small, and medium-sized enterprises, making it the third-largest Indian state in terms of MSMEs.

1. New entrepreneur Cum enterprise development scheme

2. Unemployed youth employment generation program
3. Pacts with TANSIDCO and TAICO bank
4. Capital Subsidy
5. Tamil Nadu small industries development corporation (SIDCO) initiative

Conclusion

MSMEs' sustainable development in India is crucial for both accomplishing broader social and environmental objectives as well as economic progress. And also an important part of India's economic growth, and government programs and opportunities are crucial to their expansion and advancement. This study reveals that the development of MSMEs is supported by both the central and state governments. These programs have contributed to the sustainable growth of MSMEs in India by offering assistance and resources to these businesses. It is important that the government continues to assist and give resources to MSMEs in order to ensure their success and growth since the importance of MSMEs in sustainable development cannot be overstated.

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ROLE OF MICRO, SMALL AND MEDIUM ENTERPRISES FOR INDIAN ECONOMIC DEVELOPMENT

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Abstract

Micro, Small, and Medium-Sized Enterprises (MSME) are essential for the economic development of any nation and are especially important for developing nations since they control economic activity, create jobs, and considerably reduce poverty. This industry employs more people than agriculture does in India. The MSME sector in India has grown to be a dynamic and extremely vibrant segment of the economy. By investing less money than major enterprises, MSME not only contribute significantly to the creation of considerable employment, but they also aid in the development of the non-farm sector by promoting industrialization in rural areas. The sector serves as a tool for inclusive growth, enabling the most marginalized and vulnerable groups.

Keywords: MSME, Indian Economy, Schemes, Growth rate

Introduction

In the past five decades, the Micro, Small, and Medium Enterprises (MSME) sector in India's economy has become one of the most dynamic and lively. Their inventive, adaptable, agile, and successful entrepreneurial spirit also contributes significantly to the growth of the economy. A substantial portion of the nation's industrial production and exports, as well as employment and manufacturing output, are attributed to the MSME sector, which is also recognized for producing the fastest rate of job growth. They focus on relatively smaller markets, have a labor-capital ratio that is comparatively higher than other companies, require a shorter gestation period, have unique advantages owing to their size, require fewer investments, guarantee a more equitable distribution of the nation's income, enable the efficient mobilization of capital and skill resources that might otherwise go underutilized, and encourage the expansion of industrial entrepreneurship.

Regarding firm size, range of products and services, and technological sophistication, the MSME sector in India is remarkably diverse. It greatly advances the socioeconomic growth of the nation and serves as adjunct units to larger companies. Through exporting goods, producing goods domestically, requiring little capital, being flexible in their operations, being technology-oriented businesses, and other factors, MSMEs considerably contribute to the growth of the Indian economy. Developing policies, programmes, and schemes for the growth and promotion of MSM companies falls under the purview of the Government of India's Ministry of Micro, Small, and Medium companies.

Micro Small and Medium Enterprises in India

The MSME sector is made up of all businesses, regardless of name, that are involved in the production of goods for any industry listed in the first schedule of the Industries

Development and Regulation Act, 1951, including proprietorships, Hindu undivided families, associations of people, co-operative societies, partnerships, undertakings, and other legal entities. MSMEs are categorized as follows under the Micro, Small and Medium Enterprises Development Act, 2006:

Enterprises	Investment in Plant & Machinery (Manufacturing)	Investment in Equipment (Services)
Micro	Upto Rs.25 lakh	Upto Rs.10 lakh
Small	Above Rs.25 lakh upto Rs.5 crore	Above Rs. 10 lakh upto Rs.2 Crore
Medium	Above Rs. 5 Crore upto Rs.10 Crore	Above Rs. 2 Crore upto Rs.5 Crore

Source: MSME

Economic Development through MSMEs Sector

Seventy percent of India's population lives in rural areas. The majority of rural residents live in remote, underdeveloped communities. Enhancing the standard of living and financial security of rural residents is what defines rural development (Thahira K., 2017). The utilization of traditional knowledge to make things by making use of the local resources is often how rural development occurs. Only the efficient use of resources that are readily available locally supports the rural economy. A solid pillar supporting the expansion of rural sustainable livelihood is the MSME sector. The small and cottage businesses, which primarily focus on traditional handicrafts, make good use of the human capital found in rural areas.

The Ministry of MSMEs' principal organization for rural development is the Khadi & Village Industries Commission (KVIC). The purpose of the Khadi & Village Industries Commission (KVIC), which was founded in 1956, is to advance and grow the village and Khadi industries (KVI). Large numbers of jobs are being created by the industry in rural areas, which is boosting the local economy there. One of the important organizations in the MSME sector that creates prospects for acceptable non-farm employment at minimal per capita investment in rural areas is KVIC. Since the majority of MSMEs are located in rural areas and have a significant impact on the development of those areas, KVIC engages in activities related to skill development, technology transfer, research and development in village industries, marketing support for village industries, etc. (Ministry of MSME, 2018). These activities aid in the creation of employment and opportunities for self-employment in rural areas. The workers obtain employment possibilities and generate revenue necessary for their subsistence through the diverse variety of activities within the Khadi and Village industries. KVIC's broader goals include empowering individuals to support themselves and strengthening the sense of community in rural areas, as well as the societal goal of fostering employment opportunities in both rural and urban areas through DIC. Numerous people in the nation now have jobs because to the Village Industries and Khadi industries.

Importance of MSMEs for the Indian Economy

MSMEs are recognized all over the world as a vehicle for fostering equitable development and economic prosperity. They are renowned for producing the fastest pace of economic growth. MSMEs' minimal investment needs, adaptability, and ability to create suitable native technology have propelled India to new heights.

1. MSMEs are the second-largest employer of labor after agriculture, employing about 120 million people.
2. It contributes roughly 6.11% of the GDP from manufacturing and 24.63% from service activities, with about 45 lac units across the nation.
3. The MSME Ministry wants to boost its GDP share by as much as 50% by 2025 as India's economy grows to be worth \$5 trillion.
4. Making up almost 45% of total exports from India
5. MSMEs encourage inclusive growth by giving job possibilities, particularly to those from underprivileged social groups residing in rural areas.
6. MSMEs in tier-2 and tier-3 cities contribute to the final inclusion of MSMEs' economic contribution by facilitating chances for consumers to use banking services and products.
7. MSMEs foster innovation by giving aspiring business owners the chance to assist them in creating innovative products, which in turn increases competition and spurs expansion.

Conclusion

MSMEs can be an effective medium to use local resources for more productive purposes with the coordination of government and local institutional bodies. It is required that MSMEs must be backed and supported in the mission to reduce poverty and unevenness in the development. The problems faced by MSMEs must be addressed properly and special attention should be given to Micro enterprises. The Government of India has taken a slew of measures and is striving to improve the economic and social conditions of the rural population and non-farm sector. Setting up of Micro-Units Development and Refinance Agency (MUDRA) Bank is one such step in this regard. The government should continuously and comprehensively monitor such schemes. Through government interventions in the form of financial, infrastructural and technological support, MSMEs must be strengthened create more employment which would ultimately lead to rural development and poverty alleviation. More the MSMEs flourish, more it paves the way for poverty alleviation and rural development in the country.

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IMPACT OF DIGITAL PLATFORMS FOR INNOVATIVE DIGITAL BUSINESS

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Abstract

In the rapidly evolving landscape of digital business, the advent of digital platforms has brought about transformative changes in how businesses innovate and engage with their stakeholders. Digital platforms have the ability to connect people, organizations and resources with the aim of facilitating the core interactions between businesses and consumers as well as assuring a greater efficiency for the business management. Digital technology is changing the way value is created as well as the outcome of innovation. The purpose of this study is to deeply understand the evolution of business models brought by innovative and dynamic companies operating through online platforms. This study explores the multifaceted impact of digital platforms on fostering innovation within the realm of digital business.

Keywords: Digital Innovation, Business, Technology, Digital business Models.

Introduction

Digital platforms have a wide-ranging impact on several industries, such as e-commerce, finance, healthcare, and entertainment. They create an environment where innovation and technology come together to create new business models. Due to the fundamental shift in traditional business paradigms, businesses now need to reevaluate their strategy and seize the chances that the digital revolution has to offer. A new era of business transformation has been brought about by the emergence of digital platforms, which have altered the innovation landscape and redefined how companies conduct business online. The impact of digital platforms on creative digital business practices is enormous in the quickly changing business landscape of today. These platforms enable businesses to improve consumer experiences, streamline processes, and foster previously unheard-of levels of connectedness. They are the foundation for a wide range of technical innovations. This introduction lays the groundwork for an in-depth investigation of the various ways that digital platforms influence creative digital businesses.

Review of Literature

1. **Dufva et al.(2017)** provide some examples of successful platforms like Airbnb and Uber. In their work they define the platform economy as “the value creation system consisting of platforms”
2. **Osterwalder et al., (2005)**, a conceptual tool using which it is possible to present the logic of the functioning of the enterprise, including how it generates profits because of the generated value, with the essential feature of this model being that it takes

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INNOVATION AND GROWTH OF TECHNOLOGY STARTUPS IN INDIA

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Abstract

The Indian startup ecosystem has expanded quite rapidly mainly through private investments including seed, angel, venture capital, and private equity funds, with technical support from incubators, accelerators, and the government⁷. Technology based entrepreneurs are stated as technopreneurs, they are the new trend setting entrepreneurs, they discover and create innovative product and services to the society with the effective usage of science and technology³. India has nearly 27,000 active tech startups now³. The main aim of this paper is to identify the various types of start-ups and growth of unicorn startups in India. Besides this it analysis the issues, challenges faced by the startup companies and emerging trends in the current economic climate.

Keywords: Digital Startups, Technopreneur, Start-up, Entrepreneur, Technology, Invention, Technopreneurship

Introduction

Indian technology companies are at the center of innovation, revolutionizing the Indian economy and opening up new prospects for entrepreneurs. As India's startup environment matures, expect to witness even more revolutionary enterprises emerge¹. To provide funds and facilitates to startups, Indian government initiated "Startup India Scheme" and its primary objective is to promote startup, generate employment and create wealth⁷.

India has the third largest startup ecosystem in the world, just behind China and the US¹⁰. The Indian tech startup environment is rapidly expanding and diversifying, with creative startups forming in various industries. Indian startups are altering the country's economy and offering new possibilities for entrepreneurs, from fintech to e-commerce to health tech¹.

Start-ups created more new jobs; Indian government is setting a right pathway for the young entrepreneurs by providing online portals and mobile applications that brings sharing of information to the business society that leads to healthy growth in business entities³.

Statement of the Problem

The Startup ecosystem of the country is challenging many traditional systems with new-age technologies and removing many pain points¹⁰. Indian businesses are

having a big influence on the everyday lives of the masses by delivering answers to the country's particular difficulties, and the road ahead looks promising for the Indian tech startup industry¹. Despite the progress made so far, Indian businesses face huge challenges, such as the unorganized and fragmented nature of the market in most sectors, a lack of clear and transparent policy initiatives that startups can tap into quickly, as well as a lack of infrastructure, a lack of knowledge and exposure, and complications in doing business⁷.

1. To know the present scenario of tech startups in India, the following questions were raised?
2. What are the various types of start-ups functioning in India? How the growth of startups is identified?
3. Which are the top 10 unicorn startups in India 2023?
4. What are the existing schemes in India for the promotion of start-ups?
5. What are all the issues, challenges faced by the startup companies and emerging trends in the current economic climate?

Objectives of the Study

1. To identify various types of start-ups and their growth in India.
2. To understand the concept and status of unicorn startups in India.
3. To know the existing schemes in India for the promotion of start-ups.
4. To analysis the issues, challenges faced by the startup companies and emerging trends in the current economic climate.

Research Methodology

As the research paper is of conceptual and review nature, the researcher has applied exploratory research design by using varied secondary data availed from the secondary data sources. Based on the secondary data and review, the researcher has reported on important role of innovation and growth of technology startups in India.

Review of Literature

Ankita Panda posted an article entitled "Top 10 Tech Startups in India - An Informative List" on May 23, 2023. In this post, the author indicates at the top ten tech startups in India, building a name for themselves in the tech domain.

Sumit Mishra (2017) entitled a study on "Start-Up In India: Opportunities and Challenges". This research paper revolves around the concept of Start-up India Campaign which was started on 15th august, 2015. The basic purpose of this article is to put some light on the challenges to be countered and opportunities to be capitalised upon by the start-ups entrepreneurs and the initiative taken by the Indian govt.

Unicorn Startups

Unicorn the term was coined by Aileen Lee, a venture capitalist, choosing the mythical animal to represent the statistical rarity of such successful ventures. In the business and financial worlds, a unicorn startup refers to a startup company with a value of over \$1 billion⁹.

Unicorn startups are often innovative and disruptive companies that operate in various sectors, such as technology, e-commerce, finance, healthcare, and more⁹. Unicorns in India are seen as game-changers in their respective industries and have the potential to reshape markets or create new ones. Examples of well-known unicorn startups include BYJU's, Swiggy, OYO Rooms, Dream11, Razorpay, and Ola Cabs⁹.

As per the latest reports, China is 1st position with 206 Chinese firms out of 494 ultra-valuable startups worldwide known as Unicorns. This makes China with the largest number of unicorns in the world. China is also the home of world's 3rd most valuable startup unicorns i.e. Alibaba, ByteDance and ride hailing giant DidiChuxing. All of these 3 unicorns combined value is \$280 billion. US stand at 2nd position with 203 unicorn companies. India is nowhere near China or US, in spite China being our neighboring country, India have 10 times less unicorn startups.

List of the Top 10 Profitable Unicorn Startups in India in 2023

The term 'unicorn' has come a long way from a mythical creature to a regular feature in business and finance discussions. Today unicorn companies have gained recognition and carved a niche for themselves in the market. Not every unicorn needs to prove to be a successful startup. The point is that no startup should stop hustling after achieving a milestone¹⁰.

- **BillDesk**

BillDesk is an Indian online payment gateway company based in Mumbai. The company provides its customers with an online payment platform that enables banking and merchant website transactions. It is an independent payment processing company, regulated under the Payment and Settlement Systems Act, 2007, and supervised by the Reserve Bank of India (RBI)¹⁰.

BillDesk was founded by Indian entrepreneurs M.N. Srinivasu, Ajay Kaushal, and Karthik Ganapathy in 2000. Its headquarter is located in Mumbai. Billdesk is one of the few profitable Fintech companies in India¹⁰.

- **Dream11**

Dream11 is an Indian fantasy sports platform. Dream11 allows users to play fantasy cricket, hockey, football, kabaddi, handball, basketball, volleyball, rugby,

futsal, American football, and baseball¹⁰. It was founded in 2008 by Harsh Jain and BhavitSheth. Dream11 becomes the first Indian fantasy sports company to become a unicorn in 2019. In 2021, Dream Sports, the parent company of Dream 11, raised \$840 million in a funding round led by Tiger Global, D1 Capital, Falcon Edge, DST Global, and Redbird Capital¹⁰.

- **Zerodha**

Zerodha is an Indian financial services company (Member of NSE, BSE, MCX) that provides brokerage-free equity investments, retail, institutional broking, currencies, and commodity trading¹⁰. It was founded in 2010 by Nitin Kamath, the company is headquartered in Bangalore and has a presence in nine Indian cities. It is also an official member of NSE's Advisory Committee for Advanced Trading¹⁰.

- **Zoho**

Zoho Corporation is an Indian technology company that manufactures computer software and web-based business tools. It is known for the online office suite that it provides Zoho Office Suite. The company was founded in 1996 by Sridhar Vembu and Tony Thomas and is headquartered in Chennai, India¹⁰.

- **EaseMyTrip**

EaseMyTrip is an Indian online travel company. It was founded in 2008 by NishantPitti, RikantPitti, and PrashantPitti. Its headquarter is located in New Delhi. The company offers hotel bookings, air tickets, holiday packages, bus bookings, and white-label services. It has overseas offices in Singapore, UAE, Maldives, and Thailand¹⁰.

- **Gupshup**

Gupshup is a leading conversational messaging platform, Powering over 6 billion messages per month according to the company. Thousands of large and small businesses in emerging markets use Gupshup to build conversational experiences across marketing, and sales¹⁰. It is owned and operated by Webru Inc. with its primary operations in India, the United States, Europe, Latin America, Africa, the Middle East, and Southeast Asia. The company was founded by Birud Seth in 2014¹⁰.

- **Infra.Market**

Infra.Market is a construction solutions company, it is India's largest multi-product building material brand. It aims to transform the ecosystem by leveraging technology and driving innovation. Their product portfolio includes a wide range of building materials as well as lifestyle products that enhance interior spaces. The company was launched in 2016 by AdityaSharda and Souvik Sengupta¹⁰.

- **Shiprocket**

Shiprocket is India's largest tech-enabled logistics and fulfillment platform, which aims to democratize the eCommerce landscape of the country. Shiprocket tie-up with multiple courier companies, and e-tailers so that they can easily manage their orders and day-to-day operations from a single platform, customize shipping, tracking, and much more. It was founded in 2012 by Sahil Goyal¹⁰.

- **Mamaearth**

Mamaearth is a skincare products company, They sell their product through an e-commerce platform. They sell a variety of health and wellness products including baby, beauty, hair, and body products. The company is headquartered in Gurgaon, Haryana. It was founded by Varun and Ghazal Alagh in 2016¹⁰.

- **Nykaa**

Nykaa is an Indian e-commerce company that sells beauty, wellness, and fashion products across websites, mobile apps, and 100+ offline stores. Nykaa sells beauty products that are manufactured in India as well as internationally¹⁰. The company was founded in 2012 by Falguni Nair and is headquartered in Mumbai. In 2020, it became the first Indian unicorn startup to be led by a woman¹⁰.

List of Startup Schemes by the Indian Government

India has 335+ active accelerators and incubators with capacity to support 5000+ start-ups annually. Numbers are set to expand to 450+ by 2025 with policy support from Central and State Government agencies.

Under Ministry of Electronics and Information Technology (MeitY)

1. Support for International Patent Protection in Electronics & Information Technology (SIP-EIT)
2. Multiplier Grants Scheme (MGS)
3. Software Technology Park (STP) Scheme
4. Electronic Development Fund (EDF) Policy
5. Modified Special Incentive Package Scheme (M-SIPS)
6. Scheme to Support IPR Awareness Seminars/Workshops in E&IT Sector

Under Ministry of Agriculture and Farmers Welfare

7. NewGen Innovation and Entrepreneurship Development Centre (NewGen IEDC)
8. The Venture Capital Assistance Scheme

Under Ministry Of Micro, Small and Medium Enterprises (MSME)

9. Credit Guarantee
10. Performance & Credit Rating Scheme
11. Raw Material Assistance
12. Revamped Scheme of Fund for Regeneration of Traditional
13. Single Point Registration Scheme (SPRS)
14. Aspire – Scheme for promotion of innovation, entrepreneurship, and agro-industry
15. Infrastructure Development Scheme
16. MSME Market Development Assistance
17. National Awards (Individual MSEs)
18. Coir Udyami Yojana
19. International Cooperation (IC) Scheme
20. Credit Linked Capital Subsidy for Technology Upgradation
21. Bank Credit Facilitation Scheme

Under NITI Aayog

22. Atal Incubation Centres (AIC)
23. Atal Tinkering Laboratories (ATL)
24. Scale-up Support to Establishing Incubation Centres

Under Ministry of Skill Development and Entrepreneurship

25. Udaan Training Programme for Unemployed Youth of J&K

Under Ministry of Heavy Industries & Public Enterprises

26. Enhancement of Competitiveness in the Indian Capital Goods Sector

Under Ministry of New and Renewable Energy (MNRE)

27. National Clean Energy Fund (NCEF) Refinance
28. IREDA Scheme for Discounting Energy Bills
29. Bridge Loan against MNRE Capital Subsidy
30. Bridge Loan against Generation-Based Incentive (GBI) Claims
31. Loan for Rooftop Solar PV Power Projects
32. Credit Enhancement Guarantee Scheme

Under Schemes by Public Sector Enterprises

33. Dairy Entrepreneurship Development Scheme
34. 4E (End to End Energy Efficiency)
35. Pradhan Mantri Mudra Yojana (PMMY)

36. Stand Up India
37. Sustainable Finance Scheme
38. SIDBI Make in India Soft Loan Fund for Micro Small and Medium Enterprises (SMILE)
39. Startup Assistance Scheme
40. Growth Capital and Equity Assistance

Under Ministry of Science & Technology

41. Assistance to Professional Bodies & Seminars/Symposia
42. Ayurvedic Biology Program
43. Industry Relevant R&D
44. High Risk-High Reward Research
45. Technology Development Programme (TDP)
46. National Science & Technology Management Information System (NSTMIS)
47. Biotechnology Industry Partnership Programme (BIPP)
48. Industry Innovation Programme on Medical Electronics (IIPME)
49. Extra Mural Research Funding
50. SPARSH (Social Innovation programme for Products: Affordable & Relevant to Societal Health)
51. Promoting Innovations in Individuals, Startups and MSMEs (PRISM)
52. Science and Technology of Yoga and Meditation (SATYAM)
53. Rapid Grant for Young Investigator (RGYI)
54. Biotechnology Ignition Grant (BIG)

Emerging Trends in Technology Startups

Indian technological startups are transforming the Indian economy in a variety of ways. They drive innovation in finance and online shopping, create new employment, and contribute to the nation's GDP. Furthermore, Indian entrepreneurs are rapidly meeting the demands of the country's large population, from providing inexpensive healthcare to enhancing financial inclusion¹.

Flipkart, Paytm, Ola, Byju, and Zomato are some of India's most successful software firms. Indian technology firms are producing new employment, spurring innovation, and increasing the country's GDP. Both domestic and international investors are investing money in Indian IT businesses. Fintech, e-commerce, health tech, ed-tech, and agri-tech are among the industries in which Indian tech firms are focused¹.

Recommendations

Solving problems and innovation in a country of 1.3 billion requires a lot of money¹⁰. If the government succeeds in establishing a pro-active start-up environment as intended, then there is lot of scope for new job creation. The following recommendations are suggested for betterment of the nation.

For Revenue Generation

- Provide structures institution support for early stage start-ups to tap into global markets
- Easy procurement norms of Public Procurement for Start-ups along with spend targets

To increase seed stage investments:

- Create seed stage co-investment fund for angel groups
- Bring focus on capability over capacity in accelerators and incubators

To increase corporate participation

- Expand CSR guidelines to increase capital availability and pace of deployment
- Encourage set-up of corporate innovation labs.

To strengthen support ecosystem

- Build industry-specific world-class innovation clusters
- Build industry-specific physical and digital sandboxes

Conclusion

Nowadays India focuses on competing and grabbing the top place in global market and for this the government taking necessary steps for creating awareness among the youths in India for meeting up with the global competitions by providing necessary training through training centers, educational institutions and other avenues. vision over the start-up of the nation entirely turn in the present era³.

Creating more awareness of government initiatives and incentives, credit disbursement to priority sectors, promoting outreach and network benefits to Tier 2 and Tier 3 cities, as well as easing financing and tax breaks for foreign and domestic investors could improve opportunities for startups in India⁷.

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RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT

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WOMEN EMPOWERMENT THROUGH MAHILA SAMMAN SAVINGS CERTIFICATE SCHEME -2023

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Abstract

Government of India introduced various policies and schemes that are targeted to improve the women empowerment and development of children across the country. The Ministry of Women and Child development is implementing various schemes/programmes to empower and improve the social status of women and girl children. The main aim of this paper is to identify the various features of Mahila Samman Savings Certificate Scheme which is associated in commemorating Azadi Ka Amrit Mahotsav. The Mahila Samman Savings Certificate is a small savings scheme for women and girls was introduced by Union Finance Minister Nirmala Sitharaman in the Union Budget 2023–24. This scheme has been designed with the intent of encouraging women and girls to save and invest.

Keywords: Mahila Samman Savings Certificate Scheme, Azadi Ka Amrit Mahotsav Initiative, Women Empowerment, Financial Inclusion.

Introduction

The Mahila Samman Savings Certificate, a small savings scheme for women and girls, was introduced by Union Finance Minister Nirmala Sitharaman in the Union Budget 2023–24. This small-savings scheme specifically meant for women investors. The primary goal of the scheme is to increase women's participation in investments and to promote their financial inclusion.

Objectives of the Study

The main aim of this paper is to overview about the Mahila Samman Savings Certificate Scheme which is associated in commemorating Azadi Ka Amrit Mahotsav. It also inspects the main features of the scheme in the name of Mahila Samman Savings Certificate offered by the government for the welfare of women and girl child.

Research Methodology

The study is based on the secondary data sources. The necessary information about the Mahila Samman Savings Certificate Scheme and its various features are collected from various articles, journals, internet source of related topics.

Overview - Mahila Samman Savings Certificate Scheme -2023 – Features

The Mahila Samman Savings Certificate 2023 is available for two years, from April 2023-March 2025. It will offer a maximum deposit facility of up to Rs.2 lakh in the name of women or girls (including minors) for two years at a fixed interest rate of 7.5% Per Annum Compounded Quarterly. For commemorating Azadi Ka Amrit Mahotsav, a one-time new small savings scheme, Mahila Samman Savings Certificate, has been made available for a two-year period for investment up to March 2025.

Mahila Samman Savings Certificate is a risk free scheme dedicated towards Women's and Girls of all age groups. This scheme has been designed with the intent of encouraging women and girls to save and invest. The account opened under this scheme should be a single holder type account.

There are three forms involved under the scheme which are account opening form, maturity payment form and the withdrawal form. This scheme has been made available in 159 lakh post offices as well as authorized banks. The eligible individual can open the MSSC account in post office by downloading the form from the India Post website, filling it out, and submitting it to the nearest post office branch.

V. Main Features of this Scheme

- **Eligibility - Any Individual Women and guardian on behalf of a minor girl may open an account by submitting an application at branch.**
- **Benefits – It is a 100% safe and secured scheme by Government of India. The deposits made under this Scheme shall bear interest at the rate of 7.5 % per annum. Interest shall be compounded on quarterly basis and credited to the account.**
- **Investment - A minimum of one thousand rupees and any sum in multiples of one hundred rupees may be deposited in an account and no subsequent deposit shall be allowed in that account. A maximum limit of two lakh rupees shall be deposited in a single account or multiple accounts held by an account holder.**
- An individual may open any number of accounts subject to the maximum limit for deposit and a time gap of three months shall be maintained between the existing account and the opening of other account.
- **Premature Withdrawal - The account holder shall be eligible to withdraw maximum up to 40% of the eligible balance once after the expiry of one year from the date of opening of the account but before the maturity of the account.**

- **Multiple Accounts** - The Customer can open multiple accounts under this scheme, however second account can be opened only after time gap of three months from the date of opening of first account and so on. However total deposit including all the accounts should not exceed Rs 2 Lacs.
- **Nomination** - Nomination facility is available for maximum upto 4 Nominee per account.
- **Premature Closure of Account** - MSSC account is opened for a period of 2 years and the account shall not be closed before maturity except in the following cases, namely:-
 - i) On the death of the account holder and
 - ii) In cases of extreme compassionate grounds such as medical support in life-threatening diseases of the account holder or death of the guardian.
- If the bank concerned is satisfied, that the operation or continuation of the account is causing undue hardship to the account holder, it may, after complete documentation, by order and for reasons to be recorded in writing, allow premature closure of the account. Where an account is prematurely closed, interest on principal amount shall be payable at the rate applicable to the Scheme for which the account has been held (without deduction of any penal interest).
- Premature closure of an account may be permitted, any time after the completion of six months from the date of opening of an account for any other reason mentioned above and in which case the balance as stood from time to time in the account shall be eligible only for the interest rate less by two percent (2%) than the rate specified by the scheme.
- **Payment on Maturity** - The deposit shall mature on completion of two years from the date of the deposit and the Eligible Balance may be paid to the account holder on an application in Form-2 submitted to the branch on maturity.

Conclusion

The Central and State Government is taking various steps to educate and empower to uplift the women in the society. This scheme is plays a significant role towards the financial inclusion and empowerment of the women, including girls. But in rural areas many of the women are not known about this scheme. So the government should conduct awareness campaign and take other proper initiative to reach this scheme to all section of the society.

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PERSPECTIVE OF ICT TOOLS IN EDUCATION

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DEVELOPMENT OF REASONING AND THINKING ABILITIES AMONG STUDENTS

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Abstract

Reasoning skills and logical thinking is inseparable; it is beneficial for developing insight in thinking and task which will help them to solve a problem. This ability helps in adjustments in new situation of life which will further help in success of all area of life². At present era, development of reasoning and thinking abilities is an important one to fulfil the needs in effective manner, especially for younger generation. Students must have to improve the reasoning and thinking abilities because it enhances the interest of the students in studies and shapes the future education plans, career plans, and personality. This paper explore in detail about the concepts related to the reasoning ability and reasons behind the low reasoning ability of students and how to impart these skills among students.

Keywords: Reasoning Skills, Thinking ability, Arithmetic and Logical Reasoning, Critical Thinking, etc.,

Introduction

Reasoning and thinking abilities are developed in order to address the challenges of modern education, global competition and democratic life⁵. From the beginning this skills must have inculcate among the students for the betterment of the society. Reasoning and thinking abilities helps the students not just follow the ideas or facts but to find the meaning and connection behind them. Critical thinking is the ability to find solutions on the basis of evaluation, logic and evidence¹. There is a difference between memorization and learning. Memorization of answer to the question without clearly understands the concepts and its meaning, may improve the remembering quality of the brain but this habit deteriorating the quality of learning.

Statement of the Problem

Lack of reasoning ability among students is the major issue in Indian context². After Covid-19 the entire scenario of learning habits of the students are changed. Online classes and ICT tools usage help the students to know and utilize the various learning platform at maximum level, but in regular classes we can see the students hesitate to ask questions in the classroom. To narrow down the reason for this gap the following questions have been raised:

Why the students have low reasoning ability? What are the basic concepts related to improve reasoning ability? What are the strategies to improve the reasoning and thinking skills among the students?

Objectives of the Study:

This study makes an attempt to find the solutions for the questions asked in the statement of the problem. Accordingly the following objectives have been framed.

1. To know the concepts and importance of reasoning and thinking ability.
2. To identify the reasons behind the low reasoning and thinking ability of students.
3. To suggest the strategy to develop the reasoning and thinking ability among students.

Research Methodology

As the research paper is of conceptual and review nature, the researcher has applied exploratory research design by using varied secondary data availed from the secondary data sources. Based on the secondary data and review, the researcher has reported on various strategies to develop the reasoning and thinking ability among students.

Review of Literature

Dr. Madhuri Hooda and Anita Devi (2018) entitled a study on “Development of Reasoning Ability and Barriers among Students.” In this study they described about the different kind of strategies for developing reasoning ability and factor that affects reasoning ability of students. The authors indicates the role of Inductive and deductive reasoning and the four basic reasoning skills i.e spatial, reasoning, logical reasoning, numerical reasoning and verbal reasoning which are important to everyday living.

Wayan Suarniati et al (2018) entitled a study on “The Development of Learning Tools to Improve Students’ Critical Thinking Skills in Vocational High School”. In this study the authors expressed the necessity to produce a preparation of learning tools in the form of a teaching plan based on Problem-Based Learning, and valid and reliable critical thinking instruments which is based on Watson-Glaser Critical Thinking Appraisal (WGCTA) with five dimensions: Inference, Recognition Assumption, Deduction, Interpretation and Evaluation of Arguments with the subject of Pancasila and Civic Education. Instrument validity test is analyzed using product moment Pearson's correlation analysis, and factor analysis. While the instrument reliability test using Alpha Cronbach formula, it was declared valid and reliable after it was tested on the students through three trials which resulted in 16 question items from 50 items prepared.

In Pearson Blog - article titled as “Strategies to Increase Critical Thinking Skills in students (2021)” reveals that the essential qualities of reasoning and thinking abilities among students community. It also express that the accomplishment of this objective cannot be done through the curriculum, rather through the combination of academic learning and the development of life skills.

Concepts and Importance of Development of Reasoning and Thinking Ability

Reasoning and thinking skills in education are important because it can determine the quality of the school, business, career, and students’ behavior that all depends on students' ability to solve problems and make decisions⁵.

Reasoning ability is problem solving ability which solves different kind of problems related to learning and tasks. It can be developed with proper teaching and training. The process of actively conceptualizing, analyzing and applying the information gathered through observation, experience or reflection helps to develop the reasoning ability and thinking level of the students.

Level of Thinking	Skills Students Demonstrate	Questions to Ask
Lower Levels		
Remembering	recognize, describe, list, identify, retrieve	What do we already know about...? What are the principles of ... ? How does ... tie in with what we learned before?
Understanding	explain, estimate, describe, generalize, predict,	Summarize...or explain... What will happen if? What does....mean?
Higher Levels		
Applying	carry out, use, implement, show, solve	What would happen if...? How could...be used to...? What is the counterargument for..?
Analyzing	compare, deconstruct, organize,	Why is...important? What are the implications of...? Explain why/Explain how...
Evaluating	check, judge, critique, conclude, explain	Why is...happening? What is the best..and why? How does...affect?
Creating	construct, plan, design, produce	What is the solution to the problem? What do you think causes..? Why? What is another way to look at?

Source : Adapted from Brown University's Harriet W Sheridan Center for Teaching and Learning

Reasons for Lack of Reasoning and Thinking Ability

The Education system in a country has to be able to create a condition of learning that allows students to think critically, creatively, responsibly, and provide opportunities for students to explore their imaginative ideas⁵. Teachers play an important role in developing reasoning and teaching ability among students. Normally teachers only ask the students to learn, but rarely teach students how to learn as a result they are difficult to solve problems, make decisions, think critically, and think creatively ⁵.

Apart from that, the following aspects are considered as a key reason for lack of reasoning and thinking ability of students.i.e

- Anxiety and Stress
- Learning environment
- Task Complexity
- Less Motivation
- Intelligence
- Interest
- Activeness

Strategies for developing reasoning and thinking abilities:

The thinking ability can be created and developed in the classroom by solving real-world problems. The problem-based learning strategies are perceived as good approaches because they are supported by various learning theories (cognitive and constructivism) and many results of the research have proved that as an intervention model, PBL is effective in encouraging high thinking, constructing knowledge⁵.

Tools to improve Reasoning and Thinking ability:

Preparation of learning tools with appropriate strategies and critical thinking instruments that are tested to be used by teachers can improve the reasoning and thinking ability. The students are motivated to ask questions, participate in discussions, practice active learning, study with the help of examples and should go beyond the academic learning. Then only they will get the chance of developing their skills.

The following activities are used to increase the reasoning and thinking abilities of students

Reflecting activities: Reflection activities provide students with opportunities to track their learning and demonstrate their progress throughout the semester⁴.

Peer review activities: Peer review activities enable students to demonstrate communication skills by giving feedback on each other's work, expose students to alternative perspectives, and allow students to question what they are reading⁴.

Discussion forums: Discussion forums allow students to communicate with their peers, answer questions that require them to demonstrate both lower-level and higher-level critical thinking skills, and analyze course content⁴.

Small group activities: Small group activities allow students to communicate, problem solve, hear different perspectives, and collaborate to analyze and synthesize course content⁴.

Digital Storytelling Activities: Telling digital stories allows students to use multimedia (images, audio, video) to present information. Digital stories can include 1) Personal narratives, 2) Stories that document events, and 3) Stories that inform and instruct. Creating digital stories allows students to evaluate, reflect on, or analyze course content⁴.

Conclusion

Proper reasoning and thinking abilities will improve the cognitive ability of the students. Therefore it is necessary to create an atmosphere of learning that allows the

students to be able to think critically⁵. We can able to develop a reasoning and thinking ability among students through encourage to ask questions and participate in discussion form to share ideas and thoughts, it will increase the independent thinking ability and helps to set up their own goal with self-confidence.

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IMPACT OF NEW EDUCATION POLICY (NEP) AMONG FUTURE GENERATION

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ROLE OF SAMAGRA SHIKSHA ABHIYAN SCHEME IN NEW EDUCATION POLICY

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Abstract:

National Education Policy (NEP), 2020 provides for setting up a Gender Inclusion Fund (GIF) to build the nation's capacity to provide equitable quality education for all girls as well as transgender students¹. The above objectives of NEP for Equitable and quality education for girls and transgender children are being met through specific provisions under SamagraShiksha2.0 by allocating dedicated resources for SEDGs¹. This policy helps to eliminate the disparity in access to education for children from any gender or other socio-economically vulnerable groups. The main aim of this paper is to identify the important features revamped in Samagra Shiksha Abhiyan Scheme with the addition of new components/initiatives based on the recommendations of the NEP 2020. It also inspects the role of initiative taken by the government in the name of Samagra Shiksha to implement National Educational Policy 2020.

Keywords: NEP 2020, Samagra Shiksha Abhiyan (SSA) 2.0, Gender Inclusion Fund(GIF).

I. Introduction:

"Educate, Encourage, and Enlighten" is the motto of the National Education Policy (NEP) which emphasizes the need for quality education that promotes critical thinking and creativity, encourages students to strive towards their full potential, and fosters a spirit of enlightenment that enables students to contribute to the development of society².

II. Objectives of the Study:

The main aim of this paper is to identify the various types schemes associated in National Education Policy 2020. It also inspects the initiative taken by the government in the name of Samagra Shiksha to implement NEP 2020. Besides this it analysis the Components of the Samagra Shiksha Abhiyan (SSA) 2.0

III. Research Methodology:

As the research paper is of conceptual and review nature, the researcher has applied exploratory research design by using varied secondary data availed from the secondary data sources.

Based on the secondary data and review, the researcher has reported an important role of Samagra Shiksha Abhiyan Scheme 2.0 in implementing National Education Policy 2020 in India.

IV. Overview - Samagra Shiksha Abhiyan (SSA) 2.0:

The Cabinet Committee on Economic Affairs has approved the school education programme Samagra Shiksha Scheme 2.0 till the 2025-26 financial year. It has been upgraded to align it with the Sustainable Development Goal for Education and the new National Education Policy launched in 2020⁴. It is an integrated scheme for school education covering the entire gamut from pre-school to class XII. It aims to deliver inclusive, equitable, and affordable school education. The scheme covers 1.16 million schools, over 156 million students and 5.7 million Teachers of Govt. and Aided schools (from pre-primary to senior secondary level). It is being implemented as a centrally sponsored scheme. It involves a 60:40 split in funding between the Centre and most States. It was launched by the Ministry of Education in 2018⁴.

Samagra Shiksha – It prepared with the broader goal of improving school effectiveness measured in terms of equal opportunities for schooling and equitable learning outcomes⁵. It subsumes the three Schemes of Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA) and Teacher Education (TE). The main emphasis of the Scheme is on improving the quality of school education by focussing on the two T's – Teacher and Technology. The scheme mainly aims to support States in the implementation of the Right of Children to Free and Compulsory Education (RTE) Act, 2009. The Scheme is being implemented as a Centrally Sponsored Scheme. It involves a 60:40 split in funding between the Centre and most States.

V. Components of the Samagra Shiksha Abhiyan (SSA) 2.0:

Direct Benefit Transfer (DBT):

- In order to enhance the direct outreach of the scheme, all child-centric interventions will be provided directly to the students through DBT mode on an IT-based platform over a period of time.
- This DBT would include RTE (Right to Education) entitlements such as textbooks, uniforms and transport allowance.

On NEP Recommendations:

- Encouraging Indian languages:

- It has a new component for appointment of language teachers, which includes salaries, and training costs as well as bilingual books and teaching learning material as recommended in NEP.
- Pre-primary Education:
- It will now include funding to support pre-primary sections at government schools, i.e. for teaching and learning materials, indigenous toys and games and play-based activities.
- Master trainers for pre-primary teachers and anganwadi workers will be supported under the scheme.

NIPUN Bharat Initiative:

- NIPUN Bharat is an initiative for foundational literacy and numeracy, which will get an annual provision of ₹500 per child for learning materials, ₹150 per teacher for manuals and resources and ₹10-20 lakh per district for assessment.

On Digital Initiatives:

- As part of digital initiatives, there is a provision for ICT labs and smart classrooms, including support for digital boards, virtual classrooms and DTH channels which have become more important in the wake of the Covid-19 pandemic.
- It includes a provision to support out of school children from age 16 to 19 with funding of ₹2000 per grade to complete their education via open schooling.

For out-of-School Children:

- It includes a provision to support out of school children from age 16 to 19 with funding of Rs. 2000 per grade to complete their education via open schooling.
- There will also be a greater focus on skills and vocational education, both for students in school and dropouts.
- It also has a provision for an incentive of up to ₹25000 for schools that have two medal-winning students at the Khelo India school games at the national level.

Other Features:

- Financial support for State Commission for Protection of Child Rights @ Rs 50 per elementary school in the state, for protection of child rights and safety.

- Holistic, 360-degree, multi-dimensional reports showing progress/uniqueness of each learner in the cognitive, affective, and psychomotor domains will be introduced in the form of Holistic Progress Card (HPC).
- Support for activities of PARAKH, a national assessment centre (Performance, Assessments, Review and Analysis of Knowledge for Holistic Development)
- Additional Sports grant of upto Rs. 25000 to schools in case at least 2 students of that school win a medal in Khelo India school games at the National level.
- Provision for Bagless days, school complexes, internships with local artisans, curriculum and pedagogical reforms etc included.
- Support for Social Audit covering 20% of schools per year so that all schools are covered in a period of Five years.

VI. Conclusion

The Centre has approved the continuation of the 'Samagra Shiksha Scheme' for school education for the next five years till March 31, 2026. The scheme has also been revamped now with the addition of new components/initiatives based on the recommendations of the NEP 2020³. The country is on the threshold of a big leap towards digitalization. In future all the villages should be connected to the Internet, then only the school in rural areas will be benefited. Smart classrooms and virtual labs will become possible in all rural schools and the blackboards will be replaced by digital boards.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

Volume - 1

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ROLE OF FINTECH - INNOVATION AND ADOPTION IN SUSTAINABLE BUSINESS START-UPS

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Abstract

The integration of new technologies and the digitization of society have created a favourable environment for the development of Fintech startups in India. The FinTech Industry has seen tremendous growth in India over the last decade since it caught pace after expansion of interest services in the country. In India Fintech adoption rate is 87% against the global average of 64%⁴. By providing the access to banking and financial services for unbanked people, the FinTech industry plays a predominant role to bettering financial inclusion. This paper explores the various segments and significance of Fintech industries in the success of digital transformation and it also inspects the regulatory legal framework, Government initiatives, the key principles and thrust areas of the Fintech start-ups. Besides this it also tried to identify the emerging trends, issues and challenges in Fintech revolution.

Keywords: Digital Startups, Fintech Innovation, Sustainable Development, Business Start-ups etc.,

Introduction

Financial technology (better known as Fintech) is used to describe new tech that seeks to improve and automate the delivery and use of financial services⁴. The Fintech companies play a major role in improving access to the gamut of financial services like AePS, Aadhar Pay, Remittances, and Recharges for the masses². With over 2,000 FinTech businesses officially recognized by DPIIT (Department for Promotion of Industry and Internal Trade) in India and projections indicate that the total addressable market for the Indian FinTech industry is set to reach \$ 1.3 trillion by 2025⁵.

Fintech companies are innovative, nimble, and have lower operational costs than traditional banks⁶. They can lead the way through taking financial services, increasing access to credit, innovating with speed and compliance, promoting a cashless economy to the farthest corners of the country⁶. Fintech companies can play a key role in boosting financial inclusion by leveraging the existing financial ecosystem and emerging technologies to make banking simpler, more accessible, and cost-effective for millions of unbanked and underbanked Indians⁶.

FinTech is increasingly becoming an important focus area for all the key stakeholders in India's Financial Services industry – Regulators, Traditional Banks, NBFCs, Payment Banks, Investors, Payment Service Providers, Broking and Wealth Management Companies, Insurance providers and pure-play FinTech players. The FinTech infrastructure backbone has been strengthened tremendously with the host of options available to market participants such as BBPS, Bharat QR, India Stack, UPI³.

Statement of the Problem

The FinTech infrastructure backbone has been strengthened tremendously with the host of options available to market participants such as BBPS, Bharat QR, India Stack, UPI, etc³. In India Fintech adoption rate is noted as 87% against the global average of 64%⁴. According to a World Bank analysis more than 190 million Indians lack access to formal financial services, 20 percent of the Indian population is still unbanked, implying enormous untapped economic potential⁶. Rural India has only 17% internet penetration compared to 60% in urban India³. Above these two interpretations make an argument and couldn't judge the exact state of Fintech development in India.

To know the present scenario of Fintech startups in India, the following questions were raised?

What are the various segments and significance of Fintech startups in India?

What are the factors associated with the growth of Indian Fintech industry?

What are all the issues, challenges faced by Fintech companies in the current economic climate?

What are the emerging trends predicted by Fintech industry?

Objectives of the Study

This study makes an attempt to find the solutions for the questions asked in the statement of the problem. Accordingly the following objectives have been framed.

1. To know the various segments and significance of Fintech startups in India.
2. To identify the factors associated with the growth of Indian Fintech industry.
3. To identify the regulatory legal framework and Government Initiatives for Fintech in India.
4. To explore the issues, challenges faced by Indian Fintech companies in the current economic climate.
5. To identify emerging trends in Fintech startups in sustainable development.

Research Methodology

As the research paper is of conceptual and review nature, the researcher has applied exploratory research design by using varied secondary data availed from the secondary data sources. Based on the secondary data and review, the researcher has reported on important role of Fintech -Innovation and adoption in India

Review of Literature

Mr. Nishant kumar published an article titled as "Role of Fintech in India's Digital Economy" in Nasscom community website on March 16, 2023. In this article he reveals that the role of Fintech in Indian Digital Economy, the key benefit of Fintech for business in

India, challenges of Fintech in India and the future of Fintech in India. He noted that in India the future of Fintech companies is bright, the immense potential.

The Times of India published an article entitled as “The role of Fintech companies in strengthening the banking and online payment sector in rural India” on October 12, 2022 written by Amit Tyagi. The author expresses that India’s Fintech market is among the fastest growing and is ranked the third largest market. He denotes that the companies have the potential to reshape the financial services and financial inclusion in India. He added that the companies play a major role in improving access to the gamut of financial services like AePS, Aadhar Pay, Remittances, and Recharges for the masses.

Deloitte the Learning Academy conducted a study and published an article in the name of “FinTech in India – Ready for Breakout”. This article denotes the critical issues addressed by Indian FinTech companies and few of the critical structural issues afflicting Indian financial services as increase outreach, improve customer experience, reduce operational friction, and foster adoption and usage of the digital channel. This report suggests the financial companies can learn and adopt best practices around risk and internal controls, operational excellence, compliance culture, and employee engagement.

Fintech Segments –Area Wise Classification

Deloitte report analyzed the breakout potential of India’s Fintech sector across six segments i.e Payments, Credit, Investment Management, Personal Finance Management, BankTech and InsurTech and across twenty sub-segments. Customer Loyalty, Technology & IT Infrastructure.

Area	Fintech Segments	Area	Fintech Segments
Credit	Peer-to-Peer Lending Crowd Funding Market Place for Loans Online Lenders – on-book lending by NBFCs Credit Scoring Platforms	Payments	M-wallets and PPIs Merchant Payments and PoS Services International Remittance Crypto Currencies
Investment Management	Robo Advisors Discount Brokers Online Financial Advisors	Personal Finance Management	Tax Filling and Processing Spend Management and Financial Planning Credit Scoring Services
Bank tech	Big Data Blockchain Customer Onboarding Platforms	Insur tech	Insurance Aggregator IOT, Wearables and Kinematics

Source : Deloitte Analysis

Significance of Fintech Startups in India

- **Promoting Financial Inclusion in India** – Most of the Indian people in rural area remain outside the formal financial system, and the use of financial technologies can bridge the gap left by traditional banking.
- **Finance for Micro, Small and Medium Enterprises (MSME)** – Lack of capital is the biggest threat to MSME, FinTech startups can play a key role and solve the issue of credit availability and offering easier and quick access to loans.
- **Improve Customer Experience** - FinTech start-ups provide better customer experience in terms of convenience, personalization, transparency, accessibility and developing credit scores and underwriting credit for customers for improving financial services penetration in India by leveraging big data, machine learning and alternative data.

Growth Factors of Indian FinTech Sector

Customer Loyalty, Funding environment, Technology & IT Infrastructure, Value proposition, Innovative use of Data, Cost of operation are considered as a key factors, leading to success of Fintech companies³.

The following seven factors are likely to drive the growth of the Indian FinTech sector, in the medium to long term³:

- Combination of steady economic growth with low penetration of financial services.
- Large public sector banks and insurers lagging market growth.
- Regulatory forbearance toward FinTech.
- Indian Millennials rapidly ascending the adoption S-curve of digital financial services and thus perceiving higher friction from incumbents.
- India Stack and internet data proliferation to improve financial services utility infrastructure and connectivity to support digital financial services.
- Advances in technology and adoption of cloud services leading to asset light models with almost zero unit costs at transaction levels could enable subsidization without building scale.
- Lower real interest rates in Indian economy.

Regulatory Legal Framework and Government Initiatives for Fintech in India

Owing to the overlapping and non-linear business models of fintech businesses, there is no single all-encompassing regulatory legal framework for fintech in India. The applicable laws and rules governing a fintech business will generally depend on the nature of the business being conducted⁷. It is usually regulated by the RBI, SEBI, the Insurance Regulatory and Development Authority of India (IRDAI), the Pension Fund Regulatory and Development Authority (PFRDA), and IFSCA⁷. Aspects that are regulated by the aforementioned authorities include online payments and transactions, payment

aggregators and gateways, data and privacy, lending and collection of deposits, trading of securities and derivatives, offering of insurance products and services, etc. For many financial offerings, prior approvals and licenses need to be obtained from the RBI, SEBI or IRDAI for a business to commence⁷.

The government has already laid the groundwork for the Fintech industry to provide flexible and innovative digital banking with regulations like the Unified Payment Interface (UPI), Aadhaar, and open application programming interfaces (APIs)⁶. The Government also announces measures to specifically promote investments in tech/fintech/start-up businesses in India, or which have a positive impact on those sectors. Additionally, IFSCA has also introduced an incentive scheme for, inter alia, domestic fintechs seeking access to overseas markets as well as foreign fintechs seeking market access to IFSCs in India. The Government also proposed many tax-related relaxations, including an extension of timelines (from March 31, 2023, to March 31, 2025) for funds relocation to IFSC GIFT City. Tamil Nadu FinTech Policy 2021, offering collaboration and incentives for select fintech startups⁷.

The laws and regulations that may apply to fintechs in India are listed below:

RBI

- Payment and Settlement Systems Act, 2007.
- Master Directions on Prepaid Payment Instruments (MD-PPIs), 2021.
- Framework for Scale Based Regulation for Non-Banking Financial Companies, 2021.
- Directions for opening and operation of Accounts and settlement of payments for electronic payment transactions involving intermediaries, 2009.
- Guidelines for Licensing of Payments Banks, 2014 and Operating Guidelines for Payments Banks, 2016.
- Framework for Recognition of a Self-Regulatory Organisation for Payment System Operators, 2020.
- Guidelines on Regulation of Payment Aggregators and Payment Gateways, 2020.
- Circular on Processing of e-mandate on cards for recurring transactions, 2019.
- Circular on Tokenisation – Card transactions, 2019.
- Guidelines on Digital Lending, 2022.
- RBI Master Directions on Credit Card and Debit Card – Issuance and Conduct, 2022.

National Payments Corporation of India (NPCI)

- Various circulars on Unified Payments Interface (UPI) payments.

SEBI

- Circular on Mutual Funds, 2021.

IRDAI

- Guidelines on Insurance Repositories and Electronic issuance of Insurance Policies, 2015.
- Guidelines on Insurance e-commerce, 2017.
- Insurance Regulatory and Development Authority of India (Issuance of e-Insurance Policies) Regulations, 2016.

IFSCA

- International Financial Services Centres Authority Act, 2019.
- Framework for FinTech Entity in the International Financial Services Centres (IFSCs), 2022.

Apart from these the following initiatives are taken by the government for the benefit of public.

- **Jan Dhan Yojana** - This initiative is considered as a world largest financial inclusion and it has helped in new account enrolment of over 450 million beneficiaries for direct benefit transfer and accessibility to a host of financial services applications such as remittances, credit, insurance, and pensions. It helps the Fintech companies to build technology products to enter the large consumer base in India⁴.
- **India Stack** -It is a set of APIs that allows governments, businesses, startups and developers to utilise a unique digital Infrastructure to solve India's hard problems towards presence-less, paperless and cashless service delivery⁴.
- **UPI (Unified Payments Interface)** -It is an advanced mobile app-based payment system to transfer funds between bank accounts developed by the National Payments Corporation of India in 2016, is the multiplier force behind the Fintech revolution in India. 338 banks registered under the platform, recorded more than 6.28 billion transactions in July 2022 worth 10.62 lakh crore ⁴.
- **Digital Rupee** - India launched its Central Bank Digital Currency (CBDC) or digital rupee or e-rupee recently. It is an electronic version of cash and will primarily accelerate the growth of the FinTech market in India⁴.
- **Fintech Hub** - **Fintech** Valley Vizag, O-hub Bhubaneswar, Bandra Kurla Complex, FinTech Hub Kolkata, Mumbai Fintech Hub are Fintech parks created by the respective Government to promote business infrastructure in the state, and attract investors and multinational financial corporations to set up their offices in the hub.

Issues, Challenges faced by Fintech Companies in the Current Economic Climate

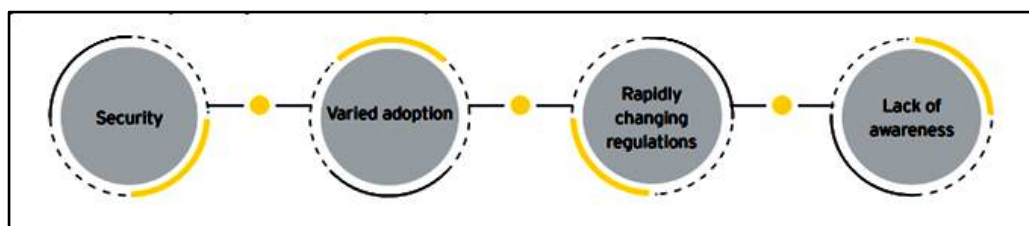
Fintech systems are vulnerable to hackers by automation of processes and digitization of data. Absence of regulatory authority has led to increased chances of fraud threat to investor protection and movement of money in the economy. Due to the diversity of

offerings in FinTech, it is difficult to formulate a single and comprehensive approach to these problems.

According to RBI financial literacy is only 27% of Indian adults and 24% of women meet the minimum level of financial literacy. The lack of financial literacy is also considered as a main issue. During the pandemic, digital lending through mobile apps became popular, but more than half of these digital loan providers were operating illegally. Many apps used tactics to exploit the widespread lack of financial literacy, charging interest rates up to 500%⁴.

The true legal status of cryptocurrency continues to be a grey area in India⁷. The Government of India introduced a draft Cryptocurrency and Regulation of Official Digital Currency Bill, 2021 (Cryptocurrency Bill), which provides for: (a) the creation of a framework for official digital currency to be issued by the RBI; and (b) the prohibition of all private cryptocurrencies in India – with certain exceptions, in order to promote the underlying technology of cryptocurrency and its uses⁷. As per a recent report, WazirX, India's biggest Cryptocurrency exchange registered an annual trade of over \$43 billion.

Nearly three-quarters of population resides in rural India Fintech industries making its route to reach digitalization. Infrastructural costs, low usage due to lack of awareness, inconsistent availability of electricity, theft, and vandalism are some of the major deterrents for physical bank branches and ATM operators in rural areas².



Source :Deloitte Analysis

Emerging Trends in Fintech Industry

Fintech companies can rapidly roll out new features and products by testing new innovations in secure sandboxes while checking for adherence to government regulations and data security. This enables Fintech companies to provide innovative products and services in a faster yet secure manner⁶. The Fintech activities are divided into three broad categories: the Banking Sector; Capital Markets; and Funds Management and the Insurance Sector, and the notable Fintech trends include BNPL (Buy Now, Pay Later), Digital Banks, Robo Advisory, Blockchain, Sustainable Finance products, neo-banks, Embedded finance/ Insurance, Cyber Insurance, Artificial intelligence (AI) and the metaverse etc., are some notable trends of the year and it could change the scope and landscape of Fintech and it continued to show an upward trend too⁷. The Fintech areas/activities expressly include

Agri Tech, Climate/Green/Sustainable Tech, Space Tech, Solutions for Banking, Financial Services and Insurance domain leveraging (AI, Chatbots, Web 3.0, etc)⁷.

Conclusion

Through the mobile applications and online platforms, Indian FinTech companies have been successful in offering various financial services to this population. It likely to reduce costs and improve quality of financial service and it will develop unique and innovative models of assessing risks and it will create a more diverse, secured and stable financial services land shape³. The government should require Fintech companies to ensure that the data harvested from consumers will not be used for any purpose other than serving the consumer's interest⁴. Establishing technological safeguards, educating and training customers will also help in democratizing Fintech and guarding against cyberattack issues. FinTech will create a more diverse, secured and stable financial services landscape. FinTech companies are less homogenous than incumbent banks, and offer great learning templates to improve, both, capabilities and culture³.

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INDIA 2.0: VISION FOR INDIA 2047 – DIGITAL ECOSYSTEM & HARNESSING ARTIFICIAL INTELLIGENCE

Volume – 1



Editor in Chief - Dr. B. Rohini

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INFLUENCE OF AI IN EDUCATION SYSTEM

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Abstract:

Artificial Intelligence (AI) now has been an integral part of human life and the most importantly has taken its place in all aspects of today's life. AI is being used in education in various ways, from chatbots that provide 24/7 student support to personalized learning algorithms that adapt to each student's needs. Learning management systems, gamification, video assisted learning, virtual and augmented reality are some examples of how technology has improved student engagement and education planning. With the rise of online education and the growing availability of educational resources on the internet, many traditional universities and colleges are worried about the future of their institutions. The aim of this study is to identify the various ways in which AI is being applied in education and various examples of successful AI-powered educational tools and platforms.

Keywords: Artificial Intelligence (AI), Personalised Learning, New Teaching and Learning Pedagogy, E-Learning Platforms, Digital Education.

Introduction

Artificial Intelligence (AI) has the potential to address some of the biggest challenges in education today, innovative teaching and learning practices, and accelerate progress towards Sustainable Development Goal (SDG) 4. Personalized learning, automated grading, and intelligent tutoring systems are just some of the ways AI is changing how students learn and how educators work. UNESCO is committed to supporting Member States to harness the potential of AI technologies for achieving the Education 2030 Agenda, while ensuring that its application in educational contexts is guided by the core principles of inclusion and equity. A study was conducted by research organization Tracxn and it was observed that about one-tenth (11%) of Indians who use artificial intelligence (AI) based technology in their organizations belong to teaching and learning (Aftab Alam, et al, 2022).

Objectives of the Study

Researches in the field of AI found a positive impact on educational implications such as Intelligent Computer-Assisted Instruction (ICAI) systems to teach and Computer-Assisted Instruction (CAI) to develop learning environment and major application as expert systems to assist educational diagnosis and assessment (Jones, 1985). AI technology-based assessment system can be used to assess students' knowledge, understanding, skills such as collaboration and persistence and characteristics such as confidence and motivation etc. (Aftab Alam, Dr. Mohammad Hasan, Md Mousuf Raza (2022).

The main aim of this study is to identify the various ways in which AI is being applied in education and various examples of successful AI-powered educational tools and platforms.

Research Methodology

The present paper is qualitative and theoretical in nature. This research work is based on secondary data collected from various journals, official documentary evidence and also various sources of information like books, websites, and newspapers.

Some ways in which AI is being applied in Education

Artificial Intelligence (AI) has the potential to transform education by enhancing the learning experience, personalizing education, and providing new tools for educators. Here are some ways in which AI is being applied in education:

Personalized Learning

AI systems can analyze individual student performance data to tailor educational content based on their strengths and weaknesses. This helps in creating a personalized learning experience that suits each student's pace and learning style.

Adaptive Learning Platforms

AI-powered adaptive learning platforms adjust content and difficulty levels based on a student's progress, ensuring that each learner is appropriately challenged.

Virtual Tutors and Intelligent Assistants

AI can serve as a virtual tutor, providing instant feedback, answering questions, and offering additional resources to support student understanding. Intelligent assistants can help students with homework or provide guidance on various topics.

Automated Grading and Assessment

AI algorithms can automate the grading process, saving teachers time and providing instant feedback to students. This allows educators to focus more on individualized instruction and support.

Identifying Learning Gaps:

AI tools can analyze large datasets to identify patterns and trends in student performance, helping educators identify learning gaps and areas that may need additional attention.

Gamification and Interactive Learning

AI is used to create engaging educational games and interactive simulations that make learning more enjoyable and effective.

Natural Language Processing (NLP) for Language Learning

NLP technology allows AI systems to understand and respond to human language, making it valuable for language learning applications. Language learning apps can provide conversational practice, pronunciation feedback, and language comprehension exercises.

Predictive Analytics

AI can predict students' future performance based on their historical data, allowing educators to intervene early and provide additional support to students at risk of falling behind.

Robotics in Education

AI-powered robots are used in educational settings to assist with tasks, engage students in interactive learning experiences, and teach programming and robotics concepts.

Facilitating Teacher Professional Development

AI tools can assist in the professional development of teachers by providing insights into effective teaching strategies, suggesting relevant resources, and offering continuous training opportunities.

Automated Administrative Tasks

AI can streamline administrative tasks such as scheduling, enrollment, and data management, allowing educators to focus more on teaching and student engagement.

Accessibility and Inclusion

AI technologies contribute to making education more inclusive by providing tools that assist students with disabilities. For example, AI-driven text-to-speech or speech-to-text applications can support students with different learning needs.

While AI in education holds great promise, it's essential to consider ethical considerations, data privacy, and the need for responsible implementation. Collaboration between educators, researchers, and technologists is crucial to harness the full potential of AI in education for the benefit of learners worldwide.

Examples of successful AI-powered Educational Tools and Platforms

Artificial intelligence is a rich technology that is being used in almost every field and is changing the world (Jhumur Basuri 2023). The technology of AI has been advanced and sophisticated that can recognize the gesture of the students and understand their mood and ease during the lecture even it can read facial expressions and posture of the students to understand difficulties and problems they are facing in the lecture and recommends altering the lesson (Aftab Alam, et al, 2022). The use of AI in education has many advantages for both students and teachers: learning resources can be accessed from anywhere, at any time. Time-consuming, tedious tasks such as record keeping or grading multiple-choice tests can be accomplished through AI automation. (Dr. Himanshu Sawant, Mahendrasinh D. Vaghela , 2022).

From personalized learning algorithms to virtual and augmented reality, AI-powered tools and technologies are helping to enhance the learning experience for students in ways we never thought possible. AI technology has developed speech-to-text transcription,

predictive text and facial recognition promising an inclusive future for all learners (Aftab Alam, Dr. Mohammad Hasan, Md Mousuf Raza, 2022) There are many examples of successful AI-powered educational tools and platforms currently in use. Some of the most popular include:

- **Duolingo:** a language learning app that uses AI to personalize lessons for each user
- **ALEKS:** an AI-powered math learning platform that provides adaptive assessments and personalized learning plans
- **Coursera:** which uses AI to recommend courses to students based on their interests and previous learning history.
- **Thinkster Math:** described by its creators as a “math tutoring program leverages human interaction and groundbreaking artificial intelligence to create personalized learning programs”
- **Jill Watson:** an AI-enabled virtual teaching assistant introduced by the Georgia Institute of Technology in 2016
- **Brainly:** a social media site for classroom questions
- **Nuance:** speech recognition software used by students and faculty; capable of transcribing up to 160 words per minute; especially helpful for students who struggle with writing or have accessibility needs
- **Cognii:** AI-based products, including a virtual learning assistant, for K-12 and higher education institutions, as well as corporate training organizations
- **KidSense:** AI educational solutions designed for children, including a voice-to-text tool with algorithms built to recognize the sometimes harder-to-translate speech of young learners
- **Content Technologies:** instructional design and content application solutions fueled by artificial intelligence research engines
- **ChatGPT:** AI and ChatGPT can revolutionize academic research by processing and analyzing large amounts of data quickly, uncovering new discoveries, generating hypotheses and conducting literature reviews faster than traditional methods. ChatGPT can assist researchers in writing papers by providing feedback and suggestions, and even generate parts of the text. Additionally, it can be used in natural language processing such as text summarization, sentiment analysis, and language translation for analyzing unstructured data.

AI can be used as an educational tool that guides students towards their goals by providing personalized feedback on homework, quizzes, etc. based on AI algorithms. (Dr. Himanshu Sawant, Mahendrasinh D. Vaghela , 2022)

Conclusion

Many educators worry about AI-powered tools may replace human interaction and affect classroom teaching quality. Ensuring that AI is used in a way that complements, rather than replaces, human educators will be important in the coming years (Aftab Alam, et al, 2022). The existence of artificial intelligence may be able to provide knowledge to

students, but developing character cannot be done. That is an educator's job. How to inspire, motivate, make students become good students." So the role of the teacher in providing motivation, inspiration and developing character are what AI cannot replace because AI is not given feelings and emotions like humans in general. In the end, if we look at technological developments, we must be able to adapt as technology advances. If we do not adjust, we are an educator(teacher/lecturer) may be replaced by technology (Tira Nur Fitria, 2021)

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NAVIGATING METAVERSE IN SHAPING THE FUTURE OF BUSINESS

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**ROLE OF METAVERSE IN THE INSURANCE INDUSTRY FOR SUSTAINABLE
DEVELOPMENT**

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ABSTRACT:

By investing in the metaverse technology and utilizing its unique capabilities, insurers can enhance their operations; improve customer experience, and addressing emerging risks in this rapidly growing space. Utilizing the metaverse as a platform for creating virtual experience can reach the sustainable development. The main aim of this paper is to examine the potential benefits and hidden threats in the usage of metaverse in the insurance industry and also explore the business opportunities that the increasing pervasiveness of the metaverse could bring sustainable development. The research will utilize a descriptive research design, the data collection process for this study involves the use of secondary sources of data. Thematic analysis approach is used to identify key themes and concepts from literature. The findings of the study reveals that metaverse in the insurance industry is the new frontier in user experience and financial risk coverage that allows the utilization of digital avatars for training and customer support, creating digital twins for property underwriting, or providing coverage for digital assets.

Keywords: *Metaverse, Insurance, Virtual environment, Augmented Reality, Sustainable Development...*

I. INTRODUCTION:

The Metaverse can be defined as a virtual shared space that allows individuals to interact with each other and digital content in a seamless manner (Dixton, 2021). In 1992, the word “Metaverse” was first coined by Neal Stephenson in his science fiction novel – “Snow Crash”, where humans, in their Avatars, interacted with each other in a virtual space.

Insurance companies can streamline their operations, enhance the customer experience, and address new risks by investing in the metaverse. One of the key features of the metaverse is the ability Many organizations across industries are working toward creating immersive experiences for their

users and customers. The relation between the metaverse and the insurance industry will be bilateral in nature. The ‘world’ metaverse creates will have some use for insurance.

II. OBJECTIVES OF THE STUDY

1. To evaluate the opportunities and drawbacks of the usage of metaverse in insurance industry.
2. To identify the role of metaverse towards the sustainable development goals in insurance industry.

III. RESEARCH METHODOLOGY:

This study aims to explore the role of the metaverse on the insurance industry through the comprehensive review of existing literature. The research will utilize a descriptive research design, as the aim is to describe and analyze the current state of the metaverse, and how it is impacting insurance industry and improve the goals of sustainable development. The data collection process for this study involves the use of secondary sources of data. It includes academic databases and online resources such as websites, blogs and industry reports. Thematic analysis approach is used to identify key themes and concepts from literature.

IV. REVIEW OF LITERATURE

Thippa Reddy Gadekallu (2022) investigated the role of block chain in metaverse using the extensive survey on the application of block chain for the metaverse. The author extensively discuss blockchain based methods from technical perspectives, such as data acquisition, data storage, data sharing , data interoperability, and data privacy preservation.

Ansh Budania (2023) made a comprehensive review of existing literature to explore the impact of the metaverse on the various industries. She noted the potential of metaverse to transform the gaming industries by offering new opportunities. She analysed the latest trends and developments in technology to gain insights into the potential of the metaverse. The study provides valuable insights in the usage of in different industries..

Ivelina Kulova, et al(2024) utilized the metaverse and sustainability as drivers revolutionizing customer experience in the food industry. The research strives to showcase how companies can adopt sustainability and fairness in the metaverse, creating immersive encounters and building relationship with customers.

Jussi S. Jauhiainen, et al (2023) conducted a comprehensive review to examine how academic discussion and research about the metaverse developed from the 1990s to the end of 2022. The authors explains the key research topics and areas, and whether and how those publications addressed sustainability. The important themes of virtual and augmented reality, those on blockchain, Crypto currencies and NFTs, those on modeling and machine learning, and those loosely related to varied aspects of decentralization are discussed here.

V. OPPORTUNITIES OF METAVERSE TECHNOLOGY IN INSURANCE

Since Facebook officially changed its name to Metaverse in Oct. 2021, the metaverse has become a new norm of social networks and three-dimensional (3D) virtual worlds. The metaverse aims to bring 3D immersive and personalized experiences to users by leveraging many pertinent technologies. (Thippa Reddy Gadekallu, et al, 2022).

The insurance industry has often been considered a slow adapter of emerging technologies. Insurers can change this perception if they are early to embrace metaverse technologies and leverage it to enhance the experience of customers, agents and employees. Insurers must start experimenting and get their feet wet while the technology is still in its early stages of development. (Amarnath R Suggu, 2023)

Life and property and casualty (P&C) insurers can adopt virtual reality (VR) platforms to explain their products to customers and prospects by demonstrating through examples from real life. Immersive technologies like AI and metaverse greatly impacts insurance companies by helping them enable the lost adjusters through damage identification. Insurance companies can directly verify the claim details by analyzing the recent damage details over the pre-damage images.

Metaverse establishes an advanced level of sales and distribution channel for insurance products. With accurate use of modeling techniques, underwriters can study the loss and risk catering to the market segment, and customers can experience a plethora of metaverse assets in different industries, for example, gaming or healthcare.

With the addition of metaverse in insurance businesses, the ownership, adoption, and transactions of assets have completely transformed with a virtual economy generating real-world value for the users. For instance, the metaverse mitigates the risk approach as investments will now occur in both virtual and physical worlds. It offers multiple opportunities for insurers to enter into the space of digital and crypto assets, along with developing strategic risk management approaches for dealing with new assets.

Metaverse helps in streamlines sales and distribution and upskilling & training the Insurers. In insurance industry the integration of metaverse technology can indeed unlock a realm of new financial opportunities like Virtual Asset Protection, Virtual Liability Insurance, and Cyber Insurance for Metaverse Platforms, Virtual Events Insurance, Augmented Reality (AR) and Virtual Reality (VR) Insurance.

VI. HIDDEN THREATS OF METAVERSE IN THE INSURANCE INDUSTRY

While the metaverse brings many opportunities for the insurance sector, it also brings corresponding risks and challenges.

At the same time, one needs to address the social sustainability. In the metaverse, many kinds of data are collected from its users. It can be an unethical place if guidelines and regulations in data collection and uses are not designed and implemented properly. Otherwise, the metaverse may lead into an erosion of trust. That would compromise its enormous potential as a complement to physical face-to-face transactions (Townsend, S. 2022).

Hacking, fraud, value loss, and centralization are a few concerns that affect digital assets in the metaverse. In general, users must take necessary precautions to secure their assets because the hazards to digital assets in the metaverse are comparable to those in the real world. Unexpected server downtime can damage virtual assets and data because no technology is fault-proof. Insurance companies must safeguard and encrypt themselves against the possibility of financial losses in the event that clients file lawsuits for unforeseen losses.

VII. ROLE OF METAVERSE FOR SUSTAINABLE DEVELOPMENT

The metaverse and sustainability are connected in many ways. In fact, sustainability is a fundamental issue because it is hypothesized that the metaverse would significantly affect the material (environmental), economic, and social spheres, as well as sustainability around the world. (Tozzy, C, 2022).

The result of increasing consumption and population growth is that many crucial natural resources will end if they are not used sustainably, and their recycling organized accordingly. The media and many enterprises discuss that while the metaverse would boost economy and financial profitability; these need to be put in balance with environmental, social, and ethical aspects of the metaverse (Lea T, 2022).

The global insurance industry is playing crucial role in the transition to a low-carbon economy. It facilitates a just transition to net-zero in three ways innovating products that integrate environmental, social and governance (ESG) factors, improving underwriting risk information capacities and making responsible and impactful investments to decarbonizes the global economy and enable communities to deal with climate change. (Manonmani P, 2023)

Insurers must drive de carbonization through product innovation. For instance, parametric insurance or index-based cover pays a predetermined amount to policyholders based on the magnitude of a specific event, as opposed to the magnitude of losses in a traditional indemnity policy. This product has been gaining traction as it delivers quick and guaranteed payouts for climate disasters. It operates on predefined triggers, eliminating the need for claims assessments. Other innovative product structures include double triggers and usage-based product. Insurance companies are funding research

for example protecting and restoring mangrove forests, cost-benefit analysis in the Caribbean region, coral reef insurance policy for reefs in Mexico etc., (Manonmani P. 2023)

As evidenced above, the metaverse needs to be connected and analyzed along broad realms of sustainability. One possibility is to connect the metaverse with the United Nations’ SDGs, which have been accepted as global goals to be achieved locally around the world. Ending poverty and other deprivations requires strategies and actions that improve health and education, reduce inequality, and spur economic growth, and these efforts are necessary to address climate change and preserve life on land and in water (Jussi S. Jauhiainen, et al, 2023).

Many technology development companies prioritize sustainability goals toward more energy-efficient practices that shrink their current carbon emissions. For example, the metaverse can support green networking technologies including minimizing the number of physical data centers, by storing data and information in the cloud (Zhang, S, et al, 2022).

VIII. CONCLUSION

Indians have caught the metaverse fever. A couple from Tamil Nadu state hosted India’s first wedding reception in metaverse. The metaverse continuum will raise the standards for insurers’ hassle free communication with customers, creation, and distribution of goods and experience, and smoother operations management. It may also result in substantial reductions in carbon emissions as many physical goods will be substituted with digital ones, physical mobility and construction are reduced with virtual interactions, the physical world is optimized with digital twins, simulations can be performed in cyberspace instead of material space, and larger awareness and more efficient interaction are created against harmful global phenomena, such as climate change.

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SOCIAL MEDIA PRESENCE IN VIRTUAL WORLDS

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ABSTRACT

Social media is becoming a more powerful tool for students for communication, information sharing, and discussions. This paper presents a study, based on a survey questionnaire, which aims to investigate to what extent and for what purposes teachers from different countries from all over the world use social media in their teaching practice. Recent days, College students are education-oriented, information seeking, multi-tasking experts. In today's college classrooms, much of the information that is hunted by students is done via social media. Social media has increasingly inspired college students' everyday lives. Students find that being connected to their classmates and peers via the internet is mainly helpful.

Keywords: Social media, Social network sites, Students, Usage

I. INTRODUCTION

Social media has given customers a voice and a platform to be heard. With rising popularity of social media, organizations are losing control over their online narrative which is increasingly being driven by their target customers. In a bid to regain this control and to be in sync with the needs and expectations of their customers, many organizations have started incorporating multiple social media platforms in their marketing plans. Empowered customer's involvement with the organization on social media is forcing organizations to rethink their marketing strategies not only to integrate the use of social media to create better marketing communication but also for opportunities of product co-creation.

II. SOCIAL MEDIA

Social media is an online platform that people use to develop social relationships with others. There are several social media networking sites that are used for instant messaging, sharing, posting, and much more. Trillions of people worldwide connected via social media to share their perspectives.

However, the majority of people use social media to interact with their family and friends in order to gain knowledge or for entertainment. Business people use social media sites to plan their target audience and execute it via attractive advertisements that pop out when they search something

related to it. The specialist also uses social media to enhance his knowledge in the related field, develop a network with like-minded people in a similar industry, and support each other in their career growth. Improvements in the Internet and technology have introduced new communication tools and styles. In particular, social media have become some of the most outstanding communication tools in this era. With the emergence of social media websites, such as facebook, my space, and Twitter, students and teachers have started to connect outside of school (Dr. ZeynepTuran et al., 2020).

III. VIRTUAL WORLDS

There are hundreds of virtual worlds to choose from, each targeting a different segment of the population. There are also virtual worlds for teens such as Whyville, Habbo Hotel and Second Life for Teens. Finally, there are virtual worlds geared toward adults such as The Sims Online, World of Warcraft, and Second Life. Thus, there is something for everyone and each virtual world shares the traits outlined above while focusing on a specific age group.

Most virtual worlds are free to join, but some require additional fees to customize one's experience or purchase virtual “goods” such as clothes and accessories. This customization has resulted in a cottage industry of sorts. While anyone can create content and design objects in a virtual world, it does require considerable time and basic design skills. For those who prefer not to take the time, some items can be bought and sold online, tax consequences notwithstanding.

Most virtual worlds allow their users to create an “avatar” which is a computer user's self-representation or alter ego. This avatar can be a realistic facsimile of their real identity or, in the case of many virtual worlds like Second Life, can be a robot, animal, mythical creature or other graphical representation

IV. VIRTUAL CLASSES

As previously mentioned, many schools are conducting classes in Second Life. Professors and students logon at a designated time and the professor conducts a class in Second Life. The premise of conducting classes online is to give students hands-on experience in the related field.

It also encourages more participation and an exchange of ideas in a more casual, relaxed environment. In schools like USC's School of Engineering, classes are conducted to give students hands on experience for animation and modelling skills. The professors say that they want to give students exposure to what the industry is seeking from prospective graduates. The University of Hamburg uses virtual worlds where the virtual and reality are merged. A lecture taking place in a

classroom is also attended by off-campus students via video streams and other media streamed to Second Life.

In addition to classes, virtual worlds can be used for virtual office hours and supplement traditional on-campus office hours. Students often find real-time office hours inconvenient and like the ability to interact with their instructors in a virtual setting at more convenient times.

V. LITERATURE REVIEW

In their study “Examining Urban-Rural Differences in the Impact of Internet Use on Older Adults’ Depression: Evidence from China,” **Sun et al. (2022)** explored the impact of Internet use on urban and rural older adults’ depression and provided insights into the positive roles that Information and Communication Technology (ICTs) play in human behaviour. Data for the study were collected from 9172 respondents from the China Health and Retirement Longitudinal Study and analysed using robustness tests and mediation effect analysis. The study found that Internet use affects urban and rural older adults’ depression, with rural older adults benefiting more significantly.

Sivakumar (2020) conducted a study entitled “Effects of Social media on Academic Performance of Students” to understand the impact of social media on students’ academic performance in the Cuddalore District. A sample of 1000 students was selected through a random sampling method, and data were analysed using descriptive and differential analyses. The study found that most students use social media sites to chat for academic purposes, which helps improve their academic performance.

In their study “Undergraduate Students’ Perceptions toward Social media Usage and Academic Performance: A Study from Saudi Arabia,” **Alamri (2019)** analysed undergraduate students’ perceptions of social media usage.

Data for the study were collected from 132 respondents through questionnaires and analyzed using descriptive statistics, including frequencies, percentages, means, standard deviations, correlation tests, and One-Way ANOVA. The study found a statistically significant impact of students’ purposes for using social media on academic performance in favour of all senses, including educational, personal, and occupational purposes.

Ezeji and Ezeji (2018) conducted a study entitled “Effect of Social media on the Study Habits of Students of Alvan Ikoku Federal College of Education, Owerri” to examine the impact of social media on the study habits of students at Alvan Ikoku Federal College of Education in Owerri. Data for the study were collected from 372 respondents using a random sampling method and analysed using

frequency tables and bar charts. The study found that social media usage negatively affected students' daily revision of lecture notes and submission and completion of study assignments.

VI. SOCIAL MEDIA PLATFORMS

With the increasing popularity of social media, there are many social media platforms available today to a user to choose from. SOCIAL MEDIA Sites (specifically Facebook and Twitter) and Content communities (specifically YouTube), known for its media rich content, allow users to upload content in media rich format and give ample opportunities to users to express themselves. Blogs and Collaborative projects score low on social presence and media richness but score high on self-presentation. They are commonly used to express opinions and knowledge and are more often exploited in B2B scenarios.

S.No	Social media Sites	Description
1	Media Sharing Sites	Media sharing sites allow users to upload, organize, and share multi-media materials, including videos, audio, and photos, with people and/or selected communities (Ngai et al., 2015). YouTube, Instagram, and Flickr are popular examples of media sharing sites.
2	Social Networking Sites	Focus of Social Networking sites (SNSs) is to build social networks of people with common interests, build relationships and sharing of information among friends and acquaintances. Facebook and LinkedIn are two examples of Social Networking sites.
3	Blogs / Microblogs	Blogs and microblogs are used by authors to post their writings that are read by people having an interest in the topics and information on which the author has written. Blogger.com is an example of a blog site. Twitter is the most popular microblog. Though text-based blogs are most common and popular, many bloggers have begun to use different media formats (Kaplan et al, 2010).
4	Social Bookmarking Sites	Social bookmarking sites provide services and facilities for individuals to store and share bookmarks of web contents. Examples of book marking sites are Delicious, Pinterest, and Digg.

5	Virtual Worlds	With the growing power of computing and web technologies, people build computer simulated environments in web sites that lead to virtual world environments, such as Second Life and Active World (Nagai et al., 2015). These computer simulated virtual worlds allow people to live a second life (virtually) with a family, job and social activities.
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VII. CHALLENGES IN THE FIELD OF EDUCATION

While the field of education appears to be a promising area that can take advantage of the opportunities that will emerge from the advent of the next generation virtual worlds at the same time, the integration of immersive technology in education, especially at lower levels of primary and secondary education presents certain challenges. As described in previous sections, technical and societal challenges apply in this field too. For example, the challenges with the technical implementation might create inequalities and increase the gap among schools. The high computational requirements of next generation virtual worlds are also a technical challenge. If education is introduced into next generation virtual worlds, then the simulation and rendering of teaching scenes, the interaction between teacher and learner, and human-computer interaction are huge computational quantities, which pose major challenges to the throughput of the network and the computing power of cloud computing.

Even more importantly, with next generation virtual worlds, it is expected that the nature of education will no longer be limited to the physical classroom but will expand across various interconnected physical and virtual environments and might be blended with the entertainment or other activities. While this has a significant positive potential for the motivation of students and for new forms of learning, there are challenges that are connected to the need for a protected educational environment that protects students' rights, such as the right of students not to share their personal data and to be forgotten, an element that is connected to students' data protection and privacy but also to safety for local off-line experimentation that a physical classroom provides. Furthermore, while virtual spaces have the potential to connect students from different countries and cultures in a synchronous way, which can be catalytic for the development of students' skills, this will raise issues of students' safety and security in cyber space. Thus, special measures are needed for their protection. Lastly the role of the

educator might need to be reconsidered since educators could provide catalytic contributions for pedagogically-grounded content for the educational virtual worlds for the best interest of the students.

VIII. TECHNICAL CHALLENGES

New technologies

Societal changes related to the next generation virtual worlds will inevitably come hand in hand with technological changes and emerging new technologies. Although there is some uncertainty as to how future virtual worlds will materialise from the technical perspective in the coming years, we can already anticipate some key technologies that are likely to be central to their implementation and will reshape the way we interact with them. Some will emerge as totally novel technologies, while others will require an effort to adapt from existing ones. In the following, we identify five technological fields that will play an essential role in the future development of virtual worlds:

- Computer graphics will allow the creation of increasingly immersive virtual, augmented and eXtended reality experiences and environments. Graphic engines will be used to animate expressive avatars in real-time, to facilitate the creation and navigation of original virtual worlds, to faithfully simulate the laws of physics, to develop data formats and compression methods for three-dimensional scenes, and to develop novel forms of visualisations such as 3D holograms.
- Human-Machine Interaction (HMI) and Internet of things (IoT) devices will be used to improve the way we perceive and interact with a virtual space from the physical world, and vice-versa. Specialised HMI hardware will include VR/ AR headsets, haptic feedback devices, Brain-Computer Interfaces (BCIs) and motion capture systems. These interaction devices will allow for enhanced multimodal and real-time means of communication. Similarly, IoT devices are smart connected sensors that will serve to communicate and transfer information between the real and virtual world through objects.
- Artificial intelligence will be needed to analyse and respond to the vast array of user interactions, data and personalized experiences created in virtual worlds. Technologies such as computer vision, machine learning and depth sensing will be essential to create realistic and immersive virtual environments, intelligent virtual agents, Non-Player Characters (NPCs) and autonomous systems within the virtual worlds. These systems will need to understand/simulate

human behaviour, respond to users’ inputs, and learning and adapting over time. New forms of AI may emerge by extending existing forms to the virtual space. For instance, current scene understanding might evolve into virtual scene understanding, current affective computing techniques might evolve into virtual affective computing (e.g. detecting emotions from avatar data), and generative models might evolve into 3D generative models to automatically generate 3D models of virtual scenes.

- Block chain and crypto currencies are likely to be the technological building blocks of a decentralized infrastructure (i.e. an infrastructure without the need of a centralised control) that will enable users to interact, buy, sell and trade virtual assets, as well as establish and enforce rules and regulations. Block chain would provide a trustworthy, transparent and verifiable mean of keeping a secure record of digital ownership of virtual assets (such as virtual real estate, avatars and virtual goods) which could be bought, sold or traded just like physical assets. This is particularly important for virtual economies, where users need to trust that their virtual assets and transactions are secure.

- High-performance computing and high-speed networks will be needed to provide the extensive computational power required by the ambitious architecture of next generation virtual worlds, which are expected to supply highly demanding functions in real time, including visual rendering, data synchronisation, motion tracking and capturing. There will be a need to optimise and parallelise computations over complex and distributed architectures to minimise latency, data transfer and processor load. In this context, edge and cloud computing are likely to play a critical role in supporting the timely processing and system responses of relevant applications. Future mobile communications such as 5G/6G are also expected to facilitate ubiquitous services to users, making possible remote and real-time persistent connections between the real and the virtual worlds.

IX. BENEFITS AND DRAWBACKS

There are a number of benefits and drawbacks to using virtual worlds. These include computer problems, cost issues, a learning curve, as well as legal, ethical and social considerations. Virtual worlds and social media require computers with adequate hardware and software as well as reliable network connections. This is usually not a problem today, however, Internet access can be problematic given a user’s location. Some virtual sites like Second Life incur fairly substantial costs for institutions and land. Then there is the cost of developing the physical buildings and staffing the campus with people. The learning curve, particularly for older people who are less computer-savvy, can be

significant. Finally, since virtual worlds are largely uncontrolled and run by their members, there are legal, social and moral issues to contend with as users can, for example, roam around naked or proposition another user at will.

Economic factors also influence the development and, ultimately the success of virtual worlds. Second Life is based on a virtual currency that is tied to real currencies. As such, legal rules and social norms require some form of government. In 2007, Linden Labs announced a ban on in-world gambling in response to an FBI investigation. As of 2008, only real companies who were able to provide proof of an applicable government registration statement or financial institution charter would be allowed to offer interest on currency. The resulting fallout and the collapse of several virtual banks resulted in Second Life’s economy to be halved and a new direction in financial commerce to begin.

Much like the banking failures experienced recently in the real world, virtual worlds are alike in more ways than they are different and residents be actively involved in their world.

CONCLUSION

We are living in a networking era, where social sites are the cheapest mode of communication, through which peers can stay connected. Social mediasites disseminate information quickly to a larger number of users with maximum benefits and minimum cost. This study set out to investigate how SNS are gaining popularity amongst academic users. As per the study conducted, it was found that certain SNSs sites are very common and are used by the student community and using it effectively in their everyday life for their academic as well as for other activities.

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ROLE OF MSME SECTOR IN INDIAN ECONOMY

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Abstract

Over the past few decades, the Micro, Small and Medium Enterprises sector has emerged as an exceedingly lively and dynamic Indian economy sector. MSMEs in India have been increasingly become important for the sole reason of their role in the Indian economics tructure. The MSME sector is vital for India's economy. There are more than 6 crore enterprises in various industries, employing more than 10 crore people. . India's micro-sized enterprises face many hurdles and yet are capable of taking advantage of opportunities in rapidly changing global markets. MSMEs contribute significantly to the country's industrial output, jobs, exports and consistent employment growth, followed by agriculture.

Keywords: MSME, vital, economy, employment, challenges.

Introduction

In the past few years, MSMEs have generated a huge number of employments, at a relatively lower cost of capital as compared to the large-scale business or ventures or establishments. As there is the increase in employment opportunities in the MSME sector, they help increase the country's socio-economic development.

The MSME sector not only providing employment but also helped rural development which was the biggest challenge in front of the Government as in initial phase of industrialization which has attracted rural population towards urban region. It has provided balanced regional development of the country and proved as a key success factor for rural development. The Ministry of Micro, Small and Medium Enterprises (MSME) intends to make the MSME sector, including Khadi, Village and Coir Industries even more vibrant by providing support to existing enterprises and encouraging creation of new enterprises, by way of various programmes and schemes in cooperation with concerned Ministries, Departments and State Governments. The long-term goal of the ministry is to enhance manufacturing base in thecountry by improving performance of MSMEs through skill and entrepreneurship development.

In India, the enterprises have been classified broadly into two categories:

- (i) Manufacturing; and
- (ii) Those engaged in providing/rendering services.

The Study Goals

The key objectives of this study are:

1. To understand the role of MSMEs in the Indian economy and their performance.
2. Understanding the policies of government for the MSMEs in India.
3. Analyze the status of MSMEs in the district of Panchkula.
4. To understand the problems of MSMEs in India.

Research Design

The data needed for the study was gathered from secondary sources.

Importance of MSMEs for Indian Economy

- **Employment:** It is the second largest employment generating sector after agriculture. It provides employment to around 120 million persons in India.
- **Contribution to GDP:** With around 36.1 million units throughout the geographical expanse of the country, MSMEs contribute around 6.11% of the manufacturing GDP and 24.63% of the GDP from service activities.
- MSME ministry has set a target to up its contribution to GDP to 50% by 2025 as India becomes a \$5 trillion economy.
- **Exports:** It contributes around 45% of the overall exports from India.
- **Inclusive growth:** MSMEs promote inclusive growth by providing employment opportunities in rural areas especially to people belonging to weaker sections of the society.
- For example: Khadi and Village industries require low per capita investment and employs a large number of women in rural areas.
- **Financial inclusion:** Small industries and retail businesses in tier-II and tier-III cities create opportunities for people to use banking services and products.
- **Promote innovation:** It provides opportunity for budding entrepreneurs to build creative products boosting business competition and fuels growth.

Thus, Indian MSME sector is the backbone of the national economic structure and acts as a bulwark for Indian economy, providing resilience to ward off global economic shocks and adversities.

Factors which Led to Growth of MSMEs

- **Campaigns** like Skill India, Startup India, Digital India and Make in India aim to provide MSME players with a level playing field and a definitive push towards enhanced productivity.
- **Digitization:** Increasing internet penetration, customer's familiarization with digital payments fuelled by B2C ecommerce players facilitate MSME sector growth.
- Tie-ups with new-age **non-banking finance (FinTech) companies** allowed access to timely collateral free finance to MSMEs.

- **Changing employment patterns:** Younger generation shifting from agriculture towards entrepreneurial activities creating job prospects for others.

MSMEs Redefined

A proposal was made to redefine MSMEs by the Micro, Small and Medium Enterprises Development (Amendment) Bill, 2018, to classify them as manufacturing or service-providing enterprises, based on their annual turnover.

Classification of enterprises into micro, small and medium enterprises (in Rs)

Kind of enterprise	Act of 2006		Bill of 2018
	Manufacturing	Services	All enterprises
	Investment towards plant & machinery	Investment towards equipment	Annual Turnover
Micro	25 lacs	10 lacs	5 Cr
Small	25 lacs to 5 Cr	10 lacs to 2 Cr	5 Cr to 75 Cr
Medium	5 Cr to 10 Cr	2 Cr to 5 Cr	75 Cr to 250 Cr

MSME Framework

The Government of India has devised an MSME framework that provides many facilities and concessions to **MSME businesses** to overcome financial stress and plan for growth. Here are some of the highlights of the MSME framework.

For New Entrepreneurs

The Reserve Bank of India has introduced provisions in the MSME financing that enable banks to provide composite loans to budding entrepreneurs through a single window. The composite loan of up to 1 crore can be availed and used to purchase land and build business units within a given timeline.

As per RBI directives, banks that have sanctioned term loans to MSMEs should not delay loans for working capital (under the composite loan model) that will allow MSMEs to start commercial production.

For Sick Businesses

All MSME businesses will have access to the Committee for Distressed Micro, Small, and Medium Enterprises to decide on a corrective action plan. All banks and government financial institutions shall constitute one or more committees at such locations that will provide reasonable access to MSME businesses that have received credit facilities from the bank.

The MSME framework aims to provide customised relief and concession to sick MSME businesses to revive and tide over difficult times. The MSME framework also seeks to unlock the potential of asset and job creation while maintaining value for the promoters and investors in MSME businesses.

Challenges faced by MSMEs in India

The MSME sector in India contributes significantly to the overall Indian GDP. However, many MSMEs need more business expertise, financial assistance, and technical obsolescence and struggle to survive in the cutthroat competition.

Financial Assistance

Lack of timely and easy finance is one of the biggest challenges faced by the MSME sector in India. MSME businesses need more time to obtain financial assistance for expansion or running business due to lengthy paperwork, absence of collateral, and lack of trust in repayment abilities.

Technology

Many MSME businesses in India continue to use obsolete technology in all business processes, which prevents them from cutting production and operation costs and improving profit margins. On the other hand, large businesses use advanced technologies in manufacturing that help them keep expenses in control, and they can scale up to meet market demands while maintaining their profit margins.

Marketing

Marketing is an indispensable factor for the success of any business. At the same time, large enterprises have dedicated resources to market their products and services to target audiences. The MSME sector in India needs more financial resources to sell its products and services effectively. In addition, MSME businesses need to be made aware of the marketing resources available online and knowledge of how to use them, thereby putting them at a disadvantage.

Role of MSMEs in Indian Economy

Since its formation, the MSME segment has proven to be a highly dynamic Indian economy sector. MSMEs produce and manufacture a variety of products for both domestic as well as international markets. They have helped promote the growth and development of khadi, village, and coir industries. They have collaborated and worked with the concerned ministries, state governments, and stakeholders towards the upbringing of rural areas.

MSMEs have played an essential role in providing employment opportunities in rural areas. They have helped in the industrialization of these areas with a low capital cost compared to the large industries. Acting as a complementary unit to large sectors, the MSME sector has enormously contributed to its socio-economic development.

MSMEs also contribute and play an essential role in the country's development in different areas like the requirement of low investment, flexibility in operations, mobility through the locations, low rate of imports, and a high contribution to domestic production.

With the capability and capacity to develop appropriate local technology, provide fierce competition in domestic and international markets, technology-savvy industries, a

contribution towards creating defense materials, and generating new entrepreneurs by providing knowledge, training, and skill up-gradation through specialized training centers.

The below-mentioned data, represented in a tabular format, is by the Central Statistics Office (CSO) and Ministry of Statistics & Program Implementation.

Contribution of MSMEs in Country's Economy at Current Price

Year	MSME- Addition of Gross Value	Growth (%)	Total Addition of Gross Value	Share of MSME in GVA (%)	Total GDP	Share of MSME in GDP (in %)
2011-12	2622574	–	8106946	32.35	8736329	30
2012-13	3020528	15.17	9202692	32.82	9944013	30.40
2013-14	3389922	12.23	10363153	32.71	11233522	30.20
2014-15	3704956	9.29	11504279	32.21	12467959	29.70
2015-16	4025595	8.65	12566646	32.03	13764037	29.20
2016-17	4405753	9.44	13841591	31.83	15253714	28.90

Source: Central Statistics Office (CSO), Ministry of Statistics & Program Implementation

Conclusion

Their role of MSMEs in economic activity is manifested in both tangible and intangible ways. MSMEs provide employment and ultimately self-dependency. In countrylike India, only self-dependency is the way, which can be a cure for devaluation of Indian Rupees. Therefore, MSMEs can be boon and a hope for Indian economy in near future. The MSMEs are providing uniform development to the society and can be a strong mean to utilize the natural resources of India. The MSMEs are very helpful to remove the regional imbalances if it is establish in the underdeveloped areas. The MSMEs are providing more employment per unit. If this contribution is to be sustained, then their uniqueness needs to be nurtured in an overt and explicit manner. MSMEs address major challenges of the overall Indian economy also, that are unemployment and poverty. By reducing regional imbalances, giving employment to local people living in rural areas, they have done their part to knock-down disparities. Acting as a motivational

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

Volume - 1

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

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RURAL WOMEN EMPOWERMENT IN INDIA

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Abstract

India is the land of village and 70 per cent of India's population stays in rural India. Rural India has myriad problems such as dependency on Monsoon ,agriculture, jobs, poor wages, distress migration, malnutrition, poor implementation of government schemes and lack of access to quality education,transport and health-care facilities. As per rural Tradition , a woman's place has been at home and a decade ago, women employment outside the home was looked down upon by the society.Now situation has changed. Because to Empower rural women is became a necessity for the society to ensure sustainable development of the country Rural Women also started seeking employment outside their homes through gross economic necessity followed by the desire to raise economic status, to have an independent income, to make use of education, to pursue a career etc .A Rural woman is the nucleus of the family, particularly, in rural India. She not only collects water, fuelwood, fodder and food but also plays a significant role in preserving the culture, grooming the children and shaping their destiny.

Keywords: rural, women, empowerment, social, education, poverty. 9842862347

Introduction

“There is no tool for development more effective than the empowerment of women”

Women constitute half of total population in our country; women have significant priority in all development efforts. Allover the world women have been accepted as powerful agents of social change empowerment of women is one of the central issues in the process of development of country. In order to fill up to empowerment of women have been built for the betterment and prosperity of women, various programmers were launched by the government. voluntary agencies NGOs are activity involved in the process to improve and empower women socially, economically, and in political frontiers, the basic need for empowering women to ac quire basic skills and abilities in order to raising their status in the society. The educated women do not want to limit their lives in the four walls of the house. They demand equal respect from their partners. However, Indian women have to go a long way to achieve equal rights and position because traditions are deep in Indian society where the sociological set up has been a male dominated one. These women leaders are assertive, persuasive and willing to take risks. They managed to survive and succeed in this cut throat competition with their hard work. Diligence and perseverance. Ability to learn quickly from her abilities. Her persuasiveness, open style of problem

solving. Willingness to take risks and chances. Ability to motivate people, knowing how to win and lose gracefully is the strengths of the Indian women entrepreneurs.

Objectives of the Study

- To study role of rural women in economy.
- To review available government offerings with respect to women empowerment

Research Methodology

This paper is completely descriptive and analytical in nature ,the data used for research it is purely collected from secondary as per the requirement of paper.

Rural Women

Rural women are key agents for achieving the transformational economic, environmental and social changes required for sustainable development. But limited access to credit, health care and education are among the many challenges they face, which are further aggravated by the global food and economic crises and climate change. Empowering them is key not only to the well-being of individuals, families and rural communities, but also to overall economic productivity, given women's large presence in the agricultural workforce worldwide.

Women Empowerment in India

“A Guru who teaches Veda is 10 times superior to an ordinary teacher and the father is 100 times more than a teacher, but the Mother is 1000 times more superior to the father”.

The government of India passed the national policy for the empowerment of women which has the goal to bring the advancement, development and empowerment of women. The national mission for empowerment of women was launched by the government with the aim to strengthen overall processes that promote all round development of women. It has the mandate to strengthen the inter-sector convergence facilities the process of coordinating all the women's welfare and socio economic development programmers across ministers and departments. The Indian Constitution not only grants equality to women, but also empowers the State to adopt measures of positive discrimination in favour of women so that women can improve their livelihood. Within the framework of a democratic polity, our laws, development policies, Plans and Programmes have aimed at women's advancement in different spheres.

It has the mandate to strengthen the inter-sector convergence; facilitate the process of coordinating all the women's welfare and socio-economic development programmes across ministries and departments. This finely conveys that mere imparting literacy would not be sufficient; the women need vocational training or skills also to be able to stand on their feet and be the earning members of the family. Women have been taking increasing interest in

recent years in income generating activities, self-employment and entrepreneurship that also lead to property rights, political representation, social equality, personal right, family development, market development, community development and at last the nation development.

Financial Empowerment

India has taken a significant initiative in extending banking outreach to rural areas. The financial inclusion and accessibility to banking through Pradhan Mantri Jan-DhanYojana (PMJDY) has boosted confidence and prospects of rural women participation in economic activities. Jan Dhan campaign has ensured access to financial services, viz, banking/savings and deposit accounts, remittance, credit, insurance, pension in an affordable manner to rural women. These financial accessibility measures have ensured transparent mode of transaction and timely access to financial services through direct benefits transfer (DBT) facility provided under various Government of India schemes. Over 7 years of the implementation of this scheme, 43.04 Crore accounts has been opened in the country. Further, this constitute 55.47 percent (23.87 crore) women account holders and 66.69 percent (28.70 crore) are Jan Dhan accounts in rural and semi-urban areas (Ministry of Finance, 2021)

This financial inclusion has helped rural population to fight the crisis during COVID-19 pandemic outbreak with uninterrupted access to financial aid. Other initiatives like Pradhan Mantri MUDRA Yojana (PMMY), Stand-Up India Scheme, Prime Minister's Employment Generation Programme (PMEGP) are the additional supporting steps towards financial empowerment and entrepreneurship development of rural women. Over 9 crore women have benefitted jointly from Mudra and Stand-Up India (Ashish Kumar, 2019).

The Role of Skill Development in Women Empowerment

Skill development plays a critical role in women's empowerment. Empowering women through skills training and education can help to bridge the gender gap and promote gender equality. When women have access to education and skills training, they can enhance their personal and professional development, gain independence, and contribute positively to their families and communities. Women who receive skill development training are better equipped to secure higher-paying jobs, start their own businesses, and become financially independent. This, in turn, can lead to a greater sense of self-worth, self-esteem, and confidence, and ultimately, help to break down barriers to gender inequality

Moreover, skill development programs can provide women with a platform to connect with other women and build social networks, which can further enhance their economic and social empowerment. Through these networks, women can share knowledge,

experiences, and resources, and support each other in their personal and professional growth. Finally, skill development programs can also play a crucial role in promoting women's participation in decision-making processes at various levels. By providing women with the necessary skills and knowledge, they can become more active participants in their communities and contribute to the development of policies and programs that address their needs and aspirations.

In conclusion, skill development is a crucial component of women's empowerment. It can help women to gain economic independence, enhance their personal and professional growth, build social networks, and participate in decision-making processes. Therefore, governments, NGOs, and other stakeholders should prioritize investment in skill development programs that specifically target women to promote gender equality and women's empowerment.

Although women can constitute a massive chunk of India's workforce, the percentage rate of working women in the total labour force is declining. Further, a large number of women are employed in the informal sector. These jobs are often seasonal, have meagre wages and provide no security of wages or tenure. Thus a focus on development of skills in women would be crucial in motivating them to develop life skills that will lead to higher paying and good quality jobs, better livelihood, economic independence and the ability to earn for their families.

Rural women's restricted access to productive resources, educational levels and the pre-existing social norms concerning labour that is proper for women, tend to confine them to lower-paying, lower-status jobs with limited prospects for skill training and promotion, thus keeping them bound to their lower status. In many rural firms, widespread patterns of insecure employment and transitory and unstable contractual arrangements restrict employers from providing training to women. Rural women's vocational education and training are sometimes restricted to a small number of female-dominated areas, reinforcing their traditional roles and obligations. While such training improves their economic options, it limits their opportunities to gain from newer, non-traditional professions such as information and communication technology (ICT). Hence, proper skill training along with effective awareness generation campaigns become a prerequisite to bridge the gap between the options women have available to them and what they actually have the potential and inclination to take up.

Challenges Facing Women in India

Discrimination: Women in India often face discrimination in many areas of life, including in the home and in the workplace. This can make it difficult for them to access education and employment opportunities, and can lead to unequal treatment and lower pay.

Lack of access to education and employment: Women in India face significant barriers when it comes to accessing education and employment. For example, data from the World Bank shows that only around 50% of women in India participate in the labour force, compared to around 80% of men. This is due in part to cultural and social barriers that prevent women from participating in the workforce, as well as lack of access to education and training.

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Gender-based violence: is a major problem in India. The National Crime Records Bureau reports that in 2021, there were over 428,278 reported cases of violence against women in India. This included incidents of physical and sexual assault, as well as dowry-related violence and female infanticide. The statistics are alarming, with 31,677 reported rapes against women in 2021 alone.

Poverty: Many women in India live in poverty, particularly in rural areas. Poverty can make it difficult for women to access education and employment, and can lead to other challenges such as poor health and malnutrition.

Disparities between urban and rural areas: Women in rural areas of India often face greater challenges when it comes to empowerment. For example, they may have less access to education and health care, and may be more isolated and vulnerable to gender-based violence.

Conclusion

Rural women are major stakeholders in growth of agricultural sector for the New India. Acknowledging and mainstreaming of rural women via ensured access to resources, technology, education, health facilities, ownership rights and skill development will improve agriculture productivity and help in building an empowered nation.

Though they make half of the world population, women have remained as an oppressed group from the beginning of the history. Though some societies regard women as superior in the family and community, most of societies of the world have been treating women as second class citizens. Because of religious and cultural values and physical structure, women are forced to remain as dominated group around the globe, especially in the least developed nations. There is a solid evidence of discrimination of women worldwide. Even in the most developed nations which boast the best human rights situation in their country, women's participation in almost fields has been minimized

because of male dominance. In many countries, women are kept as 'prisoners' as they are not allowed to participate many social and political activities. In a stratified society like ours, access and empowerment of different section of the societies are becoming serious concerns and to address it planners, managers, social scientist all over the world have started deliberating and devising way out like anything. In this direction genders issues are dominating over other vulnerable issues like poverty, class conflicts, communities, ethnic issues etc. In ensuring an egalitarian development gender equity still remains as a pertinent question as it has been for the thousands of years of human civilization. Gender issues beyond its epistemological certainly imbibe other components like production relation, access to education, geographical distribution, occupational imperatives, marital system and even physical & physiological weaknesses.

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IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

Dr. M. Deepa



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A STUDY ON ADULT LEARNING AND SELF-DIRECTED LEARNING

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Abstract

Adult education, distinct from child education, is a practice in which adults engage in systematic and sustained self-educating activities in order to gain new forms of knowledge, skills, attitudes, or values. It can mean any form of learning adults engage in beyond traditional schooling, encompassing basic literacy to personal fulfillment as a lifelong learner and to ensure the fulfillment of an individual. In particular, adult education reflects a specific philosophy about learning and teaching based on the assumption that adults can and want to learn, that they are able and willing to take responsibility for the learning, and that the learning itself should respond to their needs.

Introduction

Adult education, also called continuing education, any form of learning undertaken by or provided for mature men and women. In a 1970 report, the National Institute of Adult Education (England and Wales) defined adult education as “any kind of education for people who are old enough to work, vote, fight and marry and who have completed the cycle of continuous education, commenced in childhood.” Adult education comprehends such diverse modes as independent study consciously pursued with or without the aid of libraries; broadcast programs or correspondence courses; group discussion and other “mutual aid” learning in study circles, colloquia, seminars or workshops, and residential conferences or meetings; and full- or part-time study in classes or courses in which the lecturer, teacher, or tutor has a formal leading role.

The learning happens in many ways and in many contexts just as all adults' lives differ. Adult learning can be in any of the three contexts, i.e.:

- Formal – Structured learning that typically takes place in an education or training institution, usually with a set curriculum and carries credentials;
- Non-formal – Learning that is organized by educational institutions but non-credential. Non-formal learning opportunities may be provided in the workplace and through the activities of civil society organizations and groups;
- Informal education – Learning that goes on all the time, resulting from daily life activities related to work, family, community or leisure (e.g. community baking class)

Importance of Adult Learning

Learning can occur anywhere, which means teachers are everywhere individuals pursue adult learning for a variety of reasons, to

- Enhance their employment prospects
- Develop personally or professionally
- Obtain transferrable skills, such as critical thinking

Adult learning also contributes to improving social cohesion and promotes active citizenship. It also enhances the competitiveness of businesses and European economies. The recovery from the COVID-19 pandemic and the digital and green transitions have accelerated changes in how we live, learn and work. People need to update their knowledge, skills and competences to fill the gap between their education and training and the demands of a rapidly changing labour market. Adult learning has been identified as a focus topic of the European Education Area for the period 2021-2030.

Three Dimensions of Self-Directed Learning:

1. Sociological Dimension
2. Pedagogical Dimension
3. Psychological Dimension

The sociological dimension emphasizes the social isolation of the learner, claiming that self-directed learning is usually associated with social independence in the learning situation. Then, learning will take place independently of others in a socially isolated situation. Web-based learning might be an example of self-directed learning in a sociological sense. A main point is that the learning activities should not be determined by one or another social authority. This is the autonomous, independent individual undertaking learning for personal growth.

The pedagogical dimension implies that the pedagogical “procedures” are performed by the learner. Whether the learning can be defined as self-directed depends on the degree of freedom when it comes to determining learning goals and influence on planning, implementation, and evaluation, as well as other things associated with the pedagogical parts of learning activities. Seen from the pedagogy side, self-direction can be learned and developed and is considered a goal. This means that self-directed learning can take place without social isolation. Self-directed learning can take place in groups as well or in cooperation with institutions or others. Neither social isolation nor total independence is necessary.

Psychological self-direction is about the personal characteristics of the learner, including focus on necessary abilities and skills to carry out self-directed learning. Psychologically, self-directed learning is a question of to what extent the learner

maintains an active control of the learning process. The mental activities are in focus. The most important are not the external factors but the inner psychological control in the learning situation. Here, Long underlines the importance of the individual experiencing a personal control of the learning situation, despite external factors.

“A meaningful or emancipatory learning experience must not deny the integrity and freedom of the individual. At the same time, adult educators must not ignore the potential of others to support the individual in acquiring and applying useful and worthwhile knowledge”.

Types of Adult Education

Types of adult education can be classified as follows:

1. Education for vocational, technical, and professional competence. (Such education may aim at preparing an adult for a first job or for a new job, or it may aim at keeping him up to date on new developments in his occupation or profession.)
2. Education for health, welfare, and family living. (Such education includes all kinds of education in health, family relations, consumer buying, Planned Parenthood, hygiene, child care, and the like.)
3. Education for civic, political, and community competence. (Such education includes all kinds of education relating to government, community development, public and international affairs, voting and political participation, and so forth.)
4. Education for “self-fulfillment” (Such education embraces all kinds of liberal education programs: education in music, the arts, dance, theatre, literature, arts and crafts, whether brief or long-term. These programs aim primarily at learning for the sake of learning rather than at achieving the aims included in the other categories.)
5. Remedial education fundamental and literacy education. (Such education is obviously a prerequisite for all other kinds of adult education and thus, as a category, stands somewhat apart from the other types of adult education.)

Adult Learning Theories

Early studies about adult learning began in the mid-1960s when educators began exploring different theories, models, and frameworks that explain how adult learners can be distinguished from children. These studies spawned many theoretical approaches to learning, giving rise to adult learning as a separate entity that differs from childhood education.

In the early decades of the century, behavioral psychologists conducted the earliest research in adult learning. Early studies defined learning as a behavioral

response triggered by the learner's interaction with the environment ("What is the behavioral," 2020). Although these principles are still present today in training programs and evidence-based practices in the corporate, military, instructional technology, and medical and health arenas, the humanistic perspective on learning resulted in adult education becoming a recognized field of practice.

By the mid-20th century, three major adult learning theories have emerged: andragogy, self-directed learning, and transformative learning. These theories are firmly lodged in the humanistic approach to learning, which emphasizes personal growth and development as the key focus of education.

- **Self-Concept**

As people grow older, they become more independent and turn to a more self-directed learning approach. Unlike children who are dependent on others for learning and understanding, adults have more control and responsibility over their personal education and progression.

- **Adult Learner Experience**

Over time, adults gain innumerable experiences that deepen their resources for learning, placing them in a position where they can use their experiences as a useful tool in self-education. Based on this assumption, adult education programs must usually center around experimental tasks and open discussions based on what learners already know.

- **Readiness to Learn**

The third element in Knowles' adult learning theory is the learner's readiness to learn. As mature learners take on various roles in society, their readiness or motivation to learn becomes oriented toward the skills necessary for these roles. Whether they're an employee, parent, spouse, or citizen, a large part of their readiness to learn is directed toward these roles.

- **Orientation of Learning**

For children, the application of a subject is postponed in later life, and their orientation of learning is usually subject-centered. The things they learn at school are not normally applied to real-life problems, and they must wait until they're older and encounter a need for the skills and knowledge they acquired.

- This is in contrast to Knowles' adult learning theory, where the application of learning becomes immediate and more problem-centered as the learner matures. When adults encounter issues and complications, they immediately apply their knowledge to solve those problems.

- **Motivation to Learn**

The last assumption in Knowles' adult learning theory relates to motivation. According to Knowles, adults are motivated to learn internally (Knowles et al.,

2012). Their desire for career growth and professional development drives their motivation to pursue education.

Self-Directed Learning

When individuals pursue education to gain a new skill or learn certain information, they often seek the help of a professional instructor who can supervise the entire learning process. However, another alternative for learners is to assume the primary responsibility for initiating, planning, and conducting the learning project. Such behavior is referred to as self-education, self-instruction, or self-directed learning.

Knowles defined self-directed learning as “a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes.”

In essence, self-directed learning is an informal learning process that takes place outside the traditional classroom setting. In this approach, the learner decides about the method, content, resources, and evaluation of learning programs. By determining their needs, setting goals, and seeking resources, learners assume full responsibility for the learning process.

Benefits of Self-Directed Learning

1. You Can Begin Immediately

As a self-directed learner, you get to choose when the learning project starts. With the resources at hand, the timing is totally up to you.

2. You Learn at Your Own Pace

You can choose what to study based on your learning style and learning needs. This means you have control over the material and how it impacts you. If you complete one area of learning, it sometimes clears a path to a new learning goal.

3. You Collaborate with Others

Learning something requires you to do a bit of research. That may include calling a friend or colleague, downloading an app, or reaching out to a group or former teacher. This is known as collaborative learning.

4. You Grow in Confidence

Once you have chosen a field of learning, you embark on a learning journey that is yours and that helps you develop a growth mindset. Whether you ‘ace’ the learning objectives or get better at changing a tire, you now have a skill you otherwise would be without.

5. You Promote Well-Being

As you realize your potential and cope with the challenge of active learning, you experience what is possible when you apply yourself. As your sense of meaning and purpose grows, consider creating a personal mission statement to help you stay aligned with your goals..

Transformative Learning

Transformative learning is one theory of learning, and particularly focuses on adult education and young adult learning. Transformative learning is sometimes called transformation learning and focuses on the idea that learners can adjust their thinking based on new information. Originally developed by Jack Mezirow, an American sociologist, transformative learning theory refers to how learning changes how individuals think about themselves and their surroundings. He describes it as “learning that transforms problematic frames of reference to make them [learners] more inclusive, discriminating, reflective, open, and emotionally able to change”.

Transformative learning challenges students’ underlying assumptions and opinions about the world. In doing so, learners become more encouraged to apply critical thinking when forming their beliefs and judgment. For instance, English language learners often experience an improved opinion of themselves and a shift in their view of the U.S. culture as they learn the new language. There are a number of reasons why adults pursue additional learning. In one survey conducted by the Pew Research Center, 80% of personal learners revealed that they pursued learning programs for personal interests because they wanted to broaden their viewpoints and make life more interesting.

Transformative learning theory touches on two basic kinds of learning: instrumental and communicative. Instrumental learning includes task-oriented problem-solving, as well as the determination of cause-and-effect relationships. Meanwhile, communicative learning emphasizes how learners communicate the needs, feelings, and desires (“Transformative learning,” 2018).

Conclusion

Self-directed learning describes a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies and evaluating. Self-directed learning is one important piece of the mosaic forming the knowledge base of adult learning. This article discusses a number of factors affecting the propensity and ability to self-direct. Learning keeps our brains active and means what we know stays relevant and

we remain resilient in our roles. Being proactive about the knowledge and skills we learn gives us more choices about the jobs open to us and increases our employability. Transformative learning occurs when students run into optional points of view and perceptions. Disclosure to this encourages students to examine their postulations and beliefs and these lead to changes in the way they understand things.

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PERSPECTIVE OF ICT TOOLS IN EDUCATION

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A STUDY ON THE USE OF DISRUPTIVE TECHNOLOGIES IN HIGHER EDUCATION

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Abstract

New disruptive technologies are emerging day-by-day. These disruptive technologies have fundamentally changed the way we used to do things. Disruptive technologies in recent education system cannot be denied. Technology transformation in education system provides students a cost effectively scale education. Internet, mobile phones and Virtual Learning Environments (VLEs) are all the examples of disruptive technologies. These technologies are now widely used to support learning and teaching. Use of ICT helps students to reach the resources which they need in their learning process. Online delivery of different courses such as MOOCs at lower cost makes it easy for employees also to combine work and training. Mobile technology is also useful not only for learners but also for teachers to connect with the students from anywhere, anytime that makes learning more collaborative and effective.

Keywords: Online learning, Virtual Learning Environment, Mobile Learning, MOOCs.

Introduction

Education has been a way for students to improve their lives. Before the age of computer and digital communication technology, traditional classroom education has been used for the transfer of knowledge from teacher for the student and high dependency was there on the capabilities of the tutor. Knowledge transformation was also limited in time and space by the resources available to students such as libraries etc. But the scenario is change now. There are many digital technologies are available which have high impact on education system. Also due to globalization, there is a pressure on nations of the world to use new technologies in teaching. The use of ICT is rapidly changing the technological forces that will shape the structure of educational systems of the world. The role of teaching in a classroom is to help students who are slow learner and to catch up them with other students.

But what is about them who are faster at learning? For those students, there are additional courses according to their interests to fulfill their requirements of free elective students. MOOCs is there to enhance online learning with technology. The teachers can post their instructions online to participants through MOOCs, which is helpful to students to know how to complete the course. The integration of online course material can increase interaction among students and between the students and the teacher, for exp. through virtual group work, building an online community for module, discussion questions, instructor participation and so on. A number of institutions offer virtual distance learning which allows teachers and students to interact with each other.

Concept of Disruptive Technologies

The term 'Disruptive technology' is derived from Clayton Christensen's (1997) book, 'The Innovator's Dilemma.' The term is used to denote technologies that are not designed to support learning and teaching but are used by students and lecturers, having found a market and a use value. Disruptive technology follows four key criterias identified by Christensen in 1997; they are smaller, cheaper, simpler, and convenient. Disruptive technologies often start with a small number of users but growing over time to extent that they replace the previously dominant and incumbent technology. Disruptive Innovation caters to the needs of those who cannot attend college because of finances, work conflicts, or family obligations. There are amazing disruptive innovators in the world like in social media; Larry Page of Google, Mark Zuckerberg of Facebook, Jack Dorsy of Twitter etc.

Disruption is one of the most overused catchwords in education today. Mobile technologies, Open Educational Resources (OER), MOOC's (Massive Open Online Course), Cloud computing and Analytics (big data) have now become part of education at all levels.

Disruptive Technologies in Higher Education
The personal computer (PC) supersedes the typewriter and totally changed the way we work.
Email forever transformed the way we communicate, supersedes letter-writing and disrupting the greeting cards and postal industries.
Cell phones enabled the people to call anywhere and disrupted the telecom industry.
The laptop computer and Mobile computing replaced desktops in many industries and organisations. Laptops made it possible for people to collaborate from anywhere in the world.
Smartphones replaced cell phones and PDAs (Personal Digital Assistance) because of having different functions, smartphones disrupted pocket cameras, MP3 players, calculators and GPS devices.
Cloud computing has been an enormously disruptive technology in the industrial world. It is the combination of hardware and software to deliver the content over the internet. We can access the content and files from any device that can access the internet.
Social networking has disrupted landlines, cell phones, email, instant messaging etc. It has changed the way we communicate with others.
Campus wi-fi: with the campus WiFi, students can study effectively. They can collectively share notes and prepare for their exams. One of the basic uses of WiFi on campus is for students to keep up-to-date of their assigned work. They can log in to their portfolio thereby can monitor their own grades and keep themselves updated.
Small Private Online Courses (SPOCs): MOOCs are free and useful. The main aim of the MOOCs is to have unlimited participation and open access via web. There are no restrictions on the attendance; students can access the content any time during the day, week or month. But the main thing is to complete the hours limit given by particular course. These are widely researched in distance education and appeared as popular mode of learning in 2012.

YouTube: Now almost every university has its own YouTube channel. The content of the course is uploaded in the form of educational videos on you tube channel of particular department or university.

E-books: E-books have displaced the printed books thereby students can access to the books over the web. Earlier the students purchase the books from the market but now they can read it online.

Disruptive Technologies in Education

Online learning

Online learning offers new opportunities both for students and educators. This disruptive technology can involve those people that don't have access to traditional forms of education due to some reasons. Since online learning is easily accessible, parents, fully-employed people, and people with disabilities can use this opportunity to get an education without leaving their homes.

MOOCs

It was started in 2008 and is the short name of massive opening online courses, which can use for unlimited participation and open access is the world wide. It was introduced for students who are learning from distance. In these courses, the material is by educational institutions, who have license of these courses for completions. MOOCs will disrupt different educational institutions in different ways.

LMS

It comes from learning management systems. It have different features such as student teacher interactions, courses collaboration, delivery content, master courses, practical and exams, connecting programmes, online assignments of students etc. It can enhance the learning experience of students with the help of video recordings and presentations with recorded audios. It can create a different kind of continuous learning experience which is not restricted by a single lecture but by repeating the reading material.

MOOCS as Disruptive Technology

Nowadays, the disruptive technology that has become the topic of interest to society is Massive Open Online Courses (MOOCs). MOOCs are simple, free and convenient to use. They are flexible online learning which is aimed for unlimited participation. There is no formal academic credit is available. There are no fees or entry requirements in MOOCs. We can access to the course material free of cost. It provides certificate at the completion of the course at a cost. Some MOOCs provides certificate at free of cost. MOOCs have attracted the attention of both the media and the educational community because there are differences in teacher/student ratio. But most importantly MOOCs have entered the education system at that time when education, specifically at university level, is required to make changes to meet the demands of the society. It makes the education accessible to all at any stage of their life. MOOC is an online course aimed at mass participation and

open access via the web. MOOCs provide interactive user forums for the students, professors, and Teaching Assistants. Moreover, it provides traditional course materials such as videos, readings, and assignments etc.

A massive open online course (MOOC) is a model for delivering learning content online to any person who wants to take a course, with no limit on attendance. MOOC integrates both the traditional and modern course materials for learning such as videos, readings, projects, assignments and many more.

The major MOOC platform providers are Coursera, edX, Canvas and FutureLearn and in addition to these platforms, there are small MOOC platforms. Each platform has its own technical infrastructure, for example; some platforms align themselves with institutions, whereas others allow more freedom to individual educators.

Websites that Offer MOOCs

MOOCs provider	Websites
Coursera	https://www.coursera.org/
Iversity	https://iversity.org/
EdX	https://www.edx.org/
ALISON	http://alison.com/
CanvasNetwork	http://www.instructure.com/
Open Learning	https://www.openlearning.com/
Academic Earth	http://academicearth.org/
Future Learn	https://www.futurelearn.com/
Peer to Peer University	https://p2pu.org/en/
Saylor. Org	http://www.saylor.org/
Udemy	https://www.udemy.com/

Types OF MOOCs

xMOOCs:

An xMOOC transfer the knowledge didactically i.e., it is fairly close to the traditional pedagogical model used in lecture halls. In an xMOOC, learning content is offered in small units which are easy to understand usually 12–20 minutes duration. The medium to transfer the content is video instead of text. Other means are online tests, exercises and games. Under this short videos and exercises go side by side. Moreover, forums and wiki pages are used to give social learning experience to participants.

cMOOCs:

A cMOOC is a connectivity course. This highlights the interactive nature of the learning experience. Under this, knowledge is partly self-generated and the coherence of the course constructed by the participants. In a connectivist MOOC, the discussions and interactions between all participants are important rather than content and activities. cMOOCs provide opportunities for disrupting traditional forms of teaching and provides learner-centred pedagogy so that students can learn from each other.

Role of MOOCs in Higher Education

The MOOC movement plays a fundamental role in transforming the quality of higher education. MOOC courses are designed for large numbers of users. These courses can be accessed online without entry requirements and limit on attendance. It provides complete course experience for free of cost. The impact of MOOC is dubious due to long history of revolutionary potential in Open Distance Learning as expressed by the “hope, hype and disappointment”. As more and more initiatives are taken by millions of people to participate in MOOCs through a small but growing diversity of courses; and they attract a lot of people from various educational institutions, politicians, policy-makers and media houses. The main point is stakeholders have quite different reasons for encouraging MOOCs and therefore the opening up of education agenda must be seen alongside powerful forces that view online learning as a means of intellectual development, enhancement in self-esteem, increasing competition between institutions, introducing new business models with reduced public funding for universities, and the creation of a global higher education digital marketplace. However, MOOCs have potential to meet the growing demand for higher education, mainly in developing countries where it is not possible for traditional institutions to cope up with the large number of potential students. Daniel (2012) advocated that the MOOC movement is really a game changer, as it has potential for life-long learning, address main gaps in skill development, and eventually enhance the quality of life for millions of people. In India, there is some hope that the MOOCs may be able to close the inequality gap of literacy and reduce the unemployment of youth. The national institutes of India like IIMs and IITs also have started MOOCs. The Government of India has also decided to start 350 online courses through SWAYAM (Budget 2017-18). There is a need to create a firm systematic structure for the validation and recognition of the courses from online sources as Coursera, Edx and SWAYAM, UGC, and other educational authorities which seeks cooperation between these institutions.

Conclusion

The technology needs to be kept in perspective, as a tool to enhance learning. Teachers felt that roll of the institution is to deliver more than mere academic facts, students need to develop their interpersonal skills. For this reasons, teachers need to make every effort to ensure that students are able to use the technology intelligently and critically in order to succeed in today's online global workplace. The use of disruptive technologies has implications for higher education; students can access learning material by means other than through their university. Moreover, free access to learning materials made available through disruptive technologies poses a great threat to the high-fees offering universities. Now the big challenge for the universities is to understand and manage the disruptive technologies not only to safeguard academic standards but also to make disruptive use of ICTs to enhance learning.

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RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT

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SKILL DEVELOPMENT FOR INDIAN YOUTH: CHALLENGES AND OPPORTUNITIES

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Abstract

Skills and knowledge are the driving forces of economic growth and social development of any country. They have become even more important given the increasing pace of globalization and technological changes provide both challenges that is taking place in the world. Countries with higher and better levels of skills adjust more effectively to the challenges and opportunities of globalization. The size of the current technical training infrastructure is much smaller than what is required. India currently has the capacity for training 3.1 million people per year. This is insufficient, given that every year, 12.8 million new people enter the workforce. The distribution of training capacities is unbalanced, with the industrially-advanced states of Maharashtra, Andhra Pradesh, Tamil Nadu and Karnataka, accounting for 48 percent of recognised technical training institutions.

Keywords: globalization, effectively, challenges; opportunities, infrastructure

Introduction

The Indian economy grew at an advanced rate of 7.1 percent year in the quarter July – Sep 2018, thereby making it a fastest economy to grow. India's demographic profile is helping the country to aim for an accelerated economic growth. India is expecting a huge growth in the labour market by having 64.8 percent of the population as the working population. It gives a lot of benefit to the country in the labour market. Skill India is a campaign launched by Prime Minister Narendra Modi on 15 July 2015 which aim to train over 40 crore people in India in different skills by 2022. It includes various initiatives of the government like "National Skill Development Mission", "National Policy for Skill Development and Entrepreneurship, 2015", "Pradhan Mantri Kaushal Vikas Yojana (PMKVY)" and the "Skill Loan scheme". The MAKE IN INDIA program laid the foundation of India's latest policy to bring an Economic revolution by making India a global manufacturing hub and welcoming both domestic and international industrialists to invest in India that will generate employment and overall development of India. Manufacturing sector is the strength of an economy as it fuels employment generation, better quality of goods and services at cheaper rate, economic growth & development along with helping the growth of other sectors also.

Challenges in Skill India

India is facing a lot of challenges keeping in view the current infrastructure and the policy framework. The Challenges faced in skill development have been discussed below:

1. **Insufficient Scale and Restricted Capability** The current infrastructure facility available in the educational institutions is inadequate considering the huge demand of labour. There aren't many trained and highly skilled trainers available.
2. **Mobilization:** The enrolment of the students for vocational education and training become an extremely challenging task. The outlook of the people associated with the skill development is still very traditional. The students would move on to managerial roles as the technical trade positions are associated with low salaries and lack of recognition.
3. **Employer's buy-in:** The industry doesn't distinguish whether the person has acquired the skills through on the job training or has gone through a formal training. Many companies make their own skill centres through which they develop the people. Though the Skill Development also focuses on the Public Private Partnership Model but it needs a lot of effort from both the players in development of skills.
4. **Scalability:** Since there is very limited buy-in from the corporate sector the progress of such initiatives is reduced. Skill development had not been a priority of the government earlier and hence this area has always been ignored stakeholders too.

Ways of Facilitating Skill Development Activities

There have been methods to smooth the progress of skill development activities through the following,

1. Creating and enhancing the skill development infrastructure.
2. When construction of schools, institutions and other establishments take place, there should be adequate measures for skill development to take place such as usage of technology.
3. Current institutions, ITIs, acquire mechanisms and equipment required for vocational training of the individuals.
4. Establishment of skill development centers in rural and urban areas, especially where there were not any.
5. Finances have been major issues especially for the economically weaker sections of the society; hence some measures have to be formulated to finance their skill development programs.
6. There has to be involvement of private organizations, profit as well as non-profit in activities implemented by the CSR cell, CSR activities make skills a responsible activity and they are really useful.

7. Efforts have to be implemented to increase the number of skilled personnel within the country and on the basis of their skills they should be able to accomplish something for themselves and find employment not only in industries but in all kinds of sectors education, transport, manufacturing etc.
8. Differential wages should be offered for the skilled and certified workforce to encourage recognition of the skill development programs by the society so that more and more individuals join them.

Opportunities

Job markets all across the world including India are undergoing a tectonic shift. The future of work in India: Inclusion, Growth and Transformation Report by the Observer Research Foundation and the World Economic Forum sheds light on the future of transformative technology and its impacts on work in India. Some key insights from this report are that companies expect technological change to lead to job creation, not job loss. They recognise the potential of new technologies in the coming years. The whole focus is expected to be on automation of repetitive tasks, time optimisation, maximising productivity, creation of digital platforms for online access to job opportunities and formalising informal operations. It is critical for people to keep picking up new tricks of their trade and keep themselves updated with new technological changes in their sphere of work.

Conclusion

Skill development is the most important aspect for the development of our country. India has a huge 'demographic dividend' which means that it has very high scope of providing skilled manpower to the labour market. This needs a coordinated effort from all stakeholders including: Government agencies such as Ministry of Skill Development and Entrepreneurship, National Skill Development Corporation etc, Industries, Educational and training institutes and Students, trainees and job seekers. To make India internationally competitive and to boost its economic growth further, a skilled workforce is essential. As more and more India moves towards the Knowledge economy, it becomes increasingly important for it to focus on advancement of the skills and these skills have to be relevant to the emerging economic environment. For transforming its demographic dividend, an efficient skill development system is the need of the hour. Therefore to achieve its ambitious skilling target, it is imperative to have holistic solutions of the challenges instead of piecemeal interventions.

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A STUDY ON INNOVATION AND ENTREPRENEURSHIP IN INDIA

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Abstract

Start-up is the base thing that an individual trying to achieve something new and original. Technology based entrepreneurs are stated as technopreneurs, they are the new trend setting entrepreneurs, they discover and create innovative product and services to the society with the effective usage of science and technology. At present the government of India takes further initiatives for the growth and development of indigenous production through startups and also assisting the young entrepreneurs through various schemes for meeting up the challenges with the global competitors. With hundreds of innovative youngsters choosing to follow the path of entrepreneurship instead of joining the multinational corporations and government ventures, the business world has witnessed an explosion of ground-breaking startups providing solutions to the real problems at a mass level in the past years.

Keywords: Innovation, Entrepreneur, Technology, Entrepreneurship

Introduction

Introduction The role of start-ups in India's economic development and their potential in creating employment opportunities have been recognized by the Government of India with the launch of the "Startup India Initiative". 14,036 enterprises have been recognised as Startups by Department of Industrial Policy and Promotion (DIPP) till November 2018 with various support including tax exemption of up to 7 years, establishment of 'fund of funds' of INR 10,000 crore till 2025, establishment of Atal Innovation Mission (AIM) etc. (MCI 2018). The ecosystem is developing with a number of startups, new venture funds and angel investors, evolving technology, incubators and accelerators, etc.

Objectives of the Study

1. To understand the Startup Schemes providing by Indian Government
2. To identify various government initiatives for the development of startups.
3. To analyze the growth and opportunities of startups

Research Methodology

The study is based on the secondary data which has been collected through journals, magazines, newspapers, research papers, books and websites etc.

Statement of the Problem

The emergence of startup wave in India is a relatively a new phenomenon. Today India is undergoing a fundamental shift with entrepreneurship and innovation is being primary catalyst in job creation and solving everyday problems. A decade ago, there is to be only a handful of startups such as Make My Trip.com and Naukari.com. But, now with the success of such as Flipkart, Quicker, Practo, Zomato and Inmboi, the Indian startup eco-system has indeed come a long way.

Significance of the Study

Startups have played and continue to play significant roles in the growth, development and industrialization of many economies all over the world. Startup is flagship initiative of the government of India, intended to build a strong ecosystem for nurturing innovation. Startup will drive sustainable economic growth and generate large scale employment opportunities and minimize unemployment.

Startup India

A startup venture could be defined as, a new business that is in the initial stages of operation, beginning to grow and is typically financed by an individual or small group of individuals. It is a young entrepreneurial, scalable business model built on technology and innovation wherein the founders develop a product or service for which they foresee demand through disruption of existing or by creating entirely new markets. Startups are nothing but an idea that manifests into a commercial undertaking.

The global business community accepted India as one of the most influential destinations for investments. It has discovered India's potential for innovation and creativity. The last three years India is significantly scaling up in international investments in start-ups valuations, exceeding \$ 1 billion in some cases, a phenomenon that would have been unbelievable in just five years ago. Prime Minister Narendra Modi recognized this fact and started working on it and understands that it is the right time to bring in the government to define an effective policy framework, followed by necessary tax and financial incentives and nourish the creativity and innovative potential among youth. Start-ups created 65,000 new jobs in 2014 and by 2021, the number is expected to touch 250,000 according to the NASSCOM Start-up Report 2015, and as of now, that is driven mostly by private sector initiative. Furthermore, India has to boast about its own billion dollar club. This includes startups like Flipkart, Paytm, Zomato, Snapdeal, Ola, InMobi, Hike, MuSigma, and Quikr. Fintech startup MobiKwik too looks to join the unicorn club with the next \$100 Mn funding raise.

Startup Rankings

The first ever startup state rankings were declared on December 2018 by the Department of Industry and Internal Trade based on the criteria of policy, incubation hubs, scaling innovation, procurement, regulatory change, communication, seed innovation, North-Eastern states and hill states. Among various states some of the states secured their places in different aspects as follows:

- Top performers: Kerala, Karnataka, Odisha and Rajasthan
- Best performers: Gujarat
- Leader: Telangana State, Andhra Pradesh, Bihar, Madhya Pradesh and Chhattisgarh
- Aspiring Leaders: Jharkhand, Uttar Pradesh, Haryana, Himachal Pradesh and West Bengal
- Emerging states: Delhi, Goa, Assam, Maharashtra, Punjab, Tamil Nadu, Jammu & Kashmir and Uttarakhand.
- Beginners: Manipur, Mizoram, Nagaland, Chandigarh, Puducherry, Sikkim and Tripura

Opportunities for Startups

In spite of challenges and problems that startups are facing, Indian markets provide a plethora of opportunities to find solutions tailored to solve them. Below is a list of few of the opportunities that are discussed for consideration by startups.

1. **India's Large Population** The population of India is a huge asset for the country. By 2020, it is expected that the working age population would surpass the non-working population. This unique demographic advantage will offer a great opportunity to any startup. Various infrastructure issues and the bottom- of the- pyramid market would provide huge opportunities for the startups.
2. **Change of Mind Set of Working Class** Traditional career paths will be giving way to Indian startup space. Challenging assignments, good compensation packages would attract talented people to startups. Also, it is seen that several high-profile executives are quitting their jobs to start or work for startups.
3. **Huge Investments in Startups** Huge investment in Indian startups from foreign and Indian investors is taking place. In 2015, more than 300 deals were done by 300+ angels and venture capital/ private equity players with around \$6.5-billion (Rs 42,300Cr) investments making India the most sought-after destination for investments. Some of the active players are New Yorkbased Tiger Global Management, Russian company- DST Global, Japanese telecom giant Softbank, Kalaari Capital, Sequoia Capital and Accel Partners. More and

more are going to join the bandwagon as this is the tipping point in Indian commerce for making good returns by backing potential unicorns.

Government Initiatives

There are numerous government and semi-governmental initiatives to assist startups.

1. Start-Up India This initiative provides three-year tax and compliance breaks intended for cutting government regulations and red tapism.
2. Mudra Yojna Through this scheme, startups get loans from the banks to set up, grow and stabilize their businesses.
3. SETU (Self-Employment and Talent Utilization) Fund Government has allotted Rs 1,000 Cr in order to create opportunities for self-employment and new jobs mainly in technology-driven domains.
4. E-Biz Portal Government launched e-biz portal that integrates 14 regulatory permissions and licenses at one source to enable faster clearances and improve the ease of doing business in India.
2. Royalty Tax Indian government has reduced the royalty tax paid by businesses and startup firms from 25 per cent to 10 per cent

Conclusion

The current economic scenario in India is on expansion mode. The Indian government is increasingly showing greater enthusiasm to increase the GDP rate of growth from grass root levels with introduction of liberal policies and initiatives for entrepreneurs like 'Make in India', 'Startup India', MUDRA etc. 'Make in India' is great opportunity for the Indian start-ups. With government going full hog on developing entrepreneurs, it could arrest brain drain and provide an environment to improve availability of local talent for hiring by startup firms. The startup arena has lot of challenges ranging from finance to human resources and from launch to sustaining the growth with tenacity. Being a country with large population, the plethora of opportunities available are many for startups offering products and services ranging from food, retail, and hygiene to solar and IT applications for day to day problems which could be delivered at affordable prices. It is not out of place to mention that some of these startups would become unicorns and may become world renowned businesses by expanding into other developing and underdeveloped countries.

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DIGITAL PAYMENTS IN INDIA

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Abstract

A digital payment, sometimes called an electronic payment, is the transfer of value from one payment account to another using a digital device or channel. Digital payment is referred to as those payments that take place using the various types of electronic medium. These methods do not require payment to be made in the form of cash or providing cheque. One of the major objectives of Digital India is to achieve “Faceless, Paperless, Cashless” status. The promotion of digital payments has been accorded the highest priority by the Government of India to bring each and every segment of our country under the formal fold of digital payment services. Various digital payments make the customer ease of payments. Banking cards are the most widely used digital payment system in India. It offers a great set of features that provides convenience as well as security to the users. Unstructured Supplementary Service Data can be used for carrying out cashless transactions using mobile, without the need of installing any banking app. AEPS can be used for all the following banking transactions such as balance enquiries, cash withdrawal, cash deposit, aadhaar to aadhaar fund transfers. UPI is the latest digital payment standard where the user having a bank account can transfer money to any other bank account using UPI based app. and the methods are Mobile Wallets, Point of Sale Terminals, Mobile Banking and Internet Banking.

Keywords: Digital Payment, Government of India, Banking Cards.

Introduction

A digital payment, sometimes called an electronic payment, is the transfer of value from one payment account to another using a digital device or channel. This definition may include payments made with bank transfers, mobile money, QR codes, and payment instruments such as credit, debit, and prepaid cards. Digital payments can be partially digital, primarily digital, or fully digital.

Digital payment is referred to as those payments that take place using the various types of electronic medium. These methods do not require payment to be made in the form of cash or providing cheque.

A partially digital payment might be one in which both payer and payee use cash via third-party agents, with payment providers transferring the payment digital

between the agents. A primary digital payment might be one in which the payer initiates the payment digital to an agent who receives it digitally, but the payee receives the payment in cash from that agent.

A fully digital payment is one in which the payer initiates the payment digitally to a payee who receives it digitally, and it is then kept and spent digitally. Recent years have seen a technological revolution in governance in India. Government services have been slowly and steadily brought on board and today, last-mile delivery happens with the click of a mouse in seconds. Digital Payments transactions have been consistently increasing over the last few years, as a part of the Government of India's strategy to digitise the financial sector and economy. Further, concerted efforts have been made to promote financial inclusion as one of the important national objectives of the country.

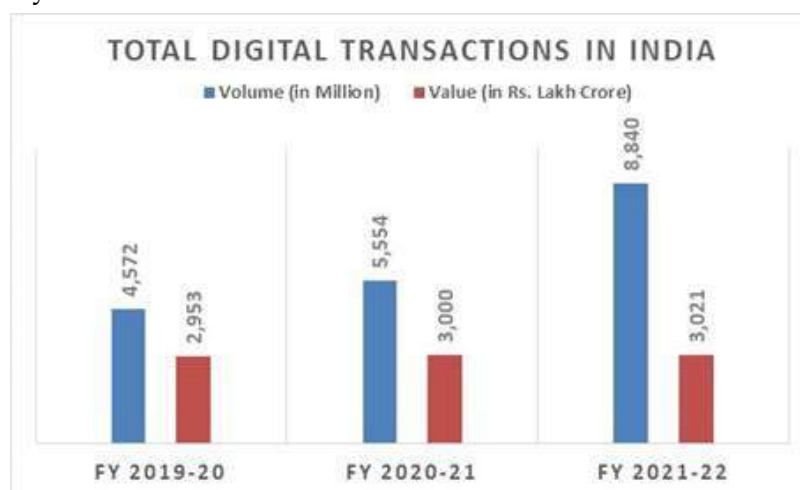
The key enabler at the centre of India's transformed digital payment landscape is the JAM Trinity - Jan Dhan, Aadhaar and Mobile. PradhanMantri Jan-DhanYojana (PMJDY) is one of the biggest financial inclusion initiatives in the world, launched in August 2014, to provide universal banking services for every unbanked household. Aadhaar, the Unique Identification Authority of India's flagship product, is a simple but effective method to verify individuals and beneficiaries based on their biometric information. Jan Dhan accounts, Aadhaar and Mobile connections, taken together, have helped lay the foundations of a Digital India where a vast array of Government services are made available directly to the citizen with enhanced ease of access without the presence of any intermediary (middle-men).

Digital Payment Ecosystem in India

One of the major objectives of Digital India is to achieve "Faceless, Paperless, Cashless" status. The promotion of digital payments has been accorded the highest priority by the Government of India to bring each and every segment of our country under the formal fold of digital payment services. The vision is to provide the facility of seamless digital payment to all citizens of India in a convenient, easy, affordable, quick and secured manner.

During the last three years, digital payment transactions have registered unprecedented growth in India. Easy and convenient modes of digital payment, such as Bharat Interface for Money-Unified Payments Interface (BHIM-UPI); Immediate Payment Service (IMPS); pre-paid payment instruments (PPIs) and National Electronic Toll Collection (NETC) system have registered substantial growth and have transformed digital payment ecosystem by increasing Person-to-Person (P2P) as well as Person-to-Merchant (P2M) payments. At the same time, pre-existing payment modes such as debit cards, credit cards, National Electronic Funds

Transfer (NEFT) and Real-Time Gross Settlement (RTGS) have also grown at a fast pace. BHIM-UPI has emerged as the preferred payment mode of users. The Government of India also launched the digital payment solution e-RUPI, a cashless and contactless instrument for digital payment which is expected to play a huge role in making Direct Benefit Transfer (DBT) more effective in digital transactions in the country. All these facilities together have created a robust ecosystem for a digital finance economy.



There are different modes and types of digital payments that are prevalent in India, which are discussed in detail in the following lines.

1. Banking Cards
2. USSD (Unstructured Supplementary Service Data)
3. UPI (United Payment Interface)
4. AEPS (Aadhaar enabled Payment System)
5. Mobile wallets
6. Point of Sale Machines (PoS)
7. Mobile Banking
8. Internet Banking

1. Banking Cards

Banking cards are the most widely used digital payment system in India. It offers a great set of features that provides convenience as well as security to the users. Cards offer the flexibility of making other types of digital payments. Customers can store card information in the mobile application and pay for the services using the stored card information. Banking cards (debit and credit cards) can be used for a variety of digital transactions like PoS terminals, online transactions, as a payment medium in mobile apps, which provide any kind of service like grocery, healthcare, rental cab booking, flight tickets, etc.

The most popular cards are issued by service providers like VISA, MASTERCARD, RuPay, AMEX etc.

2. USSD (Unstructured Supplementary Service Data)

USSD is another popular digital payment method. It can be used for carrying out cashless transactions using mobile, without the need of installing any banking app.

The good thing about USSD is that it works without the requirement of mobile data. The main aim of this digital payment service is to include those sections of people of the society who are not included in the mainstream.

The striking feature of the USSD is that it can be availed in Hindi. The USSD can be used for the following types of activities:

- a. Initiating fund transfers
- b. Making balance enquiries
- c. Getting the bank statements

3. AEPS (AadhaarEnabled Payment System)

AEPS can be used for all the following banking transactions such as balance enquiries, cash withdrawal, cash deposit, aadhaar to aadhaar fund transfers. All such transactions are carried out through a banking correspondent which is based on Aadhaar verification.

This service can be availed if the aadhaar is registered with the bank where an individual has a bank account.

4. UPI (Unified Payment Interface)

UPI is the latest digital payment standard where the user having a bank account can transfer money to any other bank account using UPI based app. UPI enabled payments occur throughout the day and all 365 days in a year.

Payment can be done using a Virtual Payment Address (VPA). To use UPI services one must have a bank account and a mobile number registered with that bank account.

5. Mobile Wallets

Mobile wallets are another popular payment option. Here the users can add money to their virtual wallet using debit or credit cards and use the money added in the wallet to perform digital transactions.

Some of the most popular mobile wallets are PayTM, Mobikwik, PhonePe, etc.

6. Point of Sale Terminals

PoS terminals are installed in shops or stores where payments for purchases can be done through debit and credit cards. There are variations of PoS, one which can be Physical PoS and the other one is mobile PoS. The mobile PoS does away with the need of maintaining a physical device.

7. Mobile Banking

Mobile banking is a service provided by the banks through their mobile apps in a smartphone for performing transactions digitally. The scope of mobile banking has expanded extensively after the introduction of UPI and mobile wallets.

Mobile banking is a term used to describe a variety of services that are availed using mobile/smartphones.

8. Internet Banking

Internet banking is the process of performing banking transactions from the comfort of your home using a mobile phone/laptop/ desktop and an active internet connection. The major type of transactions can all be done using internet banking.

Internet banking services can be availed round the clock and all 365 days in a year, which makes it a popular choice for performing digital transactions.

Benefits of Digital Payment

There are several ways digital payments can help improve your bottom line and make for a better customer experience.

- Digital payments can help reduce fraud. Digital payments leverage several technologies to secure and encrypt transaction data and multi-factor authentication, making it more difficult for bad actors to initiate fraudulent transactions. Plus, with digital payment types like virtual credit cards, you have a one-off payment dedicated to only one vendor for only one amount, thereby helping to protect your actual credit card from being hacked.
- Digital payments can help reduce costs and waste. The Association for Financial Professionals reports that 92% of companies accept paper checks as incoming payments, and 86% accept them as outgoing payments. Sending and receiving checks can incur hefty processing costs like bank fees, printing, postage and secure disposal. AFP found that digital payment fees are much lower—they can be less than \$0.50 per transaction—and are a greener solution. Some digital payments have no associated costs, meaning no additional fees, which could earn you cash back.
- Digital payments can increase transaction speeds. While traditional payment methods like paper checks can take days or weeks to process and complete,

digital payments can be almost instantaneous. By digitizing payments, companies can be better about paying invoices on time, every time.

- Digital payments give you real-time cash flow visibility. When a payment occurs, the account balance reflects the change immediately and all currency conversions happen right at the moment of the transaction. Thus, executives can track expenses and income in real time and make quicker business decisions in key areas such as spending, investing and hiring.
- Digital payments can increase scalability and accuracy. Companies can spend six to ten hours a week processing and reconciling payments. Not only is this cost-prohibitive at scale, but it also leads to high exception rates that require more time and money to correct.
- Digital payments can turn a cost center into a value driver. Consumers often consider cashback offers when deciding which credit cards to use. Businesses can get the same perks with VCCs as with physical credit cards. Plus, VCC numbers can be used only once, and companies determine how much money to fund in the credit card. Cashback offers could mean reoccurring revenue for your organization on every invoice you already need to pay.

Usage of Digital Payments Country Wise

Top 10 countries Ranked by Real-Time Payments Transactions 2021

Countries	Transaction Value in Billions
India	46.8 Billion
China	18.5 Billion
Thailand	9.7 Billion
South Korea	7.4 Billion
Nigeria	3.7 Billion
UK	3.4 Billion
US	1.8 Billion
Japan	1.7 Billion
Turkey	1.4 Billion

India has topped the list for digital payments and recorded 89.5 million transactions in 2022, according to a report. Interestingly, India's payments are more than the digital payments made in the next four leading countries combined.

According to the data provided by MyGovIndia, the citizen engagement platform of Government of India, 46% of all real-time payments made worldwide in 2022 were made in India. India has topped the list for digital payments and recorded 89.5 million transactions in 2022, according to a report. Interestingly, India's payments are more than the digital payments made in the next four leading countries combined.

According to the data provided by MyGovIndia, the citizen engagement platform of Government of India, 46% of all real-time payments made worldwide in 2022 were made in India. Brazil is second on the list accounting for 29.2 million transactions, followed by China with 17.6 million transactions. The top list is completed by Thailand, ranked at number 4, with 16.5 million digital transactions and South Korea with 8 million of transactions in 2022.

'India Number 1 in Digital Payments'

Earlier this year, Prime Minister Narendra Modi said that India is number one in digital payments.

"India is number one in digital payments. India is one of the countries where mobile data is the cheapest. Today, the country's rural economy is transforming," he noted.

The Ministry of Electronics and Information Technology (MeitY) said it will offer the Incentive Scheme for the Promotion of RuPay Debit Cards and Low-Value BHIM-UPI Transactions for the current fiscal year. This is done in order to promote digital payments in the country.

India is the world leader in digital payments, according to Prime Minister Narendra Modi, who also claimed that the rural economy of the nation is changing. "India is number one in digital payments. India is one of the countries where mobile data is the cheapest. Today, the country's rural economy is transforming," the PM said.

Expansion of Digital Payments

Apart from promoting UPI in India, the government is also pushing to make cross-border payments easy. Earlier this year, India and Singapore linked their respective digital payments systems, UPI and PayNow. This will allow users to quickly make low-cost fund transfers between the two nations.

Conclusion

The digital payments ecosystem in India has grown significantly in recent years, driven by government initiatives, an increase in internet and smartphone penetration, and the rise of e-commerce. The digital payment ecosystem is supported by private players who offer a range of digital payment services. The future of digital payments in India looks bright with the expected growth in the number of internet users and e-commerce market size.

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RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT

Vol - 1

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WOMEN ENTREPRENEURSHIP: ISSUES AND CHALLENGES

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Introduction

The increasing presence of women as entrepreneurs has led to significant business and economic growth in the country. Women-owned business enterprises are playing a prominent role in society by generating employment opportunities in the country, bringing in demographic shifts and inspiring the next generation of women founders.

With a vision to promote the sustainable development of women entrepreneurs for balanced growth in the country, Startup India is committed towards strengthening women entrepreneurship in India through initiatives, schemes, creation of enabling networks and communities and activating partnerships among diverse stakeholders in the startup ecosystem.

In India's economy, women entrepreneurs are growing more substantial, and their contributions shouldn't be undervalued. These female entrepreneurs play a crucial role in the Indian economy and have a significant effect on it by generating employment, accelerating development, and fostering prosperity. As per recent figures, women comprise 14 per cent of the total entrepreneurs in India, which works out to 8 million. Also, 10 per cent of all formal enterprises are owned by women.

The government schemes for women entrepreneurs are discussed in details below:

1. Mudra Loan for Women

Mudra Loan for Women was launched by the government as a woman loan scheme to offer financial support for enthusiastic women entrepreneurs. They seek a business plan like starting a beauty parlour, tuition centre, stitching shop, etc. This scheme does not require any collateral to grant the loan. However, there are categories under which a Mudra loan application can be applied. They are as follows:

- **Shishu Loan:** The maximum loan amount granted to businesses in the initial stage is Rs. 50,000.
- **Kishor Loan:** This loan is for businesses that are already established but wish to improve services. The amount of loan granted varies from Rs. 50,000 to Rs. 5 Lakhs.

- **Tarun Loan:** This loan is for well-established businesses planning to expand their reach and is short on capital; they can avail as much as Rs. 10 Lakhs for the purpose.

2. Annapurna Scheme

The Annapurna Yojana is one of the many government schemes for women. Under this, the Government of India offers women entrepreneurs schemes in food catering businesses loans up to Rs. 50,000. The borrowed amount could be used for working capital requirements such as buying utensils, mixer cum grinder, hot case, tiffin boxes, working table, etc.

After the loan is approved, the lender doesn't have to pay the EMI for the first month. Once sanctioned, the amount has to be repaid in 36 monthly instalments. The interest rate charged is determined based on the market rate and the concerned bank.

3. Stree Shakti Yojana

The Stree Shakti package is a unique government scheme for women that supports entrepreneurship by providing certain concessions. This woman loan scheme is eligible for women who have the majority of ownership in the business. Another requirement is that these women entrepreneurs be enrolled under the Entrepreneurship Development Programme (EDP) organised by their respective state agencies. This Stree Shakti scheme allows women to avail of an interest concession of 0.05% on loans more than Rs. 2 lakh.

4. Dena Shakti Scheme

The Dena Shakti Scheme provides loans up to Rs. 20 lakh for women entrepreneurs scheme in agriculture, manufacturing, micro-credit, retail stores, or small enterprises. This government scheme for women also provides a concession of 0.25 percent on the interest rate. In addition, women entrepreneurs can avail of a loan of up to Rs. 50,000 under the microcredit category.

5. Bhartiya Mahila Bank Business Loan

Implemented by The Bhartiya Mahila Bank (BMB), this is a public sector banking company that offers loans schemes for women entrepreneurs up to Rs. 20 Crores for working capital requirements, business expansion, or manufacturing enterprises. Some of the different plans under this woman loan scheme includes:

- **Shringaar:** The BMB Shringaar loan applies to self-employed women or homemakers planning a start-up or meeting their daily business expenses. The loan doesn't require the customer to provide any collateral security.
- **Parvarish:** Similarly, the BMB Parvarish loan is for self-employed women or homemakers to set up day-care creches. The upper limit of this loan can be Rs. 1 Crore without any collateral security under the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTSM) scheme.

- **Annapurna:** Between 18 to 60 years, food entrepreneurs wanting to start or expand their small businesses can avail of this loan. Its features are similar to that of the State Bank of Mysore's Annapurna scheme, minus that it does not require collateral security.

6. Mahila Udyam Nidhi Yojana

One of the most popular government schemes for women entrepreneurs, the Mahila Udyam Nidhi Scheme, is offered by Punjab National Bank and Small Industries Development Bank of India (SIDBI). The scheme supports women entrepreneurs to set up a new small-scale venture by extending loans up to Rs. 10 lakh to be repaid in 10 years. The rate of interest charged depends upon the market rates.

7. Orient Mahila Vikas Yojana Scheme

Oriental Bank of Commerce launched the scheme, women with an ownership of 51 percent share capital individually or jointly in a proprietary concern can avail a loan through the Orient Mahila Vikas Yojana. There is collateral required for loans between Rs. 10 lakhs to Rs. 25 lakhs. The repayment tenure of the loan is seven years. Orient Mahila Vikas Yojana Scheme also provides a concession on the interest rate of up to 2 percent.

8. Cent Kalyani Scheme

The Cent Kalyani Yojana is a government scheme for women that can be availed by both existing and new entrepreneurs and self-employed women. Micro/small enterprises like farming, agriculture, cottage industries, and retail trade are all eligible to apply for the Cent Kalyani Scheme. The customer do not have to provide any collateral as security or need any guarantors for this loan. The interest rate on loans depends on market rates. The repayment tenure of the loan will be a maximum of seven years.

9. Udyogini Scheme

The Women Development Corporation has implemented the Udyogini Scheme under the Government of India. This scheme promotes and motivates women's entrepreneurship among the poor by providing financial support to women. This scheme majorly supports and helps illiterate women living in rural and backward areas.

10. Pradhan Mantri Rozgar Yojana

The objective of Pradhan Mantri Rozgar Yojana (PMRY), one of the various government schemes for women, is to provide opportunities of self-employment to the educated young people of the country. Initiated in 1993, the scheme provides the unemployed Indian youth a loan amount to commence their personal business project and subsequently create scope of employment for others.

Just a few of the approved business segments for which the government scheme provides financial backup include manufacturing, trade, services, etc., customer can avail a loan up to Rs. 1 Lakh without having to provide any collateral. The tenure for repaying the loan ranges from 3 to 7 years.

11. Synd Mahila Shakti Scheme

Syndicate Bank has introduced a scheme known as the “Synd Mahila Shakti Scheme” with an aim to support women’s entrepreneurship development. Under this plan, the bank offers financial backup to those women entrepreneurs and professionals involved in small business, retail trade, or self-employed through its credit facilities.

The objective of this government scheme for women is to promote economic empowerment of women by supporting them with business loans to meet their need for working capital or expansion of business. Women entrepreneur can initiate as well as modernise the existing business by availing a loan of a maximum of Rs. 5 Crores with a concessional interest rate.

The minimum interest rate is 10.25% which is applicable for loans up to Rs. 10 Lakhs, and no collateral is required. Concession is offered at 0.25% for loans above Rs 10 Lakhs, and there is no processing fee.

Challenges and Problems faced by Women Entrepreneurs in India

To come up with solutions to the challenges faced by women entrepreneurs in the country, it is crucial to first identify what they are. Once these challenges have been identified, then women can look to solve them through the various government schemes for women. Here’s an overview of some of the key challenges plaguing women entrepreneurs.

1. Family Restriction

Women are expected to spend more time with their family members. They do not encourage women to travel extensively for exploiting business opportunities.

2. Lack of Finance

Since capital is the most important requirement for any business, the lack of funding has been a major challenge that has restricted several women entrepreneurs. The inability to gain access to funds has primarily been due to the lack of collateral to use to secure loans.

To bridge this gap, several government schemes for women entrepreneurs have been introduced recently that enable women to quickly and effortlessly get access to capital. In addition to this, there are several financial institutions that have also started to offer unsecured business loans to women to help them kick start their own business.

3. Lack of Education

Illiteracy and lack of formal education has traditionally been a major hurdle for women looking to start their own business. Considering the fact that proper education leads to better management of a business, it is important for women to overcome this challenge by enrolling themselves in the various educational programs established by the government of India. Some of the few government schemes promoting education amongst women are the Beti Bachao Beti Padhao Yojana, Mahila Shakti Kendra, and Mahila E-Haat among others.

4. Role Conflict

Marriage and family life are given more importance than career and social life in Indian society.

5. Unfavorable Environment

The society is dominated by males. Many business men are not interested to have business relationship with women entrepreneurs. Male generally do not encourage women entrepreneurs.

6. Lack of Persistent Nature

Women generally have sympathy for others. They are very emotional. This nature should not allow them to get easily cheated in business.

7. Lack of Mental Strength

Business involves risk. Women entrepreneurs get upset very easily when loss arises in business.

8. Lack of Information

Women entrepreneurs are not generally aware of the subsidies and incentives available for them. Lack of knowledge may prevent them from availing the special schemes.

9. Stiff Competition

Women face lot of competition from men. Due to limited mobility they find difficult to compete with men.

10. Mobility

Moving in and around the market, is again a tough job for Middle Class Women Entrepreneurs in Indian Social system.

11. Low Risk-Taking Abilities

The various government schemes for women entrepreneurs can only satisfy the need for capital. However, many women interested in pursuing business are held back by their inability to take risks, which usually forms a huge part of any business.

That said, women with low risk-taking abilities can overcome it by adopting a few simple tips.

1. By building self-confidence.
2. By weighing the pros and cons of any business decision prior to making one.
3. By taking intelligent decisions that take the path of the least risk.

12. Family Responsibilities

In a country like India, a large majority of the populace expect women to take over familial responsibilities after their marriage. Even women who wish to focus on their career are expected to juggle both work and family responsibilities equally. This lack of freedom to pursue their careers has severely limited many women from realising their true potential. Fortunately, there are a few things that women could do.

1. Hold talks with the family to make them understand the importance of having a career.
2. Devise a plan to strike the right work-life balance.
3. Prioritise responsibilities to manage time more effectively.

13. Poor Networking Skills

Networking is an important step that every business owner needs to focus on. With the right network, business owners can grow their businesses far more quickly and in a more effective manner. However, women are perceived to have less than ideal networking skills. Thankfully, here are some ways to rectify it.

1. Begin to attend events dedicated to networking.
2. Get to know more about the industry and the business as a whole.
3. Develop productive relationships with other business owners and women entrepreneurs.

14. Security and Safety Issues

This is another major issue plaguing women entrepreneurs. Running a business demands a lot of time and effort. Women may have to work long hours that extend well into the night and might have to travel frequently to and meet their customers.

This brings up the question of security and safety for women. Just like how the various government schemes for women for providing funding were established, steps are constantly being taken to bring down the crime rate for women and make the place a whole lot safer.

Conclusion

Women entrepreneurs face constraints related to access to finance, conflicts between work and family responsibilities, networking challenges, lack of education and management skills.

Empowering women entrepreneurs is crucial for achieving the goals of sustainable development and the bottlenecks hindering their growth must be

reduced to enable full participation in the business. Apart from training programs Newsletters, mentoring, trade fairs and exhibitions also can be a source for entrepreneurial development. As a result, the desired outcomes of the business are quickly achieved and more of remunerative business opportunities are found. Therefore promoting entrepreneurship among Indian women is Certainly a short-cut to rapid economic growth and development. Let us try to eradicate all kinds of gender bias and thus allow 'women' to be a great entrepreneur at par with men.

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PERSPECTIVE OF ICT TOOLS IN EDUCATION

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ICT TOOLS IN TEACHING AND LEARNING

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Introduction

ICT tools stand for Information Communication Technology tools. The ICT tools means to digital infrastructures like computers, laptops, printers, scanners, software programs, data projectors, and interactive teaching box.

The ICT devices are the latest tools, concepts and techniques used in student-to-teacher, student-to-student interaction for example: - clicker devices, mobile applications, flipped classroom) for information and communication technology.

Every aspect of our lives is driven by technology. We are growing more and more reliant on new developments as technology advances. It not only makes our lives simpler but also more efficient. When we are discussing the role of ICT in our lives, how can we neglect the transformations that are happening with the introduction of ICT in education? This article revolves around ICT in education, how ICT positively affects the way students learn and also the advantages of ICT in education. Before we dive into them, let us look at what is ICT in education.

Ict Enabled Tools for Effective Teaching and Learning Process

Following tools are used in the Teaching learning process in Online- Offline mode of instruction. During lockdown these ICT tools proved to be a boon for making the teaching learning process easy and accessible to all students.

1. Learning Management System (MOODLE and Google Classroom)

Moodle stands for Modular Object-Oriented Dynamic Learning Environment and statistics. Moodle is free software, a learning management system providing a platform for e-learning and it helps the various teachers considerably in conceptualizing the various courses, course structures and curriculum thus facilitating interaction with online students. It is configurable, highly-flexible, and feature-rich. RSCOPR has a self-customized MOODLE developed by Digital Content development team. (<https://lms.jspmrscopr.edu.in/>).

It is a very useful platform to share all learning resources, videos, sharing webpage. Moodle supports a range of media to present or link to learning materials, support the students and to assess their learning. It is able to provide automated assessment in the form of quiz, and give immediate detailed feedback to the students. The messaging system

allows learners and teachers to communicate easily. Teachers can also communicate with groups of learners via course forums either to provide answers to learners' questions or to just get involved in discussions. The uploaded learning resources are available to the students whenever they want them. The MOODLE mobile app makes students access even easier via smartphone or mobile device.

2. Google Classroom - Blended Learning Platform

Google Classroom is a free, blended learning platform that offers a variety of benefits for both students and teachers. Google Classroom enhances the productivity and take workflow management to the next level. It keeps track of assignments coming in with a simple glance making it very easy to know everyone's status and to follow up with students who are missing work. Everything is time stamped, so late work is easily identifiable. Since Google apps are cloud based the work in Google Classroom saves automatically and is accessible from any device. With the app, both students and teachers can enjoy the full functionality of Google Classroom on a mobile device. Students receive notifications on their phone when assignments and announcements are posted, making it easy for students to stay on top of classroom happenings. As a teacher, the app enables to post from the phone either right from the app or using share-sheet support.

3. Google Forms

Google Forms allows to conduct MCQ quizzes online. The information is stored as a spreadsheet automatically record the answers. The spreadsheet then populates the responses from the quiz or survey in real-time. Google forms can be used to give feedback to and receive feedback from students and parents.

4. Videoconferencing Platforms

During COVID pandemic when the world shifted to Online mode for teaching learning various free videoconferencing platforms like Google meet, Zoom and Cisco webex were used to conduct online classes.

All these have varying needs and features. Zoom allows the facility of using its features using a browser also without the need to download the application, the app download is mandatory in case of the other two software. Zoom allows face touch up facility as well which is not present in the other two competing software. Google Meet allows the maximum on-screen chatting time with respect to the others. It has over 60 minute long conferences whereas the time cap of others is only 40 minutes. Zoom has the highest, that is, 49 people that can be viewed on the screen at once.

5. Virtual Labs

The Virtual Labs provides remote-access to simulation-based Labs in various disciplines of science and engineering. This student-centric approach facilitates the absorption of basic and advanced concepts through simulation-based experimentation. Internet-based experimentation further permits use of additional web-resources, video-

lectures, animated demonstrations and self-evaluation. Virtual labs are any place, any pace, any-time, any-type labs. It is a paradigm shift in student-centric, online education. Virtual labs sessions available on Virtual labs an MOE Government of India Initiative for Physical Pharmaceutics, Organic Chemistry and Inorganic chemistry subjects as well as Virtual labs sessions from Amrita Vlab portals for Microbiology, Organic chemistry and Inorganic chemistry practicals provide helpful tool to teacher during online teaching learning process.

6. Educational Videos and Animations (Youtube and Internet)

Various valuable educational videos of pharmacy subjects available on internet, youtube provide additional help in better understanding of subject knowledge.

7. Smart Classroom

Classroom integrated with Smartboards and internet connections provides enhanced and interactive learning and teaching opportunities for students and teachers. The internet-connected to systems in smart classes is stored with abundant information. It is accessible anytime for their teaching and learning process. Teachers can access information from various educational sources for teaching purposes. It helps in easy access to online resources. Smart Classrooms helps in developing critical thinking and problem-solving skills in students.

8. e-Resources

e- journals from Proquest Pharma and DELNET were available for students to access remotely in online mode and enhance their learning experience. e books were uploaded on MOODLE and Google Classroom.

9. Trello

Trello is a collaborative tool that is used widely in IT companies with large teams. Fortunately, it has several applications for the educators as well. If the teacher prefer project-based learning for students, Trello is very useful. Trello has these digital boards. The teacher can create different boards for assignments, test papers, etc. And in those boards, we can create cards. Furthermore, we can discuss a particular topic in that card. The user can invite the students to view that card. And the students can put in comments, doubts, or ask questions and even attach images, videos, etc.

Also, students can easily look at their projects, set deadlines, and track progress online. In a nutshell, Trello takes a lot of burden off shoulder while enriching the learning experience for kids.

10. Microsoft Teams

Microsoft Teams is another popular tool for IT professionals. And similar to Trello, it has several applications for teachers and educators. Microsoft Teams is a Microsoft Office 365 product. It simply means user can host meetings, chat, share files, and use every Microsoft Office app using Teams.

One of the best features Teams comes with is the Class Notebooks from One Note. Class Notebooks resemble individual student notebooks(physical) but come with additional features and ease of use.

Teachers can assign individual notebooks to students and provide them with real-time feedback. The user can easily distribute exams, handouts, quizzes, and homework instantly to the students. Also, the students can use amazing tools within Teams for taking notes and highlighting important things. This helps the students engage more and enjoy learning. All in all, Teams can reduce the manpower and can completely replace the use of paper. It's yet another amazing tool that ensures effective education online.

11. Online Coding Websites such as DataCamp, HackerRank, Coderbyte

No minimum age exists when it comes to learning how to code.

If user want the students/kids to learn how to code, make sure it's practical. Practicing code on paper is simply a waste of time. And it also kills the creative talent of the students.

This is where the websites such as DataCamp, HackerRank, Coderbyte, etc., come into play. Using such websites, students can implement what they've learned instantly. Also, such websites feature several tricky problems that the students will enjoy. The best part is that most websites are free and accessible from any device. It simply means none of the students will need particular hardware (laptop/PC) to code.

12. Subject Specific Tools

All of the above ICT tools for teaching and learning help in generalized learning. However, when it comes to specific subjects, special tools are required. Following are the specific tools used for different subjects.

ICT Tools for Teaching Geography

Google Maps: With Google Maps, kids can learn to find the distance between two places and look at 360-degree images of places. This can help the students become familiar with multiple locations across the world.

Google Earth: This tool shows the entire earth with every location and supports an amazing zoom feature. Kids can learn about different regions, landmasses, and water bodies in a fun way.

ICT Tools for Teaching Mathematics

CanFigureIt Geometry: This tool makes learning geometry pretty easy. The teacher can teach kids about several mathematical proofs and theorems in an engaging way.

CueThink: User can use this tool to teach kids how to solve math problems in four steps: understand, plan, solve, and review.

ICT Tools for Teaching Biology

Microsoft PowerPoint: User can use HD images and create slides to clear the biological concepts for the kids. Also, user can download templates from Slidesgo and make the job even easier.

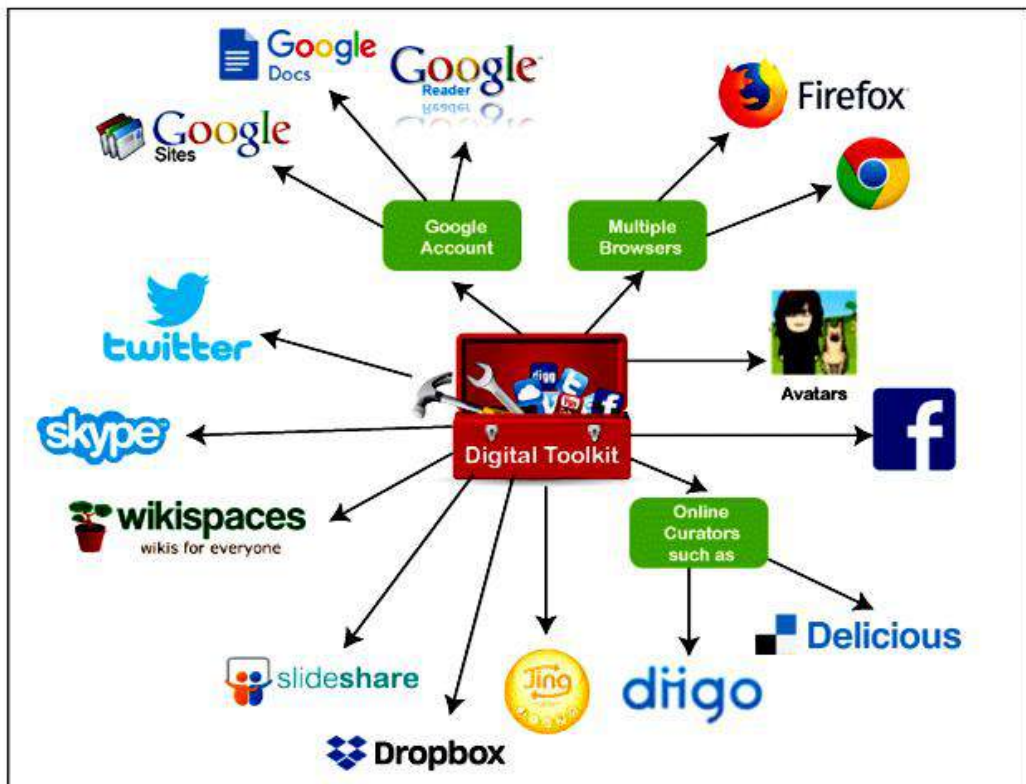
YouTube: What's better than using videos for explaining complex biological processes via YouTube videos. From digestion to excretion, user can find plenty of child-safe content on YouTube.

ICT Tools for Teaching History

User can use the above-listed tools but in a different manner:

YouTube: User can find historical movies related to the chapter.

Microsoft PowerPoint: User can create slideshows with minimal details such as dates, names, locations, and events, etc. This way, kids can learn facts easily and for longer durations.



Merits and benefits of introducing ICT education

ICT in education is not simply a method of education that responds to changes in society, but also offers various advantages and benefits that solve problems in the educational field.

For teachers, it can be used to reduce workload and share information with other teachers, and for students, it can provide an environment where they can easily concentrate on their lessons and become more interested in learning. The following are some of the concrete benefits and effects of ICT in education.

- Improved Learning Efficiency
- ICT improves student learning efficiency. For instance, in the past, students would

take notes of what the teacher had written on the blackboard, and then reread the notes to consolidate their memory of the lesson. With ICT, however, students no longer need to move their hands because of the use of tablets and other devices, and they will be able to concentrate more on the class.

- ICT can also make it easier for students to express their opinions, even if they do not like to raise their hands or be the center of attention during class.
- Reduce the Burden on Teachers
- In addition to teaching and preparing for classes, teachers have a variety of other duties, such as dealing with parents and advising club activities. This burden on teachers is seen as a problem in the field, and the challenge is how to reduce the workload.
- The introduction of ICT in education reduces the burden on teachers in detail, such as the time and effort required to print out materials used in class and to write on the board.
- The time freed up by the introduction of ICT can be used to solidify class content and perform miscellaneous tasks, which is expected to improve the quality of education as a result.
- Simplified Information Sharing
- Another major advantage is to easily share class data and teaching materials used in class among teachers and students. By organizing class materials on PCs and tablet terminals, the time required to distribute materials can be reduced, and classes can proceed efficiently and smoothly.
- Information sharing among teachers will also provide opportunities to learn about good teaching materials and teaching methods, which will have the effect of synergistically enhancing the quality of education.
- Increased Student Motivation
- Increasing students' motivation for learning is also cited as an advantage of ICT, as it is still not that common, and many students may find classes using digital tools refreshing.
- Learning through the tablet devices and electronic blackboards can be expected to increase students' interest in the class itself. When implementing ICT in education, it is a good idea to create questions and animations from the perspective of whether or not students will be interested in them. Of course, the content of the class is important, but it is also important to have a system that engages students in the class.
- Improve IT Literacy of Students
- As ICT in education advances informatization, not only teachers who support learning but also students will be able to acquire knowledge and skills of IT devices. literacy will help students to select and use necessary information and to develop the ability to think for themselves.
- In recent years, lack of IT literacy has often led to unexpected accidents. For

example, corporate security incidents and problems related to social networking accounts are mainly recognized as IT literacy issues, and it is important to ensure that students acquire basic knowledge and skills when using IT.

- We can refer to the information provided by the Ministry of Education, Culture, Sports, Science and Technology when developing and improving class content based on the benefits and effectiveness of ICT education. Please check the following points when considering the introduction or enhancement of ICT in education in the future.

Conclusion

The intervention of information and communication technology is redefining the way students learn. It is making the process of learning more efficient and effective for students and teachers. ICT tools in education make it easier for teachers to use the best strategies to bring out the best in their students. ICT in education sector is beneficial for the students, in addition to this, it is making it possible for schools to impart education in the finest way. Moreover, the technology enables them to manage all the management and administration functions in a seamless manner. Hence, there is no doubt that it is a boon to the education industry.

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IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

Dr. M. Deepa



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WOMEN'S EMPOWERMENT THROUGH NATIONAL EDUCATION POLICY

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Abstract

Women's empowerment can be defined to promoting women's sense of self-worth, their ability to determine their own choices, and their right to influence social change for themselves and others.

It is closely aligned with female empowerment – a fundamental human right that's also key to achieving a more peaceful, prosperous world.

In Western countries, female empowerment is often associated with specific phases of the women's rights movement in history. This movement tends to be split into three waves, the first beginning in the 19th and early 20th century where suffrage was a key feature. The second wave of the 1960s included the sexual revolution and the role of women in society. Third wave feminism is often seen as beginning in the 1990s.

Women's empowerment and promoting women's rights have emerged as a part of a major global movement and is continuing to break new ground in recent years. Days like International Women's Empowerment Day are also gaining momentum.

But despite a great deal of progress, women and girls continue to face discrimination and violence in every part of the world.

The Women's Empowerment Principles

Created in a collaboration between the UN Global Compact and UN Women, the Women's Empowerment Principles are used to empower women in the marketplace, workplace and community.

The Seven Principles are:

- Principle 1: Create high-level corporate leadership for gender equality
- Principle 2: Treat all people fairly at work, respecting and supporting non-discrimination and human rights
- Principle 3: Ensure the health, wellbeing and safety of all workers, whether male or female
- Principle 4: Promote education, training and professional development for women
- Principle 5: Implement supply chain, marketing practices and enterprise development that empower women

- Principle 6: Champion equality through community initiatives and advocacy
 - Principle 7: Measure and report publicly on progress to create gender equality
- Social empowerment of women is to be understood as the process of developing a sense of autonomy and self-confidence, and acting individually and collectively to change social relationships and the institutions and discourses that exclude women especially the poorest of the poor and keep them in poverty. Gender role deconstruction starts right from an early age. Social welfare and Women Empowerment Department 10 wherein parents and teachers play a key role. Women's empowerment and their ability to hold others to account, is strongly influenced by their individual assets (such as land, housing, livestock, savings) and capabilities of all types: human (such as good health and education), social (such as social belonging, a sense of identity, leadership relations) and psychological (self-esteem, self-confidence, the ability to imagine and aspire to a better future). Also important are women's collective assets and capabilities, such as voice, organisation, representation and identity.

1.1. Education and Research

Equal access to education for women and girls will be ensured and initiatives taken to eliminate discrimination, universalize education, eradicate illiteracy, create a gender-sensitive educational system, increase enrolment and retention rates of girls and improve the quality of education to facilitate lifelong learning as well as development of occupation/vocation/technical skills. Improving gender parity and reducing the gender gap in secondary and higher education would be a critical area. Sectoral time targets in existing policies will be achieved, with a special focus on girls and women, particularly those belonging to weaker sections including the Scheduled Castes/Scheduled Tribes/Other Backward Classes/Minorities. Gender sensitive curricula would be developed at all levels of educational system in order to reduce and address sex stereotyping that is one of the causes of gender discrimination.

1.1.1. Gender segregation cycle shall be reduced at home and schools so that boys and girls interact and learn from each other, and reduce the gender stereotypic beliefs, attitudes, and biases about and towards the other sex. Teachers will be trained and they would in turn conduct specific programmes for children in the form of gender club activities, competitions/crafts and cooking skills for both boys and girls and any innovative activity of the choice.

1.1.2. Reducing dropouts of girl children in secondary education by 10% every year and increasing enrolment by 5% in tertiary education.. Incentives shall be

provided to girls from poor economic backgrounds to pursue higher education in any field of their choice.

1.1.3 At Least 3% interest subvention for educational loans given to Girl students pursuing higher education. Additional 0.5 % interest subvention to those students who took education in Tamil medium. 1.1.3 Career counselling facilities for girl students opting for higher education. Retired Teachers / College professors may be roped in at Village / ward levels (both urban and rural) to support them with information on career options available.

1.1.4 Tamil Nadu shall provide free/subsidized coaching classes for exams like JEE, CAT, UPSC, TNPSC and for higher management and technical courses to encourage women's participation 1.1.4 Safety and sanitary audit shall be conducted to arrest the phenomenon of child marriage so that the conditions responsible for safety such as threats of abuse and violence on the way to school 1.1.4 It will be mandatory for all - Govt and private educational institutes (schools and Colleges) to display on their campus, portals, websites information regarding various scholarships, career opportunities available. Roll of honour shall also be displayed

1.1.5. Women researchers to be supported with access to credit and facilitation of IP and also converting the research to products.

1.1.6. Teachers in schools and Colleges to be trained in counseling skills and refresher programmes conducted periodically

1.1.7. Martial arts training to be made mandatory to all girls in schools and Colleges.

1.1.8. Sports period will be made compulsory to all standards and participation of girls will be required without omission. Girl students who are excelling would be provided exclusive coaching facilities.

1.1.9. Women researchers pursuing women oriented themes would be provided with additional support.

1.1.10 Girls and women shall have equal opportunities to pursue educational courses and skill training as per their desire and there will be no gender segregation either in terms of educational opportunities or related skill trainings

1.1.11 A common digital repository of the research and studies conducted on gender oriented themes by educational institutions, research institutes, Government agencies/departments shall be set up.

1.1.12. Additional stipend for girls who are taking up skill training in no-gender stereotyped categories. Social welfare and Women Empowerment Department.

1.1.13 Apprenticeship shall be provided to girls passing out from ITIs and Polytechnics along with a matching grant from the State

1.1.14 Industrial skills needs to be added in school curriculum through planned events

1.1.15 Skill training especially upskilling or reskilling courses for allowing women for lateral entry or reentry at a higher level after a career break.

1.1.16 To improve the Digital literacy rate among women digital a literacy program shall be implemented through CRP/CPs in local Panchayat level to train the handle online tools (what's app to internet browsing).

Conclusion

True education can be materialized if only we give equal importance to women education. Empowering women is empowering the nation. The many challenges that is ahead of us regarding implementation of women education can be achieved if gender disparity is bridged. We define education as a continuous lifelong process and to prove true to its definition women education should be continuous and promoted aggressively so that women get the respect and status they deserve.

Education will not only ensure more participation in developmental processes but also enhance awareness of rights and entitlements in society, so that women can enhance their participation in society on an equal footing in all areas. The economic independence that education brings is an added incentive. Economic independence and awareness will help curtail the vicious cycle of reinforcing negative stereotypes and aid women in chartering paths as individuals in their own right, contributing to society, polity and the economy.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

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SUSTAINABLE AGRICULTURE AND FOOD PROCESSING

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Introduction

Sustainable agriculture can be defined as producing food and livestock over the long term with minimal negative effects on the environment. It is undertaken by a society with the goal of producing the greatest quantity of food over the longest time in order to feed a growing human population while keeping the environment intact. Sustainable agriculture follows other sustainability practices where the long-term health of ecosystems and society are taken into consideration. The ideal in sustainable agriculture is to conserve water, lessen pesticide and fertilizer use, promote biodiversity in crops and livestock, and prevent soil erosion.

Historically, produce was grown and livestock was raised with very little concern for how farming practices affected the surrounding ecosystems. During the Green Revolution of the 1960s, increased pesticide and fertilizer use allowed farmers to produce larger crop yields on the same amount of land. This in turn leads to soil erosion, water pollution, and loss of crop diversity. As these new agrochemicals entered the environment, negative impacts were also noticed. This leads to environmentalists, consumers, and farmers shifting practices towards more sustainable practices.

Sustainable agriculture is something that is on the rise, with the climatic changes and environmental pollution hitting the roof it's about time farmers engaged in sustainable farming. Sustainable agriculture is nothing but farming that requires no chemicals, conserves energy and resources, goes easy on the environment, and works well with the locally available resources.

For an agriculture to be truly sustainable, farmers should consider some important factors like a. Environment – farmers should engage in farming practices that promotes sensible resource management of local resources, promising no harm to the ecosystem and enhance biodiversity, b. Profitability – it should also be profitable for the farmers, only then it will be sustainable, and c. Providing for people – the quality of food given to people has to be nutrient rich.

1. Mulching

Mulching is the process of covering the ground with some cover to avoid soil eroding and maintain soil temperature and moisture. Growth of weed can be reduced dramatically

by mulching. Sometimes even the most stubborn weed can be eliminated by mulching. This helps in increasing the soil quality. The user can use organic items like wood chips and straw for mulching; they also help in retaining the nutrients of the soil and facilitate microorganism growth that conduces the crop growth.

2. Crop Rotation

Crop rotation is nothing but growing different crops on the same field in different seasons. This is truly effective in retaining the fertility of the soil. Farmers can highly benefit from the crop rotation as this also reduces the need of using pesticides. Crop rotation helps in degeneration of destructive pests as growing different crops can help destruct the development cycle of pests and therefore reduce the usage of pesticides.

3. Diversified Farming

Diversified farming fosters farmers to help maintain the efficiency by encouraging growing varied species in one land by considering the area as one. This will promote the health of all organisms in the soil and achieve more soil fertility. By diversified farming we mean growing animals in a land that helps enhance the growth of plants too. This will also reduce bringing artificial soil fertilisers.

4. Agro Forestry

Agroforestry is nothing but growing trees on grazing lands and in between trees. This will help retain soil moisture and soil fertility. Also, soil temperature is maintained and reduces soil erosion during rains and wind. In the end, the soil quality is maintained and nutrients are retained. Fruits and vegetables from agroforestry are much more nutrient rich. This is said to increase profits for the farmers and also environmentally sustainable.

5. No-Till Farming

No-till farming is a method of farming without disturbing the soil tillage. This increases water infiltration, retain the nutrients of the soil and maintain the organic nature of the soil. Many agricultural lands have seen a reduction in soil erosion and increase the life of microorganisms on the soil that facilitates agriculture. No-till farming has to increase resilience of the soil.

6. Contour Farming

Contour farming majorly helps in soil erosion and increases water absorption and crop production. In contour farming the ruts are made perpendicular. This increases retention of soil nutrients and support environmental sustainability.

7. Organic Animal Raising

Making animal graze in open lands can be highly beneficial for the soil as well the animals. Confining animals to a particular area can be a lot less healthy for the animals. This will eventually result in the increase of quality of products we get from them. Soil also gets healthier from the manure from animals.

Sustainable Agriculture Practices

Through decades of science and practice, the following farming practices have proven effective in achieving sustainability, especially when used in combination:

Rotating Crops and Embracing Diversity

Planting a variety of crops can have many benefits, including healthier soil and improved pest control. Crop diversity practices include intercropping (growing a mix of crops in the same area) and complex multiyear crop rotations.

Planting Cover Crops and Perennials

Cover crops such as clover, rye, or hairy vetch are planted during off-season times when soils might otherwise be left bare, while perennial crops keep soil covered and maintain living roots in the ground year-round. These crops protect and build soil health by preventing erosion, replenishing soil nutrients, and keeping weeds in check, reducing the need for fertilizers and herbicides.

Reducing or Eliminating Tillage

Traditional plowing (tillage) prepares fields for planting and prevents weed problems but can cause soil loss. No-till or reduced-till methods, which involve inserting seeds directly into undisturbed soil, can reduce erosion and improve soil health.

Applying Integrated Pest Management (IPM)

A range of methods, including mechanical and biological controls, can be applied systematically to keep pest populations under control while minimizing use of chemical pesticides.

Integrating Livestock and Crops

Industrial agriculture tends to keep plant and animal production separate, with animals living far from the areas where their feed is produced, and crops growing far away from abundant manure fertilizers. A growing body of evidence shows that a smart integration of crop and animal production can make farms more efficient and profitable.

Adopting Agroforestry Practices

By mixing trees or shrubs into their operations, farmers can provide shade and shelter that protect plants, animals, and water resources, while also potentially offering additional income from fruit or nut crops.

Managing Whole Systems and Landscapes

Sustainable farms treat uncultivated or less intensively cultivated areas as integral to the farm. For example, natural vegetation alongside streams, or strips of prairie plants within or around crop fields, can help control erosion, reduce nutrient runoff, and support bees and other pollinators and biodiversity in general.

Sustainable Food Production

Sustainable food production is “a method of production using processes and systems that are non-polluting, conserve non-renewable energy and natural resources, are economically efficient, are safe for workers, communities and consumers, and do not compromise the needs of future generations”.

As the world becomes more conscious of the perils of climate change, eco-friendly practices have emerged as important qualifiers in the minds of both consumers and retailers in terms of who they do business with. The food industry as a whole is looking for ways to operate in a more sustainable fashion and food processors have an opportunity to make a difference while striving for a healthier planet.

Here are a few ways that food processing can become more sustainable.

1. Efficient Water Use and Conservation Practices

Food processors account for 23 percent of the industry’s total energy use and a lot of that is due to the water-intensive nature of the processes. Water is used both as an ingredient and a tool in the process and is often used inefficiently. Implementing water conservation measures like smart meters and sustainable water management systems can help identify and act on these opportunities. These efforts can even extend all the way back to the food production segment. Roughly 39 percent of fresh water used annually in the United States is for crop irrigation. Much of it is necessary to the cultivation of these crops but switching to drip irrigation systems and utilizing wastewater re-use mechanisms are ways to conserve water in the process and operate more efficiently.

2. Reusable and Eco-friendly Packaging

Packaging waste reduction is a crucial element to the waste reduction efforts of grocery stores and other food retailers, but it can also extend to the processors that get these products onto the shelves of those retailers in the first place. Only 14 percent of the 78 million tons of food packaging waste are recycled annually. Eliminating plastic is the name of the game when it comes to recycling food packaging. We cannot recycle plastic, meaning its only purpose after the packaging is ripped off is taking up space in a landfill.

Wood and paper packaging are better ways to go, and when needed, aluminum is the best and most environmentally responsible metal packaging to use. There are also packaging options available that are made from biodegradable materials. Changing the way food is packaged and what it is packaged makes a sizable impact on the overall waste output of food processing and will make the entire operation more sustainable.

3. Reducing Food Related Waste

Examining the way processing facility operates often leads to ways to improve it from a sustainability standpoint. Calculate how much food-related waste facility generates and determine how much of that can be reduced. Have regular maintenance checks on the equipment to ensure the process is maximizing the amount of usable food products produced.

Where are all of the fats, oils and greases going? By partnering with a reputable collection service, that used cooking oil and grease material can be repurposed into ingredients used the production of renewable diesel, a cleaner-burning alternative to petroleum fuel that reduces carbon emissions by up to 85 percent per gallon. The same goes for inedible meat byproduct. It also can be recycled and repurposed into materials used in producing renewable diesel and various household products. It's not uncommon in larger industrial processing facilities to be losing grease down the drain without knowing it. A reputable provider can help to identify where we are potentially losing grease waste in areas may not even be aware of.

Recycling the byproducts of operations is beneficial in a variety of ways. What we consider waste has value and can turn into an additional revenue stream in the form of rebates. It's also contributing toward producing fuel that could potentially power the trucks that deliver food to the retailers that buy from farmer. By

recycling, we can reduce carbon emissions both in the facility's operations and with the trucks that carry the product to its ultimate destination.

4. Avoid Additives and other Harmful Chemicals

The use of pesticides, fertilizers and antibiotics is commonplace in producing the food that the facility processes. When possible, try to buy from organic producers that shy away from using these chemicals that cause damage to the environment. Organically grown produce and grass-fed meats are a great place to start. Plant-based meat may also be an option worth exploring as the alternatives to meat-based products become more abundant and diverse. The plant can be more sustainable by looking at the product we produce and how it can be made in a healthier and more sustainable manner.

These are just a few of the ways we processing facility can look to identify ways in which it can be more sustainable. Implementing these simple tips to help do the facility work toward a healthier planet and a more sustainable future.

Conclusion

Sustainable agriculture is the way to maintain a parity between the increasing pressure of food demand and food production in the future. As population growth, change in income demographics, and food preference changes, there are changes in the demand of food of the future population. To be sustainable, the food system needs to: (1) maintain healthy rural ecosystems and fertile agricultural soils, and (2) limit its dependence on economic fluctuations and external politics.

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ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT

(Volume – 2)

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Envisioning a Self-Reliant Rural India for Sustainable Economic Development

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SIGNIFICANT CONTRIBUTION OF VILLAGE AND COTTAGE INDUSTRIES ON INDIAN ECONOMY

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Abstract

In India, cottage industries are a major source of employment and livelihood. These industries are also the backbone of the Indian economy. The cottage industry is an industry that is small-scale and informal. This business idea among other small business ideas is typically a family business and the owner of the business lives on the premises.

Examples of cottage industries in India include Weaving, Pottery, Silverware, Bamboo crafts, and many more.

Cottage industries are manufacturing companies that perform the majority of their labour by hand. India is renowned and well-known for its diverse culture, traditional cottage industries' handicrafts, and a large variety of food products, among other things. The main cottage industries in India are cotton weaving, carpet weaving, silk weaving, the leather industry, metal handicrafts, and small-scale food processing.

India's cottage industries are culturally and economically significant. They preserve ancient traditions while simultaneously employing a large number of people. Because these industries confront intense competition from other economies, society should provide support to prevent exploitation and further develop them. The only solution to combat the monster of unemployment in over-populated countries like ours is to promote cottage and small-scale industries.

The industry faces numerous challenges in a variety of ways. As a result, the government is attempting to address the sector's issues since it recognises that the sector has a lot of promise in a variety of sectors if properly supported.

Keywords: India, Cottage Industries, Carpet Weaving, Silk Weaving, Leather Industry

Introduction

In India, cottage industries are a major source of employment and livelihood. These industries are also the backbone of the Indian economy. The cottage industry is an industry that is small-scale and informal. This business idea among other small business ideas is typically a family business and the owner of the business lives on the premises.

Examples of cottage industries in India include Weaving, Pottery, Silverware, Bamboo crafts, and many more.

Types of Indian Cottage Industry

Cottage industries are manufacturing companies that perform the majority of their labour by hand. India is renowned and well-known for its diverse culture, traditional cottage industries' handicrafts, and a large variety of food products, among other things. The main cottage industries in India are cotton weaving, carpet weaving, silk weaving, the leather industry, metal handicrafts, and small-scale food processing.

1. **Cotton Weaving:** Cotton weaving is a significant cottage industry in India. Since cotton clothing is widely worn throughout the nation, the knowledge is age-old. Clothing made of cotton is renowned for its traditional style, vibrant colour, and designs made by expert weavers using handlooms. Gujarat, Tamil Nadu, and Maharashtra are the three states that produce the most cotton. Silk weaving: Another well-known cottage industry in India is silk weaving. Our nation produces and exports a significant amount of silk, both domestically and outside. Karnataka produces the most silk, making up over 70% of the whole silk weaving business. Mulberry, Tassore, Muga, and Eri silks are produced in our count.
2. **Carpet Weaving:** During the Mughal era, carpet weaving was first introduced to India. The durries and coir carpets are equally renowned for their exceptional quality and texture as the Kashmiri carpet. In spite of the fact that the carpet industry is widespread throughout the nation, it is largely concentrated in Kashmir, Rajasthan, Punjab, Uttar Pradesh, Andhra Pradesh, and Punjab. The Carpet Export Council was also founded by the Indian government to promote knotted rugs and other types of floor coverings from all around the nation.
3. **Leather production:** India is a significant producer of premium leather for export to international markets, providing around 10% of the demand. One of India's top export earners and one with almost 2.5 million workers is the leather industry. The Indian states that produce leather are Uttar Pradesh, West Bengal, and Tamil Nadu.
4. **Metal Works:** Metal has long been used in India to make figurines, jewellery, utensils, and other objects. India's metal handicrafts are well-liked worldwide and have a major economic impact on the nation. Metal handicrafts are created using hand-operated tools rather than sophisticated machinery.

Issues Faced by the Cottage Industries in India

The lack of access to adequate finance options and limited technical knowledge has made it difficult for cottage industries to fulfil domestic and international customer demands, thereby inhibiting their growth. These are some of the major issues faced by cottage industries in India – let's learn more about each one of them individually in the following sections.

1. Self-Employed Labour Shortage

The self-employed labour shortage is a major problem faced by Indian cottage industries. The lack of skilled labourers has been made worse by the Great Recession and economic slowdown, which led to a large number of factory workers losing their jobs.

Most cottage industries are made up of small-scale producers who find it difficult to attract employees due to low wages, insecure working conditions, and long hours. These challenges have worsened with the rise in unemployment rates across the country.

Cottage industries also have difficulties finding skilled employees because many young people choose not to pursue traditional occupations and apprenticeships.

2. Low Demand for Handmade Goods

The majority of the demand for handmade products comes from tourists visiting the country. But unfortunately, not enough people live in these villages to keep up with production. It means that most of these goods are not made locally and can't be sold nearby.

The result is a vicious cycle where supply and demand cannot meet due to a lack of market access.

There's a general misconception that cottage industry goods should be easy to transport because they're small. However, this isn't always the case! For example, if you want to ship something fragile like silverware to long distances without damaging it, you will need high-quality packing materials.

One of the unfortunate realities when it comes to cottage industries is low-quality products. These businesses often have little knowledge of producing high-quality goods, leaving many unsatisfied buyers.

3. Lack of Financing Options

Traditional banks offer loans with higher interest rates than microfinance institutions. The perception of high-interest rates may be that they are due to the poor credit history and low income of the rural borrowers.

However, there are other reasons for the high cost of these loans. For example, traditional banks charge a commission for processing the loan.

The process is lengthy and demanding for bank staff and customers, so it costs more to service each loan transaction. Moreover, using outdated manual systems to process data limits efficiency, increasing costs.

In contrast, many microfinance institutions offer their customers products with lower rates and no commissions on transactions because they do not have expensive brick-and-mortar branches or costly IT infrastructure; instead, they mainly operate online or through mobile phone banking apps.

4. Government Regulations

Each state has its regulations that govern the industries, so it is important to consult your local government officials and determine the regulations before starting a business.

For example, each state restricts how many days a week a business can be open or if employees must wear certain clothing.

There may also be a restriction on when employees can take breaks during the day. As another example, there may be different child labour laws for children under 14 years old compared to children over the age of 14 years.

5. Poor Working Conditions

In the past, people worked in these spaces for up to 18 hours a day. They'd work with chemicals and dangerous tools, often without protective gear or knowledge of how to use them safely. And they were paid only a fraction of what they were worth.

In recent years, we've seen some progress. The Indian government has passed legislation that mandates fair wages and working hours for this industry.

But there are still many challenges – like limited access to markets for their products or lack of business skills – that limit their success.

6. Ineffective Marketing Strategies

Cottage industries in India need to take marketing into their own hands because there are not enough jobs available. Of course, marketing is an important part of any business, but it's essential for businesses that rely on word-of-mouth and referral.

As a result, these businesses will have to be more creative in advertising themselves. For example, they could try sending emails with their products and services attached, sponsoring events, participating in community groups, or partnering with local hotels or restaurants.

Investors want nothing short of success for the companies they invest in. But investors also know these enterprises start small and don't grow overnight. As a result, it can be difficult for them to make money as quickly as they would like from investments, so they might stop investing altogether or only offer a little before reducing investment levels even further later on down the line if things don't improve.

7. No Brand Identity

It is not uncommon for small businesses to have issues with branding and marketing. They may not have the funds or expertise to develop a strong brand identity design, which leads to a lack of awareness and visibility.

For example, if you are a fashion designer who produces clothing but doesn't have the funds or skills to create your website, people may not know that you exist because they couldn't find your products on search engines.

That is why small businesses need to identify their strengths and weaknesses to use the right platforms and techniques to reach their target audience.

8. Quality Control Issues

One major problem faced by cottage industries is quality control. The vast majority of cottage industries are family owned and operated. When the owner is also the manufacturer, they are not able to monitor the quality of their products as well as a corporation might be able to. They will often produce goods until they run out of materials instead of monitoring the quality and stopping when a sufficient amount has been made.

As a result, some buyers complain about receiving low-quality items that do not meet their expectations or are defective because they were rushed to make them before running out of materials.

9. Lack of Government Support

The Indian government has not been supportive of the cottage industries. The government's policies do not support the growth and development of cottage industries.

For example, cottage industries are only given a 15% discount on the minimum rate they need to pay on electricity charges when they purchase their power from a State Electricity Board (SEB) instead of a 50% discount if they purchase their power from private companies.

It makes it difficult for these small businesses to survive, as they will have to spend more money each month to use electricity.

10. Sustainability Issues

One major issue that many cottage industries have is sustainability. There are not as many jobs as there used to be, and the demand for handmade goods is decreasing. It means that the cottage industries have less income, which makes it hard to maintain their business operations.

Government Actions to Resolve the Problem

The government has launched a number of efforts to address the problems facing the cottage and small scale industries because of their significance. The first actions taken are as follows:

A number of organisations have been established by the Union Government to support small companies and rural communities. They include the Central Silk Board, the All India Handicrafts Board, the AH India-Handloom Board, and the Khadi and Village Industries Commission.

There are now industrial cooperatives, industrial estates, and rural industrial initiatives.

- To encourage the small-scale manufacturing sector, the Central Government has designated 807 products for exclusive manufacture.
- District Industries Centers are being created at the district level to house all the support and services needed for small and village businesses.
- The Industrial Policy Resolution of 1980 provides the following provisions for the growth of home-based and small-scale businesses:
- launching a programme to create buffer stocks of essential goods, which are frequently hard to get by. Priority will be given to the special needs of those states that depend heavily on a small number of essential raw materials.
- In order to produce as many ancillaries, small, and cottage suits as possible, the government will establish a few nucleus plants in each district. A nucleus plant would bring together the output of the auxiliary and small-scale units that fell inside its orbit.
- Increasing the cap on capital investments for small and supporting businesses.
- The Union Government has established a variety of agencies to assist small businesses and villages. The Khadi and Village Industries Commission, the All India Handicrafts Board, the AH India-Handloom Board, and the Central Silk Board are among them.

- These industries have access to credit through a variety of institutions. The small-scale sector is a priority sector for the provision of institutional credit.
- Industrial estates and rural industrial projects have been established, as well as industrial co-operatives.
- The Central Government has set out 807 goods for exclusive manufacture in the small-scale sector in order to stimulate it.
- At the district level, District Industries Centres are being developed to provide all of the services and support that small and village enterprises require under one roof.

For the development of cottage and small-scale enterprises, the Industrial Policy Resolution of 1980 contains the following provisions:

- (a) Introducing a program for building up buffer stockpiles of basic commodities that are often difficult to obtain. Special requirements of states that rely substantially on a few key raw commodities will be prioritised.
- (b) The government will establish a few nucleus plants in each district to generate as many ancillaries and small and cottage suits as possible. The output of the ancillary and small-scale units falling inside its orbit would be assembled by a nucleus plant.
- (c) Raising the capital investment ceiling for small and auxiliary businesses.

Contribution of Small Scale Industries

Small-scale industries make a significant contribution to the Indian economy. They play a crucial role in employment generation, particularly for the labor-intensive workforce. These industries also contribute to the overall industrial output, promote balanced regional development, and foster innovation and entrepreneurship. The following lists the main contributions made by small-scale industries to economic development:

According to the 73rd phase of the National Sample Survey (NSS), there are 633.88 lakh unincorporated MSMEs that are not in the agriculture sector operating across the nation in 2015–16. The MSME sector has been adding 11.10 crore jobs in terms of employment.

Small-scale industries play a crucial role in eliminating income disparities.

The surplus of these sectors is distributed among many individuals, and capital is widely dispersed in tiny amounts.

Small-scale industries help to disperse industries throughout regions and balance out regional imbalances.

Small-scale industries utilise local assets like capital and entrepreneurial skills that would have gone unused in the absence of such industries, among other things.

Conclusion

India's cottage industries are culturally and economically significant. They preserve ancient traditions while simultaneously employing a large number of people. Because these industries confront intense competition from other economies, society should

provide support to prevent exploitation and further develop them. The only solution to combat the monster of unemployment in over-populated countries like ours is to promote cottage and small-scale industries.

Cottage industries are unorganised and fall under the category of small scale industries. They use traditional ways to create consumable goods. Furthermore, these industries emerge in areas where unemployment and underemployment are common. As a result of this technique, the cottage industry benefits the economy by absorbing a large portion of the surviving workers in rural areas.

On the other hand, the industry faces numerous challenges in a variety of ways. As a result, the government is attempting to address the sector's issues since it recognises that the sector has a lot of promise in a variety of sectors if properly supported.

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INDIA 2.0: VISION FOR INDIA 2047 – DIGITAL ECOSYSTEM & HARNESSING ARTIFICIAL INTELLIGENCE

Volume – 2



Editor in Chief - Dr. B. Rohini

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ECONOMIC DEVELOPMENT AND ARTIFICIAL INTELLIGENCE

Dr. M. Jeeva

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Abstract

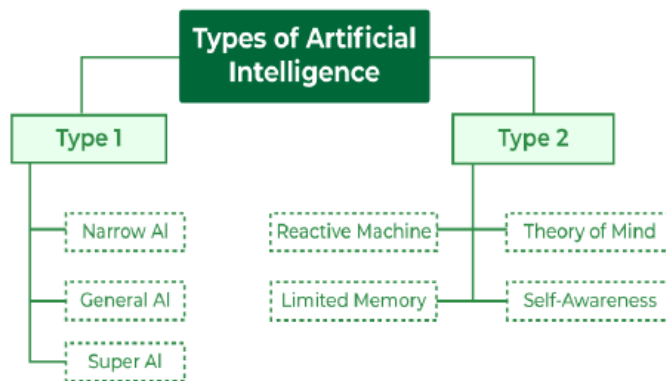
Artificial intelligence (AI), the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. The term is frequently applied to the project of developing systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience. Since the development of the digital computer in the 1940s, it has been demonstrated that computers can be programmed to carry out very complex tasks – such as discovering proofs for mathematical theorems or playing chess – with great proficiency. AI-powered solutions help businesses to respond to grievances and queries of customers quickly and address them more efficiently. The technology helps with smarter decision-making. AI coordinates data delivery, creates data consistency, analyzes trends, quantifies uncertainties, and provides forecasts to make the best decision for the company. AI helps ensure 24-hour service availability and delivers same consistency and performance throughout the day. The benefit of artificial intelligence is that it takes care of all repetitive tasks. Artificial Intelligence is poised to be a game-changer in the Indian economy. It has the potential to drive growth, create employment opportunities, and improve the quality of life for millions of Indians. However, addressing the associated challenges is crucial to realize the full potential of AI in India. With the right policies, investments, and a focus on skill development, India can harness the transformative power of AI to build a brighter economic future.

Introduction

Artificial intelligence (AI), the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. The term is frequently applied to the project of developing systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience. Since the development of the digital computer in the 1940s, it has been demonstrated that computers can be programmed to carry out very complex tasks – such as discovering proofs for mathematical theorems or playing chess – with great proficiency. AI-powered solutions help businesses to respond to grievances and queries of customers quickly and address them more efficiently. The technology helps with smarter decision-making. AI coordinates data delivery, creates data consistency, analyzes trends, quantifies uncertainties, and provides forecasts to make the best decision for the company.

Capability-Based Types of Artificial Intelligence

Based on how they learn and how far they can apply their knowledge, all AI can be broken down into three capability types: Narrow AI, general AI and super AI. Here's what to know about each.



Narrow AI

Narrow AI, also known as artificial narrow intelligence (ANI) or weak AI, describes AI tools designed to carry out very specific actions or commands. ANI technologies are built to serve and excel in one cognitive capability, and cannot independently learn skills beyond its design. They often utilize machine learning and neural network algorithms to complete these specified tasks.

For instance, natural language processing is a type of narrow AI because it can recognize and respond to voice commands, but cannot perform other tasks beyond that.

Some examples of narrow AI include image recognition software, self-driving cars and AI virtual assistants.

Artificial General Intelligence (AGI)

Artificial general intelligence (AGI), also called general AI or strong AI, describes AI that can learn, think and perform a wide range of actions similarly to humans. The goal of designing artificial general intelligence is to be able to create machines that are capable of performing multifunctional tasks and act as lifelike, equally-intelligent assistants to humans in everyday life. Though still a work in progress, the groundwork of artificial general intelligence could be built from technologies such as supercomputers, quantum hardware and generative AI models like ChatGPT.

Artificial Super Intelligence

Artificial Super Intelligence (ASI), or super AI, is the stuff of science fiction. It's theorized that once AI has reached the general intelligence level, it will soon learn at such a fast rate that its knowledge and capabilities will become stronger than that even of humankind.

ASI would act as the backbone technology of completely self-aware AI and other individualistic robots. Its concept is also what fuels the popular media trope of "AI takeovers." But at this point, it's all speculation.

"Artificial superintelligence will become by far the most capable forms of intelligence on earth," said Dave Rogenmoser, CEO of AI writing company Jasper. "It will have the intelligence of human beings and will be exceedingly better at everything that we do."

Functionality-Based Types of Artificial Intelligence

Functionality concerns how an AI applies its learning capabilities to process data, respond to stimuli and interact with its environment. As such, AI can be sorted by four functionality types.

Reactive Machine AI

Reactive machines are just that — reactionary. They can respond to immediate requests and tasks, but they aren't capable of storing memory, learning from past experiences or improving their functionality through experiences. Additionally, reactive machines can only respond to a limited combination of inputs. Reactive machines are the most fundamental type of AI.

In practice, reactive machines are useful for performing basic autonomous functions, such as filtering spam from the email inbox or recommending items based on the shopping history. But beyond that, reactive AI can't build upon previous knowledge or perform more complex tasks.

Reactive Machine AI Examples

IBM Deep Blue: IBM's reactive AI machine Deep Blue was able to read real-time cues in order to beat Russian chess grandmaster Garry Kasparov in a 1997 chess match.

Netflix Recommendation Engine: Media platforms like Netflix often utilize AI-powered recommendation engines, which process data from a user's watch history to determine and suggest what they would be most likely to watch next.

Limited Memory AI

Limited memory AI can store past data and use that data to make predictions. This means it actively builds its own limited, short-term knowledge base and performs tasks based on that knowledge. The core of limited memory AI is deep learning, which imitates the function of neurons in the human brain. This allows a machine to absorb data from experiences and "learn" from them, helping it improve the accuracy of its actions over time.

Today, the limited memory model represents the majority of AI applications. It can be applied in a broad range of scenarios, from smaller scale applications, such as chatbots, to self-driving cars and other advanced use cases.

Limited Memory AI Examples

Chatbots and Virtual Assistants: Chatbots and virtual assistants are forms of limited memory AI that use deep learning to mimic human conversation. As users interact more with these systems, they learn from this data and remember details about the user, allowing them to provide relevant and personalized responses.

Self-Driving Cars: Self-driving cars continually observe and process environmental data around them as they travel on the road. This helps them predict when they need to turn, stop or avoid an obstacle.

Theory of Mind AI

Theory of mind refers to the concept of AI that can perceive and pick up on the emotions of others. The term is borrowed from psychology, describing humans' ability to read the emotions of others and predict future actions based on that information. Theory of mind hasn't been fully realized yet, and stands as the next substantial milestone in AI's development.

Theory of mind could bring plenty of positive changes to the tech world, but it also poses its own risks. Since emotional cues are so nuanced, it would take a long time for AI machines to perfect reading them, and could potentially make big errors while in the learning stage. Some people also fear that once technologies are able to respond to emotional signals as well as situational ones, the result could mean automation of some jobs.

Theory of Mind AI Example

Rafael Tena, senior AI researcher at insurance company Acrisure, provided an example to illustrate how a successful theory of mind application would revolutionize the technology: A self-driving car may perform better than a human driver the majority of the time because it won't make the same human errors. But if we, as a driver, know that the neighbor's kid tends to play close to the street after school, you'll know instinctively to slow down while passing that neighbor's driveway — something an AI vehicle equipped with basic limited memory wouldn't be able to do.

Self-Aware AI

Self-aware AI describes artificial intelligence that possesses self-awareness. Referred to as the AI point of singularity, self-aware AI is the stage beyond theory of mind and is one of the ultimate goals in AI development. It's thought that once self-aware AI is reached, AI machines will be beyond our control, because they'll not only be able to sense the feelings of others, but will have a sense of self as well.

Role of Artificial in Economic Development

Improved Customer Experience

AI-powered solutions help businesses to respond to grievances and queries of customers quickly and address them more efficiently. Chatbots combined with conversational AI with Natural Language Processing generates personalized messages for the customers that helps in finding the ideal solution for their requirement. AI tools help in reducing the strain on the staff of customer service. Ultimately, it helps in improving productivity.

Smarter Decision Making

The technology helps with smarter decision-making. AI coordinates data delivery, creates data consistency, analyzes trends, quantifies uncertainties, and provides forecasts to make the best decision for the company. As long as AI is unable to imitate human

emotions, it is going to stay unbiased and can help make the right decision for supporting business efficiency.

Research and Data Analysis

AI coupled with ML is used for analyzing data more efficiently. It helps in creating predicting algorithms and models to process data and gauge the prospective outcomes of different scenarios and trends. Further, AI's advanced computing capabilities speed up the analysis and processing of data for research and development, which could otherwise have taken a lot longer. This is one of the biggest benefits of AI in R&D activities performed by specialists.

Solves Complex Problems

The progress of AI technologies from basic ML to advanced DL models has made it easier to solve complex problems. From personalized customer interaction and fraud detection to medical diagnoses, AI is helping businesses across industries to find the right solutions to address the problems, adequately. Better efficiency in solving issues means reduced expenses and improved productivity.

Manages Repetitive Tasks

It can take a lot of time to perform recurring tasks. Moreover, when performed by humans, it can be monotonous and reduce their productivity with time. Robotic Process Automation powered by AI can automate interactions across various businesses. It helps in intimating human actions within the digital systems in the HR, marketing, IY, or sales departments for executing any business process without requiring manual effort.

Reduces Errors

Another great advantage of artificial intelligence is that it can help in reducing the chance of manual errors. Robotic Process Automation tools can take advantage of the data processing and entry jobs as it makes the systems more efficient and less likely to create any issues because of the data processing mistakes. It is good for businesses that can't afford to make even the smallest errors.

Improved Business Efficiency

AI helps ensure 24-hour service availability and delivers the same consistency and performance throughout the day. The benefit of artificial intelligence is that it takes care of all repetitive tasks. So, you can improve the business's efficiency and reduce stress on the employees. The employees will be able to perform complex business tasks requiring manual intervention.

Strengthens the Economy

Irrespective of whether artificial intelligence is taken to be a threat to the world, it might contribute more than \$15 trillion to the world economy by 2030. As per PwC's

report, the progressive advances in AI are going to increase the global GDP by up to 14% between now and 2030.

The most considerable economic growth from AI will be in North America and China. The two countries are going to account for about 70% of the global economic impact. Most technology giants are already in the process of using AI as a solution to laborious tasks. Nevertheless, the companies that are slow to adopt AI-based solutions are going to find themselves at a competitive advantage.

Enhances Lifestyle

Recently, Artificial Intelligence has evolved from a plot in a science-fiction movie to an important part of our daily lives. With the emergence of AI in the 1950s, we have experienced incredible growth in its potential. Today, we are using AI-based assistants, such as Cortana, Siri, and Alexa for interacting with the smartphones or other devices. It is also being used to predict deadly diseases, such as Leukemia and ALS.

Some platforms monitor the browsing habits to suggest the products that they think you are going to like. Even though AI keeps being a constant threat, it keeps helping us in any way.

Disaster Management

Usually, precise weather forecasting can make things like vacation planning a lot easier. Even the smallest improvement in predicting the weather can significantly impact our daily lives. In fact, it can also help with disaster management.

With accurate weather forecasts, farmers can make crucial decisions about harvesting and planting. It also makes shipping safer and easier. What's more important is it can be used to predict natural disasters that can impact the lives of many.

After researching for several years, IBM joined hands with the Weather Company and secured tons and tons of data. The partnership helped IBM access predictive models of Weather Company that provided loads of weather data, which can feed into the AI platform of IBM to improve predictions.

Conclusion

Artificial Intelligence is poised to be a game-changer in the Indian economy. It has the potential to drive growth, create employment opportunities, and improve the quality of life for millions of Indians. However, addressing the associated challenges is crucial to realize the full potential of AI in India. With the right policies, investments, and a focus on skill development, India can harness the transformative power of AI to build a brighter economic future.

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THE VALUE OF ICT RESOURCES IN HIGHER EDUCATION

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Abstract

Education in the country Preparedness for ICT usage in Effective integration of ICTs into educational system is a complex and multifaceted process that involves in educational policy and planning, infrastructure, capacity building, language and content and financing. With the paradigm shift in the curriculum, teacher acts as a facilitator in a student centred learning and ICT based education makes the teaching-learning process effective. ICT implementation has given a magnificent opportunity for the Education Implementation specialists to reanalyze what we want our future leaders of India to be like. NEP 2020, an expert committee led by former Indian Space Research Organisation (ISRO) Chief Krishnaswamy Kasturirangan were recommended the education policy which has broaden the horizon of India education system mainly focussed on technological based education which will develop in students' inventive thinking, higher- order thinking and sound reasoning, effective communication, and high productivity. This paper presents the highlights of NEP 2020 and various provisions for ICT in Teacher Education and the present status of ICT usage in Higher Education with some challenges for implementation. Lastly, some suggestions are put forward for successful implementation of ICT in teacher education in Nagaland.

Keywords: *ICT tool s, Higher Education,*

Introduction

ICT stands for Information and Communication Technology. It is defined as the application of technology in processing of information and communication which includes the use of computers and software to not only convert and store but also process, transmit and retrieve information. National policy on ICT (NCF 2005), has defined it as all devices, tools, content, resources, forums, and services, digital and those that can be converted into or delivered through digital forms, which can be deployed for realizing the goals of teaching learning, enhancing access to and reach of resources, building of capacities, as well as management of the educational system. With the merging of technologies, it has become imperative to take a comprehensive look at all possible information and communication technologies for improving teacher teacher education, teacher-educators with varying levels of awareness of and ability to use ICT in teaching process and teacher-trainees with

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DIGITAL PAYMENTS IN INDIA

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Abstract

A digital payment, sometimes called an electronic payment, is the transfer of value from one payment account to another using a digital device or channel. Digital payment is referred to as those payments that take place using the various types of electronic medium. These methods do not require payment to be made in the form of cash or providing cheque. One of the major objectives of Digital India is to achieve “Faceless, Paperless, Cashless” status. The promotion of digital payments has been accorded the highest priority by the Government of India to bring each and every segment of our country under the formal fold of digital payment services. Various digital payments make the customer ease of payments. Banking cards are the most widely used digital payment system in India. It offers a great set of features that provides convenience as well as security to the users. Unstructured Supplementary Service Data can be used for carrying out cashless transactions using mobile, without the need of installing any banking app. AEPS can be used for all the following banking transactions such as balance enquiries, cash withdrawal, cash deposit, aadhaar to aadhaar fund transfers. UPI is the latest digital payment standard where the user having a bank account can transfer money to any other bank account using UPI based app. and the methods are Mobile Wallets, Point of Sale Terminals, Mobile Banking and Internet Banking.

Keywords: Digital Payment, Government of India, Banking Cards.

Introduction

A digital payment, sometimes called an electronic payment, is the transfer of value from one payment account to another using a digital device or channel. This definition may include payments made with bank transfers, mobile money, QR codes, and payment instruments such as credit, debit, and prepaid cards. Digital payments can be partially digital, primarily digital, or fully digital.

Digital payment is referred to as those payments that take place using the various types of electronic medium. These methods do not require payment to be made in the form of cash or providing cheque.

A partially digital payment might be one in which both payer and payee use cash via third-party agents, with payment providers transferring the payment digital



IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

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IMPACT OF NATIONAL EDUCATION POLICY (NEP2020) IN HIGHER EDUCATION INSTITUTIONS IN INDIA

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Abstract

NEP is the first education policy of 21st century. During the COVID-19, the only positive that happened in the field of education in India was this policy which promises to transform the education system of India. As they say, change in the law of nature but this change was overdue for more than 35 years. The last time we saw a similar change in the field of education was back in the year 1986. For anything to survive in this dynamic world it is important to adapt to the changing scenario. Same goes for education, with changing information and communication technology (ICT), industrial requirement, there is need for change in the way we learn. And as the global scenario in education has been changing rapidly witnessing a paradigm shift in the overall system. It was important for India also to catch up with that change, an effort in this direction has been made through NEP 2020 to reform the education system in India. The study is purely qualitative in nature as it relies solely on secondary data sources. And the secondary data sources used are books, journals, research articles, websites, newspaper, and different government publications. An effort is made to study the provisions of the policy and how these will contribute towards improving the education at school level and in the higher education. The study will also look into the challenges in implementing those provisions in place of the existing system of education in India.

Keywords: NEP 2020, School Education, Information and Communication Technology (ICT), Higher Education, Reforms.

Introduction:

India being one of the largest countries in the World when it comes to population. Keeping in view this fact it becomes really important that the focus should be on better education and skill development which has to do with the human resource development. Education is a basic necessity which sets the base for so many things. It is a prerequisite for developing human potential, creating equality in society and promoting National Development. Many efforts were made in this direction from time to time with constitution of various committees and commission and incorporation their recommendations into the education system. After independence, India has come up with three policies at the National level. The first was national education policy in India in the year 1968 and the second in 1986 which was revised in the year 1992. The third being the recent one which came in the year 2020 (Pankaj Thakur). With such a large population it is

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SKILL DEVELOPMENT IN SCHOOLS AND HIGHER EDUCATIONS

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Abstract

Skill development is a prerequisite for entrepreneurship and self-employment in the modern, globalized world. For India's economic progress in the twenty-first century, it is undoubtedly urgent. Vocational education must now be taught to all students as a required component of the curriculum. Education is the ideal tool for fostering the development of skills. It can contribute to a person's overall development. The curriculum ought to include instruction in vocational fields. This will lower the price of skill development. Additionally, youngsters learn faster than more experienced adults. When these kids are adults, they will be able to support themselves financially. They can get knowledge of the worth of money and experience what it's like to work for their money. These kids can also pick up some fundamental marketing techniques. It ought to be carried out with a teacher in charge. There should be new schools built, and the ones that already exist should be converted into a form of industrial school. An industrial school is a school that offers both academic and vocational education in this context. It works best for residential schools. It can be modified and used with other schools as well, though. The current study highlights the necessity and significance of including skill development in curricula for both schools and higher education.

Key Words: Skills, Skill development, Schools and higher Education

Introduction

The formative years of a student are spent acquiring knowledge mostly through books in schools and colleges. And, although this knowledge helps the students develop their personalities, it fails to arm them with practical skills that give them a better chance at the job market. 90% of employment opportunities need the youth to be skilled in some vocation. But, the lack of skills leads to a failure in the youth to secure the job of their dreams. Today, there is a greater demand for skilled workers. So, it becomes important that the pedagogy emphasizes skill development for students that prepare them for their future careers. Let's try and understand why skill development is a necessary part of international school and high school education and how it helps students.

Importance of Skill Development

- It is important to empower students with skill-based training as the development of our economy depends upon them. Here's why skill development in school is important:
- The skill development process helps students think beyond grades. It helps them tap into their capabilities, develop real-life skills, and prepare themselves to be successful in the careers of their choice.

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HUMAN HEALTH AND SOCIAL CARE ACTIVITIES

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Abstract

Health care is the prevention, treatment, and management of illness and the preservation of mental and physical wellbeing through the services offered by the medical, nursing, and allied health professions. According to the World Health Organisation, health care embraces all the goods and services designed to promote health, including “preventive, curative and palliative interventions, whether directed to individuals or to populations”. The organised provision of such services may constitute a health care system.

Introduction

Health Care Activity means all activities aiming at: advancement and improvement of health, prevention of diseases and injuries, diagnosis, treatment, recovery and medical rehabilitation of citizens. Health care, or healthcare, is the improvement of health via the prevention, diagnosis, treatment, amelioration or cure of disease, illness, injury, and other physical and mental impairments in people. Health care is delivered by health professionals and allied health fields.

Medicine, dentistry, pharmacy, midwifery, nursing, optometry, audiology, psychology, occupational therapy, physical therapy, athletic training, and other health professions all constitute health care. The term includes work done in providing primary care, secondary care, and tertiary care, as well as in public health. Social care services provide support to people with learning disabilities, physical disabilities/illnesses and mental illnesses. This support can cover practical activities, personal care and social work, intended to help the people receiving social care to live comfortably.

Health care system in India

Traditional Healthcare Systems in India

In India, in addition to existence of modern medicine, indigenous or traditional medical practitioners continue to practice throughout the country. Popular indigenous healthcare traditions include Ayurveda, Siddha, Unani, Homeopathy, Naturopathy, and Yoga.

The **Ayurveda** (meaning science of life) system deals with causes, symptoms, diagnoses, and treatment based on all aspects of well-being (mental, physical, and spiritual). These professionals, traditionally, have been inheriting the skills from their ancestors. However, with the advent of education, a variety of institutions offer training in indigenous medical practice.

PERSPECTIVE OF ICT TOOLS IN EDUCATION

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IMPLEMENTATION OF EMERGING ICT TOOLS IN TEACHING BY HIGHER EDUCATION TEACHERS

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Abstract

Information & Communication Technology (ICT) has become one of the basic building blocks of modern society. There is a wide spread belief that ICTs have an important role to play in changing and modernizing educational systems and ways of learning. ICT can provide more flexible and effective ways for professional development for teachers, improve pre- & in-service teacher training and connect teachers to the global teacher community. Teaching is becoming one of the most challenging professions in our society where knowledge is expanding rapidly and modern technologies are demanding teachers to learn how to use these technologies in their teaching. This topic mainly focuses on different areas such as educator's pedagogy influencing the effective use of computers for teaching purposes, Impact of training and experience in using ICT by in-service teachers, Impact of ICT diffusion, participatory development of teaching and learning, the effectiveness of using internet as a principal information resource in teaching and learning activity in higher educational institutions, teacher educators' ICT competencies, usage, and perceptions, Computer based technology and its pedagogical utility, ICT usage in Teacher Education, ICT adoption among secondary school teachers, ICT In initial teacher education, Teachers' incorporation of ICT in classroom teaching, Computer and Internet awareness in school going students, e- Training the future world of education, Utilization of computer technology in remedial instruction and modern ICT trends in teaching technology and other related areas.

Keywords: Information & Communication Technology (ICT) and Higher Education Teachers

Introduction

Today's technologies are essential tools for teaching and learning. A variety of Information and Communication Technology (ICT) can facilitate not only delivery of instruction but also learning process itself. Moreover, ICT can promote international collaboration and networking in education and lifelong professional development for today's teacher. There's a range of ICT options – from videoconferencing through multimedia delivery to websites – which can be used to meet the challenges teachers face today. ICT can change the way teachers teach and that it is essential useful in supporting more student centered approaches to instruction and in developing the higher order skills and promoting collaborative activities. To use these tools effectively and efficiently, teachers need visions of the technologies' potential, opportunities to apply them, training

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ICT TOOLS IN TEACHING AND LEARNING

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Introduction

ICT tools stand for Information Communication Technology tools. The ICT tools means to digital infrastructures like computers, laptops, printers, scanners, software programs, data projectors, and interactive teaching box.

The ICT devices are the latest tools, concepts and techniques used in student-to-teacher, student-to-student interaction for example: - clicker devices, mobile applications, flipped classroom) for information and communication technology.

Every aspect of our lives is driven by technology. We are growing more and more reliant on new developments as technology advances. It not only makes our lives simpler but also more efficient. When we are discussing the role of ICT in our lives, how can we neglect the transformations that are happening with the introduction of ICT in education? This article revolves around ICT in education, how ICT positively affects the way students learn and also the advantages of ICT in education. Before we dive into them, let us look at what is ICT in education.

Ict Enabled Tools for Effective Teaching and Learning Process

Following tools are used in the Teaching learning process in Online- Offline mode of instruction. During lockdown these ICT tools proved to be a boon for making the teaching learning process easy and accessible to all students.

1. Learning Management System (MOODLE and Google Classroom)

Moodle stands for Modular Object-Oriented Dynamic Learning Environment and statistics. Moodle is free software, a learning management system providing a platform for e-learning and it helps the various teachers considerably in conceptualizing the various courses, course structures and curriculum thus facilitating interaction with online students. It is configurable, highly-flexible, and feature-rich. RSCOPR has a self-customized MOODLE developed by Digital Content development team. (<https://lms.jspmrscopr.edu.in/>).

It is a very useful platform to share all learning resources, videos, sharing webpage. Moodle supports a range of media to present or link to learning materials, support the students and to assess their learning. It is able to provide automated assessment in the form of quiz, and give immediate detailed feedback to the students. The messaging system

RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT

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SKILL DEVELOPMENT IS AN IMPORTANT FACTOR IN WOMEN'S EMPOWERMENT IN INDIA

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Abstract

Giving women the freedom or power to live the way they want is what empowerment means. It allows them to identify their skills, knowledge & abilities to make their own decisions. It is a dynamic & growth process for women which includes awareness, attainment & actualization of skills. For the socio-economic development of any society, women empowerment is essential. It is important for women to identify themselves with self confidence & esteem. The confident smile on the faces of women is the measurement of their empowerment. Skills development is a key to success which improves productivity, employability and earning opportunities. It is the bridge between job and workforce. Today, it is considered as an important and indispensable tool for women empowerment. Indian women face the majority of barriers to accessing skills and productive employment. A large effort is needed to create a skilled workforce for creating an economic prosperity.

Keywords: Women, Empowerment, Skills, Employment and workforce.

Introduction

Women play an important role in enhancing the well-being of the family and society. In recent decades, they have been active participants in various economic and social activities, but their efforts remain unrecognized. In this male-dominated society, they are still subjected to discrimination in the social, economic, and educational fields. Raising women's awareness of their rights and strengthening their self-confidence is a central challenge. Empowering women means giving them the freedom or the power to live as they see fit. It helps them identify their skills, knowledge and capacities for making their own decisions. It is a dynamic & growth process for women which includes awareness, attainment & actualization of skills. For the socio-economic development of any society, women empowerment is essential. It is important for women to identify themselves with self confidence & esteem. The confident smile on the faces of women is the measurement of their empowerment.

Skills development is a key to success which improves productivity, employability and earning opportunities. It is the bridge between job and workforce. Today, it is considered as an important and indispensable tool for women

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PERCEPTION TOWARDS OTT PLATFORM (A STUDY WITH SPECIAL REFERENCE TO COIMBATORE DISTRICT)

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Abstract

The patterns of content consumption have changed drastically over a period of the last 20 years and as technology is making advancements in almost every arena, the evolution can be seen in the trends of entertainment and media services. Consumers have now turned towards Over-The-Top i.e. OTT Platforms which allow them to stream their choice of content via the means of the internet, instead of holding on to the more traditional forms of media. Consumers are now ready to pay more and more in order to customize their streaming experience at their convenience and this in turn is helping the entertainment industry thrive. Ever since the lockdown was imposed in the country in lieu of the Corona virus pandemic, more and more consumers are seeking out ways to keep themselves entertained at home. Currently numerous OTT video platforms are available for consumers to encourage them. These OTT video platforms are developed to reach customers easily through advanced provisions and technology. With the rapid advancement of technology, OTT services are advancing at a rapid rate.

Keywords: OTT Platform, Technology, Online service

Introduction

Watching movies and other digital content in India has been a consistent activity and a part of the lifestyle that provides relaxation and recreation from the frantic professional work. People from all age groups love to consume digital content via movies, web series, one-shot films, etc. The key aspect has been the shift in the medium on which these movies and series are consumed.

In the early digital era viz. the 1990s to 2010s, the cinemas and television were the major platforms on which movie content was consumed. The coverage and reach of these two platforms covered even the rural parts of India. Thus, people developed behaviour of watching movies at the cinemas as well as television. And since then with the internet developing quite fast, the medium of cinemas and television has been overtaken by OTT Platforms.

With the COVID-19 pandemic fuelling the OTT wave even further, impacting the cinemas to shut down; has helped the OTT players to set a strong foothold as the prime medium for watching movies, web series and much more digital content. This has impacted the Cinemas considerably in terms of revenue and market share that

leads to direct competitive rivalry between the two mediums viz. OTT and Cinemas despite differences in business model.

OTT (Over the Top) Platforms are web-based digital media libraries that enable users and viewers to stream different types of media content of several genres and languages. These platforms have gained a considerable audience and viewership over the last half-decade. Disney+ Hotstar, Amazon Prime Video, Netflix, Sony LIV are some of the leading OTT platforms in India.

These OTT platforms were a substitute and mainly a partner to the mainstream Cinema exhibition companies. The Cinema chains like INOX and PVR were the chief players in the entertainment industries that helped movie production companies to distribute their movies all across the country. Cinemas have been the prime platform for viewers and audience to watch movies firstly.

The major stimulator for the rivalry between OTT and Cinemas is the shift in consumer preferences towards OTT platforms for consuming digital content over the past 3-4 years since 2019. People have switched to OTT for several reasons and avoided going to Cinemas for watching movies.

Review of Literature

Jay Chopdar, Tanima Tarafdar (2021) conducted a study on **"A study on consumers' perception towards over the top (OTT) platforms with special reference to guwahati city"**. The aim of the study is to analyze Consumers preference towards OTT platforms and DTH services. The sample chosen for this study is 100 from Guwahati city. Judgement sampling method is used for this study. Tool used for this study is Anova. Primary data is collected for this study. The findings of this study is to identify the factors influencing consumers choice towards OTT platforms and also their level of satisfaction towards the services of OTT

Sony Varghese, Selvin Chinnaiah, (2021) conducted a study on **"Is OTT industry a disruption to movie theatre industry "**. The aim of the study is to analyze the Movie theatre industry and OTT industry in India. The sample chosen for this study is 326 from kochi. Convenient sampling method is used for this study. Tool used for this study is Anova and correlation. The study conclude on how movie theatres compete to stay relevant, in the minds of their consumers in the current marketplace, where video content is easily accessible on OTT platforms from the convenience of their homes.

Daniel Varun Paul (2020) conducted a study on **"A Study on Over the Top Platforms on DTH and its Impact on Consumer Behaviour"**. The aim of the study is to analyze whether OTT platforms can completely replace DTH. The sample chosen for this study is 114 from Bangalore. Convenient sampling method is used for this

study. Tools used for this study is Cronbach alpha , Descriptive analysis .The study conclude that mobility and price were the two primary factors that determine consumer choice and it was found that people prefer streaming content on OTT platforms.

Anindita Dey, Rahul Chanda (2022) conducted a study on " **A Study on OTT Content Versus Theatrical Released Cinema Preferences Among the Urban Population of Guwahati** " The aim of the study is To analyze the demand for Over-the-top content over TV and Cinema. The sample chosen for this study is 200 from Guwahati city. Convince and snowball sampling method is used for this study. The study concludes that whether the preferences of the viewers are diverting towards OTT content or it remains with commercial cinema released in theatres.

Statement of the Problem

The OTT (Over-The-Top) media platform is a digital media service that is offered directly to subscribers over the Internet. OTT bypasses corporations that have traditionally served as a regulator or distributor of comparable material, such as string, radio, and satellite TV channels. It has also been extended to no-carrier Cell phones, which charge all dispatches as data, thereby eliminating monopolistic competition.

An examination directed by Gomathi in his study have found that, the development of online streaming services like Netflix and Amazon Prime Video, among others, means that children and teenagers now have access to uncensored content because digital content on these OTT platforms is made available to the general public without any filtering or screening and there is no law or autonomous body to monitor and manage it. As is the case, OTT platforms ought to be in charge of promoting digital awareness that is, consumers ought to be made aware of the effects of their streaming and should determine whether watching those videos is really necessary. In addition, it is the viewer's responsibility to ensure that our children do not have access to such content, which can assist in accomplishing the very purpose. From this study following questions has been raised, what are the factors influencing OTT platforms usage? , and also to know about the customer perception ?

Objective of the Study

To find out the solution for the above problems, the present study has been undertaken with the following objectives. They are

- To determine the factors influencing the users to OTT platforms.
- To study the customers' perception toward OTT platforms

Research Methodology

The present study is based on primary data by distributing the questionnaire containing relating to socio economic profile to the OTT customers. Necessary guidance was given to the respondents for filling up the questionnaire.

Source of Data

Data collection is the one of the most important aspect of research. Primary data and secondary data were used in the study.

Sampling

The data required for the study have been collected by way structured questionnaire in order to know perception towards OTT platform ,satisfaction towards OTT platform, reason for using OTT platform .120 questionnaire are collected and 120 questionnaire are taken for analysis. Convenient sampling method is adopted to select the sampling customers .

Analysis and Intrepretations

Simple Percentage

S.no	Variables	Respondents information	No. of Respondents and Percentage
1	AGE	18-24yrs	45.0
		25-34yrs	25.0
		35-49yrs	20.8
		Above 50yrs	9.2
2	Gender	Male	38.3
		Female	61.7
3	Marital status	Married	45.0
		Unmarried	55.0
4	Occupation	Government employee	13.3
		Private employee	31.7
		Business	15.8
		Student	20.8
		Others	18.3
5	Income	Nil	30.8
		Below 1 lakh	37.5
		1 lakh – 2 lakh	21.7
		2 lakh- 3 lakh	5.8
		3 lakh – 4 lakh	3.3
		4 lakh and above	0.8

6	Types of family	Joint family	26.7
		Nuclear family	73.3
7	No. of earning members	1	27.5
		2	29.2
		3	22.5
		4	11.7
		Above 4	9.2
8	Most preferred OTT platforms	Netflix	20.8
		Amazon prime	8.3
		Disney+ hot star	36.7
		MX player	14.2
		Sun NXT	8.3
		Voot	5.0
		Aha	0.8
		Alt balaji	5.8
9	Language	Tamil	53.3
		English	24.2
		Hindi	9.2
		Telugu	9.2
		Other	4.2
10	No. subscribed channels	0-1 channels	36.7
		1-2 channels	38.3
		More than 3 channels	25.0
11	No. of hours	30 minutes	23.3
		1-2 hours	42.5
		2-3 hours	17.5
		More than 3 hours	16.7
12	About OTT platforms	Friends and relatives	37.5
		Advertisement	49.2
		Magazine and newspaper	13.3
13	Specific OTT platforms	Vast variety	22.5
		Personalized suggestion	26.7
		Easy to use	35.0
		Cost of subscription	15.8
14	Most attracts	Content	23.3
		No ads	38.3
		Convenience	28.3
		Price and offers	10.0

15	Most preferred genre's	Comedy	23.3
		Action	17.5
		Drama	23.3
		Romance	13.3
		Horror	10.8
		Anime	4.2
		Stand up	2.5
		Sport	5.0
16	Devises used to watch OTT platform	Mobile and tablet	46.7
		Laptop	32.5
		Smart TV	20.8
17	Usage of OTT platforms	Daily	26.7
		Weekly	50.0
		Monthly	23.3
18	Time preferred	Daily	11.7
		Afternoon	27.5
		Evening	29.2
		Night	31.7
19	Period of OTT platform	Less than 1 year	36.7
		2 years	49.2
		3 years	14.2
20	Amount spent for OTT platform	50-100	15.0
		100-200	12.5
		200-300	20.8
		300-400	9.2
		400-500	10.8
		Above 500	5.0
		999	5.0
		Free	21.7
21	Payment mode	Card payment	20.0
		UPI	36.7
		Net banking	25.8
		Wallet	17.5
22	Additional benefits	Yes	41.7
		No	58.3
23	Reason for choosing	To meet the need of	30.8
		different household	12.5
		member	30.8

		There is no single service that provide all the content I want I signed to a free trial and forgot to cancel Just have more platforms	25.8
24	Entertainment	Web series TV series Movies Documentaries Original	35.0 24.2 32.5 6.7 1.7
25	Price value	The price of OTT platform is affordable On the OTT platforms we get have content we pay for OTT platform I more affordable then traditional tv	32.5 25.0 42.5
26	Preference	Yes No	61.7 38.3
27	OTT platform or cinema hall	Cinema hall OTT platform Both	37.5 35.0 7.5
28	Convenient and cheaper	Yes No	60 40
29	Problem faced	Have poor internet connection Lack personal security and privacy Limits big screen experience Content in the OTT platform lacks censorship Peoples addition to OTT platform limits social life	29.2 17.5 8.3 26.7 18.3

Majority of the respondents 54(45.0%) falls between the age group 18-25 years. Majority of the respondents 74 (61.7%) are under category of female .Majority of the respondents 66 (55.0%) are unmarried. Majority of the respondents 25 (20.8%) are students. Majority of the respondents 45(37.5%) are earning below 1 lakhs. Majority of the respondents 88(73.3%) are living in nuclear family. Most of the respondents 35 (29.2%) are earning of 2 members. Most of the respondents 84 (36.7%) are mostly preferring are Disney + hot star. Majority of the respondents 64(53.3%) of them using Tamil language. Majority of the respondents 46(38.3%) are most of them have subscribed between 1-2 channels. Majority of the respondents (4.5%) are mostly spending 1-2 hours to watch OTT platforms. Most of the respondents 12 59 (49.2%) are known this OTT platform by Advertisement. Majority of the respondents 42(35.0%) most of them selected for easy to use OTT platforms. Majority of the respondents 46 (38.3%) are mostly attracted by No ads . Majority of the respondents 28(23.3%) have liked both comedy and action genres equally. Majority of the respondents 56 (46.7%) are using mobile and tablets. Most of the respondents 60(50%) of them are using OTT platform at weekly. Most of the respondents 38(31.7%) of them are preferring to watch OTT platforms at night timing only. Majority of the respondents 59(49.2%) of them are using OTT platforms for 2 years. Majority of the respondents 26(21.7%) of them are spending amount for free. Majority of the respondents 44(36.7%) of them are willing to pay in UPI App . Majority of the respondents 70(58.3%) have said no to get additional benefits. Majority of the respondents 37(30.8%) are reason for choosing OTT platforms to meet the need of different house members. Majority of the respondents 42(35.0%) of them are like to watch web series. Majority of the respondents 51 (42.5%) of them like OTT platform I more affordable than traditional TV. Majority of the respondents 74(61.7%) are mostly preferring OTT platforms . Majority of the respondents 45(37.5%) are like to watch in cinema hall . Majority of the respondents 72(60%) of them are saying that OTT platforms is convenient and cheaper. Majority of the respondents 35(29.2%) of them have poor internet connection problem

Satisfaction Towards OTT Platform

Data is to be collected from 120 respondents used for the questionnaire is divided into 3 parts and containing 29 questions is to allow assessing the satisfaction level of customers using OTT platforms. Satisfaction level is calculated based on standard deviation at (11.36) and average (77.25) respondents whose index value is below 65.89 is treated as “low level of satisfaction level “, whose index range between 65.90 to 88.660 is treated as ‘medium level of satisfaction level “, whose index -treated is above 88.61 is treated as” high level of satisfaction “ .Chi – square analysis has been - implemented and satisfaction level

S.no	Variables	No. of respondents %	Chi- square value	Significant /not
1	AGE 18-24 25-34 35-49 Above 50	54(45%) 30(25%) 25(20.8%) 11(9.2%)	12.940	Significant @10% level
2	INCOME Nil Below 1 lakh 1 lakh-2 lakh 2lakh-3 lakh 3lakh-4 lakh 4 lakh above	37(30.8%) 45(37.5%) 26(21.7%) 7(5.8%) 4(3.3%) 1(0.8%)	23.512	Significant @10% level
3	PREFERENCE OF OTT Netflix Amazon prime Disney +hotstar MX player Sun NXT Voot Aha Alt balaji	25(20.8%) 10(8.3%) 44(36.7%) 17(14.2%) 10(8.3%) 6(5%) 1(0.8%) 7(5.8%)	25.437	Significant @10% level
4	DEVISE USED TO WATCH OTT PLATFORM Mobile and tablet Laptop Smart TV	56(46.7%) 39(32.5%) 25(20.8%)	11.229	Significant @10% level

In order to know the satisfaction towards OTT platform by applying Chi - square. The associated variable are age, income, preference of OTT platform, devise used to watch OTT platform. When the age are increasing the satisfaction towards OTT platform reduced, When the income are increasing the satisfaction towards OTT platform reduced, When the preference of OTT platform are increasing the satisfaction towards OTT platform reduced, When the devise used to watch OTT platform are increasing the satisfaction towards OTT platform reduced.

Conclusion

From the Study have identified that the user friendliness and content richness as significant factors in the usage and promotion of OTT platform. Price sensitivity matters a lot to individuals. Cost effect makes the platform stronger than usual. It brings cost sensitivity to users and encourages to the platform. Life with ease, own comfort, and satisfaction brings the individuals closure to the OTT platform. Programme with own choice, time, location, duration makes possible everything with mobile phones. Mobile phone makes it easy to use this platform. It brings the control of an individual in all respects. Talking about millennia's to some extent and zen z, peer pressure, or as a status in society or better positions among friends does not force them to make an extensive usage of OTT. Exposure to the international content, and trends as well the other factors that influence the audiences to the platform.

Suggestion

- Current generation doesn't have the patience to wait for a show or movie to air on a linear platform like television. This viewer wants the content instant and on-demand
- From content selection to payment mechanism, all aspects of the user's experience must be properly managed to meet the expectations of their distinct audience base

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RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT

Vol - 1

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WOMEN EMPOWERMENT TOWARDS RETAIL BUSINESS (A STUDY WITH SPECIAL REERENCE TO POLLACHI TALUK)

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Abstract

Women play multiple roles in every stage of her life. Many women select to be entrepreneurs to manage both household & business activities. Work-life balance means balancing between personal life and professional life effectively. A sound and healthy working life are required to maintain effective balance between personal life and professional life. There is a dilemma in women nowadays in attaining perfection both in their professional and personal life. In the present competitive world entrepreneurs need to face many challenges and those must be handled properly. Women entrepreneurs are overburdened and find it increasingly difficult to balance their work & life roles. Therefore, the major objective of the present study is to suggest appropriate measures for the work-life balance (WLB) and factors that affect & creates the gap between personal & professional life. To achieve this data is collected from secondary sources. The researcher provides suggestions and recommendations to deal with the major Work-life balance issues faced by women entrepreneurs.

Keywords: *Women entrepreneurs, work-life balance, professional and personal life, etc.*

Introduction

Retail stores are defined as a shop that sells one type of merchandise and retailers tend to overload their stores with different products as possible to reach the highest sales per square meter. Nowadays, due to the rapid changing in the fashion industry, stores have to be designed and modernized to have a specific image that attracts more customers and in turn increase revenues. Store design includes store layout, and the use of colors, sound, scent, and merchandise displays that affect store atmosphere and make the store more legible for customers. Different researchers claim that store image is a determinant factor for consumers in choosing a store that stimulating their purchasing decisions. In addition, many studies support that design elements support the store image, attract the attention of customers, and store loyalty rather than ambient elements .In addition, store design is considered more influential as it affects peoples' perception of the overall brand and alters customers purchasing mood According to marketing researchers, store image is an important marketing strategy that has an influential role on store loyalty and patronage decisions rather than merchandise and price. To quote the designer Leandro Artigala, "One of the key things in retail is that consumers have to feel that they're in the environment that they are looking for" Different studies show that when consumers face multiple similar options, their choice will be based on the differences between these options.

When empowerment is considered in terms of women there are four key terms which overlap to form the consensus- "option, choice, control and power". In a broad sense this describes how much flexibility a woman has to influence decisions in her family and own life; the degree to which they can influence decision making for themselves as well their family and the level of self-resilience and autonomy they possess in the functions of their own life. It can also be coined as having entitlement and confidence of a woman to take part in decision making with choice and self-interest.

Review of Literature

Dr. Padmaja, Priya.k (2022) conducted " **A Study on women empowerment through entrepreneurship in India**". The aim of the study is to analyze how women entrepreneurs play a vital role and have made significant contributions to economic growth and reduction of poverty. Sample chosen for this study is 65. Convenience sampling method is used for this study. Tool used for this study is anova. Secondary data were collected for this study. The findings of the study in the Business world women's are fighting for their independence rights and equality.

Ms. Shwetha ,Kagenavar ,Dr.G.H.kallimath (2021) conducted " **A Study on women entrepreneurship and work life balance.**" The aim of the study is to analyze how women play multiple roles in every stage of her life. Sample chosen for this study is 100. Judgment sampling method is used for this study. Tool used for the study is anova tool. Secondary Data were collected for this study. The findings of the study is to deal with the major work life balance issues faced by women entrepreneurs.

Dr. Jasleen Kaur, Chandandeep Kaur (2020) conducted a " **A Study on retail therapy behavior of women in India.**" The aim of the study lies in extending the retail therapy research to Indian Shoppers. Sample chosen for this study is 703. Snowball sampling method is used for this study. Tool used for this study is t-test tool. Primary data were collected for this study. The findings of the study have important implications for the retailers.

Deena Paul (2019) conducted a " **A Study on the impact of online shopping over small retailers of women**". The aim of the study To analyze the new business pattern for achieving their customer satisfaction. Sample chosen for this study is 50. Continent sampling method is used for this study. Tool used for this study is a statistical tool. Primary Data were collected for this study. The finding of the study is turnover and profit margin of the retailers has considerably decreased in the past few years.

Statement of the Problem

Women empowerment plays a major part in the family. She holds the family together. According to the olden days tradition Women were not allowed to work They were asked to stay back at home while their husbands went to works, for them

work was household and kids. The main problem for women is experiencing specific challenges when trying to achieve a leadership role in retail management.(outland 2013) There can often be obstacles in women's way hindering their advancement in retail due to barriers of gender(nordell 2014). Women struggle with so-called second generation gender biases, which are "powerful yet often invisible barriers to women's advancement that arise from cultural beliefs about gender, as well as workplace structures, practices, and patterns of interactions that inadvertently favor men".(patel and buiting 2020)There are a number of key themed areas that will be discussed which are generally the reason for women not progressing in retail management. And it is focus on essential for assessing the growing need for work life balance policies or programmes for the working women of india. To know the women empowerment of retailing. From this study the question has been raised to identify the major constraints that creates obstacle for women empowerment in starting or running their retail business in pollachi taluk.

Objective of the Study

- To study the demographic profile of women empowerment in the retail sector.
- To identify the major constraints that creates obstacle for women empowerment in starting or running their retail business

Sources of Data

Data collection is one of the most important aspects of research. Primary and secondary data were used in this study

Sampling

The data required for the study have been collected by way structured questionnaire on order to know the women's empowerment in retail business of the total 110 questionnaires issued 110 questionnaires are collected, and 110 questionnaires are taken for analysis. The convenience sampling method is adopted to select the sampling customers

Research Methodology

The present study is based on the primary data of pollachi taluk by distributing the questionnaire containing questions relating to socio economic profile to the women empowerment in retail business. Necessary guidance was given to the respondents for filling up the questionnaire

Analysis and Interpretation

1. Simple Percentage

	VARIABLES	RESPONDENT INFORMATION	NO. OF RESPONDENTS AND PERCENTAGE
1	Age	Less than 20 21-31 years 31-40 years Above 40 years	4.5 34.5 39.1 21.8
2	Place	Town Village	48.2 51.8
3	Marital status	Unmarried Married Widow Divorced	23.6 64.5 4.5 7.3
4	Type of family	Joint family Nuclear family	35.5 64.5
5	Qualification	SSC HSC Graduate Post Graduate Illiterate	20.9 24.5 25.5 24.5 4.5
6	No.of family members	3 3-5 5-8	26.4 54.5 19.1
7	Family income	Below 20,000 21000-30000 36000-50000 Above 50000	14.5 50.9 20.9 13.6
8	No.of earning members	1 2 3 More than 3	15.5 51.8 22.7 10.0
9	No.of working hours	6 hours 7 hours 8 hours	20.9 29.1 50.0
10	Type of business	One owner Partnership	60.0 40.0

11	Location of the business	At home Near by home Distanced from home	32.7 42.7 24.5
12	Type of retail shop	Boutique Grocery Beauty parlour Pharmacy Tailoring shop Fancy store Other	18.2 19.1 13.6 4.5 27.3 10.0 7.3
13	Working years	1-3 4-6 6-10 Above 10	39.1 35.5 19.1 6.4
14	Working employees	Below 10 10-20 workers 20-30 workers Above 30 workers	65.5 28.2 5.5 9
15	Balance between work and family	Always Most of the time Sometimes Never	15.5 43.6 40.0 9
16	Sharing of household work	Daily Most of the time Sometime Never	21.8 31.8 38.2 8.2
17	Support of the family	Sometime Rarely Occasionally Others	33.6 34.5 27.3 4.5
18	Purchase of retail product	Yes No	49.1 50.9
19	Issue of the retail business	Network issue Financial issue Educational issue Technical issue Health issue	26.4 51.8 6.4 3.6 11.8
20	E-commerce platforms	Yes No	30.9 69.1

Majority 43(39.1%) respondents are between 31-40 years. Majority of 57(51.8%) respondents are living in village. Majority of 71(64.5%) women's are married in Marital status. Majority of 71 (64.5%) members are in the type of Nuclear family Majority of 28(25.5%) respondents are from the level of graduated in educational Qualification. Majority of 60(54.5%) respondents have between 3-5 family members. Majority 56(50.9%) respondents of their family income belong to Rs.21000-30000 category Range. Majority 57(51.8%) respondents having 2 earning members in their family. Majority 55(50.0%) respondents work 8 hours per day to maintain the business.

Gender Equality of Women Empowerment

Data is to be collected from 110 respondents used for the study questionnaire is divided into 3 parts and containing 20 questions is to allowed to assess the satisfaction level of women empowerment. Satisfaction level is calculated based on standard deviation at (11.29) and average (79.34). Respondents whose index value is below 68.05 is treated as "Low level of satisfaction of women empowerment ", whose index range between 68.06 to 90.62 is treated as" Medium level of satisfaction level", whose index treated is above 90.63 is treated as "High level of satisfaction level. "Chi - square analysis has been implemented to test association between the selected variables and satisfaction level .

S.no	Variables	No. of respondent	Chi- square value	Significant/not
1	AGE Less than 20 21-30 31-40 Above 40	5(4.5%) 38(34.5%) 43(39.1%) 24(21.8%)	10.105	Significant @ 10 % level
2	MARITAL STATUS Unmarried Married Widow Divorced	26(23.6%) 71(64.5%) 5(4.5%) 8(7.3%)	16.104	Significant @ 10 % level
3	NUMBER OF YEARS 1-3 4-6 6-10 Above 10	43(39.1%) 39(35.5%) 21(19.1%) 7(6.4%)	4.649	Significant @ 10 % level

4	NUMBER OF EMPLOYEES Below 10 10-20 workers 20-30 workers Above 30 workers	72(65.5%) 31(28.2%) 6(5.5%) 1(.9%)	15.658	Significant @ 10 % level
5	WORK AND FAMILY Always Most of the time Sometimes Never	17(15.5%) 48(43.6%) 44(40.0%) 1(.9%)	20.597	Significant @ 10 % level

In order to know the satisfaction of women empowerment by applying Chi - square. The associated variable are age , marital status , no. of years ,no. of employees , work and family. When the age are increasing the gender equality of women empowerment reduced, When the no. of years are increasing the gender equality of women empowerment reduced, When the marital status are increasing the gender equality of women empowerment reduced, When the no. of employees are increasing the gender equality of women empowerment reduced, When the issues in retail are increasing the gender equality of women empowerment reduced, When the , work and family are increasing the gender equality of women empowerment reduced, When the sell retail product in e - commerce platform are increasing the gender equality of women empowerment reduced

Conclusion

Because of this competitive world, people are choosing to work over their personal life. Family, friends and relatives are ignored to manage their work life. It creates conflicts between work life and personal life. Women must have complete knowledge of their changing roles in family and work. Women have to develop relevant skills and good combination of effective skills enables them to maintain healthy balance between work life and personal life. It has a long time for fighting for women's rights, equality and independence of women. Till today in backward areas, women are facing many problems. There are genuine instances of dowry, rape, harassment, abandonment and other problems that a woman has gone through in a marriage and family. They need to be strong and use these laws to protect themselves. In every case of misuse of power, there is a human story, of someone being hurt and threatened, with an extortion that leaves them bitter, sick and damaged. Fair discussion can solve biggest family issue. Men and women both need to be humanists. Whether a woman has been hurt or a man, society and law should

be sensitive to both. Instead of playing the power card, morality, forgiveness and happiness of family members should be motto. In family life ego should not take place, forgiveness can help to save a marriage.

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PERSPECTIVE OF ICT TOOLS IN EDUCATION

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WOMEN EMPOWERMENT TOWARDS RETAIL BUSINESS

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Abstract

Women play multiple roles in every stage of her life. Many women select to be entrepreneurs to manage both household & business activities. Work-life balance means balancing between personal life and professional life effectively. A sound and healthy working life are required to maintain effective balance between personal life and professional life. There is a dilemma in women nowadays in attaining perfection both in their professional and personal life. In the present competitive world entrepreneurs need to face many challenges and those must be handled properly. Women entrepreneurs are overburdened and find it increasingly difficult to balance their work & life roles. Therefore, the major objective of the present study is to suggest appropriate measures for the work-life balance (WLB) and factors that affect & creates the gap between personal & professional life. To achieve this data is collected from secondary sources. The researcher provides suggestions and recommendations to deal with the major Work-life balance issues faced by women entrepreneurs.

Keywords: *Women entrepreneurs, work-life balance, professional and personal life, etc.*

Introduction

Retail stores are defined as a shop that sells one type of merchandise and retailers tend to overload their stores with different products as possible to reach the highest sales per square meter. Nowadays, due to the rapid changing in the fashion industry, stores have to be designed and modernized to have a specific image that attracts more customers and in turn increase revenues. Store design includes store layout, and the use of colors, sound, scent, and merchandise displays that affect store atmosphere and make the store more legible for customers. Different researchers claim that store image is a determinant factor for consumers in choosing a store that stimulating their purchasing decisions. In addition, many studies support that design elements support the store image, attract the attention of customers, and store loyalty rather than ambient elements .In addition, store design is considered more influential as it affects peoples' perception of the overall brand and alters customers purchasing mood According to marketing researchers, store image is an important marketing strategy that has an influential role on store loyalty and patronage decisions rather than merchandise and price. To quote the designer Leandro Artigala, "One of the key things in retail is that consumers have to feel that they're in the environment that they are looking for" Different studies show that when consumers face multiple similar options, their choice will be based on the differences between these options.

When empowerment is considered in terms of women there are four key terms which overlap to form the consensus- "option, choice, control and power". In a broad sense this

describes how much flexibility a woman has to influence decisions in her family and own life; the degree to which they can influence decision making for themselves as well their family and the level of self-resilience and autonomy they possess in the functions of their own life. It can also be coined as having entitlement and confidence of a woman to take part in decision making with choice and self-interest.

Review of Literature

Dr. Padmaja, Priya.k (2022) conducted "**A Study on women empowerment through entrepreneurship in India**". The aim of the study is to analyze how women entrepreneurs play a vital role and have made significant contributions to economic growth and reduction of poverty. Sample chosen for this study is 65. Convenience sampling method is used for this study. Tool used for this study is anova. Secondary data were collected for this study. The findings of the study in the Business world women's are fighting for their independence rights and equality.

Ms. Shwetha ,Kagenavar ,Dr.G.H.kallimath (2021) conducted "**A Study on women entrepreneurship and work life balance**." The aim of the study is to analyze how women play multiple roles in every stage of her life. Sample chosen for this study is 100. Judgment sampling method is used for this study. Tool used for the study is anova tool. Secondary Data were collected for this study. The finding of the study is to deal with the major work life balance issues faced by women entrepreneurs.

Dr. Jasleen Kaur, Chandandeep Kaur (2020) conducted a "**A Study on retail therapy behavior of women in India**." The aim of the study lies in extending the retail therapy research to Indian Shoppers. Sample chosen for this study is 703. Snowball sampling method is used for this study. Tool used for this study is t-test tool. Primary data were collected for this study. The findings of the study have important implications for the retailers.

Deena Paul (2019) conducted a "**A Study on the impact of online shopping over small retailers of women**". The aim of the study to analyze the new business pattern for achieving their customer satisfaction. Sample chosen for this study is 50. Continent sampling method is used for this study. Tool used for this study is a statistical tool. Primary Data were collected for this study. The findings of the study are turnover and profit margin of the retailers has considerably decreased in the past few years.

Statement of the Problem

Women empowerment plays a major part in the family. She holds the family together. According to the olden days tradition Women were not allowed to work They were asked to stay back at home while their husbands went to works, for them work was household and kids. The main problem for women is experiencing specific challenges when trying to achieve a leadership role in retail management.(outland 2013) There can often be obstacles in women's way hindering their advancement in retail due to barriers of gender(nordell 2014). Women struggle with so-called second generation gender biases, which are "powerful yet often invisible barriers to women's advancement that arise from cultural

beliefs about gender, as well as workplace structures, practices, and patterns of interactions that inadvertently favor men".(patel and buiting 2020)There are a number of key themed areas that will be discussed which are generally the reason for women not progressing in retail management. And it is focus on essential for assessing the growing need for work life balance policies or programmes for the working women of india. To know the women empowerment of retailing. From this study the question has been raised to identify the major constraints that creates obstacle for women empowerment in starting or running their retail business in pollachi taluk.

Objective of the Study

- To study the demographic profile of women empowerment in the retail sector.
- To identify the major constraints that creates obstacle for women empowerment in starting or running their retail business

Sources of Data

Data nature collection is one of the most important aspects of research. Primary and secondary data were used in this study

Sampling

The data required for the study have been collected by way structured questionnaire on order to know the women's empowerment in retail business of the total 110 questionnaires issued 110 questionnaires are collected, and 110 questionnaires are taken for analysis. The convenience sampling method is adopted to select the sampling customers

Research Methodology

The present study is based on the primary data of Pollachi taluk by distributing the questionnaire containing questions relating to socio economic profile to the women empowerment in retail business. Necessary guidance was given to the respondents for filling up the questionnaire

Gender Equality of Women Empowerment

Data is to be collected from 110 respondents used for the study questionnaire is divided into 3 parts and containing 20 question is to allowed to assess the satisfaction level of women empowerment. Satisfaction level is calculated based on standard deviation at (11.29) and average (79.34).Respondents whose index value is below 68.05 is treated as "Low level of satisfaction of women empowerment ", whose index range between 68.06 to 90.62 is treated as" Medium level of satisfaction level", whose index treated is above 90.63 is treated as "High level of satisfaction level ".Chi – square analysis has been implemented to test association between the selected variables and satisfaction level.

S.NO	VARIABLES	NO. OF RESPONDENT	CHI-SQUARE VALUE	SIGNIFICANT/NOT
1	AGE Less than 20 21-30 31-40 Above 40	5(4.5%) 38(34.5%) 43(39.1%) 24(21.8%)	10.105	Significant @ 10 % level
2	MARITAL STATUS Unmarried Married Widow Divorced	26(23.6%) 71(64.5%) 5(4.5%) 8(7.3%)	16.104	Significant @ 10 % level
3	NUMBER OF YEARS 1-3 4-6 6-10 Above 10	43(39.1%) 39(35.5%) 21(19.1%) 7(6.4%)	4.649	Significant @ 10 % level
4	NUMBER OF EMPLOYEES below 10 10-20 workers 20-30 workers Above 30 workers	72(65.5%) 31(28.2%) 6(5.5%) 1(.9%)	15.658	Significant @ 10 % level
5	WORK AND FAMILY Always Most of the time Sometimes Never	17(15.5%) 48(43.6%) 44(40.0%) 1(.9%)	20.597	Significant @ 10 % level

In order to know the satisfaction of women empowerment by applying Chi - square. The associated variable are age, marital status, no. of years, no. of employees, work and family. When the age are increasing the gender equality of women empowerment reduced, When the no. of years are increasing the gender equality of women empowerment reduced, When the marital status are increasing the gender equality of women empowerment reduced, When the no. of employees are increasing the gender equality of women empowerment reduced, When the issues in retail are increasing the gender equality of women empowerment reduced, When the , work and family are increasing the gender equality of women empowerment reduced, When the sell retail product in e-commerce platform are increasing the gender equality of women empowerment reduced

Conclusion

Because of this competitive world, people are choosing to work over their personal life. Family, friends and relatives are ignored to manage their work life. It creates conflicts between work life and personal life. Women must have complete knowledge of their changing roles in family and work. Women have to develop relevant skills and good combination of effective skills enables them to maintain healthy balance between work life and personal life .It has a long time for fighting for women's rights, equality and independence of women. Till today in backward areas, women are facing many problems. There are genuine instances of dowry, rape, harassment, abandonment and other problems that a woman has gone through in a marriage and family. They need to be strong and use these laws to protect themselves. In every case of misuse of power, there is a human story, of someone being hurt and threatened, with an extortion that leaves them bitter, sick and damaged. Fair discussion can solve biggest family issue. Men and women both need to be humanists. Whether a woman has been hurt or a man, society and law should be sensitive to both. Instead of playing the power card, morality, forgiveness and happiness of family members should be motto. In family life ego should not take place, forgiveness can help to save a marriage.

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IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

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IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

Volume -1

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ROLE OF TEACHERS AND PROFESSORS AFTER IMPLEMENTING NEP

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Abstract :

Teachers play a pivotal role in driving educational reforms, as they are responsible for implementing interventions, innovations, and policies. As they shape the minds of the next generation, the transformation of our education system depends on the skills and qualities of our educators. In order to improve the quality of teaching and learning, it is essential to create a focused action plan for teachers at every level. Teachers actually shape the future of students, so they also build the future of our nation. Is there Because of this good contribution of them, teachers in India are now the most respected members of society and only the most gifted and knowledgeable persons are teachers. In order to provide students with the prescribed knowledge, skills and moral values, society provided all they needed by teachers or gurus. The spirit of higher status for teachers and respect for them and respect for teachers must be revived so that teachers are encouraged to include better people in their profession.

Keywords : Teacher's Role, Student, School Education, NEP 2020.

Introduction:

The National Education Policy (NEP), 2020, of India aims to transform the nation by improving its previous education policy. The NEP seeks to inculcate 21st-century skills in children and make the country's education more inclusive and flexible. It recognizes that teachers play a crucial role in achieving these goals and emphasizes the need to improve the quality of education in India. Here are a few tips on how teachers' role is key to the success of India's National Education Policy.

Teachers will be responsible for inculcating 21st-century skills, knowledge, and learning outcomes in students according to their grade level, as per NEP 2020.

1. Contribution to Curriculum Development:

According to The Sentinel, the role of teachers is no longer limited to teaching inside the four walls of the classroom. As facilitators of policy, they will act as contributors to making policies. This will help every educator to reduce the burden of their daily job challenges and will help them in the process of creating better individuals for society.

2. Implementing the New Curriculum:

Teachers play a crucial role in implementing any education-related policy or act on the ground level. The NEP 2020 focuses on a holistic approach to the development needs of students. It entirely depends on teachers what strategies they adopt in classrooms to ensure these developmental goals are met according to policy.

3. Creating an Environment of Innovation and Creativity:

The best outcome of teaching can be measured only if it is not limited to bookish knowledge and grades. Instead, it should promote pupils to think about the practical aspects of a concept and connect bookish knowledge to real-world problems. The role of teachers in the classroom according to NEP 2020 will be to promote and create an environment where students can think with a creative, critical, logical, and innovative mindset. This way, teachers can prepare students for their future life obstacles and challenges.

4. Identity Individual Interests and Treat them Accordingly:

Every student has their own unique potential and individual differences. Teachers must identify these differences in their abilities, interests, and needs to provide a personalized learning environment that can help them reach their goals. According to the new policy, teachers will receive training to identify the development needs of each individual and train them accordingly. By providing personalized learning, teachers can leverage the individual potential of their students.

5. Inculcate Lifelong Skills and Knowledge:

The ultimate goal of education in terms of a country's economic and social development is to teach students skills and knowledge that will benefit them throughout their lives. They must be able to solve problems and issues from personal to societal levels. This can be achieved only if teachers encourage self-directed learning attitudes in their students, helping them keep growing and learning throughout their lives.

6. Implement Vocational Education:

Not only in the NEP 2020, but previous policies have also emphasized the vocational aspects of education. It helps students create employment opportunities for themselves by inculcating skills obtained from local art, craft, cultural, and geographical resources, enhancing entrepreneurial skills among them. Teachers need to focus on the vocational aspect to achieve this.

Teachers' role is critical in helping students achieve their goals and in the transformation of the nation. The chances of success in reforms in policies and the nation are only possible because of the people facilitating it at the grassroots level. Therefore, teachers play an essential role in executing it properly at the grassroots level and creating the impact that's required to be created.

7. New Education Policy and Teachers Development:

Stand-alone Teacher Education institutions will be converted into multi-disciplinary institutions by 2030 offering 4-year integrated teacher preparation programme.

All fresh Ph.D. entrants, irrespective of discipline, will be required to take credit based courses in teaching/education/pedagogy/writing related to their chosen Ph.D. subject during their doctoral training period.

Ph.D. students will also have a minimum number of hours of actual teaching experience gathered through assistantships and other means. Ph.D. programmes at universities around the country will be re-oriented for this purpose

Important Views for Teachers:**Environment and Work Efficiency During Service Time :**

The primary goal of making good changes in the work environment and cultures in schools is to raise the abilities of teachers to the maximum level so that they can do their job effectively and ensure that teachers become a part of an inclusive community of students, parents, principal teachers and other supporting staff, with the only goal of being a learner.

Placement and Recruitment Policy :

In order to ensure adequate number of teachers in subjects, particularly in arts, physical education, vocational education and languages, teachers can be admitted to a school or school complex, the participation of teachers in schools can be done in accordance with the grouping of school system adopted by the state or ut governments.

Progress and Career Management :

Vertical mobility of teachers based on competency would also be the best, including outstanding teachers who have demonstrated the skills of leadership and management and trained them over time so that they can lead academic leadership in the school, school complex, D.I.E.T., B.I.T.E., as well as the concerned government departments and ministries for schooling. Teachers performing well should be identified and given step up and pay hike to encourage all teachers to do their best. The policy should have a fair career in terms of which is intended to result in permanent employment after assessment for performance and contribution and build up wage arrangements on the basis of strong merit of teachers.

Sustainable Professional Development

Continuous opportunity for teachers to improve themselves and to learn modern thought and innovation related to profession and to offer them in a variety of ways as online teacher development modules along with local, regional, state, national workshops. Teachers should develop online platforms, especially so that teachers can share their ideas and best things from time to time. Every teacher should be expected to perform timely orientation programs or faculty development programmes, as these programmes promote the latest pedagogy and competency based learning.

Professional Standards for Teachers :

A general guide set of NPST for teachers has already been prepared by the national council of teacher education, SCERT, in consultation with teachers of all levels and regions, institutions for teacher preparation and development, and institutions of higher learning as set up in its new form as a committee for professional standards setting under the general standards council in consultation with general standards setting up and institutions of higher learning.

Approach of Teacher Education :

Recognising this that teachers will need to undergo training in pedagogy, as well as teaching materials, which will have to be gradually integrated into multi – disciplinary colleges and universities. As all colleges and universities begin to move towards becoming multi – disciplinary, they aim at establishing a department of quality education that will provide a B.Ed., M.Ed. and Ph. D degree in education. The recently – introduced training in most new techniques with the prospectively tested techniques of teaching in all bod programmes can be a reform process involving the knowledge of basic literacy and numeration of education, multi – level education and assessment, teaching disabled children, teaching children with special interest, talents, using educational technology and teaching child centric and collaborative learning.

Conclusion:

NCTE by 2021, in consultation with NCERT, the new education policy 2020 should be prepared by NCFTE 2021 for a new and comprehensive teacher education framework based on the principles of the new and comprehensive teacher education. The requirements of the teacher education curriculum for vocational education should also be taken into account in NCFTE 2021. Thereafter, it is advisable to revise the NCF every year, reflecting the change in the revised NCFTE and the emerging requirements of teacher education. Finally, in order to fully maintain the authenticity

of the teacher's education system, strong action must be taken against standards institutions such as stand alone teachers education institutions in the country, including closure, if necessary. NEP teacher training program will go a long way in balancing the scale between teaching quality provided and returning rewards to the candidates in the picture. Teaching professionals can take heart in the fact that the learning experience under the NEP 2020 is a continuous process and is here to stay. Stay tuned to this space for further updates in the NEP teacher training section.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

Volume - 1

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SMES AND MSMEs IN MAKE IN INDIA INITIATIVE

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Abstract

The 'Make in India' initiative and the 'Atmanirbhar Bharat Abhiyaan' (Self Reliant India Campaign) have played a key role in promoting business and local manufacturing in the country, giving special thrust to Micro, Small and Medium Enterprises (MSMEs), also referred to as the backbone of Indian economy.

Keywords: *approximately, entrepreneurship, facilitated, generating employment manufacture, facilitated*

Introduction

The central government has also taken immediate response measures in the form of the Atmanirbhar Bharat Package to ensure continuity of businesses during the COVID-19 pandemic. Along with these measures, the main governing body for MSMEs in the country, i.e., the Ministry of Micro, Small and Medium Enterprises (M/o MSMEs) also has numerous schemes in place to support the budding manufacturing units across the country.

Overview of Govt. Initiatives on MSMEs

MSMEs are the backbone of the Indian economy, contributing approximately 30% of the country's GDP (Gross Domestic Product), 45% of manufacturing output and providing employment to 11 crores of India's population. The Government of India has been proactive to ensure that all the benefit of these MSME schemes reaches to the MSMEs in time. The Union Budget 2023-24 focuses on ease of doing business for MSMEs. The most important measures include:

- Emergency Credit Line Guarantee Scheme (ECLGS) has delivered additional credit to more than 130 lakh MSMEs. The ECLGS will be extended up to March 2023 expanding the guarantee cover by INR 50,000 Cr to a total cover of INR 5 Lakh Cr.
- INR 2 Lakh Cr additional credit for Micro and Small Enterprises to be facilitated under the Credit Guarantee Trust for Micro and Small Enterprises (CGTMSE).
- Raising and Accelerating MSME performance (RAMP) programme with an outlay of INR 6,000 Cr to be rolled out.
- INR 50,000 Cr equity infusion through MSME Self-Reliant India Fund.
- Udyam, e-Shram, National Career Service (NCS) and Aatmanirbhar Skilled Employee Employer Mapping (ASEEM) portals will be interlinked.
- They will now serve as portals with live, organic databases, delivering G2C, B2C, and B2B services relating to credit facilitation, skilling, and recruitment.

- Launch of Udyam Assist Platform (UAP) to bring the Informal Micro Enterprises (IMEs) under the formal ambit for availing the benefit under Priority Sector Lending (PSL).

Make in India Campaign

Make in India campaign is an initiative of GOI to encourage the multinational as well as domestic companies to manufacture their products in India. This is an ambitious flagship programme and a dream of honourable Prime Minister Mr. Narendra Modi was launched on 25th September, 2014. The main objectives of the programme are –

- To make India as Global manufacturing hub,
- To create jobs, to encourage entrepreneurs in India,
- To boost economic growth,
- To urge both local and foreign companies to invest in India
- To Foster innovation, protect intellectual property, and enhance skill development
- The new initiative is based on four pillars to boost entrepreneurship in India & it encompasses 25 sectors.
- The pillars are (1) New Processes (2) New Infrastructure (3) New Sectors and (4) New Mindset

Role of MSME's

The Micro, Small and Medium Enterprises (MSMEs) play a pivotal role in the economic and social development of India. The MSME sector is playing a major role in the manufacturing output, employment and exports. It plays a key role in the development of the economy with their effective, efficient, flexible and innovative entrepreneurial spirit. MSME sector has emerged as a dynamic and vibrant sector of the economy. It is expected that Indian economy will grow by over 8% per annum until 2020. The major advantage of this sector is its generating employment at low cost. The MSME sector is highly heterogeneous. There are different size of the enterprises, variety of products and services and level of technology. It helps in the industrialization of rural and backward areas. It reduces regional imbalances. It provides equitable distribution of national income and wealth. The role of MSME sector in Indian economy is better understood from the following fact sheet [Source: CARE Ratings]

MSME sector –Some high lights

- Indian MSME sector consists of approximately 45 million units
- Produces more than 6,000 products, ranging from traditional to high-tech items
- High product diversification: 67% of its produce is from manufacturing goods, followed by 17% from
- services, and 16% from repairs and maintenance

- Employs around 101 million people
- Accounts for 45% of the manufacturing output
- Contributes 8-9% to the country's GDP
- Accounts for 40% of the country's exports

T E Narasimhan, 'Make in India' to transform MSMEs' fortunes: Minister, The Business Standard(Chennai),January12,2015

The MSME's minister has said in a symposium on 'Growth and Prospects of MSME Sector in the Emerging Scenario' organized by the National Institute for Entrepreneurship and Small Business Development. The minister is of the opinion that the Make in India campaign has the potential to transform the fortunes of the MSME sector, enabling it to scale hitherto unheard-of heights. He viewed that this campaign is very relevant for Indian MSME's and highlighted the policy initiatives initiated by GOI to support the MSME's which will be effective from 1st of April, 2015. In 2013-14, 56 CPSUs organized 1,007 vendor development programmes (VDPs) for MSE's. In 2014-15, the target is over 55 national VDPs and 351 state VDPs across the country, to develop MSE vendors with a budget allocation of Rs 5 crores.

Conclusion

The make in India programme through New Processes, New Infrastructure, New Sectors and New Mindset aims to facilitate investment, foster innovation, enhance skill development and build a sustainable eco-system for the manufacturing infrastructure in the country. Make in India programme with the inclusion of MSME's in the New Start up policy of GOI, definitely helps this sector to prosper and grow. We view that the various policy initiatives and incentives for MSME announced under this programme, definitely the Make in India Campaign helps, supports and act as boost for MSME sector.

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ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT

(Volume – 2)

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ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES IN HIGHER EDUCATION

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Abstract

Administrative support is concerned with the provision of secretarial and administrative services to students, faculty, and other customers of educational institutions. In effect, any assistance provided by administrative staff to students and faculty that benefits the institution's overall well-being constitutes an administrative support service. Despite their complementary role in the teaching and learning process, it appears from the literature that administrative support services receive little attention when it comes to students' evaluation of university services for quality assurance. This article reviews digitally available scholarly research on administrative support services in higher education. The purpose of the review was to justify the inclusion of administrative support in students' evaluations of university services for quality assurance. To do this, the study reviewed scholarly works on administrative support services in higher education. In all, 43 research articles were analyzed in terms of six criteria, namely 1) nature of administrative support in higher education 2) administrative support as service 3) customers of higher education administrative support 4) quality as necessity in administrative support 5) justification for quality assuring administrative support service 6) justification for use of students' to evaluate administrative support services. The study found that administrative support and teaching services have a direct symbiotic relationship. Quality assurance of teaching services without the same being done for administrative support services does not provide a complete picture of the overall service quality and well-being of higher education. Again, the study found that a lot of resources go into the recruitment and maintenance of administrative staff. To ensure efficiency effectiveness and accountability of this staff, there is the need for frequent evaluation. The study recommends periodic student satisfaction surveys to ascertain students' level of satisfaction with administrative support services.

Keywords: *Job motivation, Organizational identification, Perceived administrative support, Teacher.*

Employment Activities

The provision of employment services plays a particularly central role in the functioning of the labour market, especially during periods of high employment growth. Employment activities are varied and complex and so the measurement of the value of these services, both in current and constant prices, is challenging. Employment activities comprise all services relating to the search for and selection of candidates, supplying workers to clients' businesses for limited periods of time (i.e. temporary employment agencies) and other kinds of human resources provision. These activities have grown at a rapid pace in recent years because they allow businesses more flexibility in adapting to changes in economic conditions. This is particularly true for the services provided by temporary employment agencies which are strongly linked to changes in economic conditions and are often an early indicator of broader economic developments. Thus over

the last ten years, the number of temporary workers being placed by agencies has consistently grown, reflecting more flexible patterns of work. Businesses enterprises engaged in employment activities encounter low barriers to entry in the market and have relatively small capital requirements. As a consequence, there may be a large number of small service producers although the majority of turnover is often generated by large and/or international business enterprises. The existence of a large number of service producers in a market can lead to significant differentiation in the products offered. Large service producers take advantage of their size, length of experience, and international networks while smaller producers often focus on regional, sectorial or occupational “niches”. A wide range of services are offered across the division, from staffing to payroll services, outplacement, outsourcing and search and selection.

The industry is sensitive to structural changes in the market; for example, in respect of the ageing population in Europe or changes in the regulation of the labour market. Alongside the more traditional activities of employment placement and temporary employment agencies, new activities have emerged, particularly outsourcing and the services of so-called “umbrell-companies” – both classified within ISIC group 783 - Other human resources provision:

- **Outsourcing:** The client outsources the employment activity to a service producer that supplies workers to the client for a longer period of time. In practice these workers function as regular employees of the client even though they are legally and officially on the service provider’s payroll. Producers of outsourced employment activity services are either legally independent entities (known as Professional Employer Organisations - PEOs) or subsidiaries of business enterprises which transfer the administration of their personnel to this intra-group service producer and subsequently lease them back on a long-term or permanent basis. The service producer therefore becomes the official and legal employer of the workers, even though they remain under the direct supervision of their initial employer - the client. PEOs often specialise in a single specific sector, such as medical, wholesale or construction, rather than diversifying into several sectors. This allows PEOs to realise specialisation effects and economies of scale thereby enabling them to offer reduced prices to clients and enhanced benefits and administrative services to personnel. The importance of intra-group-PEOs has grown in recent times. Many business enterprises, particularly larger ones, have created PEO subsidiaries to outsource the employment of their workers. This allows them to bypass labour agreements particular to the sectors in which the workers are actually engaged, thereby reducing costs.
- **Umbrella companies:** The activities of so-called “umbrella companies” function as official employers for actual freelancers and supply them to clients on a temporary basis, usually to run a specific project. They provide freelancers with services in implementing employment contracts and payroll accounting. The freelancers benefit fiscally and professionally from being employed by such an umbrella

company (as in the case of the U.K.) or can avoid legal burdens concerning their self-employment (as in the case of France).

Price Determining Factors and Pricing Mechanisms

Differentiation of products, competitive markets, and the emergence of outsourcing and umbrella companies can make the measurement of price change challenging. The price of employment activities can depend on many factors including, the level of qualification or skill that the workers must possess, the length and type of contracts, the numbers of hours worked, the contract between the employment agency and the client, and the geographical location. In order to effectively measure the change in prices of employment activities, it is crucial to firstly consider how the workers are paid. Different relationships between the service producer, the worker (i.e. the recruited employee), and the client may lead to different pricing mechanisms; reflecting the type of services offered and the way in which the workers are paid. In this respect, the two following distinct cases should be considered:

1. Workers are employed and paid directly by the client This case is of particular relevance for placement agencies that provide services in respect of the search for and selection of candidates, and all ancillary services such as skills assessment. These services involve drawing up descriptions of positions to be filled, searching for and selecting candidates. Placement agencies may use advertisements (increasingly online), a direct approach (“headhunting”) or a combination of the two in the search for candidates. Several pricing mechanisms can be employed by placement agencies, including a fixed price, a price based on a percentage of the salary of the placed workers or re-invoicing of costs with profit. Pricing based on a percentage of the annual salary of the placed worker appears to be the most common mechanism. In this case, the placement agency records only the recruitment costs on which the price charged to the client is based; the salaries of placed workers are paid directly to them by the client and therefore the fees paid to agencies should be treated on a net basis.
2. The client pays the service producer, who in turn pays the worker. This case applies for both the activities of temporary employment agencies and other human resources provision such as outsourcing and umbrella companies. Here, the definition of the output services is an essential part of the SPPI compilation process and should be consistent with national accounting practice.

Classification Aspects:

Industry classification:

Employment activities, classified under section N - Administrative and support service activities, division 78 Employment activities, of the ISIC classification system, covers the following three classes:

1. 7810 - Activities of employment placement agencies, includes listing employment vacancies and referring or placing applicants for employment, where the individuals referred or placed are not employees of the employment agencies;
2. 7820 - Temporary employment agency activities, includes the supply of workers to clients' businesses for limited periods of time to temporarily replace or supplement the working force of the client;
3. 7830 - Other human resources, are typically provided on a long-term or permanent basis and the units classified here may perform a wide range of human resource and personnel management duties associated with this provision. The units classified here represent the employer of record for the employees on matters relating to payroll, taxes, and other fiscal and human resource issues, but they are not responsible for direction and supervision of employees.

As shown in annex A, the ISIC and NACE classifications have the same structure. NAICS has a similar structure although the equivalent of class 7810 is split into two groups namely 561311 - Employment placement agencies, and 561312 - Executive search services. The concordance between ISIC and ANZSIC is less effective since group 721 - Employment services, is separated into two classes only: 7211 - Employment placement and recruitment services, and 7212 - Labour supply services, which consists of units mainly engaged in supplying their own employees to clients' business on a fee or contract basis. Additionally, ISIC class 7830 corresponds to activities classified outside the ANZIC group 721, such as management advice and related consulting services or office administrative services.

Product Classification:

The corresponding products for ISIC 78 - Employment activities are classified in the CPC classification under group 851 - Employment services. This group is divided into two classes, 8511 - Personal search and referral services and 8512 - Labour supply services, which are defined as follows:

8511 - Personal search and referral services which is further split between:

- 85111 - Executive/retained search services, covering the provision of services such as formulation of job descriptions, specialized search and screening and testing of applicants;
- 85112 - Permanent placement services, other than executive search services, including the provision of services in respect of the testing, interviewing and referring of candidates.

8512 - Labour supply services which is further delineated by the specific nature of contracts between the client and service provider:

- 85121 - Contract staffing services, consisting of the search for and referral of a candidate to fill a specific position in the client company. Conditions and terms of employment are pre-assigned in the contract between client and staffing company

and the service provider maintains legal rights and duties with respect to the individual worker;

- 85122 - Temporary staffing services including the supply of workforce to clients on a temporary basis in order to resolve shortage of manpower;
- 85123 - Long-term staffing (payrolling) services covering the supply of personnel for extended work assignments. Under the terms of this arrangement, the client may recruit the person or persons hired by the staffing firm and assigned to their place of work, or transfer a portion of their existing workforce to the staffing firm. Long-term employees are placed on the payroll of the staffing firm, which is legally responsible for their actions, but when working they are supervised by the client. This service includes labour leasing, staff leasing, employee leasing, extended employee staffing and payrolling. The services of Professional Employer Organizations (PEOs) are not included;
- 85124 - Temporary staffing-to-permanent placement services covering the supply of personnel for temporary employment with the expectation of permanent work at the end of a trial period with the client. The employee remains on the payroll of the temporary help staffing firm until the hiring decision is made at which time he or she becomes an employee of the client or, if not, returns to the temporary help staffing firm. This service may include training, counselling, assessment, and resume upgrading;
- 85125 - Co-employment staffing services covering the supply of personnel through a staffing arrangement in which a PEO co-employs a client's workforce. The PEO and the client enter into a contractual agreement whereby the rights and responsibilities in respect of co-employees are shared or allocated, with the service provider assuming responsibility for certain activities as agreed with the client. These range from basic to full-service packages.

Industry vs. Product SPPI based SPPI

Business enterprises classified under ISIC groups 781, 782 or 783 rarely offer secondary activities classified outside division 78, except perhaps consultancy relating to employment services (classified under group 702 - Management consultancy activities n.e.c.). However, they often provide a mix of services across a range of employment activities; for example employment placement agencies may also provide human resources services. Therefore the weighting schemes for each of the industry based SPPIs should include a certain percentage of services classified as main activities of the other 3-digit industries within the division. Product based SPPIs measure the price development of all output of a service product irrespective of the industry in which the service producer is classified. In Germany labour supply services are often produced as secondary activities in the management consultancy, IT and engineering industries. Product based SPPIs will include the price development of human resources services produced by these industries.

Conclusion

Job motivation, organizational identification and perceived administrative support perceptions are significant notions for both organizations and employees as they are the reflection of the employees' relationship with their organizations. It is also important to reveal the employee perceptions regarding these concepts in terms of uncovering the main reasons underlying the attitudes and behaviours of the employees and guiding the managers during the organizational development activities. In this study, the relationships between the teachers' perceptions regarding job motivation, organizational identification and administrative support were examined. These variables, whose effects on each other had been examined separately in the literature, were brought together with a dual model within the scope of this study. Based on the result of the model, it was concluded that perceived administrative support had a partial mediating role in the effect of job motivation on organizational identification. This study is limited to the variables of job motivation, organizational identification and perceived administrative support. In future studies, the relationship between the variables and different organizational behaviour elements can be examined. Moreover, this study in which quantitative research methodology is adopted, can be combined with qualitative research methods to further examine the underlying ideas of perceptions.

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“EMPOWERING INDIA THROUGH DIGITAL TRANSFORMATION : A SUSTAINABLE APPROACH”

Volume - I

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E-Commerce: Sustainability Trends in Online Retail

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Abstract

The rapid growth of e-commerce has transformed global retail landscapes, offering unparalleled convenience and accessibility to consumers worldwide. However, alongside this growth comes increasing scrutiny of its environmental impact. This abstract explores the evolving sustainability trends within online retail, focusing on key initiatives that are reshaping industry practices towards a greener future. The adoption of eco-friendly packaging solutions is highlighted as a visible and impactful trend, aimed at reducing packaging waste and minimizing environmental footprint. Companies are shifting towards using recycled materials, biodegradable alternatives, and exploring reusable packaging options to mitigate environmental impact. The commitment to carbon neutrality and emission reduction goals is examined, showcasing how leading e-commerce firms are investing in renewable energy, optimizing logistics, and promoting sustainable practices across supply chains. These initiatives not only align with global environmental targets but also enhance corporate transparency and credibility.

Introduction

In recent years, sustainability has emerged as a pivotal consideration across industries, driven by consumer demand for eco-friendly products and responsible business practices. The realm of e-commerce, with its global reach and rapid growth, has not been exempt from this shift towards sustainability. Online retailers are increasingly recognizing the importance of integrating green practices into their operations to meet consumer expectations, reduce environmental impact, and foster a positive brand image. This article explores the burgeoning trends and initiatives in green e-commerce,

highlighting how online retailers are embracing sustainability to drive innovation and enhance customer loyalty. Online retail has become synonymous with convenience, choice, and accessibility. However, as consumer awareness of environmental issues grows, so too does the demand for sustainable practices within e-commerce. This article delves into the emerging sustainability trends shaping the landscape of online retail, highlighting innovative strategies, technological advancements, and consumer-driven initiatives that are driving the industry towards a greener future.

1. Eco-friendly Packaging Solutions

One of the most visible sustainability trends in online retail is the adoption of eco-friendly packaging solutions. Traditionally, e-commerce has been criticized for excessive packaging waste. Today, companies are responding by using recycled and biodegradable materials for packaging, minimizing plastic use, and designing packaging that is both protective and environmentally responsible. Some retailers are even exploring reusable packaging options or incentivizing customers to return packaging for reuse or recycling.

2. Carbon Neutrality and Emission Reduction Goals

Many leading e-commerce companies are committing to carbon neutrality and setting ambitious goals to reduce their carbon emissions. This involves investing in renewable energy sources for their operations, optimizing transportation and logistics to reduce fuel consumption, and implementing sustainable practices across their supply chains. By transparently disclosing their emissions and progress towards these goals, companies enhance their credibility and appeal to environmentally conscious consumers.

3. Sustainable Product Sourcing and Transparency

Consumers are increasingly interested in the origins of products they purchase online, including how they are sourced and manufactured.

E-commerce retailers are responding by partnering with suppliers who adhere to sustainable practices, such as organic farming, fair trade principles, and responsible forestry. Some are even providing detailed information about product sourcing and certifications (e.g., Fair Trade, Forest Stewardship Council) to empower consumers to make informed choices aligned with their values.

4. Circular Economy Initiatives

The concept of a circular economy, where products are designed to minimize waste and maximize resources through recycling, refurbishment, and reuse, is gaining traction in online retail. Companies are exploring innovative ways to extend the lifecycle of products, such as offering repair services, promoting second-hand sales platforms, and integrating take-back programs for used goods. These initiatives not only reduce waste but also contribute to a more sustainable consumption model.

5. Leveraging Technology for Sustainability

Technology plays a pivotal role in driving sustainability in online retail. Artificial Intelligence (AI) and data analytics enable retailers to optimize inventory management, predict consumer demand more accurately, and streamline logistics, thereby reducing unnecessary transportation and storage-related emissions. Blockchain technology is being used to enhance transparency in supply chains, ensuring ethical sourcing and authenticating sustainable claims.

6. Consumer Education and Engagement

Educating consumers about the environmental impact of their purchasing decisions is essential for fostering sustainable behavior. E-commerce retailers are leveraging their platforms to raise awareness about sustainability issues, promote eco-friendly products, and empower consumers with information to make greener choices. Engaging customers through educational content, eco-

friendly shopping guides, and sustainability-themed campaigns enhances brand loyalty and encourages a collective commitment to environmental stewardship.

The Rise of Eco-conscious Consumers

Today's consumers are more environmentally aware and conscious of their purchasing decisions than ever before. According to recent studies, a significant portion of shoppers prioritize sustainability when choosing products and brands. This trend is influencing e-commerce platforms to adapt by offering sustainable alternatives, transparent supply chains, and information on product origins and environmental impact. Brands that align with these values are gaining a competitive edge, appealing to a growing segment of environmentally conscious consumers.

E-commerce Initiatives in Sustainability

E-commerce giants and smaller retailers alike are implementing various strategies to reduce their environmental footprint and promote sustainability:

- 1. Carbon Neutrality Commitments :** Many e-commerce companies are pledging to achieve carbon neutrality or reduce emissions through initiatives such as renewable energy investments, energy-efficient logistics, and carbon offset programs.
- 2. Packaging Innovations :** Reducing packaging waste is a priority for e-commerce businesses. Initiatives include using recyclable materials, optimizing packaging sizes to minimize material use, and adopting reusable packaging options.
- 3. Supply Chain Transparency :** Providing visibility into supply chains allows consumers to make informed choices about the environmental and social impact of products. Some retailers are

partnering with sustainable suppliers and conducting audits to ensure responsible sourcing practices.

4. Product Sustainability Certifications : Certifications like Fair Trade, Organic, and Forest Stewardship Council (FSC) are becoming increasingly important in e-commerce. These certifications verify that products meet specific environmental and ethical standards, giving consumer's confidence in their purchases.

5. Circular Economy Practices : Embracing circular economy principles involves extending product lifecycles through practices such as product refurbishment, recycling programs, and incentivizing product returns for reuse or recycling.

Technology and Innovation in Green E-commerce

Technological advancements are playing a crucial role in advancing sustainability in e-commerce:

1. Data Analytics : Leveraging data analytics to optimize supply chain efficiency, reduce waste, and predict consumer demand more accurately, thereby minimizing environmental impact.

2. Blockchain Technology : Utilizing blockchain for transparent supply chain management, ensuring product authenticity, and tracking sustainability credentials from source to consumer.

3. Artificial Intelligence (AI) : AI-driven algorithms can optimize transportation routes, warehouse operations, and inventory management to reduce energy consumption and carbon emissions.

4. Augmented Reality (AR) : AR technologies allow consumers to visualize products in real-world settings, reducing the likelihood of returns and associated environmental costs.

Challenges and Opportunities

While progress is being made, challenges remain in achieving widespread sustainability in e-commerce. These include logistical complexities, consumer education, and the cost of implementing sustainable practices. However, the shift towards green e-commerce presents significant opportunities for innovation, differentiation, and market leadership among retailers committed to sustainability.

Conclusion

Green e-commerce is not just a trend but a fundamental shift towards a more sustainable future. By integrating environmentally responsible practices into their operations, online retailers can meet consumer expectations, reduce their environmental footprint, and contribute positively to global sustainability efforts. As technology continues to evolve and consumer awareness grows, the role of e-commerce in promoting sustainability will only become more crucial. Embracing green initiatives isn't just good for business – it's essential for building a resilient and responsible global economy.

தமிழருவி

(2022-2023 ஆம் கல்வியாண்டில் சேர்வோர்க்குரியது)

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2. ஆற்றுப்படை நூல்களில் ஆறுபடைகளின் சிறப்புகள்

- முனைவர் பே. மஹேஸ்வரி,

முன்னுரை

தமிழ் மொழி மிகப்பழமையான மொழி அதிலிருந்துதான் இலக்கண இலக்கியத் துறைகளில் நுட்பமும் செறிவும். நிறைந்த வரலாற்று உண்மைகளை எடுத்துரைக்கப்பட்டுள்ளது. மனித சமுதாய வரலாறு ஒவ்வொரு சமுதாயத்திலும் வரலாற்றுக்கு முற்பட்ட காலத்தில் அரசு என்பது இருந்ததில்லை எனக் காட்டுகிறது. ஆங்காங்குப் பழங்குடி குழுக்களும், குல அமைப்புகளும் இருந்து மக்கள் கூட்டங்களை நெறிப்படுத்தி வழிகாட்டின. அவை சமுதாயத்திற்கு வழிகாட்டி நெறிப்படுத்தத் தேவையான விதிகளையும், உறவுகளையும் ஒழுகலாறுகளையும் பண்புகளையும் அமைத்துக் கொண்டன. அரசு தோன்றிய பிறகு அவை அறநெறிகளாகவும் பழக்கவழக்கங்களாகவும், காலத்திற்கு ஏற்ப மாறிப் புதுப்பொலிவுடன் இன்றளவும் நின்று நிலவி பெருமை சேர்த்து வருகின்றன. அந்த வகையில் நன்கு வாழ்ந்த ஒருவர் மற்றொருவரை வழிப்படுத்தி தான் பெற்ற பெரும்பேற்றை அவரும் அடைய வேண்டும் என்ற நல்ல எண்ணம் கொண்டு நெறிப்படுத்திய நூல்களே ஆற்றுப்படை நூல்கள். அவற்றில் திருமுருகாற்றுப்படையின் சிறப்பினை இக்கட்டுரை விளக்குகிறது.

திருமுருகாற்றுப்படை:

சங்கத்தொகை நூல்களில் முதன்மையாக வைத்து எண்ணப்படும் சிறப்பு வாய்ந்தது பத்துப்பாட்டு ஆகும். அகவற்பாவால் அமைந்த பத்து பாடல்களின் தொகுப்பாக இது அமைகிறது. செந்தமிழ் தெய்வமாகிய முருகப்பெருமானைப் பாட்டுடைத் தலைவனாகக் கொண்ட இந்நூல் 317 அடிகளைக் கொண்டது. ஆற்றுப்படை என்பது சங்கச் சான்றோர் பாடிய பாட்டு வகைகளுள் ஒன்றாகும். ஆற்றுப்படையாவது- ஆற்றின்கண் படுப்பது, ஆறு என்பது வழி. படுப்பது என்பது செலுத்துவது. அதாவது ஒருவர் செல்லவேண்டிய வழித் துறைகளைச் சொல்லித் தெரிவித்து, அவற்றைப் பின்பற்றிச் செல்லுமாறு செலுத்துவது ஆகும்.

7. காற்றில் மிதந்த பாடல்கள்

முனைவர் க. தனபாகம்

இயற்கையோடு இணைந்து வாழ்ந்த, வாழ்கின்ற இதயங்களின் உள்ளத்து உணர்வுகளை வெளியிடும் காலக் கண்ணாடியே நாட்டுப்புற இலக்கியங்களாகும். இவை வழிவழியாக வழங்கி வருபவை தனிமனிதப் படைப்புக்களையும் கூட்டுப்படைப்புக்களாக மாற்றும் சக்தி வாய்ந்தவை. முக்களின் அன்றாட வாழ்வில் நடைபெறும் இன்ப துன்பங்கள், விளையாட்டு, காதல், ஏக்கம், ஏமாற்றம், குடும்ப விவகாரம், பக்தி, சமூகச் சீர்திருத்தம் என்று அனைத்து உணர்ச்சிகளையும் இயம்பக்கூடிய நாட்டுப்புறப்பாடல் குறித்து ஆராய்வதே இக்கட்டுரையின் நோக்கமாகும்.

நாட்டுப்புறப்பாடல்களின் வகைகள்

“நாட்டுப்புற மக்களின் இலக்கியங்கள்”, கலைகள், பழக்க வழக்கங்கள், நம்பிக்கைகள், மருத்துவங்கள், விளையாட்டுகள் போன்ற பல்வேறு வழக்காறுகளைப் (Folklore) பற்றி ஆராயும் சமூக அறிவியல் துறையை நாட்டுப்புறவியல் துறை என்கிறோம்” (டாக்டர் ஆறு. இராமநாதன், நாட்டுப்புறவியல் ஆய்வுகள்) என்பர். இப்படிப்பட்ட அறிவியல் நோக்கில் ஆராயும் தனித்தன்மை மிக்க நாட்டுப்புறவியலில் தாலாட்டுப் பாடல்கள், சிறுவர் பாடல்கள், காதல் பாடல்கள், ஆலாத்திப் பாடல்கள், கும்மிப்பாடல்கள், தொழில் பாடல்கள், ஒப்பாரிப்பாடல்கள் ஆகியவை முக்கியமான நாட்டுப்புறப் பாடல் வகைகளாகும்.

தாலாட்டுப் பாடல்கள்

ஒரு மனிதனின் பிறப்பு முதல் இறப்புவரை நாட்டுப்புறப்பாடல்கள் வாழ்க்கையில் பின்னிப்பிணைந்து காணப்படுகின்றன. அவற்றுள் தாலாட்டுப் பாடல்கள் முக்கிய இடத்தைப் பெறுகின்றன. தாராட்டு, தாலேலோ, ஓலாட்டு, தோராட்டு, ராராட்டு, ஓராட்டு, ஊர் சோதி (தெலுங்கு), ஜோகுல (கன்னடம்) என்று வழங்கும் இப்பாடல்கள் குழந்தையில்லாத போது தாய் அடைந்ததுயரம், தாய்மாமனின் சீர், குழந்தையின் குலப்பெருமை குழந்தையைத் தெய்வத்தோடு தொடர்பு படுத்துதல் ஆகியவற்றை எடுத்து இயம்புவதாக உள்ளன.

3. பதினெண்கீழ்க்கணக்கு நூல்களில் இல்லறமே உயற்கையறம்

முனைவர் ஆ. மகாடகாமி

அறிய வேண்டியது அறம். அடைய வேண்டியது பொருள். அனுபவிக்க வேண்டியது இன்பம். மனிதனுடைய அடிப்படை வாழ்வின்னைத் தாங்கக்கூடிய ஒரு மனன்கோலாகத் திகழ்வது அறம் ஒன்றேயாகும். உறுதிப் பொருள்கள் நான்கனுள் அறம் முதன்மையானதாக வைத்துப் போற்றப்பட்டது. அறத்தின் வழியாகப் பிறத்தது தான் பொருளும் இன்பமும் என்று இலக்கியங்கள் பதிவு செய்துள்ளன. அறம் முதன்மை வாய்ந்ததாக இருப்பதற்குக் காரணம் மற்றவர்களுக்கு நன்மை செய்ய வேண்டும் என்பதேயாகும். அவ்வகையில் நீதி இலக்கியங்களில் அறத்தைப் பற்றி ஆராய்வதே இக்கட்டுரையின் நோக்கமாக அமைகிறது.

தமிழகத்தில் இருண்ட காலத்தில் உயர்ந்த வாழ்க்கை நெறிகள் மறக்கப்பட்டுச் சமூகச் சீர்கேடுகள் மிகுந்த போது மக்களுக்கு அறநெறிகளை உணர்த்தி சமூகத்தைச் செம்மைப்படுத்தும் அறநூலாக பதினெண்கீழ்க்கணக்கு நூல்கள் தோன்றின. இந்நூல்கள் மனித வாழ்வுக்கான கொடை, இல்லறம், கல்வி, பொருளின் அறம், நட்பு, ஒழுக்கம், பிணியின்மை என்று ஒவ்வொரு நிலையினையும் அறம் சார்ந்த தன்மையுடன் எடுத்தியம்பியுள்ளது.

இல்லறமென்பது இயற்கையோடு இயைந்ததென்பதே திருவள்ளுவரது முடிபு. ஆண் மக்களின் பண்பும், பெண் மக்களின் பண்பும் ஒன்று சேர்ந்த உயர்ந்த ஒழுக்கமே இல்லறவொழுக்கமாகக் கட்டமைக்கப்படுகிறது.

மனைத்தக்க மாண்புஉடையவள் ஆகீத்தற் கொண்டான்

வளத்தக்காள் வாழ்க்கைத் துணை

(கிருக்குறள் - 51)

என்ற குறளின் வாயிலாக மனைவி இல்லத்திற்கு ஏற்ற குணமுடைய வளாக இருக்கவேண்டும். தன்னைக் கொண்டவனது வருவாய்க்குத் தக்க வாழ்க்கையை நடத்தவேண்டும். குடும்பம் சிறக்கத் துணையும் அவளே என வள்ளுவர் கருத்தாக அமைகிறது.

6. சங்க இலக்கியத்தில் சுற்றுச்சூழல்

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பொள்ளாச்சி
அலைபேசி எண். 9344885715

சுற்றுச்சூழல் என்ற வார்த்தைக்குச் சுற்றுப் புறத்தைச் சார்ந்த ஒரு கூட்டமைப்பு என்ற பொதுவான பொருள் கொள்ளலாம். ஒரு உயிரினம் தன்னைச் சுற்றியுள்ள காரணிகளைப் பற்றி நன்கு அறிந்திருந்தால் மட்டுமே, வெற்றியுடன் வாழ முடியும். “சுற்றுச்சூழல் சார்ந்த அறிவியலைச் சூழலியல் (Ecology) என்று குறிப்பிடலாம். Ecology என்ற வார்த்தை Oikos என்ற கிரேக்கப் பதத்திலிருந்து தோன்றியது. Oikos என்றால் வீடு என்னும் Logos என்றால் அதைப் பற்றி அறிவது என்றும் புரிந்து கொள்ளலாம்.”

“சூழலியல் என்பது ஒரு உயிரினத்திற்கும் அதனைச் சூழ்ந்துள்ள உயிருள்ள மற்றும் உயிரற்ற காரணிகளுக்கும் இடையிலான உறவு முறையாகும்.” என்கிறார் சார்லஸ் எல்டன். மேலும், தன் விலங்கியல் சூழ்நிலை இயல் என்ற நூலில் சூழலியல் என்பது இயற்கையின் அறிவியல் வரலாறு என்றும் கூறுகிறார். சுற்றுச்சூழல் பாதுகாப்புச் சட்டம் 1986 இல் போபால் விஷ வாயு நிகழ்ச்சிக்குப் பிறகு இச்சட்டம் நடைமுறைப்படுத்தப்பட்டது. (ப-150, சுற்றுச்சூழல் கல்வி) என்கிறார் டாக்டர் சுசிலா அப்பாத்துரை அவர்கள்.

1. சுற்றுச்சூழல் பாதுகாப்புச் சட்டம் - 1986
2. காற்று மாசுபாடு தடுப்புச் சட்டம் - 1981
3. நீர் மாசுபாடு தடுப்புச் சட்டம் - 1974
4. வனவிலங்கு பாதுகாப்புச் சட்டம் - 1972
5. காடுபாதுகாப்புச் சட்டம் - 1980

எனப் பல்வேறு சட்டங்கள் இயற்கையினைக் காப்பாற்றும் பொருட்டு நடைமுறைப்படுத்தப்பட்டுள்ளன.

சூழலியலின் பிரிவுகள் தாவரச்சூழலியல் என்றும் விலங்கியல் சூழலியல் என்றும் இரு பிரிவுகளாகப் பிரிக்கப்பட்டுள்ளது.

சூழல் கூட்டமைப்பில் தாவரங்கள், விலங்குகள், மட்டுமல்லாது. மனிதனும் ஒரு உயிருள்ள அங்கமாகவான். இந்த உயிருள்ள அங்கமானது, சுற்றுச் சூழலிருந்து பிரிக்க முடியாததாகிறது. நாம் அனைவரும் ஒட்டு மொத்தமாக சுற்றுப் புறச் சூழலின் உயிருள்ள காரணிகள் (தாவரங்கள், மற்றும் விலங்குகள்) மற்றும் உயிரற்ற காரணிகளைச் (வெளிச்சம், வெப்பம், மண், காற்று) சார்ந்து உணர்ந்து கொள்ள வேண்டும். சுற்றுப்புறச் சூழலுடன் நமது உறவு ஒரு பரஸ்பரத் தன்மையுடன் அமைந்திருக்கிறது. சுற்றுச்சூழலுக்கு நாம் விளைவிக்கும் (மாசுபாடு, காலநிலை, மாற்றம், மண்ணரிப்பு) தீமை நமக்கே தீங்காக அமைகிறது. உதாரணமாக உலகக் கதகதப்பு, நீர்ப் பற்றாக்குறை, மண்ணின் வளம் குறைதல் ஆகியவற்றைக் கூறலாம்.

7. இதழ்களில் உலகளாவிய சிந்தனைகள்

திருமதி.ர.சூர்யா,
தமிழ் உதவிப்பேராசிரியர்,
தமிழ்த்துறை(அரசு உதவி)
என்.ஜி.எம். கல்லூரி,
பொள்ளாச்சி.

தகவல் தொடர்பு ஊடகங்களில் எண்ணற்ற வகை ஊடகங்கள் இருப்பினும் அச்ச வடிவில் அமைந்துள்ள இதழ்கள் இன்றியமையாததாக விளங்குகின்றன. ஏனெனில் மக்களின் அனைத்து விதமான சிந்தனைகளுக்கும் தீர்வுகளின் வழி செயல்படுவதால்தான். அத்தகைய இதழ்கள் மக்களிடம் அனைத்து கருத்துகளையும் உருவாக்குதல், பரப்புதல், என்ற அடிப்படையில் செயல்பட்டுச் சிறந்த ஒரு மக்கள் தொடர்பு ஊடகமாகத் திகழ்கின்றன. இவ்விதழ்கள் மக்களிடம் வாழ்வியலுக்கான அறிவுரைகளையும் அன்றாடம் நடைபெறும் நடைமுறைச் சிக்கல்களையும் அடையாளம் காட்டி அவற்றிற்கான தீர்வுகளை வழங்குகின்றன. இச்சமூகம் விரும்பக்கூடிய சரியான முறையில் செய்திகளையும் கருத்துகளையும் இதழ்கள் வெளியிடும்போது அதற்குரிய ஆர்வமான வாசகர்களை அவ்விதழ்கள் பெற்றுவிடுகின்றன. வாசகர்களின் எதிர்பார்ப்பை நிறைவேற்றும்படி இதழ்கள் அனைவருக்கும் பயன்படும் வகையில் செயல்பட்டுக் கொண்டுள்ளதைக் காண முடிகிறது.

அச்ச வடிவில் வெளிவருகின்ற அனைத்து இதழ்களும் பல்வேறு தலைப்புகளில் செய்திகளையும் கருத்துகளையும் வெளியிடுகின்றன. அவை தலையங்கம், விளம்பரம், சிறுகதை, கட்டுரை, நேர்காணல், இணைப்புகள், துணுக்குகள், கவிதை, வாசகர் கடிதம் போன்றவைகளாக அமைகின்றன. மக்களின் உடல் ரீதியான, மன ரீதியான சிக்கல்கள் அனைத்திற்கும் இதழ்களில் காணப்படும் சிந்தனைகளின் வழி தீர்வுகள் கொடுக்கப்படுகின்றன. சமூகத்திற்குத் தேவையான செயல், பொறுப்பு ஆகியனவற்றை உணர்த்துவதாக இச்சிந்தனைகள் கூறப்பட்டுள்ளன என்பதை எடுத்தாளும் விதமாக 'இதழ்களில் உலகளாவிய சிந்தனைகள்' என்ற இக்கட்டுரை அமைகிறது.

சிந்தனை

'சிந்தித்தல்' அல்லது 'சிந்தனை' என்பது உயிரினங்களின் மூளையில் முதன்மையாக இடம் பெறும் ஓர் அடிப்படை உணர்வு ஆகும். ஆங்கிலத்தில் இதை ஓர் அறிதிறன் வழிமுறை என்கிறோம். அதாது அறிவைப் பயன்படுத்தி பகுத்துப் பார்க்கும் திறன். மனிதனின் சிந்தனை இயற்கையை வெல்ல உதவியது. சிந்தித்தலின் மூலம் சிந்தனைகள் அல்லது எண்ணங்கள் உருவாகின்றன. இந்த எண்ணங்கள் மொழி, கலை, செயல் எனப் பல வடிவங்களில் வெளியிடப்படுகின்றன. சிந்திப்பது என்பது ஒரு செயல்படாக இருந்தாலும் சிந்திப்பதைப் பற்றி விரிவாக விவரிப்பது மிகவும் கடினமாகவே உள்ளது. சிந்தித்தல் என்பது முதலில் ஓர் அகச் செயல்பாடு என்பதால் அதைப் புற வடிவில் விவரிப்பது என்பது சிக்கலாகவே உள்ளது. இருப்பினும் உலக மக்கள் எதனை? எவ்வாறு? சிந்திக்கின்றனர் என்பதை இதழ்களின் மூலம் உலகளாவியச் சிந்தனைகளாகக் காண்போம்.

தமிழருவி

(2022-2023 ஆம் கல்வியாண்டில் சேர்வோர்க்குரியது)

இரண்டாம் பருவம்

முனைவர் பே.மஹேஸ்வரி

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பொள்ளாச்சி - 642 001



சுவாமி விவேகானந்தரும் மகாகவி பாரதியாரும்



தொகுப்பாசிரியர்கள்

பேரா. க. ஸ்ரீனிவாசன்
முனைவர் க. தனலட்சுமி
முனைவர் பொ. அர்ச்சனா

சுவாமி விவேகானந்தர் மாணவர் சிந்தனை மன்றம்
நல்லமுத்துக் கவுண்டர் மகாலிங்கம் கல்லூரி
பொள்ளாச்சி - 642 001



இலக்கிய நதி

மூன்றாம் பருவம்
தமிழ் மொழித்திறன் - III 22 UTL 303

தொகுப்பாசிரியர்

திருமதி ர.சூர்யா

உதவிப்பேராசிரியர்

தமிழ்த்துறை (சுயநிதி)

நல்லமுத்துக் கவுண்டர் மகாலிங்கம் கல்லூரி

பொள்ளாச்சி - 642 001



சீர்மிகு

வளர் தமிழ் ஆய்வு



பதிப்பாசிரியர்கள்
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வாணி அறிவாளன்
ர.கோரிஜான்

2023

வளர் தமிழ் ஆய்வு மன்றம்
திண்டுக்கல்

2

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வேதாத்திரியமும் அறத்தின் மேன்மையும்

அறம் என்பது வாழ்க்கையில் பின்பற்ற வேண்டிய நெறிமுறைகள், கட்டுப்பாடுகள், விதிமுறைகள் போன்றவற்றையும் ஒவ்வொருவரும் கடைப்பிடித்து வாழவேண்டிய நற்பண்புகளையும் கூறுவதாகும். அறம், பொருள், இன்பம், வீடு எனும் நான்கு உறுதிப்பொருள்களில் அறமே முதலிடம் பெறுகின்றது. அறம் சார்ந்த வாழ்க்கைக்குப் பண்பாடு இன்றியமையாதது. இத்தகைய பெருமையுடைய அறத்தின் மேன்மையினை வெளிக்கொணரும் வகையில் அமைந்த வேதாத்திரி மகரிஷியின் அறக்கருத்துகளை இக்கட்டுரை இயம்புகிறது.

அற ஒழுக்கம்

மக்களாகப் பிறந்தவர்கள் எல்லோரும் உயர்வாக மதிக்கப்படுவதில்லை. அவர்களில் அற ஒழுக்கம் உடையவர்களே உயர்ந்தவர்கள் என மக்களால் மதிக்கப்படுகின்றனர். அற ஒழுக்கம் உள்ள ஒருவனுக்குச் சென்ற இடமெல்லாம் சிறப்பு உண்டாகிறது. இலக்கியங்கள் புராணங்கள் போன்றவற்றில் பெரியோர்களால் நல்ல செயல்கள் என்று கூறப்பட்டவை எல்லாம் அற ஒழுக்கம் என்று கருதிட வேண்டும். மனம் மொழி மெய்களைத் தீய நெறியில் செல்ல விடாமல் தடுத்து நன்னெறியில் நிறுத்தமுன்னோர்களின் நூல்கள் காட்டிய வழிமுறைகள் துணை புரிகின்றன. தூய்மையான பழக்கவழக்கங்கள், எண்ணம், சொல், செயல், பொய் சொல்லாதிருத்தல், பிறரிடத்தில் அன்பும் அருளும் கொண்டிருத்தல் ஆகியவற்றை முன்னோர்களின் வழி நின்று அறிய முடிகிறது.

அன்பு நெறி

மனித வாழ்வின் அடிப்படையே அன்பு. மண்ணில் வாழும் மாந்தர் எல்லாம் மனிதரிடத்தில் மட்டுமின்றி அனைத்து உயிரினங்களிடமும் அன்புடையவர்களாய் வாழ வேண்டும். அன்பு இல்லாத மனிதன் இவ்வுலகில் வாழ்வது என்பது அரிதானதேயாகும் என்பதைத் திருவள்ளுவர்,

“அன்பின் வழியது உயர்நிலை அஃதிலார்க்கு

என்புதோல் போர்த்த உடம்பு”(குறள் : 80)

என்று விளக்குகிறார். அன்பை வழியாகக் கொண்டு வாழ்பவனே உயிருள்ள மனிதன் ஆவான். அன்பு இல்லாது வாழ்பவன் வெறும் எலும்புகளைப் போர்த்தியிருக்கும் தோலுடைய உடம்பு மட்டுமே உடையவன். அதாவது செத்த பிணத்திற்குச் சமமானவர் என்பதைக்

பேரா. செ.மகேஸ்வரி,

என்.ஜி.எம் கல்லூரி, பொள்ளாச்சி,

குறிப்பிட்டுள்ளார். வாழ்க்கையில் இவ்வாழ்வு இனிமையாக அமைய அன்பு நெறியும் அற உணர்வும் மிகவும் இன்றியமையாதவையாகும். அன்பு இன்றி எந்த உயிரும் வளமாகவும் நலமாகவும் வாழ்வது அரிது. அன்பு நெறி தழைத் தோங்கும் சமுதாயத்தில் தான் அறம் தழைத் தோங்கும். இதனையே

“துன்பம் போக்கும் தூய நெறியே அன்பாம்” (ஞா.க.1:582)

என்று பிற உயிர்களையும் துன்பத்தைப் போக்க வேண்டுமென மகரிஷி குறிப்பிடுகிறார். பண்பாடு உயர் மனிதனை மனிதன் மதிக்கும் உயர்வான ஒழுக்கம் ஏற்படும். எல்லா நன்மைகளுக்கும் சான்றாக விளங்கும்; இவ்வாறான ஒழுக்கங்கள் உயர்ந்த சமுதாயத்தை உருவாக்கும். அன்பு உணர்வின் மூலமே தனிமனிதன் தொடங்கி அனைவரிடமும் நல்லிணக்கம்; ஏற்படுகின்றது. இல்லறமும் இனிமையாக அமைய அன்பும் அறனும் மிகமிக அவசியம் என்பதனை வள்ளுவர்,

“அன்பும் அறனும் உடைத்தாயின் இவ்வாழ்க்கை
பண்பும் பயனும் அது” (குறள் : 45)

என்ற குறள்மூலம் அன்பையே வலியுறுத்துகின்றார். அன்புணர்வு இன்றி வளரும் குழந்தைகளிடம் சரியான மனநிலை அமைவதில்லை. இதன் விளைவாக பொய், திருட்டு, கொலை, சு+து, மானபங்கம் போன்ற பழிச் செயல்கள் வெளிப்பட்டுச் சமுதாயத்தில் ஏற்படும் சிக்கல்களுக்கும் குழப்பங்களுக்கும் காரணமாகி விடுகின்றன. உடல் நலம் மனநலம் இரண்டும் சேர்ந்ததுதான் முழுமையான ஆரோக்கியமாகும்.

அருள்நெறி

இராமலிங்க வள்ளலார் மிகச்சிறந்த ஆன்மீகவாதி. சமுதாயத்தின் மீது பற்றுள்ளம் கொண்டே தன் கருத்துக்களைப் பரப்பினார். மனிதனை மரணம் இல்லாப் பெருவாழ்வு வாழ வழிவகை செய்துள்ளார். அவர் மக்கள் வாழ்வில் கடைபிடிக்க வேண்டிய அறநெறி சார்ந்த செய்திகளைக் கூறியுள்ளார். அவை அன்பின் மிகுதியையும் அருளின் பெருக்கத்தையும் உய்த்துணர்வதாகும். மனிதன் பிற உயிர்களிடத்திலும் அன்பு கொள்ள வேண்டும் என்ற உயர்ந்த எண்ணத்தை,

“அன்பெனும் கடத்துள் அடங்கிடும் கடலே அன்பெனும் உயிர் ஒளிர் அறிவே அன்பெனும் அணுவுள் அமைந்த பேரொளியே அன்புருவாம் பரிசிவமே” (அகவல் : ப-6) என்ற பாடல் அடிகளின் மூலம் வள்ளலார் கூறுவதை அறியலாம்.

கற்புநெறி

கற்பு நெறி என்பது வாழ்க்கை ஒழுக்கத்தைக் குறிக்கும் மிக உயர்ந்த சொல்லாகும். தமிழர்கள் பண்பாடு உலக மக்கள் அனைவருக்கும்

வழிகாட்டியாக அமைந்துள்ள உயர்ந்த வாழ்க்கைப் பண்பாடு. அது ஒருவனுக்கு ஒருத்தி என்ற குடும்பமும் பாசப்பிணிப்புக்குள் உறவுகளை வளர்த்து வாழ்ந்த நெறிமுறையும் ஆகும். உடல், மனம், பொருளாதாரம் ஆகியவற்றில் தகுதி செய்து கொண்ட பின்னர் இல்லறத்துக்குள் தம்மை ஈடுபடுத்திக் கொள்ளும் பண்பாடு தமிழர் பண்பாடு. கற்பு என்பது ஆண் பெண் இருபாலருக்கும் பொதுவானது என்பதை,

"கற்பு நிலையென்று சொல்ல வந்தார் இரு
கட்சிக்கும் பொதுவில் வைப்போம்" (பாரதி. கவி : 241)

என ஆண் பெண் இருபாலருக்கும் கற்பு என்பது பொதுவே என்று பாரதியார் குறிப்பிடுகிறார்.

"கற்பதனைக் காப்பாற்ற இருபாலார்க்கும்
கடமை பொதுவே" (ஞா.க 1:582)

என்று மகரிஷி குறிப்பிடுகிறார். தலைவன் தலைவி இருவருக்குமே கற்புநெறி என்பது பொதுவானதாகும். கற்பு நெறியை பற்றி மேலை நாட்டினர் அவ்வளவாகக் கவலைப்படுவதில்லை. இந்தியத் திருநாட்டில் அது உயர்ந்த நெறி மட்டுமல்லாமல் உயிர் நெறியாகவும் பின்பற்றப்படுகிறது. விஞ்ஞானம் மருந்துகளே இல்லாது தவிக்கும் நோய்க்கு இந்திய மகான்களாகிய முன்னோர்கள் முன்பே மருந்து கண்டுபிடித்து உலகிற்கு அளித்து விட்டனர். அந்த மருந்தின் பெயர் இல்லற ஒழுக்கம் எனப்படுகிறது.

விருந்தோம்பல் நெறி

தாய் தன் குழந்தைகள் மற்றும் கணவனுக்கு உணவு பரிமாறும்போது உண்மையான தாய் அன்பை உணர முடியும். தாய் உணவை மட்டும் ஊட்டுவதில்லை உணவோடு அன்பையும் சேர்த்து ஊட்டுகிறாள். அப்போதுதான் குழந்தை உயிர்த் துடிப்போடு வளர முடியும். தாய் தனது குடும்பத்தைக் கவனிப்பதோடு மட்டுமல்லாமல் உறவினர்கள் மற்றும் அனைவருக்கும் விருந்தோம்பும் ஆற்றல் உடையவளாக விளங்குகிறாள். விருந்து படைக்கும்போது இல்லாள் நடந்து கொள்ளும் விதம் பரிமாறும் விதம் இவற்றைக் கொண்டே ஒரு குடும்பப் பெண்ணின் நல்லியல்பை உணர முடியும். மனம் கோணாமல் விருந்தோம்பல் ஆற்றும் சிறப்பு பெண்களுக்கே உரியது. விருந்தின் மேன்மையை 'மோப்பக் குழையும் அனிச்சம்'; (குறள்-90) என்ற வள்ளுவர் கூற்றினின்று உணர முடிகிறது.

அறநெறி

அறநெறி வாழ்க்கை வாழ்வதற்குக் கணவன் மனைவி இருவரும் சேர்ந்து தவம் பயில வேண்டும். அதன் மூலம் நல்ல மனத்தன்மையைப் பெற முடியும். அப்போதுதான் இல்லறம் இனிமையாக அமையும். சுவைத்து அனுபவித்து வாழ்வதன் மூலமே வாழ்வின் நிறைவும் வாழ்வின் நோக்கமும்

திறைவேறும். இல்லற வாழ்க்கையில் நல்ல பண்பையும் நெறி வழுவாத ஒழுக்க உணர்வையும் போற்றி அதன்படி வாழ்வதன் மூலம்தான் அறம் தழைக்கும் என்பதை முன்னோர்கள் உணர்ந்துள்ளனர். வள்ளுவர் குறிப்பிடுகையில்

“அறனெனப் பட்டதே இல்வாழ்க்கை அஃதும்
பிறன்பழிப்பது இல்லாயின் நன்று” (குறள் : 49)

என்ற குறளில் அறம் என்று சிறப்பித்துக் கூறப்படுவது இல்லறமே எனத் தெளிவுறக் கூறியுள்ளார். அறம் நன்மையையும் வலிமையையும் தரவல்லது. யார் ஒருவருக்கு நீடித்த மகிழ்ச்சியும் புகழும் வேண்டுமோ அவர்கள் கண்டிப்பாக அறவழியில்தான் செல்ல வேண்டும் என்று திருவள்ளுவர் இயம்புகின்றார்.

அன்பு கொண்டு வாழும் இல்லறத்தவர் அறவாழ்வு வாழ வேண்டும். அந்த இல்வாழ்க்கையில் அறம் என்பது ஒழுக்கம், கடமை, ஈகை மூன்றும் இணைந்த உயர் நெறியே என்பதை, “ஒழுக்கம் கடமை ஈகை என்ற மூன்றும் ஒன்றிணைந்த உயர்நெறியே அறம்” (ஞா.க : 453) என்று வேதாத்திரி மகரிஷி விளக்கம் அளிக்கிறார். இவ் அற நெறி பிறரது பழிச்சொல் ஏதும் உண்டாகாத உயர் அறவாழ்வாகும்.

ஒழுக்கம்

ஒழுக்கம் என்பது தனக்கோ பிறருக்கோ தற்காலத்திலோ பிற்காலத்திலோ, உடலுக்கோ அறிவிற்கோ துன்பம் தராத செயல்கள் ஆகும் என்பதை மகரிஷி குறிப்பிடுகின்றார். வள்ளுவர் கூறுகையில் ஒழுக்கம் உயிரினும் மேலானது (குறள்-131) என்று சுட்டிக்காட்டி உள்ளார்.

கடமை

ஒவ்வொருவருக்கும் ஒவ்வொரு வகையாகக் கடமை உள்ளது. இவற்றை, ‘தான்’ ‘குடும்பம்’; ‘சுற்றம்’ ‘ஊர்’ ‘உலகம்’; என்று ஐவகைக் கடமையாக மகரிஷி வலியுறுத்துகின்றார். தனக்குச் செய்ய வேண்டிய கடமைகள், தன் குடும்பத்திற்குச் செய்ய வேண்டிய கடமைகள், உற்றார் உறவினர்களுக்குச் செய்ய வேண்டிய கடமைகள், பிறந்த ஊருக்குச் செய்ய வேண்டிய கடமைகள், உலகத்திற்குச் செய்ய வேண்டிய கடமைகள் என்று அவரவர் கடமைகளை வலியுறுத்துகின்றார்.

ஈகை

ஈகை என்பது ஒருவன் தன்னால் இயன்றவரை பிறருக்கு உதவி வாழ்வதாகும். துன்பப்படும் உயிர்களுக்குத் தம்மால் முடிந்த உதவியைக் கைம்மாறுகருதாமல் அதாவது பிரதிபலன் எதுவும் எதிர்பார்க்காமல் செய்யக்கூடிய மிகப்பெரிய சேவையே ஈகையாகும். பிறருடைய துன்பத்தைக் கண்டு தன் துயர்போல் எண்ணி மனமிரங்கிச் செய்யக்கூடிய ஈகை மிக உயர்ந்த அற்புதமான அறநெறியாகும்.

இத்தகு அறவழியில் நின்று இல்வாழ்வு நடத்தினால் பிற வழிகளில் சென்று பெறக்கூடிய பயன் ஏதும் இல்லை. இத்தகையவர் தெய்வத்திற்கு

ஒப்பானவர் ஆவர். அவர்களே இசைபட வாழ்பவர்களாவர்; அவர்களே தெய்வத்திற்குச் சமமாகப் போற்றப்படுவர். வள்ளுவரும்,

“வையத்துள் வாழ்வாங்கு வாழ்பவன் வானுறையும்
தெய்வத்துள் வைக்கப்படும்” (குறள் : 50)

என்று குறிப்பிடுகின்றார். அறம் என்பது வழிபாட்டுத் தலங்கள் கட்டுதல், இலவசமாக அன்ன சத்திரங்கள் ஏற்படுத்துதல், அன்னதானம் வழங்குதல் என்ற வட்டத்தில் நின்று விடுவது அன்று. மாறாகப் புத்தாக்கச் சிந்தனை கொண்டது. முயன்றால் அனைவராலும் அதனை உய்த்துணர முடியும். ஈகை எனப்படுவது,

“வரியாற்க்கொன்று ஈவதே ஈகை மற்றெல்லாம்
குறியெதிர்ப்பை நீர துடைத்து” (குறள் : 221)

வறியவருக்கு ஒரு பொருளைக் கொடுப்பதே ஈகை. மற்றவருக்குக் கொடுப்பதெல்லாம் பயன் எதிர்பார்த்து வழங்கப்படுவது என்று குறளின் வழி புலனாகின்றது.

ஆன்மீக நெறி

மனிதன் செய்யும் நற்செயல்கள் அவனை உயர்த்தும் என்பதை வள்ளுவரும் வேதாத்திரி மகரிஷியும் கூறியுள்ளனர். மனித ஒருமைக்கும் சமுதாய அமைதிக்கும் வள்ளுவர் குறள் (குரல்) கொடுத்ததுபோலவே மகரிஷியும் கூறிப் போந்துள்ளார். முதற் குறட்பாவில் உலகு என நினைவு+ட்டி உலகளாவிய நேயத்தை உணர்த்தியுள்ளார். மகரிஷியும் இறைவன் மனிதனது நற்செயல்களிலேயே இருக்கிறான் என்பதை அறிந்து உணர்ந்து ஆன்மீகத்தில் ஒவ்வொருவரும் உயர்வடைய வேண்டும் என்பதை அருளிய முறையை அறிய முடிகிறது.

முடிவுரை

ஒரு மனிதன் தன் வாழ்க்கையில் என்னென்ன நெறிகளைப் பின்பற்றி வாழ்ந்து வருகிறான் என்பதைப் பொறுத்து அவனது முடிவுகள் அமைகின்றன. மனிதனுடைய வாழ்க்கையில் நல்ல பழக்கவழக்கங்கள் பண்பாடாகவும் வாழ்க்கை நெறியாகவும் மாறுகின்றன. எல்லா உயிரினங்களுக்கும் இல்லாத பகுத்தறிவை மனிதனுக்கு இறைவன் கொடுத்திருக்கின்றான். குழந்தையாய் இருந்து முதுமை அடைந்து இறையடியைத் தொடும்வரை வயதுக்கு ஏற்ற வாழ்க்கை முறைகளை வகுத்துக் கொடுத்திருக்கிறார்கள் முன்னோர்கள். அவர்கள் வகுத்துக் கொடுத்த வாழ்க்கை முறைகளைப் பின்பற்றினால் வாழ்வாங்கு வாழ்ந்து வாழ்க்கையில் உயர்ந்து நிற்க முடியும். எண்ணம், சொல், செயல் அனைத்திலும் அறத்தைப் போற்றும் சமூகம் தன்னையும் வளர்த்துத் தன்னைச் சார்ந்தவர்களையும் வளர்ச்சி அடையச் செய்யும். முன்னோர்கள் வகுத்த நெறிப்படி வாழும்பொழுது வாழ்வில் துன்பம் குறைந்து பயன் மிகுந்து இன்பம் பெருகும் என்பதில் ஐயமில்லை.





வளர் தமிழ் ஆய்வு மன்றம்

திண்டுக்கல்

பத்தொன்பதாவது பன்னாட்டுக் கருத்தரங்கம்

பங்கேற்புச் சான்றிதழ்

திருமிகு / முனைவர் / பேரா. S. மகேஸ்வரி அவர்கள்

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பங்கேற்றார் / பங்கேற்று லேதாத்திரியமும் அறத்தின் மேன்மையும்

என்னும் தலைப்பில் கட்டுரை வழங்கினார்.

சுபாஷ்மயம் அரவிந்தன்
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தலைவர்

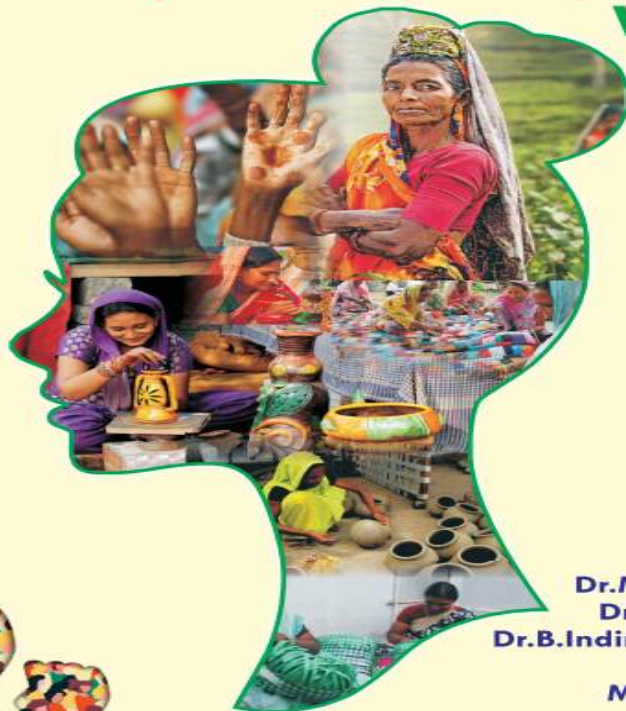
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பொருளாளர்

Rural Women Empowerment through Entrepreneurship

Volume I



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GREATNESS OF WOMEN

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Abstract

Human society is made of men and women, both of whom are responsible for the propagation and wellbeing of the race. It is not possible for either men or women to exist without the other; but unfortunately, male dominance has always been the norm in the society, with women being disregarded or relegated to a lower level by the men. Even though there were reasons for it in the beginning, they have lost their relevance with time; the practice however continues and has to be eliminated through edification and efforts.

It can however be achieved only when the men and women begin to work together, and not through individual efforts. Both of them have to realize the need for the changes, and work in unison. The family has to prosper, and good children, who grow up to be educated and responsible citizens, working for the welfare of the family and the society, should be born - this is the dream of every individual, for which both the husband and wife should be educated, and enjoy equal rights within the family.

Keywords: Women, Equal Rights, Family, Education, Responsible Citizen

Every child has to grow into an erudite, skilled, and respectable citizen, for which both the parents have to be educated and aware of their responsibilities. Some people are of the opinion that it is enough if the men are educated, and a woman need not be, for begetting good children or running a family. This view can best be exemplified by a story credited to George Bernard Shaw, the famous writer: A beautiful woman once approached Shaw expressing a desire to marry him for the reason the children born to them would possess her good looks and his intellect, an ideal combination, according to her. Bernard Shaw replied, "Madam, have you considered the possibility they may be born with my looks and your intelligence?" The point here is that imperfections can lead to feelings of inferiority, which can be overcome when the partners look on themselves as equals, ready to extol the qualities or the skills in the other, always.

Mangalasutra - The Symbol of Wedlock

Man, who lived in the forests and the mountains during the initial stages of his existence, survived by hunting and foraging for food, when he was exposed to many dangers. Under the circumstances it was considered inadvisable for the women to venture into the forests and the onus of hunting fell on the men. This in turn led to the practice of the male protecting the female, as well as the house, from

marauders, man or beast. The practice continued through the ages and became the norm. When a custom that denied marriage to a youth who had failed to prove his worth came into existence, it became imperative that every aspiring groom prove his strength and courage by hunting down a beast and bring home its tooth or claw, as a proof of his prowess. This, a mark of his courage, was then attached to a string and presented to the girl of his choice. The practice of tying a Mangalsutra around the bride's neck, as a symbol of her married status, arose from this. The women were expected to remain secure at home, while the men went hunting or fighting the battles.

Time has wrought changes in the practice of women staying at home and even the Mangalsutra has undergone changes over the years - the tooth or claw of the feline has been replaced with a replica made in gold or other material. Women in the northern parts of our country, who had to face invasions and attacks from outside, were considered fair game and a part of the spoils of war, by the invaders. The women preferred to die rather than fall into the hands of the marauding soldiers, and the Mangalsutra was designed with a small chamber, capable of holding a dose of potassium cyanide or other poison, which could kill instantly. The practice was however discontinued when it was discovered that women, with even minor problems, like a tiff with the husbands, consumed the poison and ended their lives.

The Mangalsutra thus underwent transition from a symbol of courage in the male, to one that protected the modesty of a woman, and then to a mere token that signified the status of a married woman. It is a carry-over from the past, which has lost its significance with time. Customs travel from country to country, to be aped without any knowledge regarding their origins or purpose.

Frugality and Reforms

Practices continue despite having lost their relevance in a changing milieu; for example, some of the religious festivals, which can be avoided, are still celebrated on account of peer pressure or the inquisitiveness of the people. Unnecessary expenses can be avoided if the partners put their heads together, and frugality, for which the husband and the wife work together, should be the norm. Changes can be introduced and expenses controlled through this.

Vethathiri Maharishi has travelled to many parts of the world and have made it a point to study the local customs and culture by interacting with the people. Many changes have taken place from the time of the early man, and cultures have grown and developed in keeping with the places, environs, resources, food habits, trades and even the diseases endemic to the place. It can be called a form of 'cultural

evolution', and is the product of deep analysis by the thinkers and wise men who lived there. Culture is often imbibed from one's parents, teachers and the religious heads.

He noticed that it is the women in a place who adhere to cultural norms, rather than the men, which may be on account of the fact the men often travel and live in other places, which brings about changes. Women rarely travel outside the country, and even when they do, stick to their old traditions and customs. Indian women rarely depart from their old values, and the qualities revealed by them, even when living outside the country, are praiseworthy. The culture of India, in matters regarding hygiene, politics, economics, healthcare and knowledge has always been exemplary, and worthy of emulation by the rest of the nations.

Equal Rights for the Women

Women's liberation movements have been in existence for some time now, and I have always supported them tacitly and openly, but a woman's responsibilities should never be overlooked by the supporters of the movements. So long as a woman tries to attract the men through her dress and demeanor, equality will not prevail. Laws are made to bind and protect the people, but two laws that can never see eye to eye or exist together in harmony, are the mother-in-law and the daughter-in-law within a family. Their differences are irreconcilable, and have probably been in existence from the beginnings of time. The western countries, where extended or joint families are no longer in practice, are free, to some extent, of this problem; but in our country, where the will of the mother-in-law prevails in almost all the households, the daughter-in-law is constantly on the lookout for a means to escape.

If every mother-in-law were to recall her younger days, and the torment she had to face from her own, she would definitely be considerate towards her daughter-in-law; and if, on the other hand, the daughter-in-law begins to look on her as a mother, rather than a mother-in-law, the situation would definitely improve. Equal rights, like charity, should definitely begin at home.

Maharishi has quoted that the father of the bride gives her away in a ritualistic manner, evocative of disowning or disinheriting her, met with the ire and resentment of the people. Giving the girl away, like a commodity or a household article was, according to me, an act of injustice and cruelty. The practice continues to this day, even though it does not find a place in the marriages conducted under the aegis of the World Community Service Center.

Equal rights and responsibilities should be provided to the women in running the family, taking care of the children, and even in financial matters. It is the only way to ensure the wellbeing of the women and peace in the family.

Our Duties

Women have always been looked upon as second class citizens, and relegated to the lower strata, in a male- dominated society. This is wrong and unjust. A single sentence can describe the greatness and worth of all women: 'every individual, male or female, who lived and continues to live on the face of the Earth, is the gift of a woman to humankind'. They are the blessed ones and it is the duty of every male to realize and respect this fact. Women, today, are eager to shoulder their share of the responsibilities and duties, and preventing them can affect the society adversely.

Children inherit the physical, mental and spiritual qualities of their parents. The qualities of a seed depend on the parent tree, which in turn affects the qualities of the tree that springs from it, in a continuous process. The parents have to be physically and mentally healthy to beget healthy children. Education has progressed, in keeping with which, the cost of education has also increased; yet the ways to live in good health, in the company of good people, has not formed a part of the academic curricula. Children are ignorant about the true nature of the body, mind or the soul. They are unaware of the nature and importance of biomagnetism, or the need and the means to conserve it, on account of which the principles of measure and method are never followed. All deeds bring suitable results in their wake, and there is escaping the fact. Mother and child care is not about women or children alone; it is a science that takes into consideration all humankind. Proper care has to be provided from the time of conception to childbirth, and even after that, for a mother and child to remain healthy. Everyone in the family, the husband, parents and the others have to contribute their mite for keeping the woman happy and healthy. Ill feelings or sorrow affect the health of the child adversely, because the mind is the peripheral consciousness, a phenomenon born of the working of the Consciousness, genetic center and biomagnetism, together. People, especially the husbands, are unaware of the ways in which to take care of a pregnant woman, and the manner in which their attitudes or behavior can affect an unborn child.

Proper care should commence from the time of conception. The purpose of observing full moon and new moon days, as well as eclipses, as holy days, to be spent in prayers or fasting was to prevent conception, because a child conceived on these days can be born with physical or mental impairment. Many of the physically or mentally challenged children we see today are the result of similar indiscretions

People treat the days as 'holidays' rather than 'holy days', indulging in pleasurable activities. It is a subject that deserves to be analyzed by the doctors and the scientists, despite the fact medical science has yet to analyze or accept the influence of the planets on human lives.

Texts pertaining to the Ayurveda and Siddha systems of medicines explain in detail the precautions to be observed by a woman during her pregnancy. For example combing the hair during the menstrual cycles, followed immediately by a pregnancy can produce a child with scanty hair; similarly applying kohl to the eyes or chewing betel-nuts during the periods can affect the eyes or teeth of the child. They are the findings born of deep research made on the health of a woman, and not to be taken lightly. The growth and development of a child within the mother has been described as given below:

The foetus resembles the numeral 1 during the first month. The head and backside are formed during the second month, the hands, legs, fingers and toes, during the third, the face and the nose during the fourth. The ears, eyes and tongue are formed during the fifth month, the nails during the sixth, the nervous and skeletal systems, bladder, lungs and heart during the seventh month. The child is fully formed during the eighth month. During the ninth, it gets ready to emerge into the world, turning upside down, within the womb. The tenth month sees the child coming out into the world, separated from its mother.

They are the results of the studies made by the physicians and others during days when science was in its infancy. The relationship between a husband and wife, during the period of her pregnancy is of extreme importance. Conflicting thoughts or actions, and an overbearing attitude should be avoided for begetting good and healthy children.

The husband and the wife, having entered into wedlock and lived together, should exude love, affection, and harmony, at all times. Conflicts arise in the absence of tolerance and sacrifice, which qualities can be developed through the practice of meditation or prayers; awareness and the noble qualities of virtue begin to rule the mind.

A radiant future awaits humankind provided the world begins to understand the laws of Nature and is ready to provide respect and equal rights to the women. They are the symbols of motherhood', a gift bestowed by Mother Nature, for the welfare of humankind. God may have created the world; but it needs a woman to create humankind. As I have mentioned in one of my poems, 'Humankind is the gift of the woman'; yet they are seen with tear-laden eyes and in misery always. Ours is not an isolated case; it is common to the people all over the world. Constant ill-treatment and harassment break the women, physically and mentally.

**"The greatness of women becomes evident when-
The fact that all the women and men
Are to the human race, womanhood's gifts,
Can there be a deed, nobler than this?"**

- Vethathiri Maharishi

A lady once asked Maharishi the reason why women are not being provided with equal rights or opportunities despite the progress made by the nations. He replied, "Laws are made by the men, and the only way to overcome the problem is for the women to unite and resist the unfavorable laws". Thetime is ripe; women are educated, erudite and skilled, and have also proved themselves in various fields. Women should be provided with an opportunity to frame the laws, with interference from the men.

Praise for the Women

The noble quality of sacrifice is etched into the psyche of the women in our country, as is evident from the fact that every woman leaves behind her parents, siblings and friends when leaving for her husband's house, immediately after her marriage. She has to be respected not as a mere woman but as a living symbol of motherhood and sacrifice.

Even friendship has its limits; but the relationship between a husband and his wife knows no boundaries, with regard to love, compassion and sacrifice. It yields immeasurable love and happiness in the lives of the individuals. Blessing the life partner is a definite way to keep the sentiments alive. A "Woman's International Spiritual Educational Trust" has been constituted under the aegis of the World Community Service Centre for looking into the welfare of the women. It is the bounden duty of humankind because "Born of a woman and fed on her milk, you survived and grew; you live with the help of a woman; realize her greatness".

Duty Bound to the Society

Man has to realize the extent of his duties and responsibilities to the society. The purpose behind all human birth is realization of the Truth. It is important to know the efforts, and the manner in which the commodities are made available to us.

**"See the unity of the world in every morsel of food, Pay back your dues,
through deeds that are always good!"**

Every morsel of food we eat contains the efforts of many, like the farmer who raised the crops, the laborer's who toiled in the fields, the people who threshed it, the traders, the cooks, and finally those who served it to us. We go through each day enjoying the efforts and goodwill of many. It is our bounden duty to strive for

the welfare and wellbeing of the society which has sustained us from the beginning. In the words of Saint-poet Thiruvalluvar:

**"The seas, the source of the rainclouds
Lose their depth, in the absence of rain".**

Everyone has to contribute for the welfare of the society, failing which society goes into decline.

Individual and his duties to the Society

Every individual is an asset of the society. It is the law of Nature. The society takes care of, and protects the individual, and he has to repay the 'capital' invested in him in the form of selfless service. The three noble qualities of morality, duty and charity are important for selfless service. Thoughts, words and deeds bring suitable results in their wake, in accordance with the laws of Nature. Every deed should be analyzed for the likely outcome; the results of striving hard, or shirking one's responsibilities, should also be analyzed. All actions should yield only good results and not harm anyone, which forms the basis of morality. Charity is born of the feelings that arise in the mind seeing the pain or misery of the others, and the desire to alleviate their pain. Morality is the resolve not to inflict pain, and charity the actions that alleviate the pain.

"Helping those in need, and living in harmony Are the gains in life"

-Thiruvalluvar

Charity is an act of compassion, undertaken to alleviate the pain or the misery of the others. The ability to live in harmony with the others arises from morality. The noble qualities of morality and charity provide contentment. Duty, the only means to repay the benevolence of the society, is important. Ruination awaits societies or countries that fail to take into consideration, or cater to, the three noble sentiments mentioned above.

Freedom

Realisation of the eternal truths is impossible without the help of philosophy. Gnana is where the individual begins to understand things for himself by treading the path of virtue and righteousness. Bhakthi is when people, incapable of attaining realisation on their own, follow the teachings of the wise, when pursuing their goal. Bhakthi is faith, and Gnana, wisdom. The path of Bhakthi or Gnana, either of which can lead to realisation of the Self and the Divine, is essential for all. A virtuous life, consisting of morality, duty and charity is important. Realisation of the Self and the Divine is the purpose behind all human birth.

Every individual should be made to feel secure within the society. Once, when people from another country asked my opinion about freedom, I told them, "You

are talking about freedom for the individual; everyone is free, but it can be secured only through discipline. Freedom is not the right to do as one pleases; it is respecting the freedom of the others and avoiding interference". True freedom comes from being aware of the need to respect the freedom of the others and avoiding transgressions.

Importance of Good Health

Having taken birth on this Earth, and living in the midst of the people in a society, it is our duty to deliberate over the ways to improve our knowledge and serve them. Analysis helps understand the genuine needs and avoid the unnecessary ones. The duties of an individual are fivefold: they are duties to the self, the family, relatives, country and the world, and serving them in accordance with one's knowledge, skills, and age is important. Among the five, duties to the self. Which involves keeping the body and the mind healthy, is primary. Next comes the family, followed by relatives, country and the world. All duties should be performed without conflict of interests; working for the welfare of the society at the cost of one's health, or the wellbeing of the family, is inadvisable. A society can flourish only when all are healthy, mentally and physically.

Duty Safeguards Rights

Taking care of oneself cannot be considered a selfish act, acquiring knowledge or seeking the ways to improve oneself are not acts of selfishness, because they help the individual live as a good citizen, serving the society, and taking care of its needs. Once, during the course of my travels abroad, I had to approach the government officials in order to get my visa extended. I was pleasantly surprised by the courtesy shown by the officials, who on hearing my request politely asked me to be seated and completed the work in a matter of minutes. This should serve as an eye-opener for the officials in our country, where the poor tax payers are made to wait interminably, and then asked to come again, on another day. This reprehensible state of affairs, which has somehow crept in and flourishes in our country, has to be eradicated.

It is wrong to think that punitive action or stringent rules can correct the situation; corrections are possible only when the individuals begin to realise their mistakes and learn to discriminate between good and bad. People have to realise the futility of evil deeds and avoid them scrupulously. Good deeds are born from within, the result of a proper education and moral compulsions. Changes cannot be induced through fear or enticements. The system of education has to change for the better. There is no need for revolutions or social upheavals; it is enough if the

individual remains aware of his duties and performs them well. Rights are born of the awareness to do one's duty well, which safeguards the interests of all.

Conclusion

Women should be provided with an equal status, at all costs. The progress achieved by the women benefits the nation, as well as the coming generations. The above organization was founded for the uplift of the women from the rural areas through the practice of meditation, introspection and a process of edification. Every family should be provided an opportunity to study and practice Manavalakkalai, which helps strengthen the mind, besides providing the ability to think and analyze, for a happy and contented life.

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37. SWAMI VIVEKANANDA'S CONCEPTS OF UNIVERSAL RELIGION

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Abstract

One of the Swami Vivekananda's greatest contributions to mankind is 'Universal religion' – a new religious ideology. It is not a new religion with a new scripture, but it is a new approach to religion, a new spiritual temper. It not only enjoins tolerance, it urges acceptance of other religions as true there by making religions a principle of human unity. Universal religion is a discovery of universality in all religions excluding the particularities of creed, dogmabeliefs, rituals and convention of them (religions). A believer in universal religion has an enlightened understanding of and respect for all the religions without losing the sense of belonging to his own religion with its belief and practices. In his Chicago Addresses in 1893 Swami Vivekananda gave importance on the validity and universality of all religions. He mentioned that every religion is able to create purity, sacredness and kindness in human mind. So, he accepted the validity of all religions. He appealed to all that everyman must keep up his oneness in the sphere of religion and accept all that is good in other religions. To him, a religion which is capable of giving satisfaction and comfort to every religious sect can be granted as universal religion.

Keywords: Universal Religion, religious ideology, Hinduism, Vedanta

Introduction:

The religious concepts of Vivekananda are very much broad in attitude. He says that religion is not talk or doctrines or

Like his master, Vivekananda also cherished the world-view based on Advaita Vedanta view of unity-in difference. As a Karma-Yogi, he did not stand for any abstract religion but for the religion of work with detachment or work for impersonal ends as the highest expression of the religious life.

Swami Vivekananda learnt from the life and saying of Sri Ramakrishna that true religion is universal religion. He got support of his master's teachings from the 11th verse of the 7th chapter of the Bhagavad-Gita "ye yatha mann prapadyante tamstathaira bhajamyaham/mama vartma-nuvartante manushyah partha sarvashah" (who ever comes to me, through whatever form, I reach him; all men are struggling through paths which in the end lead to me).²

In all his addresses and writings, Vivekananda aimed at the establishment of universal religion for the betterment of the universe as a whole. But Vivekananda made his surviving statements on the idea of universal religion in his first address at Chicago Parliament of Religion on 11th September, 1893 of the many statements we may remember only two for the present purpose:

- (a) "I am proud to belong to a religion which has taught the world both tolerance and universal acceptance".
- (b) "We believe not only in universal tolerance but we accept all religions to be true".³

Though he was proud to belong to Hindu religion, he accepted all religions as true. This is his universalism of religions. So we see his address on Hinduism on 19th September 1893 at the same place he presented his idea of Universal religion. The one watch word for universal religion is acceptance. Acceptance is not just tolerance. Tolerance is negative in its import. It implies that something is being allowed in spite of its being wrong. Swamiji recommends positive acceptance.

Swamiji said, there have been many religions. They have been quarrelling among themselves, each religion claiming that it is superior. In spite of the conflicts the major religions have managed to survive.

The conflicts instead of weakening them have added vitality to them. The new thoughts arise only through that conflict. In a stagnant water there are no whirlpools. These are seen in a living running stream. In the same manner conflicts awaken new thoughts.⁴

'Universal Religion' as suggested by Swami Vivekananda, is not a new addition to the existing list of known religions like Buddhism, Christianity, Confucianism, Hebraism, Hinduism, Islam, Jainism, Sikhism, Taoism and Zoroastrianism. It is neither a separate religion nor an alternative caption suggested for any particular religion. Normally one may expect that as a Hindu and religious preacher he has glorified his own religion by claiming it to be a universal religion. But it is clear that while talking about universal religion Swamiji's intention has not been concentrated in glorifying his own religion, rather the emphasis seems to have been concentrated the universality aspect of any religion so that bad effects of the religiosities can be avoided.

As we have learnt that universal religion is not a new religion, it is important to make it more specific, what is meant by universal religion. Here it can be pointed out that something can be treated to be universal when it keeps its gate open to every individual one might be born from parents of a particular religion but he must have the choice to adopt any one. The choice of the individual is of prime importance. It is the mark of universality. Further a religion if capable of giving satisfaction and comfort to every religious sect can be treated to be universal. The religion should appear reasonable to the people of other religious sects in order to be universal. When we shall throw away the narrow out-looks, non-humanitarian considerations from the religions, they all will become universal by nature. So, every religion is potentially a universal religion

The great religious masters of the world teach that not the external forms but the power that is latent within mankind can bring salvation to light. Man lives and takes movement in God. Creeds and sects play their parts for children, their lasting is purely temporary. Books never make religions, rather religions make books. The end of all religions is the realization of God in

the soul. That is the one universal religion. The one universal truth in all religions, according to Vivekananda, thus, is realizing God within. He asserts that ideals and methods may differ, but that's the central point. When someone puts that he is right or his church or temple or mosque or gurudwara is right and all others are wrong, he unfortunately misses that upon the roof of all the others depend the proof of his own.

Naturally, a relevant question may immediately arise – what do we mean by the ideal of a universal religion? In this respect, Vivekananda comments: 'I do not mean any one universal philosophy, or any universal mythology, or any one universal ritual, held alike by all; for I know that this world must go on working wheel within wheel, this intricate mass of machinery, most complex, most wonderful'.

In modern age, the very essence of universal religion has been highlighted by Raja Ram Mohan Roy, Keshab Chandra Sen., Sri Ramakrishna Paramhansa, Vivekananda, Rabindranath Tagore, Vethathri Maharishi, Romain Rolland etc. Universal religion does not seem a mere dead conformity or dry dogma as constituted by vain intellect or only product of liberal thought. This concept recognizes and pays significance to the emotional and aesthetic resources of man to divert or sublimate them towards the Para or the Highest

Vivekananda explained that the language of the soul is one, the languages of the nations are many; their customs and methods of lives are totally different. Religion is of the soul that gets revealed through various nations, languages and customs. So, the difference among the world religions is one of expressions and not of substances, and their points of similarity are intrinsic. Vivekananda puts that the so-called doctrines or dogmas, rituals or books, temples or churches are but "secondary details". Vivekananda represented Hinduism not as a specific belief found on Puranic idolatry and mythology. As a proud Hindu, he described that Hinduism is a Universal Religion which depends on spiritual truth to be achieved in own life. He puts that the spiritual realization is the absolute testing of truth than any authority got from the past. This realization is of oneness

The philosophy of the Advaita Vedanta was realized by Vivekananda as the last term in respect of religious ways and this deep realization and conviction made him to synthesize and harmonize all sorts of sects under the banner of Vedanta. Vivekananda was very much aspirant regarding the future religion to be free from all racial prejudices or sectarian biasness that should be sustained through the spirit of a democratic unified awareness, made realistic and concrete through the highest spiritual ideals.

Vivekananda accepts Vedanta's true metaphysics and universality. The objectivity of all religious quests is fulfilled by the Vedanta. The great idea of Vedanta is nothing but the idea of the oneness of all, of the infinite and the impersonal, the wonderful idea of the eternal soul of mankind, of the ceaseless continuity in the march of objects, of the infinity of the universe. Vedanta consists of eternal principles without depending upon the authority of persons. It alone can be treated as universal religion as it teaches principles. No religion based on a person can be accepted as a type of universal religion by all the races of mankind. The Vedanta approves the eternal nature of man. Reality is one and eternal but it exists in many forms – "Ekam sat Vipra Vahuda Vadanti". The central principle of the universe can be treated as unity in Diversity.

In the parliament of religions at Chicago on 11th Sept, 1893, Vivekananda presented before that assembly that the different religions of the world like Hinduism, Buddhism, Jainism, different sects of Christianity, Islam etc. were not religions dividing the whole world into disputing sects, but these religions formed a grand federation of kindred faiths owing allegiance to some spirit, i.e., universal. The universalism of Vivekananda maybe said to be essentially a creative religious tolerance that broadens that liberal principle into a spiritual ideal and accepts all religions as but different revelations of man's approach to Truth and God

Towards the end of the memorable and historic third address at the Parliament on 19th Sept, 1893, Vivekananda, emphasizing on universal religion, said: 'if there is ever to be a

universal religion it must be one which will have no location in place or time; which will be infinite like the God it will preach, and whose sun will shine upon the followers of Krishna and of Christ, on saints and sinners alike, which will not be Brahmanic or Buddhist, Christian or Mohammedan, but the sum total of all these and still have infinite space for development.

Universal religion as conceived by Vivekananda is, therefore, not a new religion with a new scripture and a new liturgy, it can be treated as a fresh approach to religion, a fresh spiritual and moral outlook. It prescribes not only tolerance; it insists on acceptance of other religions too as true and making religion thereby a principle of human unity. Universal religion may, thus, be said to be a discovery of universality in all religion. 7 Thus, a believer in universal religion possesses a good understanding of and reverence for world religion without losing his sense of belonging to his own religion. For him, 'unity in variety is the plan of the universe'

Swamiji, wants to establish a religion that will be equally acceptable to all minds. It must be equally philosophic, equally emotional, equally mystic and equally conducive to action. This combination will be the ideal of the nearest approach to a universal religion to become harmoniously balanced in all these four directions in his ideal of religion. And this religion is attained by Yoga or union with God. 'Yoga' means "Yoke" to join, that is, to join the soul of man with the supreme soul or God. Swamiji wanted a total development of all the four Yogas. Hence he advocated a combination of all the four Yogas. To the worker it is union between the men and the whole of unity. To the mystic, it is union between his lover and higher self. To the lover, it is union between himself and the God of love. To the philosopher, it is the union of all existence.

The ultimate goal of each Yoga is the same that is realization of the supreme self. Each of four Yogas represents the development of one particular mental faculty that is reason, emotion or will. The spiritual practices prescribed by these Yogas build up character.

Universal religion is a discovery of universality in all religion. Swamiji thinks of the possibility of bringing together all religions of the world under one umbrella. The dream of Vivekananda was to propagate a universal religion based on the spiritual synthesis. The aim of the universal religion of Swami Vivekananda is to glorify the universe with peace and harmony by overcoming the apparent contradictions and fictitious differences among the different religious faiths.

The main aim of Universal Religion is just to teach us the knowledge of the divinity of the soul the non-duality of God-head, the unity of existence and one greater thing, that is, universality or harmony of all different religions. "All religions are true." The important thing is to reach to roof. One can reach it by stone stairs. One can reach it by wooden stairs. One can reach it by bamboo steps. One can reach it by a rope. One can also climb up by a bamboo pole. It depends upon one's sincerity and earnestness of faith on God. It is God alone who is called 'Satchidananda Brahma' in the Vedas, 'Satchidananda Krishna' in the Puranas, and 'Satchidananda Shiva' in the Tantras. It is one and the same Satchidananda. One can realize it after a long period of earnest quest. Where it comes, it shakes the very foundation of the personality of the seeker. It is like a huge elephant entering a small hut. The house shakes to its foundation. Perhaps it falls to pieces. It is the question of state of realization. The state of Brahman – realization is not Philosophy. It is a matter of spiritual attainment.

Conclusion:

From the above discussion, it follows that Vivekananda's ideal of universal religion is a step towards universal humanity. According to his thoughts, the concept of universal fraternity has frequently been claimed as the central message of the great religions of the world which is to be attained. Vivekananda is an Advaitavadin. His philosophy of Universal Religion teaches us that to love God and realized the Ever-living God and feel that "All are one" is the true spiritual mark of understanding religion. It regulates the human life. If there is no inner life there is no religion either. Religion is a matter of the inner life. Religion

intervenes human conduct. It regulates the human life. If there is no inner life there is no religion either. Religion is a matter of the inner life. Religion intervenes human conduct.

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Rural Women Empowerment through Entrepreneurship

Volume I



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YOGA FOR RURAL WOMEN ENTREPRENEURS

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Abstract

Yoga in Daily Life is a system of practice consisting of eight levels of development in the areas of physical, mental, social and spiritual health. When the body is physically healthy, the mind is clear, focused and stress is under control. This gives the space to connect with loved ones and maintain socially healthy relationships. When you are healthy you are in touch with your inner Self, with others and your surroundings on a much deeper level, which adds to your spiritual health. Yoga increases the flexibility of the spine, improves body's physical condition and heightened awareness to the importance of relaxation. It has been emphasized that each exercise be practiced slowly, coordinating movement with the breath, pausing motionless in each position and always with full concentration

Yoga Practices improved physical and psychological and physiological and Healthy. Yoga is able to help a person have control over their body through control of their mind. Yoga leads not only to physical fitness, but also peace of mind which is the ultimate goal of all human beings.

Keywords: *Yoga health spiritual menstruation cardiovascular.*

Introduction

In India, yoga can be traced back many centuries and presents a way of life. Yoga is an ancient Indian way of life, which when practised properly, ushers in changes in mental attitude, apart from keeping you very fit and fine. The *practice of yoga* – the asanas, pranayam and meditation can actually foster your journey to the highest level of consciousness. It has been followed religiously by sadhus, athletes, people from all walks of life including celebrities and business heads. It brings about a rejuvenation that gives you an extra impetus – to live life to the fullest.

So, if you are a woman entrepreneur, you can make an attempt to understand the importance of being fit both physically and mentally – for this will only take you strides ahead in your business endeavour. Starting from our PM Shri Narendra Modi, many politicians and business leaders are seriously pursuing this activity to bring about sound progress in their personal environment. Endorsing the benefits of Yoga, the new Minister for Information & Broadcasting Shri Prakash Javadekar pointed out the fact that practicing Yoga “has become the mantra of new India under the leadership of Prime Minister Narendra Modi”.

Yoga Enhances Entrepreneurship Skills & Business Techniques

If you are an entrepreneur and even you want to get ahead in your business enterprise, you can check out the benefits listed below. It can help you:

- to be focused and not lose sight of your dream
- to develop patience that can see you through difficult situations
- to communicate better, as it clears your mind
- to be more creative, as it enhances your mental powers
- to be more positive, as it is a calming influence
- to develop inner peace and tranquility, that will take you strides ahead

Women entrepreneurs can definitely benefit from focussing on yoga especially, as they have a tight work-life balance to achieve! This will keep them stress-free, and ready to face challenges that come along their path with a sense of undaunted spirit, that can only lead the way to success.

Yoga isn't just about the body; it's also about the mind. It helps to calm down, settle your thoughts and unwind. Remember the proverb – a sound mind in a sound body! So, it's not surprising that many offices today, have introduced some exercise activity to keep their employees fit – like gyms, sports events and so on.

So what are we waiting for? Whether we are a small-business owner or a big business head, your business and your employees will benefit from the practice of yoga. And, now is a great time to get started.

Benefits of Practicing Yoga

Yoga in Daily Life is a system of practice consisting of eight levels of development in the areas of physical, mental, social and spiritual health. When the body is physically healthy, the mind is clear, focused and stress is under control. This gives the space to connect with loved ones and maintain socially healthy relationships. When you are healthy you are in touch with your inner Self, with others and your surroundings on a much deeper level, which adds to your spiritual health. Yoga increases the flexibility of the spine, improves body's physical condition and heightened awareness to the importance of relaxation. It has been emphasized that each exercise be practiced slowly, coordinating movement with the breath, pausing motionless in each position and always with full concentration.

One of the main concerns of modern Indian health and fitness experts is the concern regarding the physical health of women. Particularly of Rural women. Since the half of the Nation's population is constituted by Rural women, this concern has to be addressed properly. It is on the health of women that the future of the next generation lies. A woman has many roles to play: taking care of Children, looking after the family, maintaining the domestic life and any other

work that wants her attention. In this busy and hectic schedule, she cannot go out for gym, fitness club or even a moderate evening walk. This prone a modern women to many ailments in India. The present Article tries to solve this problem by proposing a home based simple technique that uses the combination of aerobics and yoga

Challenges and Problems Faced by Women Entrepreneurs

Women Entrepreneurship Till even just a few years ago, the scope of women was restricted to the four walls of their home, focused on performing household chores in a male governing culture. But currently females are not limited to their houses. Rather they are engrossed in all various kinds of operations and are often carrying these out better than men. Whether it's academics, politics, social work or managing their business they strive to achieve success in all avenues of life. Even so, they are balancing these activities along with their innumerable responsibilities towards their family. For a nation like India, a businesswoman plays a momentous part in the development of the nation and women entrepreneurship is considered as a significant catalyst for progress and economic growth. By starting their own enterprise, they generate employment and inspire other women. Women Entrepreneurship is not a novel phenomenon twenty decades prior slowly and in small numbers, women started shifting from kitchen, kids, knitting to pappad, pickles as they started to earn their own money by trading these. Later, through the advancement of technology and digitalization, women made a shift towards engineering, electronics and energy. The women of today take advantage of technology and many establish their entire business online through which they get the benefit of extending the products and services to a large no. of clients globally

To get ahead and achieve great success in business is a lot stiffer as compared to men. They face many problems along with way, such as:

- The primary obstacle in their path is the mere fact that— they are females existing in a male dominant society where males are always given predilection over the female species particularly in terms of business.
- Financial institutions are more skeptical when it comes— to women entrepreneurs and their ability to handle business and as such it is more challenging for women to get financial assistance for their business ventures.
- Women often lack the ability to provide tangible— security as they usually don't own large assets like houses on their own name. These are usually in the name of the males of the household.

- In a country like India major emphasis is placed on how— humanity views us and in many fragments of the nation something like women going to work and contending a business is frowned upon.
- Women are taught since birth to depend on males of the— family and so their confidence in their capabilities is not developed. They don't feel confident in handling business responsibilities as they are taught that such work is for men and it is too difficult for them.
- Their participation in business is also prompted by the level of education and family background of their husband.
- There is a dearth of institutions that provide help and— training for entrepreneurship to women.
- Lack of awareness about financial and government— programs aimed at helping the development of women entrepreneurs.
- Cultural constraints and lack of role models often— demotivate women hoping to start their own business.
- Many women find it difficult to keep up with the face— pace of digitization while being the sec e second-breadwinner of family and taking care of children.
- Many of them are averse to risk and lack of knowledge.—
- Women's mobility is still quite limited in the country.— Even now, it is difficult for a single woman to ask for a room. People's prejudice often hampers the growth of women.
- Women typically have administrative jobs that are— increasingly being digitized.
- Indian women place greater importance on family ties— and obligations, putting these first before their work, causing them to lose focus from growing their business.
- The literacy level among women is found to be lower— than that of men which affects their speed in adapting to changes and new technology. Many women across the country lack the knowledge needed to maintain and grow their business and keep up with the competition from male entrepreneurs

How ASANAS Promotes Women Health

For the development of the economy, it is essential to increase the level of women entrepreneurship. To get success in their professional life woman has to balance both family and business. Practicing yoga gives physical and mental strength to women to handle the things in a better way.

Except when the body is going through hormonally influenced biological changes, yoga practice for women can consist of the same postures as those practiced by males. Women tend to have more open hips and greater flexibility than men, while men tend to have more strength than women. Women often have less competitive natures than men so that the non-competitive aspect of yoga comes naturally. Their non-competitive nature can help women realize more easy progress in the spiritual realm. Asanas – Surya Namaskar (Sun Salutation), Sarvangasan (Shoulderstand), Halasan (Plough), Matsyasan (Fish), Kandhanasan (Shoulder Pose), Ardha Chakrasan (Half Wheel), Chakrasan (Wheel Pose), Bhujangasan (Cobra), Shalabhasan (Locust), Dhanurasan (Bow), Paschimottanasan (Forward Bend), Ushtrasan (Camel), Viparita Karni (inverted Pose), Sirshasan (Headstand), Ashwini Mudra (Horse Gesture), Akarna Dhanurasan (Archer's Bow), Marjariasan (Cat), Garudasana (Eagle), Veerasana (Warrior), Trikonasana (Triangle).

Yoga and Woman's Life Stages

A regular yoga practice is beneficial in every stage of life. When an individual goes through changes, such as those associated with pregnancy, menstruation, or menopause, illness or injury. Yoga helps them approach life with more equanimity. Yoga practitioners with depression, eating disorders, arthritis, or bone loss find that yoga can contribute to their healing. Special sequences of poses are available for a wide variety of health conditions. We encourage you to approach yoga with a regular ongoing practice, not only doing prescriptive yoga poses. A yoga practice is healing and preventative of many types of illness. It can be emotionally balancing and spiritually nourishing. Yoga can help women on a day-to-day basis by allowing time for inner focus in a culture that is often hurried and which many women find stressful. Transitions in a woman's life call for different yoga practices. We offer some guidance about pregnancy and menstruation below. During the postnatal time, women recover physically from birth and should slowly get back to doing yoga after about 4 to 6 weeks. After pregnancy, a woman can strengthen abdominal muscles with poses like The Boat Pose (Navasana) and other core strengthening yoga positions. Through a yoga practice, she can regain her muscle tone and help her body deal with the physical strain of feeding, carrying, and taking care of a new baby. Puberty brings hormonal challenges, and yoga can help young women transition gracefully into adulthood while loving themselves and their bodies at the same time, being more attuned to self. In menopause, yoga helps deal with emotional imbalance and hot flashes that some rural women experience.

After menopause, women can expect better posture with a more upright and flexible spine, and more mobility into old age.

Yoga for Menstruation

Women particularly Rural women are cyclic in their nature and physiology. Most sequences of poses for menstruation include supported forward bends. Forward bends quiet the brain and are perfect for this time in which one typically feels like going inward. For health reason, it is suggested that you avoid doing inversions during menstruation. Some women also avoid standing poses or backbends at this time. Having a regular practice with a variety of yoga poses for the rest of the month is recommended for women, keeping them healthy, fit and emotionally centered. Yoga helps a woman particularly Rural to deal with heavy or irregular menses and PMS. Special sequences exist for these and other problems, depending on why she is having difficulty becoming pregnant, certain yoga poses may help women become more fertile.

Overall, a woman can balance her endocrine system improve her blood circulation develop better posture, become more toned, have better physical balance, increase her flexibility and strength, and build her immune system through yoga practice. A lifelong and daily practice will cultivate the many health benefits and spiritual growth possible with yoga throughout all stages of life

Child Birth Women

Child birth women, who attend yoga classes before, during and after pregnancy, have almost no problem during and after childbirth. Practicing yoga regularly during pregnancy can help to give birth to a child naturally and without any complications. If you are able to practice yoga on regular basis, you will find manifold and noticeable benefits in your body. You will also feel change in your thinking and attitude towards life and other factors. When you are performing yoga asanas, make sure, the room is free from any disturbances and is comfortable and warm. Early morning is the best time for yoga. However, maintaining a good and nutritious diet along with yoga asanas helps women remain healthy for a long time.

Cardiovascular Exercise

The main difference between yoga and aerobic exercise occurs in the effect each exercise has on the heart muscle. Cardiovascular exercise such as running and swimming elicit intense demands on the large muscles of the body, which require more oxygen to perform exercises. The increased need for oxygen causes the heart muscle to work harder, and as your heart adapts to the stress, it becomes more

efficient. The slower pace of yoga does not require much oxygen. Therefore, it does have the same conditioning effect on the heart that aerobic exercises do. Another key difference between yoga and aerobic exercise lies in caloric expenditure. The average 50 minute Hatha Yoga class burns approximately 144 calories, according to the American Council on Exercise. A 50 minute Ashtanga class, the more vigorous style of yoga, burns slightly more at 237. Compare this to 50 minutes of running or swimming at 355 and 507 calories respectively. Aerobic exercise burns considerably more calories than yoga. A study published in the “Indian Journal of Physical and Pharmacology” in 2004 evaluated energy costs and cardiovascular changes during a sequence of eight yoga poses. The highest recorded heart rate among study participants was 101 beats per minute, which is only 50 percent of maximum heart rate for a 30-year-old. Although yoga involves systematic breathing that improves respiratory fitness, ultimately aerobic exercise outperforms yoga in the cardiovascular arena because it involves elevation of the heart rate for sustained periods of time or for distinct intervals. This improves the efficiency of the heart muscle, allowing it to do more work with less effort during rest times.

Strength

Yoga does tend to boost muscular strength and muscular endurance, according to the American Council on Exercise, particularly in the chest, triceps and abdominal regions. Yoga also helps to develop strength and endurance in many of the core muscles, especially the oblique’s and the erector spine. Cardiovascular exercise will help develop muscular endurance, however as a rule, aerobic exercise does not encourage the development of muscular strength to the same extent that yoga does. In 2011, researchers followed a group of 79 male and female volunteers as they engaged in sun salutations – a basic yoga sequence – six days a week for 24 weeks. The “Asian Journal of Sports Medicine” published the study, which found a significant increase in strength and endurance among both men and women whose bench press one rep maximum increased by 15 and 6 pounds, respectively.

Flexibility

Aerobic exercise has little impact on the development of flexibility, whereas yoga significantly improves it, according to a 2010 USA Department of Health study published in the “Journal of Bodywork and Movement Therapies”. In the study, 108 physically fit firefighters took yoga classes over six weeks. None of the participants had practiced yoga prior to the study. Researchers marked significant improvements in trunk flexibility, and the study participants also reported less musculoskeletal pain overall. Fat loss occurs when more calories are expended than consumed. Aerobic exercise-specifically running at 5 miles per

hour— burns about 600 calories in one hour. A yoga class of moderate intensity -- as practiced in Ashtanga Yoga— burns about 350 calories. However, calories burned do not tell the whole story. The gain in lean muscle from yoga practice yields a slight improvement in basal metabolic rate. Nevertheless, when exercising five days a week for one hour, running has the potential to burn off pounds more than yoga running has the potential to burn off pounds more than yoga over the course of eight weeks.

Health Benefits

Most rigorous studies suggest that yoga is a safe and effective way to increase physical activity, especially strength, flexibility and balance. There's some regular practice is beneficial for:- Leads to total health of the body. 1. Calms the mind. 2. Improves mental strength and perception. 3. Increases concentration. 4. Several asanas increase the strength of many muscles and improve the efficiency of all the organs and brain. 5. Improved concentration leading to better. High blood pressure Grades 6. Balanced Blood Pressure. Type 2 diabetes 7. Decreased Absenteeism & Tardiness. Breast and colon cancer 8. Improved Interpersonal Relationships. Falls 9. Enhanced Confidence Level. Depression 10. Sharper Brain. Improve bone health. 11. Early death. Improve cardio respiratory and Muscular 12. fitness. Coronary heart disease. Decrease levels of body fat. 13. Stroke. Reduce symptoms of Depression.

Conclusion

A journey of becoming an entrepreneur is full of troubles and more so for women especially in India because our society criticizes women at every turn rather than motivating them, it ridicules and discourages them. However, today women are accepting and overcoming all challenges to prove them at every point and is starting to work towards their dream. Today, many women start their careers as entrepreneurs and empower other women also, becoming role models for future generations of women aspiring to have their own business. The Government has started many schemes to support women that want to start their entrepreneurship journey but due to lack of awareness most of these women aren't able to grab the opportunity especially in rural areas. Women have major contributions to the economic development of the nation. Even with lots of obstacles in their path, women nowadays are increasingly working on having their own business venture with innovative products and services that are useful for the betterment of society also. Although the Government has helped women entrepreneurs to grow to some extent, awareness and motivation are necessary so women can reach the limits of the sky. Yoga Practices improved physical and

psychological and physiological and Healthy. Yoga is able to help a person have control over their bod through control of their mind. Yoga leads not only to physical fitness, but also peace of mind which is he ultimate goal of all human beings.

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**தமிழ் இலக்கியங்களில் உணவியலும்
அறிவியல் பின்புலமும்
தொகுதி - 2**



**வைரவிழா ஆண்டு
(1964-2024)**



வெளிப்புற
தமிழ்த்துறை

முதிராமலிகுஷ்டை மிஷ்டம் வித்யாஸ்ய கதை அறிவியல் கல்லூரி
(தஞ்சாவூர்), கோயம்புத்தூர் - 641 020

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Food & Scientific Background in Tamil Literature

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Introduction:-

Nature has taken good care of food needs. She has given us farm land where vegetables, fruits, grains and other plants can be grown. She has filled the ocean with fish and the lands with animals that supply meat, milk and other food products. She has blessed us with the ability to find ways to cultivate and produce food products.

The world has a huge desire for food. About two thirds of the people of the world are employed to satisfy the food needs of mankind. Farmers, ranchers, fishermen, millets, bakers, milkmen, grocers, food chemists and workers in canning factories, sugar refineries, food freezing and food packaging plants, etc., form only a part of the great army who work to bring us food.

Sometimes people who get enough food do not eat the things which are need for good health. At extraordinary levels of lifestyles, the constitution of the human frame modifications and it calls for specific ingesting habits to maintain normal physiological features. As indicated with the aid of those numerous stages, our ancestors had unique meals that were wholesome and nutritionally dense.

The traditional authentic food, organized with close-by fixings and direct cooking procedures are known to have incredible dietary advantage. Regardless they have been neglected and are known to outline negligible idea of our step by step utilization. Along these lines it is basic to get prologue to these fundamental yet supporting and strong sustenance's. The all around valuable of sustenance usage is for the nutritive regard. Therefore with extended access to contrasting sustenance things it is imperative to perceive

the enhancements of the sustenance we use likewise, keep up a reasonable eating routine.

History and Background of Food in Tamil literature :-

Sangam era culture had a recognizable delicacies, a particular set of cooking traditions. The six tastes of Tamils are 1. Sweet 2. Pungent (mirchi) 3. Bitter 4. Salt. 5. Sour. and 6. Astringent. Over the years Sangam generation gastronomy has substantially advanced and that they have used function spices and the mixture of flavours particular to Sangam period. The Sangam generation culinary had precise flavors, the tangy twist and the plethora of vegetables had been used of their recipes. The gastronomy of Sangam Tamil cuisine changed into dominated by rice, lentils, tamarind, coconut and curry leaves. Rice became the fundamental staple meals of maximum of the Sangam Tamil human beings.

Sangam literatures actually defined the foods that have been served in the laymen residence and also the Kings palace in the ones days. historic instances the South India become divided by Chera, chola and pandya kingdoms. The elements what we're using now for our cooking changed into no longer to be had on the ones days cooking practice. The meals tradition had been converted as consistent with the land in which they had been dwelled. in line with the Chirupanachupadai, a Tamil paintings, Raja Annam is the higher pleasant rice, this rice is used to bartering the goods.

Purananuru And Pathipathu

Even the well-known Biriyani had its beginning in South India, not from everywhere, according to Tamil works Pathipathu and Purananuru which massively describes the meals and fermentation technique finished in historic days. This Tamil works says that the warriors infantrymen had been feeded with "Oonthuvaia dishil" or "Oonsoru" (Oon method meat) via the King earlier than they have been going to warfront and also the biriyanis were served to soldiers on

every occasion there have been victories at struggle.

Tirukkural

In Sangam age, Tirukkural, composed via Tiruvalluvar, the maximum celebrated Tamil poet-saint, is taken into consideration as unparallel, frequent scripture. It comprises of 1330 aphorisms in couplets organized in 133 chapters underneath three heads virtue, Wealth and Love. Tiruvalluvar's couplets on medicinal drug (95th chapter) are rather aphoristic: "no medication is essential for him who eats after assuring (himself) that what he has (already) eaten has been digested.

"Maruntena ventavam yakkaikku aruntiyatu arratu porri unin" (Tirukkural 942: Poet Tiruvalluvar)

No need of drugs to heal your frame's pain, If, what you ate before digested well, you eat once more.

Tolkappiam

Tolkappiam, the earliest extant grammatical treatise also gives a good amount of instances. Nature provides us with all kinds of resources to make food items. Tamils are utilizing these precious gifts of the nature in their daily life. Mankind came into existence just thirty lakh of years ago whereas the plants were in existence even before eight to nine crores of years. All the living species which we observe today were the ancient.

Though our forefather did not have a synthetic analysis of the food items, they were the pioneers in establishing a balanced diet. Tolkappiam and Sangam literatures establish clearly how the Tamils enjoyed a culturally superior life with tasty, nutritious and balanced diet. The classical literatures are the innocent mirrors which reflect the mode of life and culture of the people. On this basis the food habits find a place in the scriptures spontaneously. They were not introduced purposefully.

Thanipadal Thirattu

Celebrated Poetess Avvaiyar described the lunch on a summer day in her Thanipadal Thirattu in 32 song

*'Varagu arisi chorum, vazhuthunangai vaatum,
moramoravena pulitha morum...*

The translation of the above song is steamed varagu rice, smoked and mashed aubergine and tangy frothy buttermilk. The poet mentions her host's name as Boothan of Pulvelur village and expresses gratitude for the tasty meal. Ancient Tamils well-versed in cooking tasty food. Their foods are differed from region to region. There were five lands such as-

Kurunji, Mullai, Marutham, Neithal and Palai.

Nutritional Value of Tamil Authentic Food

1. Koochu

Koozhu is a very conventional and old recipe of tamilan's that's specifically organized throughout aadi masam pageant which is well known considering that a while at some stage in Aadi masa (Tamil month) from July to August. This month is taken into consideration to be auspicious for the religious sports of Amman as she is stated to be more effective throughout this month. For the duration of this month Koozhu is organized and supplied to Mari Amman (another shape of goddess Durga and Kali known as as Amman in Tamil) at some stage in pooja in Tamil Nadu and local Tamil human beings in India. Koozhu is additionally known as Kevaraghu Koozhu or Keppai or Ragi Koozhu which is ready with millets. In English it's far known as Porridge of finger millet.

Benefits

There are lots of nutrients in the koozhu. It contains 15% protein and high fiber, vitamin E, vitamin B complex, niacin, thiamine, riboflavin. It also contains essential amino acids such as methionine and lysidine, mineral richness such as iron, magnesium, phosphorus and potassium. Many people suffer from sunburn during summer. If it is the best drink for the lubricant to lubricate this body, it is a koozhu. If

one day eating a Koozhu every day, the temperature of the body is maintained uniformly. It also gives instant energy to the body.

2. Kozhukattai

Kozhu kattai is a completely divine recipe that is specifically cooked by using Tamil people during ganesh chaturthi, as it's miles supplied to Lord Ganesh especially. Ganesh Chaturthi can never be complete without the ubiquitous kolukattais. The dish comes in various shapes and tastes these days from the regular traditional varieties to the exciting ones with different stuffing. "It is said that the practice of making Kolukattai and steam cooking came to our country from East Asia through trade merchants in the olden days," says Chef Raj Mohan "In a way, the dumplings are the Kolukkattais of East Asia." Apart from being a tasty snack, Kolukattai is also healthy as it packs the goodness of coconut, dal, jaggery and rice in its little potli. Kolukattais have also taken a 'diet' avatar as they are made from oats.

Benefits

- It's a totally light food it could be taken in breakfast or night snacks.
- It's miles helpful in decreasing cholesterol within the body and weight reduction.
- It is also a terrific appetizer.

3. Appam

Appam is a very old and conventional recipe of South India especially in Tamil Nadu, Kerala and SriLanka. It's far a little special recipe that is cooked at the appam pan simplest which is particularly made to cook dinner appams on it.

Benefits

Appam has low calories in it so it helps in preserving weight problems away and maintains suitable health. Reduces the chances of heart stroke because it lowers cholesterol and fat deposits from the body. In olden days Toddy or kallu the

neighbourhood palm wine was used inside the fermentation of Appam which gives a bounce kind of taste and it is right for health. It has right vitamins and proteins in it.

4. Ullunthakanji/Ulluntha Kali

Ullunthakanji which is likewise known as hot porridge of urad and jaggery. It's a conventional Tamil Nadu dish, it's far taken as breakfast served hot.

Benefits:

This dish is very good for health specifically for ladies of all age. It enormously advantages bones particularly for lower back bones and strengthens it. It ought to be eaten with warm sesame oil as aspect dish that is helpful in lowering ldl cholesterol from body.

5. Puttu

In Tamil language, Puttu means breaking up, Bit (breaking up), it is said that the name comes from eating. This is also the right cause. ot only this, Paranjyothi sage is mentioned in the book 'Thiruvilaiyadal Purana' in reference to Lord Shiva. "Pittikku mannu sumandhar". Puttu is also a conventional sweet recipe of Tamil Nadu. It's famous in both Tamil Nadu region as well as Kerala. exclusive forms of Puttu may be organized with special sorts of Flours like Rice Flour, Wheat Flour, Millets or Ragi powder, and many others... however specifically Rice flour. Puttu that is called as Arisi mavu Puttu is eaten by using most of them. It tastes suitable with Ghee or warm sesame oil.

Benefits

Suitable for those who want to reduce the Weight. In our tradition is the habit of Currippetum young girls by using puttu. It gives you the strength to bear pain during menstrual periods; our ancestors knew that hip bones would be strong. Avoid coconut.

Eating and doing this in small quantities will have a lot of benefits. For example, if you eat it in a samai rice, the blood circulation is correct; Stomach problems, constipation

The number of life cells will rise. Food pudding that does not make side effects. High blood pressure and diabetes are good for eating rice made from rice millet.

6. Kazzhi (Kali)

Kazzhi is traditional Tamilian food made up of Rice with ragi or Ulundu(urd dal).

Benefits

Fiber is high in Ulundukazzhi. Excreting the toxins that are in the intestine by eating Ullundu.. The most severe diarrhea, known as Gynecologist, is an eating disorder that stops the stomach and adds strength to the body. Constipation problem solves. The waste salts in the kidneys can be dangerous to health, as they become stoned. Kidneys activity increases once a week old is eaten. Prevent the stones from forming in the kidneys. The kidneys can be amplified and the excrement of the body will be exhausted. The function of the veins for the proper movement and function of the body is vital. Nervous disorders, hysteria, cirrhoebrenia, and memory losses are associated with diseases associated with the daily intake of the ullundu kazzhi.

Traditional lands of TamilNadu:-

The atmosphere as delineated within the Sangam literature is known as 'Thinai'. The phrase Thinai' way the exceptional geographical region sand the conduct of the inhabitants in those-regions. Within the Tolkappiyam we find a direct connection with the 4-fold physio graphic divisions of the land and climate and those are called the Kaurai ulagam(the forests), the Maivarai ulagam (the hills), the Tiruppunal ulagam (the plains or fields) and the Perumaal ulagam (the littoral or sandy areas).here the word 'ulagam' (international) implies that every vicinity was a separate unit by means of itself and tremendously one of a kind from one another. The local variation should had been so top notch that they have to had been global in themselves'. We

note inside the equal work in addition five-fold ecological divisions (Ainthinai) or regions or five varieties of tracts or terrains. They are (1) Kuri-ji(hills and environs), (2) Mullai (forests or pastoral or woodlands), (3) Marutham (water courses or plains studded with wet fields and status vegetation), (4) Neytal (littoral or sandy coastal tract) and (5) Palai (arid or dry or wilderness tract).

The remaining area, Palai, is recognized no longer as a separate physio graphic or ecological region however as kingdom of aridity with scrub plant life and generally warm climate. This form of dry tracts might be an extension of the Mullai or Kuri ji place in some unique instances. The Maduraikka-ji refers to such a tract as "Kuri-jippalai, and in the identical text only we notice the descriptions of the 5 tracts. The Perumpanatruppaai idyll has additionally distinctive account of these five thinais. We might also notice right here out of hobby that the Pandyan country had all the five kinds of areas, at the same time as the Cheras had most effective the Kuri-ji, and the Chola, only the Marutham tracts.

"The Sangam literature refers to cooking strategies like vakkuthal (direct fire cooking) that differed among regions. Direct fireplace cooking was widespread within the Kurinji and Mullai landscapes while, frying and sun-drying were common inside the Palai and Neithal wallet. It become within the barren region regions that maintaining techniques like pickling had been followed," says Osai Chezhiyan, who's doing a thesis on historic Tamil food. "within the agricultural belt of Marutham, humans predominantly boiled and steamed which later developed into tricky cooking techniques. "Chezhiyan says that food of the common man within the Sangam Age ranged from everyday to bizarre. "While millets like varagu, thinai and samai have been staple, there had been additionally delicacies that had been made on special occasions. Agananuru denotes a recipe of tender pomegranate

seeds sautéed in ghee that was a sort of dietary supplement for vegetarians," he says.

Conclusion:-

Nutrition, nourishment, or aliment, is the supply of materials food required by organisms and cells to stay alive. Good nutrition is an important part of leading a healthy lifestyle. Combined with physical activity, your diet can help you to reach and maintain a healthy weight, reduce your risk of chronic diseases (like heart disease and cancer), and promote your overall health. Ancient Tamil nadu authentic foods contain enormous nutritional values. This article reveals evidence through Tamil literature's about various cooking methods, ingredients available and food habits based on the classification of lands in ancient Tamil Nadu. Authentic Tamil Nadu foods are simple, delicious and naturally healthy foods. Creation of awareness about ethnic foods and its benefits of consumption are essential amongst current generations in Tamil Nadu.

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Volume – I

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ADVENT OF TECHNOLOGY IN NEP 2020 (ENHANCEMENT, INTEGRATION AND IMPLEMENTATION)

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Abstract

The National Education Policy (NEP) is a comprehensive framework that aims to transform the education system in India. Technology plays a pivotal role in realizing the vision set forth by NEP. This document explores the significance of technology in education, its integration in NEP and the potential features, it brings to the forefront. It further encompasses the concept of integration of technology, how the enhancing work of technology is embedded in purview of NEP, differences between blended learning and implementation of technology in learning, benefits and challenges in the methodology after adapting NEP 2020.

Keywords: *National Education Policy - comprehensive framework – Technology - pivotal role – significance - potential features - concept of integration - blended learning - technology in learning - benefits and challenges – adaptation.*

Introduction

Education has always been a key driver of a nation's progress and development. The Indian government recognizes this and has formulated the National Education Policy, a landmark document that envisions a radical transformation of the education sector. At the heart of this transformation lies the strategic utilization of technology to empower educators and learners alike.

The Integration of Technology in NEP

- The NEP acknowledges the transformative potential of technology and incorporates it into various aspects of the education system:
- Digital Infrastructure: NEP emphasizes the creation of robust digital infrastructure, including high-speed internet connectivity, in all educational institutions. This enables the seamless integration of technology into classrooms and ensures equitable access to digital resources.

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Volume – II

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EXPERIENTIAL LEARNING AND SKILL DEVELOPMENT IN NEP 2020

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Abstract

Experiential learning is an active learning method where students "learn by doing" and expressing opinions on the experience. Experiential learning activities include fieldwork, internships, practicals, undergraduate research, and classroom performances. This paper presents a thorough examination of the role of experiential learning methodologies in fostering skill development and enhancing the effectiveness of national education policies. There is a growing emphasis on providing students with both academic knowledge and practical competencies because the global economy is continually changing and demands a qualified workforce. This paper helps to know the key concepts of experiential learning and skill development aspects in nep and its integration into national education policies, analyzing the best practices to create a holistic and dynamic educational environment. The NEP 2020 makes use of experiential learning as one of its fundamental ideas. This is effectively used in schools, higher education, corporate training for educational learning, personal development and skills building. The NEP also emphasises skill development, which aims to provide students with a wide range of skills necessary for both their personal and professional development. The policy places a strong emphasis on developing 21st-century abilities like critical thinking, interaction, teamwork, innovation, and digital literacy.

Keywords: NEP 2020, Experiential learning, Skill development, Employability, Holistic learning, Indian education system.

Introduction

*"Education is simply the soul of a society as it passes
from one generation to another"*

— G.K. Chesterton

The National Education Policy 2020 is a comprehensive framework that aims to transform the education system in India. The Indian government approved NEP to solve many issues with the current educational system and offer a more comprehensive and contemporary approach to learning. The NEP 2020 places a strong emphasis on skill development and experience learning as essential elements to preparing students for the future. The instructors play an important role by

INSIGHT OF SAGARMALA SAGARTAT SAMRIDHI YOJANA SCHEME WITH SPECIAL ADDRESS TO MAKE IN INDIA, SHIPPING SECTOR

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Abstract

Make in India is an initiative by the Government of India to create and encourage companies to develop, manufacture and assemble products made in India and incentivizes dedicated investments into manufacturing. The policy approach was to create a conducive environment for investments, develop a modern and efficient infrastructure, and open up new sectors for foreign capital. The initiative targeted 25 economic sectors for job creation and skill enhancement and aimed "To transform India into a global design and manufacturing export hub". The aim is to improve the manufacturing output of India and reduce dependence on foreign imports for which campaigns like "Atmanirbhar Bharat" which translates into "Self-Reliant-Green" India has also been started. It focuses specifically on "Startups", MSME's, young scientists, R&D labs and traditional manufacturing units that have little access to financial support but are an integral part of the Indian manufacturing ambit. The paper focus on Sagarmala – Sagartat Samridhi Yojana scheme under the Make in India Manufacturing sector, that enhance the growth of Shipping Industry.

Keywords: Manufacturing, Decision, Growth, Shipping Industry, Development.

Introduction

*"Design in India is as
Important as make in India"*

-PM Narendra Modi

The Make in India initiative was launched by Prime Minister in September 2014 as part of a wider set of nation-building initiatives. Devised to transform India into a global design and manufacturing hub, Make in India was a timely response to boost the domestic manufacturing sector and also augment investment into the country. Manufacturing currently accounts for slightly more than 15% of national GDP. The government intends to create jobs, attract significant foreign direct investment, and transform India into a favored manufacturing hub worldwide. The 4 pillars of Make in India initiative are New Mindset, New Sectors, New Infrastructure, and New

AN OVERVIEW OF WOMEN'S ENTREPRENEURSHIP

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Abstract

In today's modern era, women are shouldering the responsibilities with their male counterparts in all walks of life whether it is private sector or public sector, one can find growing of females in almost all sectors. In this context, the increasing numbers of women's in organization indicates that women must be recognized as active participant in the nation development process. From pastoral society to contemporary information and global society, the role of women has changed drastically. Still lots have to be done yet for aspiring women toward Entrepreneurship.

Keyword: Entrepreneur, Women, Empowerment, Financial initiatives.

Objective

- To examine the issues and challenges in the way of women entrepreneur.
- To analyze the available financial assistance and Government schemes for women entrepreneur.

Concept of Women Entrepreneurship

Women entrepreneurs are those women who conceive the idea of a business enterprise initiate it organize and combine the factors of production, operate the enterprise, undertake risks and manage the economic uncertainty involved in running a business enterprise. A women or a group of people who initiate, organize and run a business enterprise is defined as women entrepreneur. The government of India has defined women entrepreneur as an enterprise owned and controlled by a women having a minimum financial interest of 51% of the capital and fixing at least 51% of the employment generated in the enterprises to women.

Functions of Women Entrepreneurship

- Exploration of the prospects of starting a new business enterprise.
- Undertaking of risks and the handling of economic uncertainties involved in business.
- Introduction of innovation or imitation of innovations.
- Coordination, administration and control.
- Supervision and leadership.



Volume 1

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Editor

Dr. R. Ramya

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CHALLENGES AND ISSUES OF WOMEN ENTREPRENEURSHIP IN INDIA - A CONCEPTUAL STUDY

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Abstract

Entrepreneurs play a key role in the economic development of the country. A "women entrepreneur" is defined as the women or group of women, who initiate, organize and operate a business enterprise. Government of India has defined 'women entrepreneurs' as an enterprise owned and controlled by a woman having a minimum financial interest of 51 percent of the capital and giving at least 51 percent of employment generated in the enterprise to women. Educated Indian women have to go a long way to achieve equal rights and position because traditions are deep rooted in Indian society where the sociological set up is male dominated one. Despite all the social hurdles, many Indian women stood as successful entrepreneurs. The transformation of social fabric of the Indian society, in terms of increased educational status of women and varied aspirations for better living, necessitated a change in life style of Indian women. Women in India face many problems and constraints to get ahead in their life in business.

Keywords: Indian Women entrepreneurs, Entrepreneurship, Challenges, Issues in India.

Objectives

- To understand about the women entrepreneurship.
- To examine the challenges faced by women entrepreneurship.
- To identify the problems faced by women entrepreneurs.

Introduction

"Build your business success around something that you love something that is inherently and endlessly interesting to you"

Martha Stewart

Entrepreneurship refers to the act of setting up a new business or reviving an existing business so as to take advantages from new opportunities. A woman entrepreneur is an adult who owns and runs an enterprise, especially a commercial one, often at personal financial risk. The International Labor Organization defined the women's enterprise as a small unit where one or more women entrepreneurs have not less than 50 per cent financial holdings. Women

NOURISHING THE WOMEN THROUGH SELF EMPLOYMENT – A SPECIAL ADDRESS TO VELLORE DISTRICT

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Abstract

This paper focuses in economic empowerment of several women involved in self employment of Vellore District. Enterprise assumes an essential part in creating open work door for provincial social orders, giving independent work to the individuals who began up their own particular business and enhancing the financial status. Self employment not only helps the respondents to produce extra income but also enables them economically independent and self-sufficient. Self-empowerment is the process of equipping a person or group of persons with the power towards the development. The status of women is intimately connected with their economic position, which in turn depends on opportunities for participation in economic activities. Many welfare schemes are launched for the development and well being of women. Self-employed women and their contribution to the national economy is quite visible in India. Social and economic empowerment leads to development and the development relieves people from poverty. The Paper provides valuable insights into the growing trend of women entrepreneurship in Vellore and offer potential policy recommendations to enhance their entrepreneurial journey. The empowerment of women in The analysis indicates that self employment not only helps the respondents to produce extra income but also enables them economically independent and self-sufficient.

Keywords: Self-employment, Empowerment, Economic position, Schemes, Self help group

Introduction

*“When woman moves forward, they family moves
they village moves and the nation moves”*

Jawaharlal Nehru

In the present globalized time, ladies are ending up socially and financially enabled through creating their own business; there has been an extreme advancement in the field of economy. In this advancement, ladies' support is of more prominent significance. A lady business person assumes a critical part in India to the wake of globalization and financial progress. Ladies enterprise is essential ideas for improvement of country regions. Country Entrepreneurship can make new commercial open doors for provincial ladies and add to generally speaking development and leaving from neediness. It likewise gives an incredible open door in the current time for the improvement of the country or semi-provincial

WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT

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Introduction

One of the key factors in determining the success of development is the status and position of women in society. Women provide the powerful economically place for women community and for the nation through entrepreneurship. Women's empowerment can be defined to promoting women's sense of self-worth, their ability to determine their own choices, and their right to influence social change for themselves and others. Thus a focus on development of skills in women would be crucial in motivating them to develop life skills that will lead to higher paying and good quality jobs, better livelihood, economic independence and the ability to earn for their families.

Women Empowerment

Empowerment means people having power and control over their own lives. People get the support they need that is right for them. Empowerment means that people are equal citizens. They are respected and confident in their communities. You can't empower someone else or make someone empowered. Women's empowerment has five components:

- Women's sense of self-worth.
- Their right to have and to determine choices.
- Their right to have access to opportunities and resources.
- Their right to have power to control their own lives, both within and outside the home.
- Their ability to influence the direction of social change to create a more just social and economic order, nationally and internationally.

Women Empowerment in India

The Indian Constitution not only grants equality to women, but also empowers the State to adopt measures of positive discrimination in favour of women so that women can improve their livelihood. Within the framework of a democratic polity, our laws, development policies, Plans and Programmes have aimed at women's advancement in different spheres. Declaring 2001 as the Year of Women's

SKILL DEVELOPMENT SCHEMES THROUGH NATIONAL SKILL DEVELOPMENT CORPORATION (NSDC)

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Abstract

The Skill India Mission sought to establish and implement comprehensive skill development training programmes that would assist bridge the gap between industry demands and skill requirements, thereby developing the country as a whole. This paper aimed to know the rationale behind the launch of the Skill India Mission campaign, role of the National Skill Development Corporation, the schemes it offers as well as the challenges in skill development and entrepreneurship. The information was secondary and was gathered from multiple websites, government reports, and other sources. The government, stakeholders, businesses, educational institutions, students, trainees, job seekers, etc. must all work together which will guarantee the targeted youth to find work across a range of industries.

Keywords : Skill India Mission, NSDC, Schemes and Initiatives, Challenges

Introduction to Skill India Mission

In 2015, Prime Minister Mr Narendra Modi announced the commencement of the Skill India Mission, which was in line with his goal of assisting India in becoming "Atmanirbhar" (self-sufficient). Numerous skill-building activities and schemes are grouped under one centralised programme. The main goal is to equip the nation's youth with the necessary skill sets so they can work in fields that are relevant to them and increase production.

The Skill India initiatives involved in creating curriculum-based skill training programmes, through which learners would receive certificates and endorsements from learning institutions that had gained industry recognition. It includes skill-based learning in the school curriculum and fostering both long-term and short-term possibilities for skill training and employment. The Ministry of Skill Development and Entrepreneurship (MSDE) has partnered with Central Government Ministries, State Governments, Industry, Non-Profit Organisations, and Academic Institutions to coordinate and expedite skilling initiatives globally. Positive outcomes with a significant increase in skill training have been steered by the combined efforts of all stakeholders.

PERSPECTIVE OF ICT TOOLS IN EDUCATION

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WOMEN EMPOWERMENT IN INDIA

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Abstract

Women empowerment is the process of strengthening women's capacity to fully engage in society, exercise their rights, as well as access opportunities on an equal basis with men. It entails confronting and altering the social norms, cultural practices, and power structures that support gender inequality and discrimination. This paper is an attempt to examine women's empowerment in India, their legal rights in India as well as highlights the issues and Challenges of Women Empowerment. This paper is descriptive in nature and is based on secondary data collected from journals, internet, previous conducted research. It is concluded that Government initiatives alone would not be sufficient to achieve this goal. Society must take initiative to create a climate in which there is no gender discrimination and women have full opportunities of self decision-making and participating in social, political and economic life of the country with a sense of equality.

Keywords : Women Empowerment, Legal rights, Progress, Achievement, Challenges

Introduction to Women Empowerment

“When women prosper, the world Prospers”

- The Prime Minister, Shri Narendra Modi addressed the G20 Ministerial Conference on Women Empowerment held in Gandhinagar, Gujarat .

Women's empowerment is the process of giving them more autonomy and control over their life. This can involve giving women the freedom to make decisions about their own health and well-being, as well as the ability to fully engage in the political and economic processes. Women's empowerment is crucial because it can result in a variety of advantageous outcomes, such as higher economic growth and development, enhanced health and well-being, and more gender equality.

Objectives of the Study

1. To understand women empowerment and its types
2. To examine the position of women in India
3. To identify the legal rights for women in India
4. To be familiar with government schemes for women empowerment
5. To know the challenges facing women in India

INFORMATION COMMUNICATION TECHNOLOGY TOOLS IN EDUCATION

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Abstract

Information and Communication Technology (ICT) is an extensional term for Information Technology (IT) that emphasizes role of unified communications and the integration of telecommunications (telephone lines and wireless signals) and computers, as well as necessary enterprise software, middleware, storage and audiovisual, that enables users to access, store, transmit, understand and make uses of the information. ICT is an umbrella term that includes any communication device, encompassing radio, television, cell phones, computer and network hardware, satellite system and so on, as well as various services and appliances with them such as video conferencing and distance learning. ICT is a broad subject and the concept is still evolving. It covers any product that will store, retrieve, manipulate, transmit or receive information electronically in digital form (e.g., personal computers, smart phones, digital television, e-mails, and robots). Use of ICT Tools is all pervasive in our everyday life, and use of ICT tools has almost revolutionized the way teachers impart knowledge to students and students receive knowledge from their teachers, Not only that, by making accessible entire bookshelf and whole of library to students and teachers on a click of their smart phones and laptops have made education simple, much more efficient and have enhanced their productivity enormously.

Keywords: ICT tool, Technology in Education, Teaching and Learning.

Introduction

Information and Communication Technology (ICT) includes computers, the Internet, and electronic delivery systems such as radios, televisions, and projectors among others, and is widely used in today's education field. Kent and Facer (2004) indicated that school is an important environment in which students participate in a wide range of computer activities, while the home serves as a complementary site for regular engagement in a narrower set of computer activities. Increasingly, ICT is being applied successfully in instruction, learning, and assessment. ICT is considered a powerful tool for educational change and reform. A number of previous studies have shown that an appropriate use of ICT can raise educational quality and connect learning to real-life situations. Learning is an ongoing lifelong activity where learners change their expectations by seeking knowledge, which departs from traditional approaches. As time goes by, they will have to expect and be willing to seek out new sources of knowledge. Skills in using ICT will be an indispensable prerequisite for these learners.

AN EYEVUEW ON DIGITAL LITERACY IN 21ST CENTURY

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Abstract

Digital literacy encompasses a range of competencies that enable individuals to use digital tools, devices, and information effectively and responsibly. These competencies include basic digital skills, such as using computers and the internet, as well as more advanced abilities like critical thinking, media literacy, information evaluation, and data analysis. In the 21st century, digital literacy is closely intertwined with traditional literacy skills, fostering communication, collaboration, creativity, and critical thinking among individuals across different age groups and backgrounds. As digital technologies continue to shape our lives, the development of comprehensive digital literacy skills becomes an essential endeavor for individuals and society at large. Embracing digital literacy equips people with the tools they need to harness the vast potential of technology while navigating its challenges responsibly, ensuring an inclusive and prosperous digital future. The paper aims to explore the overview of digital literacy and its relationship to 21st-century skills, which are crucial for navigating the complexities of the modern world.

Keywords: Technology, Communication, ICT skills, Knowledge, Tools,

Introduction

Digital literacy is an individual's ability to find, evaluate, and communicate information by utilizing typing or digital media platforms. It is a combination of both technical and cognitive abilities in using information and communication technologies to create, evaluate, and share information. The origin of the word literacy refers to the ability to read and write. Early descriptions of computer-related literacies also focus on the acquisition of sets of rules and technical capabilities. However, by the end of the 20th century, this definition had expanded considerably. While digital literacy initially focused on digital skills and stand-alone computers, the advent of the internet and the use of social media has resulted in a shift in some of its focus to mobile devices. Similar to other evolving definitions of literacy that recognize the cultural and historical ways of making meaning, digital literacy does not replace traditional methods of interpreting information, but rather extends the foundational skills of these traditional literacies. Digital literacy should be considered a part of the path towards acquiring knowledge.



IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

Dr. M. Deepa



IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

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A GLIMPSE ON NEW EDUCATION POLICY 2020

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Abstract

The New Education Policy was approved by the Indian Union Cabinet on July 29, 2020, replacing the previous policy. The Access, Equity, Quality, Affordability, and Accountability aspects form the basis of the NEP 2020. This paper aims to understand the features of the New Education Policy 2020. This is a descriptive study. The necessary secondary data was gathered from various websites, journals, and other publications. This study concluded that the previous educational system has flaws, including rote learning, a lack of practical knowledge, a heavy emphasis on exams and tests and study material that isn't applicable to real-world situations. These flaws were addressed by the introduction of the new educational system. This can be the cause of "Unemployed educated youth." As a result, the Indian government announced a new policy that makes several changes to the existing framework. The country and the lives of young people will drastically change if these policies are put into practice and the goals are met.

Keywords: NEP, Education structure, Curriculum, Digital Learning

Introduction to New Education Policy

The New Education Policy (NEP) has taken the place of the National Education Policy (NEP), which was established in 1986 and was in force for 34 years. The National Education Policy (NEP), which was first created in 1986, was later modified in 1992 and 1998. The government finally introduced the National Education Policy 2020 after 34 years. A committee was established to create a new education policy, and in 2019, the National Education Policy was written under the direction of Dr. K.K. Kasturirangan. In July 2020, the Central Government approved the National Education Policy 2020.

The NEP 2020 aims to raise the standard of education in India to a global level, enabling the nation to emerge as a leader in knowledge-based industries. It also focuses on the holistic development of students and the inclusion of all types of students regardless of their caste, creed, and religion. It opens the door for fundamental changes to the nation's higher education and educational systems. It is accomplished through implementing the National Education Policy's recommendation to make education universal. It is achieved through the universalization of education outlined in the National Education Policy By incorporating creativity, learning, experiments, visualisation, and art into the

SCENERY OF NEW EDUCATION POLICY

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Abstract

The National Education Policy (NEP) 2020 is a comprehensive reformulation of India's education policy that aims to transform the country's education system to meet the needs of the 21st century. The policy is based on the principles of accessibility, equity, quality, affordability, and accountability, and it seeks to provide a holistic and multidisciplinary education to all students. The salient features of the NEP include emphasis on early childhood care and education, the introduction of curricular structure, the promotion of multilingualism, the incorporation of vocational education, and the establishment of a National Educational Technology Forum. The need for adequate funding, the development of a robust monitoring and evaluation mechanism, and the involvement of all stakeholders in the implementation process. Overall, the NEP 2020 presents a unique opportunity for India to transform its education system and to prepare its students for the challenges and opportunities of the future.

Introduction

"Education imparted by heart can bring revolution in the society"

Education is fundamental for achieving full human potential, developing an equitable and just society, and promoting national development. Providing universal access to quality education is the key to India's continued ascent, and leadership on the global stage in terms of economic growth, social justice and equality, scientific advancement, national integration, and cultural preservation. One major change brought about by the policy is the shift from the traditional 10+2 education structure to a more flexible and comprehensive 5+3+3+4 system. The aim behind this new system is to prioritize essential skills, critical thinking, and life skills in education for students at all levels. The New Education Policy brings a strong focus on developing 21st-century skills like creativity, critical thinking, and problem-solving. It also suggests the creation of innovative institutions like digital universities and the use of technology to enhance student learning.

Highlights of New Education Policy

- The new policy aims for universalisation of education from pre-school to secondary level with 100 per cent Gross Enrolment Ratio (GER) in school education by 2030 and aims to raise GER in higher education to 50 per cent by 2025.

NEW EDUCATION POLICY CHALLENGES AND OPPORTUNITIES IN HIGHER EDUCATION IN INDIA

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Abstract:

Education is important for the economic and social Development of nation. The weapon may prove to be harmful if it is misused. Due to proper interpretation and implementation of policies, the generations may be benefitted. It will result in strong economic and social development. The National policy in education, 1986 was replaced by New National Education Policy. [NEP 2020] National Education Policy is the holistic reform in the education across all levels stages of education in India. It made reforms in Primary, Secondary and Higher education in single policy document. It is the Evolution in the field of education in India. This Study is based on secondary data, the available literature on the topic is referred. This paper aims at discussing challenges and Opportunities in National Education policy 2020 with respect to higher education in India. This paper will help the researchers, academicians and policy makers gain insight in the NEP policy.

keywords: New Education Policy, Challenges and Opportunities Higher Educational Institutes.

Introduction :

“Education is the most powerful Weapon to be used to change the world”

- Nelson Mandela

Kothari Commission [1964-66] had recommended a 6 % allocation of GDP, National Education Policy, 2020 is an evolution in the Education field. It tried to increase access, equity, And inclusion as one of the key changes. Internationalization of higher education is one of the Aims in the NEP. NEP promoted more and more Philanthropic activity in the education sector. NEP tried to imbibe that education is a concurrent subject. NEP suggested a “light but tight” regulatory Framework to ensure integrity, transparency, and Resource efficiency of the educational system through audit and public disclosure while Encouraging innovation and out-of-the-box ideas through autonomy, good governance, and Empowerment.

A BIRDS EYE VIEW ON NEW EDUCATION POLICY 2020

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Abstract

Well defined and futuristic education policy is essential for a country at school and college level due to the reason that education leads to economic and social progress. Different countries adopt different education systems by considering the tradition and culture and adopt different stages during their life cycle at school and college education levels to make it effective. Various innovations and predicted implications of NEP 2020 on the Indian Higher Education system along with its merits are discussed. Finally, some suggestions are proposed for its effective implementation to achieve its objectives.

Keywords: Well defined- futuristic education policy- school and college levels –economic and social progress –different education systems- tradition and culture-life cycle at school and college education levels –predicted implications – effective implementation-achieving the objectives

Introduction:

The first national education policy after independence was announced in the year 1968 and the Second national education policy which was improved version of the first was announced in the year 1986. The currently introduced National Education Policy 2020 envisions an India centered education system that contributes directly to transforming our nation sustainably into an equitable and vibrant knowledge society, by providing high quality education to all. India, being a growing liberal country for educational reforms, currently has about 845 universities and approximately 40,000 higher education institutions (HIEs), reflecting the overall high fragmentation and many small sized HEIs in the country which are affiliated to the universities. It is predicted that India will be the third largest economy in the world by 2030-2032 with estimated GDP of ten trillion dollars.

Highlights of New Education Policy 2020:

- New Policy aims for Universalization of Education from preschool to secondary level with 100 GER in school education by 2030.
- NEP 2020 will bring 2 crore out-of-school children back into the mainstream.
- New 5+3+3+4 school curriculum with 12 years of schooling and 3 years of Anganwadi/Preschooling

SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

Volume - 1

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

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STRATEGIES FOR SUSTAINABLE DEVELOPMENT IN INDIA - AN OVERVIEW

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Abstract

Sustainability is a long-term vision of commitment or goals, while the process or way to achieve those goals is known as sustainable development. Sustainability is a multidimensional concept, and it often describes the concept of sustainable development through four key components. They are society, culture, environment, and economy. This paper covers the concept of sustainable development, its need in India, Sustainable development goals, and Indian Government Initiatives in Sustainable development and strategies for sustainable growth. The secondary data used to describe the concept is collected from various websites. Sustainable development brings stability to the environment and it has to be kept in mind that the use of eco-friendly technologies and resources won't harm the environment and it is time for the global community to act upon their responsibilities to promote sustainable development.

Keywords: Sustainable development, Society, Environment, Economy, Cultural

Introduction

Sustainable Development means development that meets the needs of the present without compromising the ability of future generations to meet their own needs. The concept of sustainable development is the process of sustaining economic growth over time without lowering the standard of living for future generations. It was first mentioned in the 1980 World Commission Strategy report by the IUCN (International Union for the Conservation of Natural Resources). Sustainability is based on ensuring that the current generation leaves a legacy of quality of life for the next generation. Sustainable development is observed as the mutually beneficial interaction between the legal interest of a business and the economy, government and politics, and civil society, and culture.



FINANCIAL INCLUSION OF MSME

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Abstract

*This study aims to determine the effect of the digital economy on the financial inclusion of MSME and try to examine the technology adoption variable in mediating the impact of the digital economy. Structural model results indicate a mediation and a reflective impact of the extended technology acceptance model on digital economy and financial inclusion relationship. The role of the digital economy and technological adaptation has significant implications for financial inclusion. The digital economy is a sign of future economic development and growth which is marked by the rapid development of business transactions. The world's economies have harnessed the potential of technology-based inclusion through a combination of financial products and services. Technology adoption plays a role in reducing the digital economy gap towards financial inclusion in Sukabumi MSMEs. This study proposes the concept of the digital economy as an independent variable and technology adoption as a mediating variable on the financial inclusion of MSME actors. This research is empirical and has a wider application. **Key words:** Digital economy, Financial inclusion, Technology adoption.*

Introduction

Finance covers all aspects of economic activity, is a fundamental and essential part of an inclusive series of transactions that are important in creating economic stability, improving financial arrangements, managing government programs in the field of backwardness, and narrowing gaps between individuals and regions. According to the World Bank and the European Commission, a comprehensive or inclusive mode of finance is a comprehensive activity that is expected to minimize everything that is considered to interfere with the implementation process to enable the public to optimize the use of technology in the financial sector. As presented two things above, financial inclusion focuses on the accessibility, availability, and benefits of the formal financial system owned by economic actors, which is not limited to the reach of community needs in the business sector. India's Micro, Small and Medium Enterprises (MSMEs) sector has appeared as a vibrant and dynamic sector for the economy. It has been recognized as a catalyst in promoting the growth and development. The concept of financial inclusion has become a major issue on the development agenda in a number of developing countries. According to the United Nations, financial inclusion refers to easy access to financial services for low-income people and micro-, small-, and medium- sized enterprises (MSMEs).

AN INSIGHT ON DIGITAL INDUSTRY 4.0

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Abstract

Industry 4.0 stands for the fourth industrial revolution which is defined as a new level of organization and control over the entire value chain of the life cycle of products. Digitalization and modernization of the manufacturing process is the need for today's industry. The manufacturing industries are currently changing from mass production to customized production. The rapid advancements in manufacturing technologies and applications in the industries help in increasing productivity. It is geared towards increasingly individualized customer requirements. Industry 4.0 is visionary realistic concept that includes the Internet of Things, Industrial Internet, Smart Manufacturing and Cloud-based Manufacturing.

Keywords: *Industry 4.0, Digital, Cyber Security*

Introduction

Industrial Revolution, subsequent revolutions have resulted in manufacturing, from water and steam powered machines to electrical and digital automated production which makes manufacturing process more complicated, automatic and sustainable so that people can operate machines simply, efficiently and persistently. The term Industry 4.0 stands for the fourth industrial revolution which is defined as the new level of organization and control over the entire value chain of the life cycle of products, it is geared towards increasingly individualized customer requirements. Industry 4.0 is fulfilling individual customer needs which affects areas like order management, research and development, manufacturing commissioning, delivery up to the utilization and recycling of products. The main difference between industry 4.0 and Computer Integrated Manufacturing is the concern of the human role in production environment. Industry 4.0 has an important role of human worker in performing the production whereas CIM is considered as workerless production. The Industry 4.0 promotes the connection of physical items such as sensors, devices and enterprise assets, both to each other and to the Internet. Designing and drafting methods in all disciplines should be reviewed and their suitability to be checked for a modern, interdisciplinary approach model for product development and transferred to a common, integrated and interdisciplinary methods, process and IT solution. The production process is divided into small value-oriented units which shares information of the consecutive process steps only which helps in increasing flexibility and probably results in reduction of complexity of coordination.

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VOLUME - 2

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POVERTY ALLEVIATION AND RURAL DEVELOPMENT THROUGH MSMEs

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Abstract:

It is a reiterated fact that India is one of the fastest-growing countries in the world. The government has taken various initiatives to accelerate the growth of the country. Various Government and non-government institutions are working relentlessly to take the country to new heights of growth. The challenge here is to take care of every section of society and every sector of the economy for overall sustainable development. The problem of poverty still persists in rural areas. The rural development and poverty alleviation are the major challenges which hinder the growth of the country. The Micro, Small and Medium Enterprise Sector is one of the crucial sectors that could prove a game-changer in rural development and poverty alleviation. In this paper, an attempt has been made to study the situation of rural economy and poverty in the country. The researchers have tried to list out the possibilities that MSMEs could offer to alleviate poverty and contribute to sustainable rural development.

Keywords: *Rural development, Micro, small and medium enterprise MSMEs, Rural economy*

Introduction:

MSMEs have a critical role to play in the development of rural India. They not only bring employment opportunities but also help in various other ways such as getting recognition, facilitating economic growth and so on. Here is how small industries are helping achieve rural development. When it comes to MSME and rural development, there is the valuable role of small-scale industries in rural India, and the contribution of the cottage industry. Traditional businesses such as cotton weaving, silk weaving, handicrafts, etc., have been instrumental in the growth of the region, by ways of eradicating poverty, generating employment, contributing towards economic growth and so on.

Definition of MSMEs:

The definition of MSMEs in India has been ever-changing as per the growth in the economy. First systematic and robust definition of MSMEs was provided in the MSMED Act, 2006. Which defined the MSMEs in terms of investment criteria for both manufacturing and service enterprises. The definition has been changed again in June 2020,



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Dr. R. Gayathri

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Envisioning a Self-Reliant Rural India for Sustainable Economic Development

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DIGITAL TRANSFORMATION IN MSME: A PATH TO SUSTAINABILITY

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Abstract

Micro, Small and Medium Enterprise (MSME) sector has emerged as a very prominent sector of the Indian economy, contributing significantly, to Gross Domestic Product (GDP), merchandise exports, employment and inclusive growth of the country. Throughout the period, the government has undertaken several policy measures related to finance, infrastructure, risk mitigation etc. to precipitate MSMEs growth. With the government initiatives, such as, digital India and the boom in digital payment, post demonetization, the overall technological adoption, in doing business, has improved in the country. The government's initiatives to support manufacturing, such as Make in India and the PLI programmes will assist Indian. The government has also launched various campaigns such as Skill India, Startup India, Digital India and Made in India to boost this sector's growth and enhance productivity

Keywords: Digitalization, Economic Development

Introduction

The motto of MSME is “**EMPOWERING ENTREPRENEURSHIP**”

The MSME sector in India has grown incredibly robust and dynamic. By encouraging entrepreneurship and generating significant employment possibilities, the sector significantly contributes to the economic and social growth of the nation. More than 63 million MSMEs are located across the nation, and they produce goods and services that support roughly 30% of the GDP and nearly 11 crore people's daily needs MSMEs establish themselves firmly in international value chains.

Micro, small and medium enterprises (MSMEs) are considered the pillars of Indian economy due to their considerable contribution to GDP, exports and employment generation. MSMEs started with the establishment and growth of India's khadi and coir industry, along with various industries situated in rural areas. Most micro and small businesses belong to food and agriculture sectors. Medium-sized firms are primarily within automotive, pharmaceutical, textile and chemical industries.

The Importance of Digital Transformation for MSMEs:

- **Competitiveness:** In a digital age, staying relevant requires embracing technology to streamline operations, reach new markets, and improve customer experiences.
- **Efficiency:** Automation and digital tools can enhance productivity, reduce operational costs, and minimize errors.
- **Market Access:** E-commerce and online marketing open new opportunities for MSMEs to reach global audiences.
- **Data-Driven Decision-Making:** Collecting and analyzing data can provide valuable insights for informed decision-making.

ROLE OF MINISTRY OF MICRO, SMALL & MEDIUM ENTERPRISES IN CONNECTING SOCIETY

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Abstract

The Micro, Small and Medium Enterprises (MSME) sector has emerged as a vibrant and dynamic sector of the Indian economy. MSMEs play crucial role in providing large employment opportunities at comparatively lower cost than large industries. MSMEs are complementary to large industries as ancillary units and this sector contributes significantly to the socio-economic development of the country.

Introduction

Worldwide MSME's account for 95% of firms and thus creating nearly 60% of employment generation. Appropriate technologies have to be domestically developed to overcome efficiency and cost considerations. Indigenously developed innovations help in solving the problems. MSME's firms are the universal vehicles all over the world to achieve the goals of employment generation, inclusivity, innovation, and distributed economic activity across population, sectors, geography, poverty alleviation and other critical factors needed for sustained growth leading to sustained development. The firms operate in very different markets rural, semi-urban, metro cities, local, national, regional as well as international. They operate at different levels of skill sets, investment, intricacies and growth orientation. MSME's also nurture entrepreneurial talent in addition to being effective engines for poverty alleviation and women employment. Be it in manufacturing or service sector MSME's can become the engines that sustain growth for long-term development for India. When growth becomes stronger, SMEs gradually assume a key role in industrial development and restructuring.

Role of MSME in Connecting Society

Contribution to Industrial Production and Export

MSME are, at present, operating in wide variety of sectors such as manufacturing, trade and services and there by constitute a terrifying component of country's industrial production from last good number of years. The sector contributes much to the industrial growth of the country. The sector account for more than 90 of the percent Industrial units

SELF SUSTAINABLE IN AGRICULTURE

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Abstract

In the industrialized countries dramatic decreases in the number of people employed in agriculture have been made possible by a rise in soil and labour productivity. There is scope for these to improve further, particularly in developing countries. Potential yields are determined by the characteristics of the crop, local temperature and sunlight. Because the availability of nutrients and that of water are limiting for at least part of the growing season in most agricultural lands, attainable yields are lower than potential yields. Proper management of nutrient inputs, such that optimum use is made of each, can reduce this gap without causing negative environmental side-effects. Actual yields are lower than attainable yields because of growth-reducing factors, such as pests, diseases and weeds. For sustainable agriculture these should be controlled mainly by biological measures. There are many possibilities for this, thus biocides may be used as a last resort not as preventive insurance. Potential yields of rice and sugarcane can reach 30 000 kg ha⁻¹ per year of consumable organic matter, sufficient to feed 120 people. Such yields cannot be achieved on all agricultural land, but it is estimated that world food production could support a population of 80 thousand million, if they were all vegetarian and required only 1500 m² for non-food related purposes. The green revolutions that occurred in the Western industrialized countries in the late 1940s and early 1950s and in Asia in the late 1960s and early 1970s need to be followed by a similar increase in agricultural productivity in Africa and West Asia to feed their rapidly growing populations. Better use of fertilizers and good water management require well-educated farmers with the financial means to implement long-term strategies. If these developments are managed properly, food production for the ever-increasing human population can be guaranteed and the burden on the environment and natural habitats reduced, enabling the development of sustainable agricultural systems.

History of Agriculture

In the early Middle Ages, French farmers produced some 800 kg of grain per hectare each year of which, because of its poor quality and competition with weeds, 200 kg were needed as seed for the next year's crop. The low level of mechanization meant that it took at least 500 hours to cultivate each hectare. North-western Europe's highly productive agriculture now produces around 7500 kg of grain per hectare per year. No more than 150 kg of seed and 15 hours of work are required for each hectare. The cause of the low yields

DEVELOPMENT AND INNOVATION IN FOOD INDUSTRY

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Abstract

Food processing is the method and technique used to transform raw ingredients into food for human consumption. Food processing takes clean, harvested or slaughtered and butchered components and uses them to produce marketable food products. Food Processing is a branch of food science. Processing of food leads to preservation of food, enhances its flavor and reduces the toxins in the food product. It leads to better distributional efficiency and helps in the easy marketing of the food products. Food processing being a capital intensive industry is also a water consuming industry. Water being the most important resource, the food processing industry should make efforts to reduce the wastage of water.

Introduction

Innovation in the food industry combines technological innovation with social and cultural innovation. It occurs throughout the entire food system, including production, harvesting, primary and secondary processing, manufacturing and distribution. The ultimate innovation is a new or improved consumer product and service. Innovations can be focused in one area of food technology, for example process engineering, product formulation, food qualities or consumer needs; but ripples spread causing changes in other parts of the food system, in consumer eating patterns and in general social and cultural areas. Food industry innovation strategies need to be based on the total technology in the food system and concerned not only with the technological changes but also with the social and environmental changes, so as to produce food that satisfies the nutritional, personal and social needs and wants of all communities.

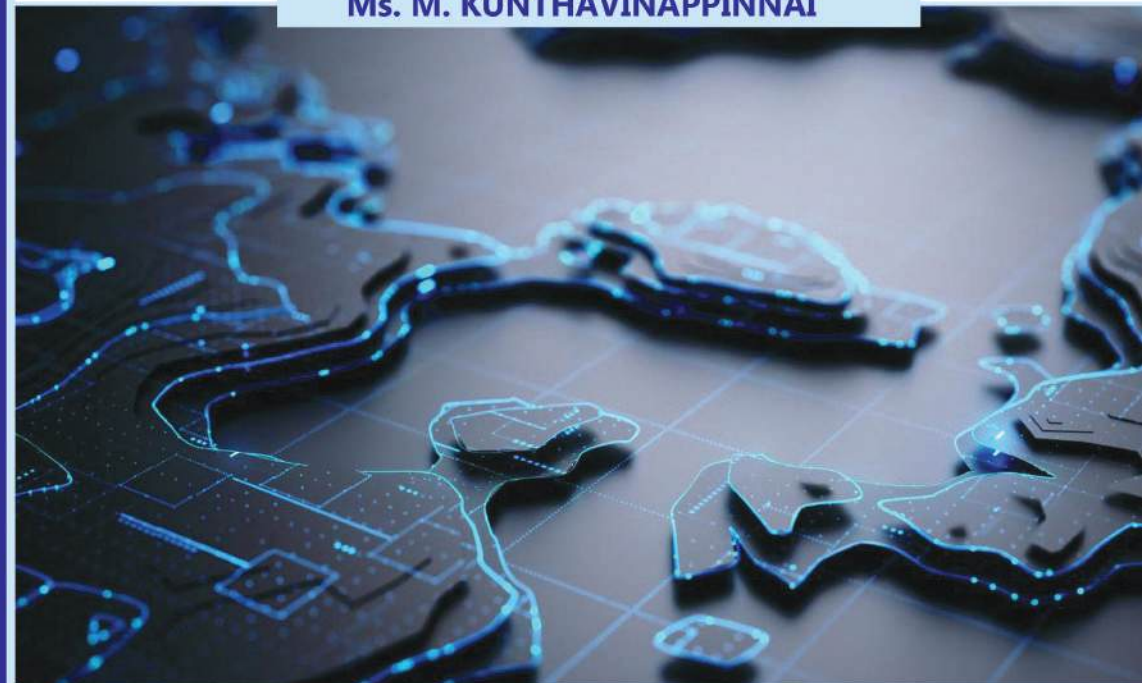


**Sakthi Institute of Information and Management
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G20 TECHNOLOGICAL TRANSFORMATION & DIGITAL PUBLIC INFRASTRUCTURE

Editor

Ms. M. KUNTHAVINAPPINNAI



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Planning Commission, N.Delhi.

**ROLE OF FINANCIAL SYSTEM AND ECONOMIC DEVELOPMENT
OF A COUNTRY**

Divya.D¹, Priyadharshini.P², Giridharan.M³, Sathya Prakash.K⁴

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INTRODUCTION TO FINANCIAL SYSTEM

A financial system consists of a collection of organizations that allow money to be exchanged, like stock exchanges, banks, and insurance providers. There are regional, global, and company financial systems. To finance projects—whether for consumption or profitable investments—and to seek a return on their financial assets, lenders, investors, and borrowers trade current funds. The financial system also includes sets of rules and practices that borrowers and lenders use to decide which projects get financed, who finances projects, and terms of financial deals.

IMPORTANCE OF FINANCIAL DEVELOPMENT

Economic development is greatly influenced by the development of the financial sector, according to a substantial body of evidence. By raising the savings rate, mobilising and pooling savings, generating investment information, facilitating and encouraging the inflows of foreign capital, and optimising capital allocation, it fosters economic growth through capital accumulation and technological advancement. Long-term economic growth is typically faster in nations with more developed financial systems, and a growing amount of evidence points to a causal relationship between financial development and economic growth, not just an effect of the latter. In addition, it decreases poverty and inequality by giving the impoverished and vulnerable populations greater access to financing, facilitating risk management by lessening their susceptibility to shocks, and boosting investment and productivity that raise income generation. The development of the financial sector can facilitate the expansion of small and medium-sized businesses (SMEs) by giving them access to funding. Compared to large companies, SMEs usually employ more people and generate more jobs. They are crucial to economic growth, especially in developing nations.

MEASUREMENT OF FINANCIAL DEVELOPMENT

Assessing the financial sector's growth and realising how financial development affects economic expansion and the eradication of poverty require accurate calculations of financial development. Debits to GDP, liquid liabilities to GDP, and assets to GDP ratios of financial institutions are calculated. These measurements are only approximations and do not fully capture all facets of financial development because a nation's financial sector consists of a wide range of financial institutions, markets, and products.

ROLE OF FINANCIAL SYSTEM IN ECONOMIC DEVELOPMENT

PROBLEMS & PROSPECTS OF HUMAN RESOURCE AMONG G20 NATIONS

Dr. G. Vignesh – Associate Professor & Head*

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Introduction:

Human resource management (HRM) is a relatively young field, which has undergone a rapid evolution. From its initial roots as the function involved in the administrative aspects of hiring, firing, and payroll, it has seen stages where Union relations/avoidance, employee satisfaction, and legal compliance have served as dominant areas of emphasis and expertise (Noe, Hollenbeck, Gerhart & Wright, 1997). Most recently a trend has developed toward justifying the expenditures for and existence of the HR function. HR departments and programs have become an element of the firm's profit equation to be minimized as a cost and maximized as a value-adding component of firm strategy. In fact, some in the popular business press have characterized HR departments as bureaucratic wastelands and suggested doing away with them (Stewart, 1996). Consequently, HR practitioners have become preoccupied with demonstrating the value of the HR function, particularly through showing its impact on firm performance (Pfeffer, 1997; Ulrich, 1997).

STARTUP–FINTECH CHALLENGES AND OPPORTUNITIES: INDIA’S ECONOMIC DEVELOPMENT IN 21ST CENTURY

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DIGITAL INCLUSION IN RURAL COMMUNITIES WITH SPECIAL REFERENCE TO POLLACHI TALUK

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Abstract

Digital payments are transactions that take place electronically or online without exchanging physical money. Payments are exchanged electronically between both the payer and the payee. This paper aims to identify the usage of digital payment systems by rural customers and to understand the obstacles faced by rural customers in adopting digital payment systems. A convenient sampling method is employed for selecting a sample of 75 respondents with bank accounts in rural areas of Pollachi taluk. The data is analyzed using Simple Percentage, Weighted Mean score, T-test, and ANOVA. The results indicate that bank type influences the usage of digital payment systems.

Keywords: Digital Payment system , rural customer, Obstacles, Usage

Introduction to the Study

Digital payment system refers to the mechanism through which financial transactions are conducted electronically, without the need for physical currency or checks. Nowadays digital payment systems have become integral to facilitate the exchange of goods and services, both online and in physical stores. These systems enable individuals, businesses, and organizations to transfer funds, make purchases, and settle transactions securely and efficiently. They encompass a wide range of technologies and platforms, including: credit cards and debits , mobile wallet, bank transfer, online payment platforms and more. Digital payment systems offer several benefits over traditional cash-based transactions, including convenience, speed, security, and accessibility. They streamline the payment process, reduce the need for physical cash handling, and enable seamless transactions across geographic boundaries and time zones. Additionally, they provide valuable data insights for businesses and financial institutions to track spending patterns, manage finances, and personalize customer experiences.

Digital Payment System

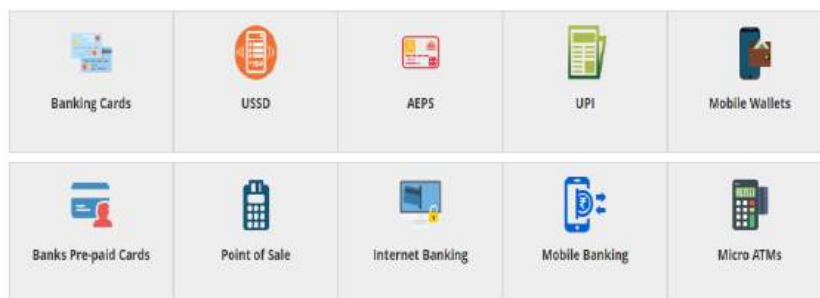


Figure 1

Source: Cashlessindia.gov.in

ROLE OF CUSTOMER EXPERIENCE IN STARTUPS: A STRATEGIC IMPERATIVE

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Abstract:

This paper explores the critical role of customer experience as a strategic imperative for start-ups. Customer experience is the heart of the relationship between a business and its customers. Typically, when people talk about customer experience they mean traditional sales and marketing touch points along the customer journey. In the fast-paced and competitive business environment, where customer expectations are continually evolving, start-ups must prioritize CX to establish a competitive edge, foster customer loyalty, and ensure sustainable growth. The paper delves into the strategy in business, strategies and the impact on long-term success.

Introduction:

Customer experience is a business engages with its customers at every point of their buying travel. It is embedded into every interaction, and each interaction is an opportunity to build a stronger bond between the company and the customer—or has the potential to weaken that bond. Good customer experience involves building a relationship by understanding what people want, need and value. Each department have its own priorities, targets and metrics. Instead of operating in isolation, companies need to organize all of their internal operations in new ways to evaluate and serve changing consumer needs.

To remain relevant and compete in today’s ever-changing world, customer experience strategies need to be top of mind for every stakeholder in your business. From management to marketing to sales to service, everyone across front- and back-office functions needs to be invested in delivering a life-centric customer experience.

Leaders who push beyond traditional strategies and their organizations, not just by which products or services they sell and offer, but with a approach to meet customer needs, will emerge stronger and ignite growth in their organizations.

Importance of Customer Experience in Start-Up

- Understanding the importance of customer experience
- Review past data and future projections.
- Evaluate your customer experience SOPs.
- Create a customer policy and a vision.
- Build a strong team to carry out the Plan.
- Empower agents with defined objectives and guidelines.
- Test and tweak your plan
- Set up ticket tagging so that specific tags assist in isolating problems
- Constantly review and record performance data

Strategies for Ensuring Consistent Cx in Scaling Startups

- Standardize Processes : Launch Standard Operating Procedures (SOPs) for all customer interaction points it ensures that team member handles customer interactions

INDIA 2.0: VISION FOR INDIA 2047 – DIGITAL ECOSYSTEM & HARNESSING ARTIFICIAL INTELLIGENCE

Volume – 1



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PREFACE

In 2021 Independence Day speech, the Hon'ble Prime Minister shared his Vision, when the country would celebrate the Centenary Year (100) of Independence, the goal of 'Amrit Kaal' is to create India with the high level of all facilities not dividing the village and the city; where the government does not interfere unnecessarily in the lives of citizens; where there is world's modern infrastructure everywhere. To achieve these goals, the slogan is framed, "Sabka Saath, Sabka Vikas, Sabka Vishwas, and Sabka Prayas". The government has taken several steps, like focusing on women's development, health, education, skill development, science and technology advancement, infrastructure creation, employment, agriculture, increasing manufacturing, industrial production, innovation, boosting indigenous industry etc.

Vision India @ 2047 is a project initiated by the NITI Aayog, the apex policy think tank of India, to create a blueprint for India's development in the next 25 years. The project aims to make India a global leader in innovation and technology, a model of human development and social welfare, and a champion of environmental sustainability. It is framed the objectives of Achieving a USD 30 trillion economy with a per-capita income of USD 18,000-20,000 with strong public finances and a robust financial sector, Building world-class infrastructure and facilities in both rural and urban areas, Eliminating unnecessary interference by the government in the lives of citizens and promoting digital economy and governance, Developing 3-4 global champions in every sector by merger or restructuring and boosting indigenous industry and innovation, Becoming self-reliant in defence and space sectors and enhancing India's role in the world, Fostering green growth and climate action by increasing renewable energy capacity and reducing carbon emissions, Empowering the youth with skills and education and creating more employment opportunities and Partnering with foreign R&D organizations to build top 10 labs in the country and bringing at least 10 Indian institutions among the top 100 globally.

Growth of India at 100 years in 2047 will be catalyzed by rapid advancements in all business sectors, with technology being the key enabler of the progress. Rapid smart phone penetration, faster & affordable internet fuelled by 5G, and wider adoption of emerging technologies like Artificial Intelligence, Machine learning is expected to enable India leapfrog for the years to come. The government is already implementing various programs for green fuel, green energy, green farming, green mobility, green buildings, and green

equipment, and policies for efficient use of energy across various economic sectors. Similarly, the Government is also focusing on critical and emerging technologies like block chain, AI, IoT etc. The alarm on governments engaging with the private sector as appropriate to work, towards providing or promoting the provision and the infrastructure and digital technologies for AI and the mechanisms for knowledge sharing, taking into account their national frameworks. Digital ecosystems help companies interact with customers, business partners, unrelated companies, and even some competitors. So, while more and more companies are becoming technology companies, they are also participants in some digital ecosystem. The best part is that successful digital ecosystem can lead to measurable gains, by automating routine tasks, analyzing data, and improving decision-making, AI can help increase productivity, reduce costs, and improve the quality of products and services. In Healthcare, Education, and other fields, Humans will work symbiotically with technology, with AI performing analysis, optimization, and routine work, while we humans contribute our creativity, strategy, and passion. AI enables automation of tasks in areas such as data collection, data entry, customer focused business, email responses, software testing, invoice generation, and many more. Employees get time to focus on such tasks which require human abilities and have become an essential part of daily life. The biggest beneficiaries of this change will be young and skilled developers learning AI development with safety and security. Artificial Intelligence and its multiple sub-domains are being increasingly employed in various industries and businesses to aid in repetitive processes. So efforts had made to organize the seminar on the theme India 2.0; Vision for India 2047 that specially focus on Digital Eco Infrastructure clubbed with Entrepreneurial Opportunities for economic development were special address on safety and trust in Artificial Intelligence.

Digital Ecosystem: The digital ecosystem encompasses more than just technological infrastructure; it encapsulates the fusion of connectivity, innovation, and accessibility that defines the nation's digital landscape. From the bustling metropolises to the farthest corners of rural India, this ecosystem envisions a seamless integration of technology that empowers citizens, catalyses economic growth, and redefines the paradigms of governance.

Harnessing Artificial Intelligence: AI is predicted to grow increasingly pervasive as technology develops, revolutionising sectors including healthcare, banking, and transportation. The work market will change as a result of AI-driven automation,

necessitating new positions and skills. The future of AI in each of the fields, like Health care Industries, Education, Finance, Military, Cyber security, Transportation, Business, etc.,

Roadmap for India @ 100 emphasises productivity as a driver of sustained prosperity through sector-specific and region-specific policies based on the '4 S' principles. The 4S principles stress the need for prosperity growth to be matched by social progress, to be share across all regions within India, to be environmentally sustainable, and to be solid in the face of external shocks. India is well on the path to becoming one of the two largest economies in the world by 2047. Hon'ble Commerce and Industries Minister have also predicted that by 2047 India will be a global powerhouse with the size of economy around \$ 35 trillion. The vision document for the same is already being prepared in consultation with a wide-range of stakeholders across all sectors.

Dr. B. Rohini

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DIGITAL ECONOMY

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Abstract

The purpose of this study is to develop the principles for building a digital economy in developing countries. It is shown that the priority task of the socio-economic development of these countries is the formation of a digital economy. The features of the development of the digital economy are highlighted, which include the presence of intellectual assets, the increasing importance of data, the network organization of business, the widespread adoption of the Internet and the global nature of data exchange. The tools for solving the problems of the digital society are defined, which include digital platforms for the development of a "share economy", as well as cloud technologies and methods for processing large databases. The principles of building skills development systems in terms of digitalization are formulated, among which are rational use of resources, combining short-term and long-term development goals, lifelong learning, systematic approach, a unified approach to management at different levels of government and involvement of all stakeholders in the digitalization process.

Keywords: Digital – Economy - Shared Economy - Developing Countries

Introduction

The modern world is undergoing a digital revolution with significant implications for the economic and social fabric. As in the case of previous waves of technological innovation, digital technologies create conditions for the transformation of socio-economic relations. The development of the Internet of Things (IoT) can make workplaces and transportation systems safer, cities more livable. Broadband networks and online applications are used for communication, shopping, travel and work, as well as to create completely new business models and markets. Digitalization has turned many consumers into prosumers through the production of content on digital platforms and participation in P2P networks. The digital economy boosts productivity and supports socio-economic development. The introduction and use of digital technologies in economic processes increases productivity and allows you to participate in global value chains.

Objectives

- A more effective system of direct and indirect support for research, development and innovation.
- Maturity and readiness of sectors for digital transformation.

- Citizens' readiness for changes in the labour market, education and the development of digital skills
- Support for the connectivity and infrastructure of the digital economy and society.
- Ensuring security and trust in the environment of digital economy and society.
- Legislation supporting all aspects of the digital economy and society
- Optimal system of financing the digital economy and society.
- Institutional coordination of policies to support the digital economy and society.

1. Effective system of direct and indirect support for research, development and innovation

The enormous development of digital technologies has helped to improve everyday life in recent years. Digital technology has proven to be an excellent tool for stimulating innovation in all sectors of the economy. At the same time, new technologies are shaping the future digital economy. The competitiveness and economic growth of the Czech Republic strongly depends on the level of the digital economy. If we want the Czech Republic to continue on the road to technological progress, we must support research and development.

Maturity and readiness of sectors for digital transformation

Digitization penetrates all the areas of our lives and its intensity is increasing. The transformation of the Czech Republic's industry takes place across all sectoral agendas. The aim is to ensure that all sectors can benefit fully from digital innovations in order to create higher value products, adapt their business models and maximize the growth potential of the Czech digital economy. In addition to healthcare and the automotive industry, there are many other areas where the added value of digitization and cost savings are obvious. Digital tools help achieve optimal use of both raw materials and waste streams. Integrated data systems can help industry to replace energy from fossil fuels with renewable energy.

Citizens' readiness for changes in the labour market, education and the development of digital skills

Over the years, people have been trying to expand their potential through technology. Digital technology created a human-machine ecosystem at the beginning of the 21st century that changed everyday life, people's work, needs and mobility. We are facing a future of change. Being able to use digital technology will be a must for all citizens. Automation and digitization could cause a large global relocation of workers by 2030. Unless we support new knowledge, retrain and change education systems to support lifelong learning, we cannot be competitive. Digitization implies great impacts on education, the transformation of the education system of the whole society and the related impact on the labour market. It is important to set up a flexible education system with regard to changes in the labour market and related socio-economic phenomena.

Support for the connectivity and infrastructure of the digital economy and society

Connectivity is the key to the success of digital services. The development of infrastructure is crucial to achieving the sustainable development objectives. The right investment in digital infrastructure development act as the backbone of well-performing economies and more inclusive societies. One of the fastest ways to transform the society and economy of the country is to invest in digital infrastructure. Digitization is the engine of global economic growth. If the Czech Republic does not have an efficient and functioning infrastructure, it will never be competitive. It will not be able to take full advantage of all opportunities in the digital economy (mobility, autonomous management, fast, reliable and affordable connection for households, businesses and citizens, etc.).

Ensuring security and trust in the environment of digital economy and society

The boom in the digital economy is associated with cyber threats and risks. Cyber security is essential for the proper functioning of the digital economy. In order for the digitized society to function well and for the organization and the citizens to trust it, it is crucial to ensure security on the Internet. This requires high digital trust of all parties in the digital space. This involves the defence against cyber attacks and effective and high-quality cyber infrastructure, as well as the protection of privacy and personal and business data. Privacy and security is the focal point of building trust on the Internet and in the digital economy.

Legislation supporting all aspects of the digital economy and society

The legislative and regulatory area is one of the most important benefits and possible obstacles of the State as a legislator for the digital economy. The main challenge is to ensure legal certainty for citizens, entrepreneurs and investors and to create a consistent, effective and predictable legal environment. In order to ensure competitiveness of the Czech Republic, it will therefore be necessary to simplify and streamline legislation so as not to put unnecessary administrative demands on citizens and companies (on users and providers of digital services and solutions).

Optimal system of financing the digital economy and society

To ensure the development of the digital economy, innovation and competitiveness, long-term sustainable ways of its financing are needed. In particular, highly innovative business models cannot exist and develop without a stable and robust sources of finance and their lack holds back the entire economy. Digital technologies, services and platforms can support the flexible and efficient future development of the Czech economy. The priority is to support effective measures to facilitate investment in innovative digital technologies. The economy should exploit the possibilities of digital technologies and the Internet and promote innovation of products, services, processes, organizations and business models.

Institutional coordination of policies to support the digital economy and society

The Czech Republic vitally needs effectiveness, consistency and sustainability of the rapid pace of digitization, especially with regard to the competitiveness of the Czech Republic. It would be a huge mistake to underestimate the increasingly important role of the digital agenda and miss the boat. Given the horizontal nature of measures in the digital economy, it is necessary to establish a functional coordination mechanism that will have an institutional foundation so that it can effectively coordinate activities in the digital economy across public and state administrations, ensuring its funding across different sectors.

Features of the Digital Economy

- **Internet-powered:** The internet has become the driver of the digital economy, making it possible for organizations to connect with new markets and target a better fit of customers.
- **World-encompassing:** Location no longer limits businesses in a digital economy. The ease of global interconnection enables businesses to reach new markets and better maintain the customers they have.
- **Always-on:** The technology, mobile apps and digital products offered by E-Commerce has allowed businesses to offer goods and services twenty four hours a day, seven days a week.
- **Fast-paced:** Due to the almost constant flood of new technologies, and the innovation that brings with it, the digital economy moves at a far quicker pace, making it even more important for companies to keep up.
- **Data-driven:** Data is at the heart of the digital economy. Using data and analytics, businesses are able to make more informed decisions about the product they offer, and formulate marketing strategies targeted perfectly at specific consumers.
- **Competitive:** In a web economy, networked intelligence has enabled companies to ramp up the competition by being more aware of what consumers want, allowing them more choices, and forcing them to vie for their attention.

Challenges in the Digital Economy in Sustainability

1. E-Waste and Pollution

The digital economy is characterized by rapid innovation and the emergence of new technologies that generate more e-waste, creating significant environmental and health risks. The lack of proper e-waste management systems compounds the problem, as most nations lack adequate infrastructure and resources to dispose of e-waste. Unsustainable solutions, such as dumping e-waste in landfills or illegally exporting it to developing countries, are commonplace. Notably, most electronic waste is toxic and non-biodegradable. When methods such as open-air burning and acid baths extract valuable materials from electronic components, toxic components are released into the environment, causing air, water, and soil pollution. These components include mercury, polybrominated

flame retardants, lead, barium, cadmium, and lithium, which can have profound health implications in surrounding communities.

2. Energy Consumption and Carbon Emissions

Electronic devices that support or increase the digital economy are associated with higher energy consumption or contribute even more to greenhouse gas emissions. For example, data centers typically consume a lot of electricity to power their servers, cool their facilities and provide backup power. Furthermore, as the demand for high-performance devices and data-intensive applications continues to grow, technology manufacturers are producing and using more electronic devices. These processes require significant energy inputs to facilitate activities such as extracting and processing raw materials and manufacturing and transporting devices. Furthermore, high energy consumption and carbon emissions from the increased use of cloud-based services, media streaming, and other data-intensive applications have become a crucial challenge in the digital economy. Therefore, more research and development are needed to balance the opportunities created by digital technologies and their consequent environmental impacts.

3. Inequality and the Digital Divide

While the digital economy aims to increase everyone's access to information, knowledge, and opportunity, it is characterized by high inequality and the digital divide. For example, Rappitsch indicates that while online opportunities are accessible to at least 80% of the population in developed countries, only 15% of people in less developed countries have access to the Internet. Furthermore, 30 out of every 100 people have fixed broadband subscriptions in developed countries, compared to 0.7 in Africa. These statistics indicate that those with limited access to digital technologies are being left behind as the digital economy grows, resulting in disparities in economic, social, and educational opportunities. The lack of infrastructure and technologies limits these people's ability to participate in the digital economy and access various options, including education, employment, and health. Furthermore, these regions and communities tend to have low literacy and digital skills, especially among older adults and low-income communities.

This challenge undermines the ability of the digital economy to achieve the sustainable development goals of increasing equity and equality to eradicate poverty and improve the well-being of the global population.

4. Job Displacement and Insecurity

Digital technologies and automation are advancing rapidly, increasing the risk of job losses, and changing the job market. For example, manufacturing and agriculture industries that rely heavily on manual labor are replacing workers with robots and automation technologies. These changes significantly impact individuals, communities and the environment and exacerbate existing inequalities. Furthermore, there are growing concerns about the potential for a skills gap, as employees may lack the necessary skills to

adapt to new technologies and the changing job market. With innovations appearing consistently, it has become a challenge for employees to maintain the desired skills to explore the opportunities presented. This situation has led to a mismatch between workers' skills and those in demand, leading to unemployment and underemployment. The loss of jobs has a negative impact on the quality and standards of living, affecting the well-being of individuals.

5. Market Monopolies and Concentration of Power

As companies expand into international markets, concerns about the impact of market monopolies and the concentration of power are growing. Most large corporations have access to digital technologies and platforms and highly skilled talent, which allows them to continue to grow and dominate various sectors. This dominance is often associated with the corporation's ability to limit competition, stifle innovation, and reduce consumer choice, negatively impacting the economy and social and environmental sustainability. For example, monopolies can limit the diversity of products and services available to consumers and reduce incentives for sustainable practices. Additionally, they may misuse or abuse their power through unethical business practices, manipulative algorithms, or data breaches. Low competition due to the concentration of power allows them to engage in unethical and unsustainable business practices without fear of retaliation, as consumers have limited access to alternative products or services. This challenge affects society and the environment, as evidenced by issues such as the exploitation of workers or the misuse of personal data.

6. Privacy and Data Protection

Privacy and data protection are essential issues in the digital economy that can undermine efforts to achieve sustainability. Most companies use digital information and communication technologies to collect, process and share large amounts of personal data, leading to privacy and data protection concerns. For example, there have been numerous cases of unauthorized access to consumer personal information, data breach or sale of personal data to third parties. These issues affect people's trust in digital technologies, ultimately impacting the adoption of sustainable practices.

Future of the Digital Economy

- **AI and machine learning.** AI, including machine learning, deep learning and neural networks, is advancing and will have a growing role in the digital economy. AI is essential for extracting insights from big data, automating complex tasks, making predictions and managing autonomous systems and robots.
- **Transformation of traditional sectors.** The digital economy is also changing traditional industrial industries such as agriculture. For instance, farmers can get real-time updates on crop quality, soil conditions and irrigation with the help of smartphone apps.

- **Digital connectivity.** Strong broadband connectivity and infrastructure are crucial to the success of the digital economy. Technologies such as 5G are predicted to play a key role in enhancing digital connectivity, resulting in quicker and more reliable communication while supporting the growth of the digital economy.
- **The metaverse.** Immersive technologies such as the metaverse can create entirely new experiences for consumers and open up innovative business applications. These digital environments have the power to revolutionize entire sectors, and in the future, a parallel universe with a distinct financial and economic system might also come into existence.
- **Healthcare transformation.** The integration of telemedicine and digital health tools and applications is expected to improve healthcare delivery and accessibility.
- **Cybersecurity advancements.** The rapid adoption of a digital economy is evolving cybersecurity measures to address increasingly sophisticated cyber threats, including AI-powered attacks. By applying machine learning algorithms, AI-powered cybersecurity systems can detect anomalous behavior, identify potential vulnerabilities and proactively lower the risk factors.

Conclusion

Block chain technology is a powerful tool in various economic industries, including financial management, banking services, supply chain management, insurance, and compensation. With the continuous development of blockchain technology, newer and more creative applications are emerging, particularly in the tourism and digital economy sectors. In the tourism industry, blockchain can be used for reservation management, payment, and travel expenses to improve service quality, reduce costs, and increase security and privacy. Blockchain technology can also be effective in reducing fraud in the tourism industry, which can lead to increased trust among travelers. By using digital signatures and the trust network of blockchain, tourism transactions and information can be safely and reliably registered and managed. The digital economy, as a new and innovative economy, uses digital technologies and electronic communications to conduct economic and business activities. This type of economy usually includes a wide range of sectors, such as e-commerce, digital marketing, digital financial services, software development, computer games, and cloud services, among others. The digital economy is recognized as the main driver of economic growth and development in many advanced countries and continues to develop continuously due to the special importance of digital technologies and their impact on economic and business activities. In addition, the digital economy has significant impacts on various economic, social, and cultural areas, such as changing the way people work and interact with each other, promoting more flexible and remote working arrangements, and increasing global connectivity.

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PERSPECTIVE OF ICT TOOLS IN EDUCATION

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ICT FOR PROFESSIONAL DEVELOPMENT

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Abstract

The pace of technological revolution and emergence of a knowledge society can change the traditional role of the teacher and the students. Traditionally, the teacher used to be the source of knowledge for the students. There is some cooperation among students to explore new knowledge. In many cases, the teachers do not possess passable knowledge to supplement the view of the student. And the main source of knowledge remains limited to text book. The development of ICT changes the epic centre of knowledge. Technological enlargement always warrants transition to newer technologies by jeopardizing the cost effectiveness of the education programme. The increase in expenditure on elementary education alone over the last four Five Year Plan periods has been more than the increase in expenditure on education as a whole. Professional development goes far the term 'training' with its implications of learning skills, and encompasses a definition that includes formal and informal means of helping teachers not only learn new skills but also develop new insights into pedagogy and their own practice, and explore new or advanced understandings of content and resources. This paper presents the role of ICT in the professional development of teachers. ICT can contribute to teacher and student learning; and good models of effective computer integration as a learning tool; and high quality professional development that transforms this vision into classroom reality, policymakers can turn schools into partners in the creation of the knowledge society envisioned in national policy plans.

Introduction

Professional development activities are an integral part of one's professional life. These activities help one to grow, learn and excel in one's professional field. The increased use of information and communications technologies (ICT) in the classroom to support students' learning places new demands on teachers at all levels, from pre-school to graduate school. This in turn increases the expectations on the teachers' abilities to develop their own proficiency of using this technology: internationally, such proficiency is commonly referred to as digital literacy, while within the Scandinavian educational context the term digital competence is more common (Hanell, 2018; Ilomäki et al., 2016; Krumsvik, 2008). Digital competence refers here to a holistic perspective incorporating proficiency with pedagogical judgement and with the focus on pedagogy and subject matter. In other words, digital competence is knowledge about how digital tools affect our everyday life, and how to use digital tools to support critical thinking, creativity, and innovation. As a teacher, you must have participated in various types of professional development activities/programmes either through the support of your institution or through your

personal effort. Have you tried to analyse the benefits of undergoing professional development programmes? Why are such activities necessary for a teacher? What are the opportunities, avenues in professional development activities for working teachers? What are the hurdles one faces in participating in such activities? These are a few questions which need to be answered. With the innovation of Information Communication Technologies (ICTs) and their uses in teaching learning process and in teacher training, the nature, scope and opportunities for professional development of teachers have changed. The present study will discuss various aspects of using ICTs for professional development of teachers including their uses at personal and at institutional level. The Unit will also highlight various digital initiatives of Government of India in this regard. This unit will help you understand how Massive Open Online Courses (MOOCs) are being used in India as well as globally for professional development of teachers. The study will also critically scrutinize various factors associated with use of ICTs for professional development.

Role of ICT in a Positive Learning Environment

The appropriate use of ICT tools helps in catalyzing the paradigmatic shift in making the classroom a creative space for exploration and experiment for both the teachers and students. It promotes the acquisition of skills and knowledge for students to become lifelong learners. Thus making students autonomous learners and bringing the world into their classrooms. The new ways of teaching and learning create a shift from a teacher-centered pedagogy to studentcentered pedagogy. Various innovative platforms provide an active learning classroom environment and opportunities to work on real-life problems in depth making it less abstract. By keeping the classroom environment engaging, technology enables students to become better focused on their learning. This also helps teachers to juggle various responsibilities like attendance maintenance, delivering academic content, monitoring student's progress, and much more.

ICT Tools

Powerpoint

Continuing on with the digital images theme this program and others similar to it can provide children with a multimedia experience they will enjoy and be able to develop their creativity skills. These programs have colour, movement and sound so it is no surprise that it is quite appealing. It is just as appealing though for children with profound and multiple learning difficulties. PowerPoint can make learning meaningful and relevant. With the use of transition effects, it can reveal a favourite character with a single touch by using it with the Interactive Whiteboard.

Word Processing

Word processing not only can enhance literacy in English lessons, but can enhance literacy throughout all key learning areas. It is a basic and important skill to have not just throughout formal schooling but later in the workforce. Typing skills, saving documents

and knowing how to send a document to the printer are all associated with the use of the word processor.

Spreadsheets

Spreadsheets are undervalued by teachers at times despite being useful for even key learning areas such as English. Besides being a great ICT tool for mathematics and science this needs to be used throughout the curriculum.

Presentation Software

Multimedia programs such as Keynote, PowerPoint and Prezi are commonly used in education settings as teachers often present lessons using them. They are also wonderful learning tools if used correctly to enable students to share their ideas and notes with others in the class. You can focus ICT techniques the students need and monitor their progress along the way.

Desktop Publishing

Publishing programs such as MS Publisher can be a very useful ICT tool to learn during primary school. Much of the formats and templates tend to match learning outcomes. They also offer great opportunities to teach literacy with ICT. It too can be used right across the primary curriculum.

Characteristics of ICT

They are used from anywhere

If something has to stand out as a priority of ICT is the possibility of maintaining a continuous and direct contact with students. The advantage that the student can connect to teaching from anywhere in the world, with the appropriate means to do so, facilitates learning, making it attractive.

For example, when the holiday periods begin, the child usually switches off during the time he does not come to the classroom. This disconnection, only subject to some exercise or list of tasks that must comply, gives way to oversight and a longer time of adaptation period upon return.

Union of culture, science and technology

ICT is the union of beliefs, customs and all those habits that society has adopted as routine. On the one hand, talking about culture is about the everyday routine of society, about the benefits that technology brings to the whole community. On the other hand, it encompasses science, as it is also responsible for giving answers to the human being of what happens in the world.

It is the curiosity to learn that leads man to carry out scientific research to respond to his concerns, producing the *Scientific knowledge*. And finally, the technique is responsible for responding to the need for transformation that man requires to meet his needs.

It is a Mobilizing Teaching

Teaching through ICT gives the possibility that the student can move in different contexts and different realities. In this way we choose a quality teaching in which the student can interact with the world and can face different situations.

For example, before subjects such as geography, the student will be able to contemplate images and videos of geographic features that he has never seen before. In this way, visualizing the content, making it more practical, is given the motivation that it needs.

It is based on other scientific aspects

ICTs applied to education are enriched by other scientific aspects, such as the pedagogical sciences, through innovations in teaching-learning methodologies; Of the psychology of the learning, showing special attention to the stimulus-answer; Of sociology, of anthropology and of philosophy.

Focuses on Objectives

Teaching through ICT is based on keeping in mind, at all times, the objectives. Achieving the proposed goals is essential and, therefore, we are faced with a flexible working methodology.

For example, situations are commonly encountered in ordinary classrooms in which teachers, because of the need for the whole group to carry out a temporary planning, move quickly, leaving behind students who do not carry the same pace.

It is an excellent channel of communication

Another advantage of ICT is the promotion of communication. The use of new technologies favors the communication that the teaching - learning process needs.

For example, there is the possibility that the teacher can maintain daily and fast contact with the family. In addition to answering questions that the students raised when they left the classroom.

It is changeable

As time goes by, the world is changing and new technologies are also changing. Therefore, it adapts to the changes of the context itself and of education, based on the sciences that support them.

Challenges

Technology integration can also present significant challenges to educators. There are several barriers, some extrinsic related to the availability of resources, time, support system, training facilities, and some intrinsic factors such as attitudes, beliefs, practices, and the resistance of the teachers. The constant need to keep updating with the new innovations makes it an overwhelming experience for the teachers. Teachers are constantly adapting the new ways of learning and teaching at the same time. In a diverse country like India, the digital divide also plays a major role in access to ICT tools. Availability of limited or no access to hardware facilities can pose the biggest challenges in adopting technologies

for the teachers. Many schools in rural India lack basic facilities of electricity and internet making teachers rely on textbookbased teaching. School-level factors such as organizational culture and teacher-level factors as beliefs about teaching and technology also impact the motivation levels of the teacher. Lack of digital literacy and adequate continuous training about the use of technology in the teaching process makes it difficult to navigate with the technology in the classroom. Another constraint is of insufficient time and content to use their ICT skills. The non-teaching responsibilities and pressure to complete the textbook syllabus also discourage teachers to use ICT tools. All these factors contribute to making it difficult for teachers in India to explore digital resources and use technology with their teaching.

Future of ICT in Teaching Profession

The role of interactive multimedia in a perspective where learning is part of schooling, working or just living. ICT also includes web TVs, Net PCs, and Web-Based Education that offers accessibility, flexibility and innovativeness in teaching and learning. ICT integrated teacher education is more important to Indian education system that is committed to maintain global partnership as well as leadership in knowledge-based society.

Prof Ram Takwle (2003) says about IT driven education: "They are changing the methods of content generation, content storage, content packaging and content delivery and hence offer a new paradigm of education." These multimedia programs and packages are also intended to supplement the real classroom activities and help their easy assimilation. ICT especially in the 21st Century context of teacher education fulfills the following objectives.

1. It envisages excitement to the learner's eyes, ears, and more importantly the head.
2. ICT fulfills the needs of learners by providing items and packages of higher standard and interest.
3. It helps in transforming the definition of literacy, learning and knowledge; a definition that increasingly includes multimedia digitized literacy.
4. Multimedia provides a kind of control over the learning environment to the pupil teachers and they experience learning from their failures and ill practices.
5. ICT facilitates the learner to have control on lesson, pace the sequence, content, feedback, which in turn enhances the efficiency of learning.
6. Unlike books, it is interactive in nature and creates motivation and interest among the learners, in turn meeting the individual unique needs effectively and efficiently.
7. Develops the ability of self-learning and interacting individually, as the learner attains vast experiences effectively, efficiently and expeditiously.
8. ICT-empowered simulated situation minimizes dangers in the real world' e.g. practical in science, pilot training driving etc.
9. ICT is a powerful new development with ambitious role in teacher education, Digital and Internet.-based multimedia transforms the present trend in the field. It takes just a computer to play multitude of media enabled programs and packages.

Conclusion

The analysis of ICT based approaches to prospective teachers' professional development indicates that there are possibilities and challenges in adopting ICT in teacher training and professional development. Although valuable lessons may be learned from best practices around the world, there is no one formula for determining the optimal level of ICT integration in the educational system. Overall, governments and teacher training institutions seem to recognize the importance of integrating ICT in education and teacher training. In many cases, the national vision for ICT use in education has been integrated into teacher training. Teacher training approaches in this paper show that many cases adopt ICT into their training process not just as content of the training but rather as an integrated training environment and thus allow teachers to experience ICT-based pedagogies. Hence, it may conclude that a variety of approaches in ICTPedagogy integration in teacher training. Via a variety of examples, the author tries to show that ICT use is not only a matter of new possibilities but that it also brings with it new implications and new challenges. Significant challenges that policymakers and planners, educators, education administrators, and other stakeholders need to consider include educational policy and planning, infrastructure, language and content, capacity building, and financing.

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VOLUME
I

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Volume - 1

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

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WOMEN'S PERCEPTION TOWARDS TECHNOLOGY IN SUSTAINABLE DEVELOPMENT THROUGH MSME

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Abstract

This study aims at exploring women's perception towards technology in sustainable development and variables associated with level of opinion towards technology especially e-bike. Data for the study have been collected from 180 women through issue of structured questionnaire by adopting convenience sampling method. Simple Percentage and Chi-square test have been used to analyze the data. The study reveals that majority of the women are in the age group of 35 to 45 years and majority of them are undergraduates and employed in private sector with an earning between Rs.20001 to Rs.40,000 per month and they are aware about E-Bike through friends. The level of opinion to purchase e-bike are less pollution followed by Incentives/subsidies from government, durability, eco-friendly, less dependence on fossil fuels, no fuel cost, smooth driving and appearance of vehicle. Chi-square test reveals that area, age, occupation, monthly income, family income and period of usage are significantly associated with the level of opinion for e-bike.

Keywords: Women- Technology-Sustainable.

Introduction

Indians prefer two wheelers because of their small manageable size, low pricing, maintenance, and availability of loans on liberal terms. Indian streets are full of people of all age group riding two-wheelers. Wide varieties of two wheelers are available in the market, known for their latest technology and enhanced mileage. Indian bikes, scooters and mopeds represent style and class for both men and women. India is the second largest producer and manufacturer of two-wheelers in the world. The face of auto industry that was redefined with the invention of fuel-efficient technology is all set to see dawn of a new era in two- wheeler industry. Electric vehicles differ from fossil fuel-powered vehicles in that the electricity they consume can be generated from a wide range of sources, including fossil fuels, nuclear power, and renewable sources such as tidal power, solar power, and wind power or any combination of those. There are several policies, promise and pledges with the ever-increasing emission of greenhouse gases. There is an increased fear of environment pollution at every step with modern technology and innovation. In this regard the present study brief about women perception towards technology in sustainable development through MSME especially e-bike.

Literature Review

Ajaysinh Paramar and Tushar Pradhan (2021) in their study made an attempt to know the consumer perception towards e- vehicle in Vadodara City. The data for the study have been collected by issuing questionnaire to 100 respondents by using random sampling method. The data have been analysed using simple percentage. The finding of the study reveals that the most of the people prefer other than e-vehicle. **Sivasakthi and Geethanjali (2020)**, in her research made an attempt to know the customer satisfaction towards ampere electronic bike with special reference to Coimbatore City. The data for the study have been collected by issuing questionnaire to 120 respondents by adopting random sampling techniques. The data have been analysed using simple percentage and ranking analysis. The finding of the study depicts that advertisement affects to buy E-bike. Customers feel the price of ampere e-bike is moderate.

Statement of the Problem

The two-wheelers of the present world have the sounds to attract the consumers but at the cost of degrading the environment. The usage of e-bike has solution for good environment by reducing pollution, sound etc. With the rising cost of fuel, increasing levels of pollution, high running and maintenance cost of vehicle, the electrically chargeable bikes and scooters are gaining popularity. Sheela Srivastava and Sivakoti Reddy (2011), found that majority of the customers are satisfied with price and availability of spare parts in the local market of the vehicles. Customers are not satisfied with the insurance policy of the companies. Shuvam Mondal et.al (2022), depicts that the carrying expenses are less than fuel (petrol/diesel) cost and hence they are willing to buy e-vehicle (or) switch to one. In this backdrop, an attempt has been made to study the women's opinion for e-bike and variables influencing the level of opinion towards e-bike.

Objectives of the Study

The following are the objectives of the study

- To know the socio-economic profile of the women.
- To find out the level of opinion towards e-bike.
- To identify the variables that associate with level of opinion towards technology.

Research Methodology

The study is based on primary data collected through issue of well-structured questionnaire. It contains questions relating to the socio-economic profile, factors influence to purchase to e-bike. A sample of 180 women in Pollachi Taluk has been selected by adopting convenience sampling method. Simple Percentage and Chi-Square test have been used to analyze the data.

Data Analysis

The findings of the study are divided into three sections namely, Socio-economic profile of sample women's, level of opinion towards e-Bike and variables associated with level of opinion for e-bike are showed in the following paragraphs.

(i) Socio - Economic Profile

- Most 86 (47.7%) of the women are in the age group 35 to 45 years.
- Majority 92 (51.1%) of the women are from rural area.
- Majority 123 (68.3%) of the women are married
- Majority 118 (65.5%) of the women belong to the nuclear family
- Majority 129 (71.6%) of the women are under graduate.
- Majority 146 (81.1%) of the women are private employee.
- Most 88 (48.8%) of the women are earning between Rs.20,001 and 40,000.
- Most 74 (41.1%) of the women monthly family income is between 50,001 to 100,000.
- Majority 154 (85.5%) of the women are using e-bike less than a year.
- Majority 136 (75.5%) of the women are friends induced to purchase an e-bike.
- Majority 127 (70.5%) of the women are using battery electric vehicle.

(ii) Level of Opinion towards E-Bike

- Majority 92 (51.1%) disagree that use of fossil fuel does not influence them to purchase e- bike
- Most 88 (48.8%) of women agree that less pollution while using e-bike influence them to purchase e- bike
- Most 86 (47.77%) of women disagree that no fuel cost does not influence them to purchase e- bike
- Most 78 (43.3%) of women agree that smooth driving influence them to purchase e- bike
- Majority 106 (58.88%) of women agree that incentives/subsidies from government influence them to purchase e- bike
- Most 76 (42.22%) of women agree that the factor that eco-friendly factor influence them to purchase e- bike
- Majority 97 (53.88%) of women agree that less maintenance influence them to purchase e- bike
- Majority 114 (63.33%) of women agree that durability influence them purchase e- bike
- Most 84 (46.67%) of women agree that appearance of vehicle influence to purchase e- bike

(iii) Variables Associated with Level of opinion towards e-Bike

To identify the association between the select variables and level of opinion towards e-bike, the Chi-square test has been employed.

Table: 2 Variables Associated with Level of Opinion towards e-Bike

Variables	d.f	Calculated χ^2 Value	Table Value 5% Level
Area	4	13.408	9.488
Age	6	14.987	12.592
Marital Status	2	1.001	5.991
Type of family	2	3.775	5.991
Educational Qualification	4	4.367	9.488
Occupation	2	7.152	5.991
Monthly Income	6	14.979	12.592
Family Income(Per Month)	6	16.018	12.592
Period of Usage	4	12.366	9.488
Sources of Information	4	5.968	9.488
Type of E-Bikes	4	7.068	9.488

It has been found that there exists a significant association between area, age, occupation, monthly income, family income per month, period of usage and level of opinion for e-bikes.

Suggestions

- Producers are suggested to come up with more developed batteries and their life time has to be increased.
- Service centre's can be increased to solve the problems and needs of the customers when needed.
- Number of charging stations may be opened in different spots

Conclusion

According to the study there are many factors that influence the women towards e-bikes. The concept of e-bike has entered in recent years with help of MSME and same is gaining momentum. As an eco friendly product it is more suitable for the city as it can reduce the emission of harmful gas and here by it reduces the pollution. Due to high increase in fuel prices, the electrically charged vehicles seem to be the best one compared to traditional vehicles. Number of charging stations may be opened in rural areas to increase the use of e-bikes then fuel bikes.

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KPR College of Arts Science and Research

(Affiliated to Bharathiar University, Coimbatore)

A Two-Day National Conference on **ROLE OF ENTREPRENEURSHIP IN THE CHANGING ECONOMIC ENVIRONMENT**

Editors

**Dr. K. Kumuthadevi
Dr. A. Shanthi
Dr. R. Prema
Ms. T. A. Archana**



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PREFACE

The significance of entrepreneurship lies in its ability to boost the economy and facilitate significant social transformation. Apart from satisfying a demand and earning income for the business owner, entrepreneurship fosters community growth and job creation for the general public. Because entrepreneurship has such a profound effect on a country's economy, it is common to view entrepreneurs as national assets who are encouraged and compensated by a variety of government initiatives. This is mainly because an exceptional entrepreneur has the power to fundamentally alter our way of life and employment. They can actively support the expansion of the economy in addition to raising our level of living. Most entrepreneurs are "givers". They attempt to make others' lives simpler because they have endured hardships and put in a lot of effort to succeed. In addition, they invest in various community initiatives and support various charities. Entrepreneurship is essential for planned and fast economic growth. In developing countries, it is the foundation of prosperity. In developed countries, it is a method of innovative thinking, social innovation, and enterprise society.

Entrepreneurship education is becoming increasingly popular in today's world. Therefore it is essential to lead people in the right direction. Conference on entrepreneurship will help in establishing a connection between entrepreneurship and sustainability and comprehends how sustainable entrepreneurial methods and processes can adapt to this new environment. It also provides forum for a wide range of influential stakeholders to share their experiences, ideas, and research findings and disseminate knowledge on entrepreneurship as widely as possible among communities of academic researchers and entrepreneurs in India. In addition it develops proposals for institutional, program, and policy changes that will promote new approaches to entrepreneurship in theory and practice.

DISCLAIMER

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KPR College of Arts Science and Research, Coimbatore



About the Institution

KPR College of Arts Science and Research is the latest addition to the KPR fleet. The College is located in a picturesque campus of about 11 Acres with a build area of 4.5 lakh Sq. Feet. The College is run by KPR charities under the leadership of the Chairman Dr. K. P. Ramasamy. The KPR Group is one of the largest industrial conglomerates in the country with interests in Textiles, Sugar, Wind Turbines, Automobiles, and Education. The College was established in the year 2019 with a vision of providing top-class education and life skills to students and thereby serving the nation and beyond. At the time of establishment, the college offered four Undergraduate programmes with a faculty strength of 6 members and 134 students. Within a short span of four years the college has shown remarkable progress, currently offering 15 undergraduate programmes with around 3500 students. At KPR College of Arts Science and Research, We believe in the power of education to transform lives and contribute to the betterment of society. Our aim is to empower our students to excel academically, develop critical thinking skills, and become responsible global citizens.

About the School of Commerce

The School of Commerce commenced its operation in the year 2019 with two Under Graduate Programs and then extended its wings to seven - Department of Commerce, Commerce with Computer Applications, Commerce with Professional Accounting, Commerce with Banking & Insurance, Commerce with Business Analytics, Commerce with E-Commerce and Commerce with Information Technology. The School constitutes richly qualified and experienced faculty members and well-disciplined student fraternity. In the course of further expansion, the School introduced Post Graduate Programme M.Com and Research Programme Ph.D in Commerce (Part-Time and Full-Time) from 2023. The core objective of the school is to provide an ICT centric curriculum to fall in line with the industrial demand. The school evolves to maintain academic excellence and bestow students with the required skills to face the challenges in a competitive world at global scenario. There is a blend of theoretical and practical exposure for the students to showcase their talents through Conferences, Seminars, Workshops, Hands-on activities and training. The School of Commerce focuses on research activities to nurture social responsibility with commitment and integrity towards nation-building.

About the Department

Bachelor of Commerce (B.Com) a three-year Undergraduate programme was started in the year 2019. The department focuses on quality education in commerce by imparting conceptual and practical knowledge through a well-structured curriculum & syllabus. This programme offers Value-based education by acquiring adequate knowledge in BFSI (Banking, Financial Services and Insurance), Business Analytics, Entrepreneurship and related fields of study.

About the Conference

India is the fifth-largest economy in the world as per the report of the Economic Survey 2022-2023. India's economy expanded by 6.1 per cent in the Q4 of the fiscal year 2022-23, leading to an annual growth rate of 7.2 per cent. According to official figures released on May 31, 2023, the estimated Q4 GDP for the current fiscal year stands at Rs.43.62 lakh crore. In a new Worldwide survey, it is stated that India has a high-quality entrepreneurial ecosystem, showing the country's consistent improvement in the business environment over time. India is the third largest start-up ecosystem globally next to China and the US with over 60,000 new start-ups. One of the key indicators of India's entrepreneurial success is creation of large number of jobs leading to a positive sign of India's growing market for employment opportunities.

Entrepreneurship is assumed as a key driver for the economic growth and development of our nation. By starting new businesses and creating jobs, entrepreneurship leads to an increase in GDP and per capita income. This is particularly noteworthy for emerging nations, where poverty and joblessness are major issues. The economic environment influences the progress of entrepreneurial ventures by influencing the supply of capital and prospective opportunities. This conference is designed to enhance skill and potential of young entrepreneurs and student community towards building of environmental eco-friendly nation.

The conference aims to explore the intersection of role of entrepreneurship and sustainable development in the changing economic environment, highlighting the challenges faced, the opportunities available, and the future prospects in the field of entrepreneurship. Further it aims to create a platform for developing business ideas, concepts and to facilitate knowledge sharing on business idea. It also focuses on the G20 theme i.e., to achieve global economic stability, sustainable growth, to promote financial regulations that reduce risks and prevent future financial crises and to create an Innovation and Technology based development. The conference will bring together entrepreneurs, business leaders, policy makers, researchers and academicians to exchange business ideas, share insights and foster collaborations.

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Message from Principal

There are various reasons why someone would choose to launch their own business at a particular point in their lives. Some see a great commercial potential, while others are constrained by several problems. Despite having a degree and a set of abilities, they cannot find employment. The health, happiness, and prospects of people are impacted by their lack of employment. Consequently, entrepreneurship is one of the approaches to help people into the workforce. In addition to giving people without work experience employment opportunities, this has an effect on economic growth by creating new jobs, boosting competition, and stimulating innovation.

Considering all these facts, I congratulate Department of Commerce for organizing a National Conference on Role of Entrepreneurship in the Changing Economic Environment. In the age of digitization, the conference aims to broaden the field of research and practice viewpoint on the major problems encountered by entrepreneurs and organizations in high-potential nations like India.

It is my immense pleasure to welcome participants joining from different parts of India. The conference's findings are anticipated to determine the direction for future discussions and the agenda for entrepreneurship research, business development, and policy formulation in this area. As we start this journey of Entrepreneurial discussions for two days, I wish everyone the very best!

Dr. P. GEETHA

Principal,

**KPR College of Arts Science and Research,
Coimbatore.**



Message from Convenor

I am delighted at the conduct of National Conference on Role of Entrepreneurship in the Changing Economic Environment by the Department of Commerce. Conferences on entrepreneurship can make a very important contribution in promoting meaningful entrepreneurship as they can introduce and mitigate opportunities and challenges in the domain. Since research activities across all the fields pave the way for the world to strive forward with huge advancement, I am confident that this conference will provide a suitable platform for the research community, for innovation, interaction with each other and to share the knowledge on Entrepreneurship. With great pleasure and pride, I wish the conference a grand success.

Dr. K. KUMUTHADEVI

**Dean - School of Commerce,
KPR College of Arts Science and Research,
Coimbatore.**



Message from Organizing Secretary

The way that entrepreneurship has altered the commercial landscape is incredible. The growth of entrepreneurship has increased employment possibilities, raised living standards, and had a noticeable effect. In India, the subject of entrepreneurship is expanding quickly, and it is becoming increasingly important in the world of business. Therefore it is essential to organize events on entrepreneurial aspects so that they create a stage with a positive atmosphere that promotes creativity and innovation. This realization has dawned on Department of Commerce and has resulted in the National Conference on Role of Entrepreneurship in the Changing Economic Environment.

I sincerely look forward to welcome and provide with the support needed to make this conference the best it can be. I wish a great success to this conference and hope that it will be fruitful and knowledgeable. I also extend my best wishes to the delegates and greetings to everyone.

Dr. A. SHANTHI

**Associate Professor & Head,
Department of Commerce,
KPR College of Arts Science and Research,
Coimbatore.**

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RURAL WOMEN ENTREPRENEURSHIP: OPPORTUNITIES AND CHALLENGES

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ABSTRACT

The research paper aims at exploring the factors influencing rural women to become an entrepreneur and issues faced by women Entrepreneurs. Data for study have been collected from 168 women entrepreneurs in Pollachi Taluk through interview schedule by adopting convenience sampling method. Simple Percentage, Weighted Average Ranking and Chi-Square test has been used to analyze the data. The study reveals that most of the women entrepreneurs belong to the age group of 31-40 years who are graduates. It is identified that factors influencing women to become an entrepreneur are self-dependent, supplementary income for family, self-identity, employment opportunities, family support, innovation in business whereas women give less importance to government schemes and policies. It is observed that problem in raising capital is ranked first by women entrepreneurs followed by lack of family support, increased competition, lack of training, lack of education, non-unity among partners and problem in marketing. It is also found that age, marital status, type of family; monthly income and family income have significant association with level of issues faced by rural women entrepreneurs.

Keywords: Rural, Women, Entrepreneurs, Opportunities issues.

INTRODUCTION

The status of women in Indian society has undergone a drastic change in the recent years. Women are now playing a crucial role in the growth of economy. In the context of women empowerment, entrepreneurship plays an important role. Women Entrepreneurs are goal oriented, flexible, creative, tolerant, independent, realistic, enthusiastic and energetic in their management skill. The hidden entrepreneurial potentials of women have gradually been changing with growing sensitivity to the role and economic status in the society. The number of women undertaking entrepreneurship is mounting each year. In India most of the housewives want to start their own business but there is so many challenges faced by them. Mary Lubinda, NsamaMusawa and Blessing Mataka (2018)

found that difficult to access capital is the greatest challenge faced by most respondents followed by difficult to accessing policy makers, difficult to access training and discrimination in accessing resources as the least challenging. Neenu Venugopal and Somasundaram (2019) observe that majority of women entrepreneurs are facing problem in finance, lack of education, stiff competition, family responsibilities, male-dominated society and limited mobility. So, in this study an attempt has been made to investigate the role of rural women entrepreneurs in pollachi Taluk.

REVIEW OF RELATED LITERATURE

Nidhi Khatrani (2021) in her article captioned “A study on challenges faces by women entrepreneurs in Surat” to identify challenges faced by women entrepreneurs in Surat. Data have been collected from 141 women entrepreneurs by issuing questionnaire. Simple percentage and Chi-Square test have been used to analyse the data. The result of the study reveals that women entrepreneurs are facing lots of challenges like doubt of self-confidence; financial issues, lack of information and lack of family support, combining domestic and professional life are the most frequent challenges.

Gomathi and Priyadeepa (2018) in their research captioned “Opportunities, Status and Challenges Faced by Women Entrepreneurs in India” to examine the opportunities and constraints faced by female entrepreneurs in developing countries at the micro and macro level perspectives. The result of the study shows that challenges for women entrepreneurs are not being taken seriously, wearing too many hats, letting fear stand in the way, not being able to ‘Toot your Own Horn’ and wanting to please everyone and also it is observed that majority of them faced with many problems like family restriction, problem of finance, role conflict, lack of education, unfavorable environment, lack of persistent nature, lack of mental strength and stiff competition.

Sheweta Gaur et al (2018) in their research entitled “Challenges and Opportunities for Women Entrepreneurs in India” to know challenges for women entrepreneurs. The findings of the study reveals that that there are several challenges faced by women entrepreneurs they are balance between family and career, socio-cultural barriers, male dominated society, low level of education, lack of technical knowledge, lack of marketing and entrepreneurial skills and lack of self-confidence.

Statement of the Problem

In recent years, women entrepreneurs and their participation in the growth of economy is crucial for a developing country like India. Women entrepreneurs have been

making a major impact in all segments of economy. Women entrepreneur is one who initiates or inherits a business, alone or with groups, and is ready to undertake all kinds of challenges associated with entrepreneurial activities such as financial, administrative and social. Women in India are ready to take the burden of work in home as well as the work place. Even though there are many achievement among women entrepreneurs but still they are facing so many problems in moving forward. Debashree Kashyap and Jayashree Bordoloi (2020) found that desire for self-dependent influenced women entrepreneurs to select entrepreneurship as career and this factor occupy first position followed by availability of raw material, good market potential, not getting government job, economic needs, desire to give employment opportunities, willing to do something creative, encouragement from family, to utilize own skill, better status in society, role model and to support households. It is found that age, technical education and monthly income from enterprise are significant with women empowerment. In this backdrop, it is necessary to know the factors influencing rural women to become an entrepreneur and issues faced by rural women entrepreneurs. To find solution for the said questions, the following objective has been framed and tested.

OBJECTIVES OF THE STUDY

- To know the socio-economic profile of women entrepreneurs.
- To identify the factors influencing rural women to become an entrepreneur.
- To find out the issues faced by rural women entrepreneurs.
- To ascertain the variables that associate with level of issues faced by rural women entrepreneurs.

RESEARCH METHODOLOGY

The study is based on primary data collected through interview schedule. It contains questions relating to the socio-economic profile, factors influencing women to become an entrepreneur, issues faced by women entrepreneurs. A sample of 168 women entrepreneurs residing in Pollachi Taluk has been selected by adopting convenience sampling method. Simple Percentage, Weighted Average Ranking Method and Chi-Square test have been used to analyse the data.

FINDINGS

The findings of the study are divided into three sections namely, Socio-economic profile, factors influencing rural women to become an entrepreneur, issues faced and variables associated with level of issues faced by women entrepreneurs.

(i) Socio-Economic Profile of Rural Women Entrepreneurs

Socio-economic profile of women entrepreneurs like age, marital status, educational qualification, type of family, monthly income and family income, size of business are showed in the following table.

Table-1

Socio-Economic Profile of Rural Women Entrepreneurs

Variables	Number of Respondents	Percentage
Age(Years)		
Up to 30	16	9.53
31-40	76	45.24
41-50	62	36.90
Above 50	14	8.33
Marital Status		
Married	122	72.62
Unmarried	46	27.38
Educational Qualification		
Uneducated	6	3.57
Below 10 th Std	12	7.14
SSLC	22	13.10
HSC	34	20.24
Graduate	56	33.33
Post Graduate	22	13.10
Others	16	9.52
Type of Family		
Joint	82	48.81
Nuclear	86	51.19
Monthly Income (Self)		
Up to Rs.15000	38	22.62
Rs.15001-30000	74	44.05
Above Rs. 30000	56	33.33
Family Income (per month)		
Up to Rs.25000	22	13.10
Rs.25001-50000	77	45.83
Above Rs.50000	69	41.07

- Most of the women entrepreneurs, 76 (45.24%) belong to the age group 31-40 years.
- Majority of the women entrepreneurs, 122(72.62%) are married.
- Most of the women entrepreneurs, 56(33.33%) are graduate.
- Majority of the women, 86 (51.19%) belong to nuclear family.
- Most of 74 (44.05%) women entrepreneur's monthly income is between Rs. 15,001 and Rs. 30,000.
- Most of 77 (45.83%) women entrepreneur's family income is between Rs. 25,001 and Rs. 50,000.

(ii) Factors Influencing Rural Women to become an Entrepreneur

Table-2: Factors Influencing Rural Women to become an Entrepreneur

Factors	Yes	No
Self-Identity	122 (73.0%)	46 (27.0%)
Employment Generation	107 (63.7%)	61 (36.3%)
Government Schemes and Policies	35 (20.8%)	133 (79.2%)
Family Support	104 (62.0%)	64 (38.0%)
Supplementary Income	144 (85.7%)	24 (14.3%)
Self-Dependent	154 (91.7%)	14 (8.3%)
Business Knowledge/Innovation	79 (47.0%)	89 (53.0%)

It is identified that factors influencing women to become an entrepreneur are self-dependent (91.7% top choice), 85.7% of them taken up this to provide supplementary

income for family, 73% of them choose entrepreneurship for their identity, 63.7% of them taken up to provide employment opportunities, 62% of them have family support, 47% of them taken up to explore innovation in business whereas 20.8% of them have given less importance to government schemes and policies.

(iii) Issues Faced by Rural Women Entrepreneurs

Weighted average ranking has been applied to identify the issues faced by women entrepreneurs.

Table-3: Issues Faced by Rural Women Entrepreneurs–Weighted Average Ranking

Issues	RANK
Problem in Raising Capital	I
Lack of Training	V
Non-Unity among Partners	VI
Lack of Family Support	II
Problems in Marketing	VII
Lack of Education	IV
Increased Competition	III

It is observed that problem in raising capital is ranked first by women entrepreneurs followed by lack of family support, increased competition, lack of education, lack of training, non-unity among partners and problem in marketing.

(iv) Variables Associated with Issues Faced by Rural Women Entrepreneurs

In order to find out the association between the selected variables namely age, marital status, educational qualification, type of family, monthly income and family income and level of issues faced by rural women entrepreneurs. Chi-square test has been made use of. Level of significance is five percent.

Table-4: Variables Associated with issues Faced by Rural Women Entrepreneurs

Variables	Calculated Chi-Square Value	D.f	Table Value @ 5% Level
Age	14.902*	6	12.592
Marital Status	7.299*	2	5.991
Educational Qualification	19.568	12	21.026
Type of Family	6.987*	2	5.991
Monthly Income	11.593*	4	9.488
Family Income	12.826*	4	9.488

The above discloses that out of seven variables selected, five factors namely age, marital status, type of family, monthly income, and family income are found to be significant with the level of issues faced by rural women entrepreneurs at five percent level.

SUGGESTIONS

- Financial institutions and Government may provide assistance and support for women entrepreneurs to raise finance.
- Awareness programmes may be conducted by government and successful entrepreneurs for rural women entrepreneurs to get advice and guidance in better way.
- Training programmes may be provided to increase management skills.
- Unity among partners and support from family may encourage women to achieve in business.
- Marketing can be improved by using promotions through social media like whatsapp, facebook, instagram, linkedin etc

CONCLUSION

It is found that age, marital status, type of family, monthly income and family income significantly associated with the level of issues faced by women entrepreneurs. Women entrepreneur can lead to a tremendous change in society and economy. Now a day's more and more women are becoming innovators and entrepreneurs. Government and financial institutions may provide rural women entrepreneurs with financial assistance to

meet their need. Training and awareness can be provided by government to increase skill. Still some actions by government are needed for developing women entrepreneurs especially women entrepreneurs in rural area.

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**“Thinking is the Capital, Enterprise is the Way,
Hard Work is the Solution”.**

- Dr. A. P. J. Abdul Kalam

**“Take up one Idea. Make that one idea your life
- think of it, dream of it, live on that idea. Let the brain, muscles,
nerves, every part of your body, be full of that idea,
and just leave every other idea alone. This is the way to success”.**

- Swami Vivekananda

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Volume – I

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Volume - I

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VISION FOR VISHWA GURU INDIA: INITIATIVES FOR GLOBAL LEADERSHIP BY 2047

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PREFACE

In an era where the global landscape is undergoing rapid and profound changes, the aspiration for global leadership demands a visionary and concerted effort. The seminar proceedings titled “Vision for Vishwa Guru India Initiatives for Global Leadership by 2047” stand as a testament to India's unwavering commitment to shaping a future that is not only transformative for its own citizens but also resonates across the international community.

As we approach the momentous milestone of 2047, which marks the centenary of India's independence, we find ourselves at a crossroads of possibilities and challenges. The concept of ‘Vishwa Guru’ encapsulates India's age-old tradition of disseminating knowledge, fostering dialogue, and illuminating the path for others. This compilation of seminar proceedings is a reflection of this tradition, a dialogue that transcends boundaries and invites scholars, students, and visionaries to collectively envision the path ahead. These proceedings offer a panoramic view of the discussions and insights shared by luminaries in various fields, touching upon a myriad of sub-themes. From discussions on the Role of Technology in NEP 2020 to explorations of Ease of Doing Business, the proceedings delve into crucial facets that shape India's global role.

We extend our heartfelt gratitude to the Indian Council of Social Science Research (ICSSR) for its invaluable support in bringing together these seminal discussions. Their unwavering commitment to advancing knowledge aligns seamlessly with the spirit of the Vishwa Guru India Initiatives. As we navigate the complexities of a rapidly evolving world, we hope that these initiatives serve as a source of inspiration, a catalyst for meaningful dialogues, and a blueprint for action.

We are indebted to the authors who have contributed their scholarly insights to this compilation. Their diverse perspectives and rigorous research have enriched the discourse on global leadership and India's role in shaping the global narrative. Each paper presented here is a testament to their dedication to knowledge dissemination and their belief in the power of ideas to drive positive change.

Together, let us embrace the spirit of ‘Vishwa Guru’ and pave the way for a brighter, more harmonious, and prosperous India.

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ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING IMPLICATIONS AND APPLICATIONS

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Abstract

Within the last decade, the application of “artificial intelligence” and “machine learning” has become popular across multiple disciplines, especially in information systems. The two terms are still used inconsistently in academia and industry – sometimes as synonyms, sometimes with different meanings. With this work, we try to clarify the relationship between these concepts. We review the relevant literature and develop a conceptual framework to specify the role of machine learning in building (artificial) intelligent agents. Additionally, we propose a consistent typology for AI-based information systems. We contribute to a deeper understanding of the nature of both concepts and to more terminological clarity and guidance – as a starting point for interdisciplinary discussions and future research.

Keywords: Artificial Intelligence, Machine, Learning.

Introduction

Artificial intelligence (AI) is the ability of machines to replicate or enhance human intellect, such as reasoning and learning from experience. Artificial intelligence has been used in computer programs for years, but it is now applied to many other products and services. For example, some digital cameras can determine what objects are present in an image using artificial intelligence software. In addition, experts predict many more innovative uses for artificial intelligence in the future, including smart electric grids.

AI uses techniques from probability theory, economics, and algorithm design to solve practical problems. In addition, the AI field draws upon computer science, mathematics, psychology, and linguistics. Computer science provides tools for designing and building algorithms, while mathematics offers tools for modeling and solving the resulting optimization problems. Although the concept of AI has been around since the 19th century, when Alan Turing first proposed an “imitation game” to assess machine intelligence, it only became feasible to achieve in recent decades due to the increased availability of computing power and data to train AI systems.

History of Artificial Intelligence

With so much attention on modern artificial intelligence, it is easy to forget that the field is not brand new. AI has had a number of different periods, distinguished by whether the focus was on proving logical theorems or trying to mimic human thought via neurology. Artificial intelligence dates back to the late 1940s when computer pioneers like Alan Turing and John von Neumann first started examining how machines could “think.” However, a significant milestone in AI occurred in 1956 when researchers proved that a machine could solve any problem if it were allowed to use an unlimited amount of memory. The result was a program called the General Problem Solver (GPS).

Over the next two decades, research efforts focused on applying artificial intelligence to real-world problems. This development led to expert systems, which allow machines to learn from experience and make predictions based on gathered data. Expert systems aren’t as complex as human brains, but they can be trained to identify patterns and make decisions based on that data. They’re commonly used in medicine and manufacturing today. A second major milestone came in 1965 with the development of programs like Shakey the robot and ELIZA, which automated simple conversations between humans and machines. These early programs paved the way for more advanced speech recognition technology, eventually leading to Siri and Alexa.

The initial surge of excitement around artificial intelligence lasted about ten years. It led to significant advances in programming language design, theorem proving, and robotics. But it also provoked a backlash against over-hyped claims that had been made for the field, and funding was cut back sharply around 1974. The early years of the 21st century were a period of significant progress in artificial intelligence. The first major advance was the development of the self-learning neural network. By 2001, its performance had already surpassed human beings in many specific areas, such as object classification and machine translation. Over the next few years, researchers improved its performance across a range of tasks, thanks to improvements in the underlying technologies.

Artificial Intelligence & Machine Learning

Artificial Intelligence is the most trending field of computer science. However, with all the new technology and research, it’s growing so fast that it can be confusing to understand what is what. Furthermore, there are many different fields within AI, each one having its specific algorithms. Therefore, it’s essential to know that AI is not a single field but a combination of various fields.

Artificial Intelligence (AI) is the general term for being able to make computers do things that require intelligence if done by humans. AI can be broken down into

two major fields, Machine Learning (ML) and Neural Networks (NN). Both are subfields under Artificial Intelligence, and each one has its methods and algorithms to help solve problems.

Machine Learning

Machine learning (ML) is a type of artificial intelligence (AI) that allows software applications to become more accurate at predicting outcomes without being explicitly programmed to do so. Machine learning algorithms use historical data as input to predict new output values.

Recommendation engines are a common use case for machine learning. Other popular uses include fraud detection, spam filtering, malware threat detection, business process automation (BPA) and Predictive maintenance.

Types of Machine Learning

Classical machine learning is often categorized by how an algorithm learns to become more accurate in its predictions. There are four basic approaches: supervised learning, unsupervised learning, semi-supervised learning and reinforcement learning. The type of algorithm data scientists choose to use depends on what type of data they want to predict.

Supervised Learning

In this type of machine learning, data scientists supply algorithms with labeled training data and define the variables they want the algorithm to assess for correlations. Both the input and the output of the algorithm is specified.

Unsupervised Learning

This type of machine learning involves algorithms that train on unlabeled data. The algorithm scans through data sets looking for any meaningful connection. The data that algorithms train on as well as the predictions or recommendations they output are predetermined.

Semi-supervised Learning

This approach to machine learning involves a mix of the two preceding types. Data scientists may feed an algorithm mostly labeled training data, but the model is free to explore the data on its own and develop its own understanding of the data set.

Reinforcement Learning

Data scientists typically use reinforcement learning to teach a machine to complete a multi-step process for which there are clearly defined rules. Data scientists program an algorithm to complete a task and give it positive or negative cues as it works out how to complete a task. But for the most part, the algorithm decides on its own what steps to take along the way.

How Does Machine Learning Work?

A Machine Learning system learns from historical data, builds the prediction models, and whenever it receives new data, predicts the output for it. The accuracy of predicted output depends upon the amount of data, as the huge amount of data helps to build a better model which predicts the output more accurately.

Implications & Applications of Artificial Intelligence

The revolutionary power of computers to “learn” from large datasets and use this information to make predictions is unprecedented. Loosely defined under the umbrella of artificial intelligence (AI), these complex systems are already applied in multiple contexts: at home, at work, in decisions about loans and college admissions, in vehicles and transportation systems, in weapons, in surveillance, in healthcare, and in policing and judicial sentencing. Future applications of AI could extend even further, encompassing most aspects of our lives.

As we stand on the cusp of a technological revolution, opportunities abound to harness these technologies for social good: AI-based systems may have the capacity to scan social media across platforms and across the globe to warn of imminent environmental disasters, disease outbreaks, or political upheavals, using this information in ways that individuals may not have intended or even realized were possible. They have the potential to remove human bias from judicial decisions about sentencing; AI-based systems could optimize diagnostics and therapeutics through analysis and correlations of immense swaths of patient data. But for the benefits to be equitably enjoyed by every member of society, public attitudes toward AI among marginalized and vulnerable populations must be better understood. AI innovations must be intentionally and responsibly developed, and their application must address the possible disparity of impact new technologies have on disadvantaged populations. In response to these challenges and opportunities, the American Association for the Advancement of Science (AAAS) and its partners are launching the (AI)²: Artificial Intelligence—Applications/Implications initiative, the goal of which is to affect the development and application of AI in ways that alleviate, rather than exacerbate, social inequalities.

Applications of Machine Learning

Machine learning is a buzzword for today's technology, and it is growing very rapidly day by day. We are using machine learning in our daily life even without knowing it such as Google Maps, Google assistant, Alexa, etc. Below are some most trending real-world applications of Machine Learning:

1. Image Recognition

Image recognition is one of the most common applications of machine learning. It is used to identify objects, persons, places, digital images, etc. The popular use case of image recognition and face detection is, Automatic friend tagging suggestion:

2. Speech Recognition

While using Google, we get an option of "Search by voice," it comes under speech recognition, and it's a popular application of machine learning. Speech recognition is a process of converting voice instructions into text, and it is also known as "Speech to text", or "Computer speech recognition." At present, machine learning algorithms are widely used by various applications of speech recognition. Google assistant, Siri, Cortana, and Alexa are using speech recognition technology to follow the voice instructions.

3. Traffic Prediction

If we want to visit a new place, we take help of Google Maps, which shows us the correct path with the shortest route and predicts the traffic conditions. Real Time location of the vehicle from Google Map app and sensors. Average time has taken on past days at the same time.

4. Self-Driving Cars

One of the most exciting applications of machine learning is self-driving cars. Machine learning plays a significant role in self-driving cars. Tesla, the most popular car manufacturing company is working on self-driving car. It is using unsupervised learning method to train the car models to detect people and objects while driving.

5. Stock Market Trading

Machine learning is widely used in stock market trading. In the stock market, there is always a risk of up and downs in shares, so for this machine learning's long short term memory neural network is used for the prediction of stock market trends.

6. Medical Diagnosis

In medical science, machine learning is used for diseases diagnoses. With this, medical technology is growing very fast and able to build 3D models that can predict the exact position of lesions in the brain. It helps in finding brain tumors and other brain-related diseases easily.

7. Automatic Language Translation

Nowadays, if we visit a new place and we are not aware of the language then it is not a problem at all, as for this also machine learning helps us by converting the text into our known languages. Google's GNMT (Google Neural Machine Translation) provide this feature, which is a Neural Machine Learning that translates the text into our familiar language, and it called as automatic translation.

The technology behind the automatic translation is a sequence to sequence learning algorithm, which is used with image recognition and translates the text from one language to another language.

Methods of Artificial Intelligence

Logic, Problem-Solving

Early researchers developed algorithms that simulate humans' step-by-step reasoning when solving puzzles or making logical deductions. By the late 1980s and 1990s, AI research had developed methods for dealing with uncertain or incomplete information, employing concepts from probability and economics. For difficult problems, algorithms can require enormous computational resources-most experience a "combinatorial explosion": the amount of memory or computer time needed for problems of a certain size becomes astronomical. The search for more efficient problem-solving algorithms is a high priority.

Knowledge Representation

Knowledge representation and knowledge engineering are central to AI research. Many of the problems that machines are expected to solve will require extensive world knowledge. The things AI needs to represent are objects, properties, categories, and relationships between objects; situations, events, states, and times; Cause and Effect; Knowledge about knowledge (what other people know about what we know); and many other, less well-researched domains. A representation of "what exists" is an ontology: the set of objects, relations, concepts, and so on about which the machine knows. The most general is upper ontology, which attempts to provide a foundation for all other knowledge.

Planning

Intelligent agents must be able to set goals and achieve them. They need a way to envision the future - a representation of the state of the world and make predictions about how their actions will change it - and be able to make choices that maximize the utility (or "value") of the options available.

In classical planning problems, the agent can assume that it is the only system acting in the world, allowing the agent to be certain of the consequences of its actions.

However, if the agent is not the only actor, it requires that the agent reason under uncertainty. It calls for an agent to assess its environment, make predictions, evaluate its predictions, and adapt based on its assessment.

Learning

Machine learning, a fundamental concept of AI research since the field's inception, is the study of computer algorithms that automatically improve through experience. Unsupervised learning is the ability to find patterns in a stream of input. Supervised learning includes both classification and numerical regression. After seeing several examples of things from several categories, classification is used to determine which category something falls into. Regression attempts to construct a function that describes the relationship between inputs and outputs and predicts how the outputs should change as the inputs change.

Social Intelligence

Effective computing is the study and development of systems that can detect, interpret, process, and simulate human. It is an interdisciplinary field spanning computer science, psychology, and cognitive science. While the origins of the field can be traced to early philosophical inquiries into emotion, the more modern branch of computer science originated from Rosalind Picard's 1995 paper on "effective computing".

Creativity

A sub-field of AI addresses creativity theoretically (philosophical, psychological perspective) and practically (the specific implementation of systems that produce novel and useful outputs). Some related areas of computational research include artificial intuition and artificial thinking.

General Intelligence

Many researchers think that their work will eventually result in a machine with artificial general intelligence, combining all the skills described above and exceeding human capacity in most or all of these areas. Some believe that such a project may require anthropomorphic features such as artificial consciousness or an artificial brain.

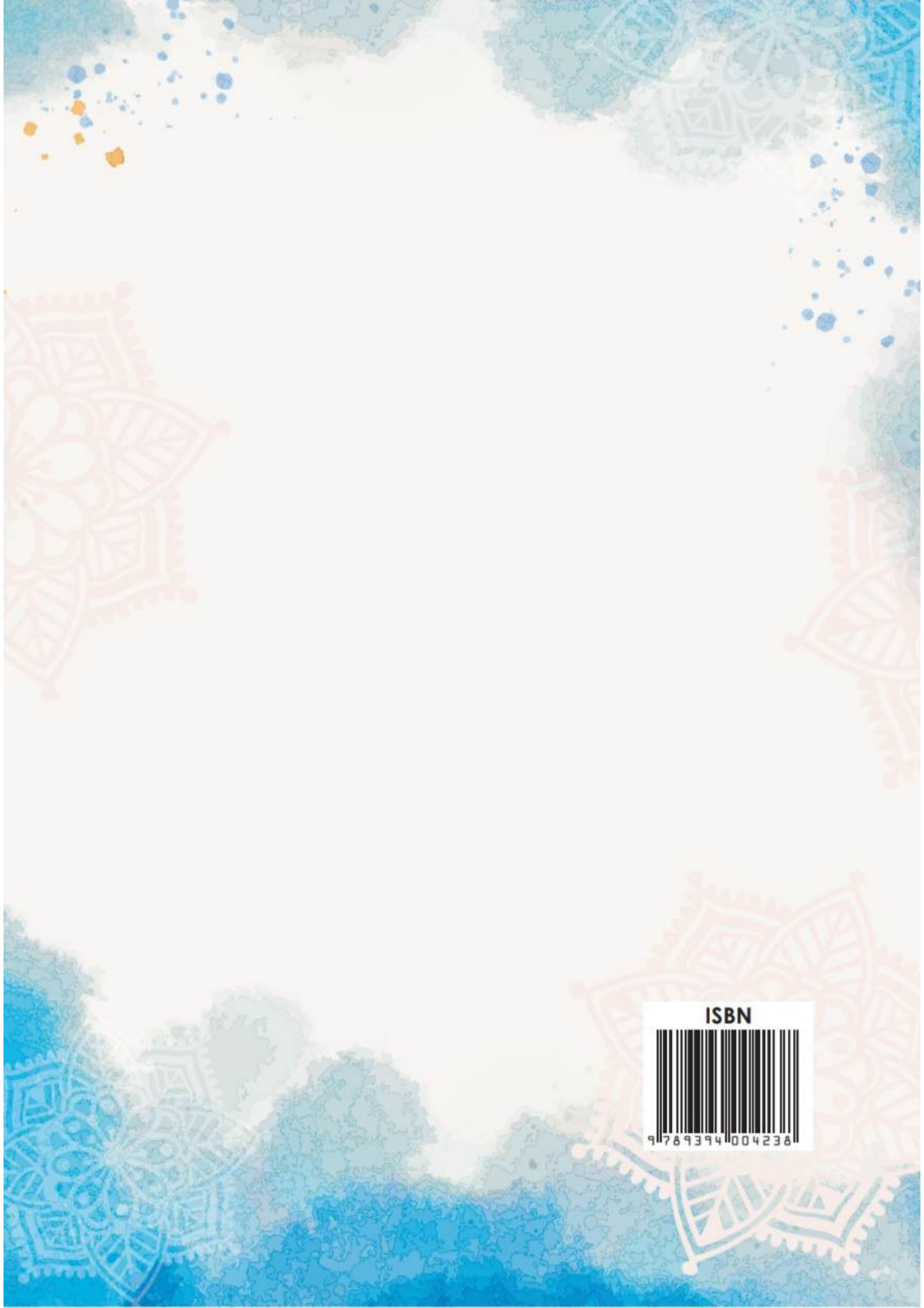
Conclusion

AI is at the centre of a new enterprise to build computational models of intelligence. The main assumption is that intelligence (human or otherwise) can be represented in terms of symbol structures and symbolic operations which can be programmed in a digital computer. There is much debate as to whether such an appropriately programmed computer would be a mind, or would merely simulate one, but AI researchers need not wait for the conclusion to that debate, nor for the hypothetical computer that could model all of human intelligence. Aspects of

intelligent behaviour, such as solving problems, making inferences, learning, and understanding language, have already been coded as computer programs, and within very limited domains, such as identifying diseases of soybean plants, AI programs can outperform human experts. Now the great challenge of AI is to find ways of representing the common sense knowledge and experience that enable people to carry out everyday activities such as holding a wide-ranging conversation, or finding their way along a busy street. Conventional digital computers may be capable of running such programs, or we may need to develop new machines that can support the complexity of human thought.

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ARTIFICIAL INTELLIGENCE IN INSURANCE INDUSTRY

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ABSTRACT

The introduction of artificial intelligence in insurance has made monumental advances in the world and continues to change as more forms of technology appear. The purpose of this paper is to inform others about the intricacies of artificial intelligence in insurance while simultaneously providing insight into what is to come with ever-changing advances in technology in everyday use. This paper will be a literature review broken down into four parts. The first section will give information about the purpose of artificial intelligence in insurance. In the second section, we will look at addressing the benefits as well as the problematic impact of artificial intelligence with the ever-changing innovations in technology that impact the insurance world. In the third section, we will address possible issues that may arise in the future from the advancements of artificial intelligence. This section is used to answer the question of how the changing customer behavior, digital disruption, regulatory pressures, and competitive marketplace are forcing insurers to refine their current strategy and operating models. Finally, in the last part we look at how these technological advances are solving problems in the industry, such as cyber-security concerns and fraud.

Keywords: Artificial intelligence- Insurance-Technology-Fraud Detection-Automation

INTRODUCTION

The insurance industry relies primarily on solving the risks associated with a business or an individual. Therefore, insurance companies need a systematic and smooth way to deal with any risk in order to gain more revenue. The advent of Artificial Intelligence (AI) can transform the insurance industry from a 'detection and repair' to a 'predictive and preventive model. The implementation of Artificial Intelligence with the help of an AI development company in the insurance sector has helped many insurance players to reap a lot of benefits such as efficient claim

management, less fraud, and more. Now let us take a close look into the uses or applications of artificial intelligence in the insurance sector.

Artificial intelligence is gradually making inroads into every industry, and the insurance sector is no exception. It is a complex and highly regulated industry that has been slow to adopt new technologies until now. AI technology has already begun to transform the way insurers do business by helping them become more efficient and effective. This article will discuss how AI is changing the insurance industry and how companies can benefit from it. We will take a look at some of the ways AI is being used in the insurance industry and how it is helping insurers and policyholders alike.

ROLE OF AI IN INSURANCE INDUSTRY

It is not a secret that Artificial Intelligence (AI) is revolutionising every facet of our lives. Its ability to learn, make decisions, and self-correct is making it the fastest growing technology of our era. Industries and organisations that have rapidly adopted AI, with top organisations having seen manifold growth and significant impact on their businesses —and have created competitive advantage for themselves as a result.

The insurance sector can be divided in three broad categories: life and annuity (L&A); property and causality (P&C); and finally, health and wellness. With all these types of insurance categories, organisations observe some common processes like sales and marketing, underwriting, claims, services etc.

AI application in new business onboarding:

The customer applications came from various sources and format like PDF files, customised forms from partner networks, data dump in the insurance portal database. AI can help an insurance company here in

1. Automated relevant content extraction using Natural Language processing and Image processing.
2. Robotic Process Automation agents gathering relevant information and inserting into database for further processing.

AI applications in underwriting:

Underwriting is one of the most critical processes of all insurance processes. AI can help underwriters in the following ways.

1. Claims Risk Assessment: Availability of risk assessment factors are growing day by day. With evolution of wearables, preventive healthcare screening results, tracking personal habits like eating, health club memberships etc, AI can create more sophisticated and robust models to ascertain claim risk.
2. Predict and simulate outcomes of an incident: Take an example of Covid-19. What if an insurance company already had an AI model that could simulate a pandemic and ascertain the overall risk to the population which is already covered or is going to get covered under an insurance policy. This can help the insurance company to determine better and more competitive premiums for their members.
3. Generate a quote: Quote generation is subject to underwriter's individual biases and competitor pricing. Machine learning algorithms can help eradicate these biases and derive the best policy quote for an individual or homogeneous group of individuals.
4. Digital Insurance products: As agents adopt digital tools such as interactive advisory services, companies can use live simulations and digital AI health assessments to provide personalised product recommendations that help customers understand their unique life situations and achieve their financial goals.

AI application in policyholder services:

1. Straight thru processing of policyholder change requests like name change, address change, addition, and deletion of members etc.
2. Customer Experience: AI-driven chatbots have already gained traction in the sphere of customer service. In the insurance industry, these chatbots can enhance scalability and take the load off human resources for more critical matters. At the same time, the chatbots cross-sell or upsell products depending on the customer profile and history. In short, AI can help improve overall customer experience.

AI applications in claims processing:

The next process which is highly involved in insurance companies is claims processing. Following are the ways wherein AI can be useful in Insurance claims processing.

Claims creation: Automated claims creation by use of image processing and NLP.

1. Creation of healthcare claim from healthcare records using NLP
2. Creation of Auto claims with photographs of damaged vehicles using image processing

3.Improved loss estimation for low claims leakage

Conversational AI driven chatbots for first notice of loss (FNOL) reporting.

Deep learning driven fraud detection model to detect aberrant and fraudulent claims

Claims investigation: AI driven integration services to assist Special Investigation

Units to ascertain fraud, waste, and abuse (FWA) claims.

Automated claims processing using AI agents (Straight-thru processing).

Major insurance organisations are using AI to get smart quotes and accelerated claims settlement with adoption of Deep learning and image recognition services. Now the bigger question is how we can get started with AI adoption and make your processes smarter.

IMPACT OF AI IN INSURANCE INDUSTRY

AI and Insurance

Like every other field, the insurance industry is using AI to streamline its operations, engage with the audience in an effective manner and facilitate sales. AI has not only challenged legacy product lines but also supported InsurTech companies to garner venture capital. Primarily, AI has saved a lot of money for the insurers and has made life simpler for the policyholders.

Usage-based Insurance

AI has been instrumental in introducing behavioral policy pricing. The traditional model of arriving at an insurance premium based on statistical records has given way for analytical, individual-based data for determining the accurate premium. This has been possible because of the Internet of Things (IoT). Its examples are – wearable devices, objects with sensors, sensors based on one's location, and systems that record geographic data with the help of satellites.

Enhanced Customer Experience

Customers do not want jargons, they want simplified information that will add value to them. AI-powered chatbots come in handy in order to offer simple solutions to customer's complex queries. Chatbots have evolved from being a glorified 'Frequently Asked Questions' assimilator to identifying customers' faces and selling them policies. For example, an insurance company offers life insurance based on a selfie! AI is also useful in fast-forwarding the claim process thanks to automation.

Efficient Underwriting

Data analysis performed by AI scores over human analysis when the data volume is large. With AI applications, the underwriter can focus on the strategy and portfolio management aspect rather than scrutinize the data manually. AI's algorithms can perform tedious underwriting tasks more efficiently. Sometimes, a combination of AIs is used to arrive at a formidable underwriting plan.

BENEFITS OF AI IN INSURANCE INDUSTRY

The benefits of implementing AI in insurance seem clear to stakeholders in this ecosystem. Indeed, 84% of surveyed French investors believe AI will revolutionize the insurance sector. Moreover, 66% of insurers feel AI can help improve workforce productivity. Thousands of claims, customer queries and large amounts of diverse data make the insurance industry a natural use case for artificial intelligence and cognitive technologies.

□ By implementing AI into their processes, insurers can save time, reduce costs, improve customer experience and increase profitability.

□ AI can also transform typically tedious and time-consuming processes i.e. underwriting, claims management, fraud detection, customer service.

□ With AI insurers can also reduce human errors. These errors can be common due to factors like changing the regulation of information to analyze for fraud prevention.

LIMITATIONS OF AI IN INSURANCE INDUSTRY

Technological Risk—Data Confidentiality

The chief technological risk is the matter of data confidentiality. AI development has enabled the collection, storage, and processing of information on an unprecedented scale, thereby becoming extremely easy to identify, analyze, and use personal data at low cost without the consent of others. The risk of privacy leakage from interaction with AI technologies is a major source of consumer concern and mistrust. The advent of generative AI, where the AI manipulates your data to create new content, provides an additional risk to corporate data confidentiality. For example, feeding a generative AI system such as Chat GPT with corporate data to produce a summary of confidential corporate research would mean that a data footprint would be indelibly left on the external cloud server of the AI and accessible to queries from competitors.

Technological Risk—Security

AI algorithms are the parameters that optimize the training data that gives the AI its ability to give insights. Should the parameters of an algorithm be leaked, a third party may be able to copy the model, causing economic and intellectual property loss to the owner of the model. Additionally, should the parameters of the AI algorithm model may be modified illegally by a cyber attacker, it will cause the performance deterioration of the AI model and lead to undesirable consequences.

Technological Risk—Transparency

The black-box characteristic of AI systems, especially generative AI, renders the decision process of AI algorithms hard to understand. Crucially, the insurance sector is a financially regulated industry where the transparency, explainability and auditability of algorithms is of key importance to the regulator.

Usage Risk—Inaccuracy

The performance of an AI system heavily depends on the data from which it learns. If an AI system is trained on inaccurate, biased, or plagiarized data, it will provide undesirable results even if it is technically well-designed.

Usage Risk—Abuse

Though an AI system may be operating correctly in its analysis, decision-making, coordination, and other activities, it still has the risk of abuse. The operator use purpose, use method, use range, and so on, could be perverted or deviated, and meant to cause adverse effects. One example of this is facial recognition being used for the illegal tracking of people's movement.

Usage Risk—Over-Reliance

Over-reliance on AI occurs when users start accepting incorrect AI recommendations—making errors of commission. Users have difficulty determining appropriate levels of trust because they lack awareness of what the AI can do, how well it can perform, or how it works. A corollary to this risk is the weakened skill development of the AI user. For instance, a claims adjuster whose ability to handle new situations, or consider multiple perspectives, is deteriorated or restricted to only cases to which the AI also has access.

CONCLUSION

AI is poised to disrupt the insurance industry like never before for both insurers and their customers. Customers may enjoy a more seamless user experience and more affordable rates. Insurance companies might save money by making their processes more efficient or offering AI car insurance policies. With AI, the possibilities are boundless, and it is only a matter of time before we start seeing these improvements. AI is a catalyst for transformation in the insurance industry. Some insurance companies are already using AI technologies to make more accurate predictions about risks; this allows them to set policies at a safer level. Above it is described how automation and data analytics are being used to improve risk assessment, pricing, insurance underwriting processes, and customer engagement strategies for more accurate future predictions – all while reducing costs.

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RE-ENVISIONING INDIA @ 2047: INITIATIVES FOR GLOBAL LEADERSHIP

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Abstract

The abstract presents an overview of a comprehensive vision for India's future as a global leader in the year 2047. As India marks its centennial anniversary of independence, the nation stands on the cusp of transformative change, aiming to propel itself to the forefront of the international stage. This visionary paper outlines a set of initiatives that will harness India's vast potential across various domains, fostering sustainable growth, inclusive development, and responsible global leadership. The paper begins by delving into India's historical journey, tracing its achievements and challenges since independence. It highlights the nation's diverse cultural fabric, democratic ethos, and entrepreneurial spirit, which form the foundation for re-envisioning India's trajectory towards 2047.

Keywords: Vishwa guru, sustainable development, energy and environment and global leadership

Introduction

The vision of India in the year 2047 - a nation with a renewed sense of purpose, poised to take on the mantle of global leadership. "Re-envisioning India @ 2047: Initiatives for Global Leadership" is a transformative journey that charts the course for India's progress, prosperity, and prominence on the world stage. In the next two and a half decades, India will have traversed an incredible path, transforming itself from a developing nation into an economic and technological powerhouse. This ambitious vision is grounded in the principles of inclusivity, sustainability, and innovation. As we look ahead, we must recognize the challenges of the past and harness our collective strengths to build a brighter, more equitable future. At its core, "Re-envisioning India @ 2047" focuses on five key initiatives that will shape our nation's journey to global leadership:

- 1. Economic Resurgence:** We envision a self-reliant and dynamic economy that fosters entrepreneurship and innovation, embraces sustainable practices, and empowers every citizen to be a participant in India's growth story. A robust infrastructure and investment-friendly policies will attract global partnerships and fuel economic progress.
- 2. Knowledge and Skill Revolution:** Education will be the cornerstone of our nation's transformation. We will establish a world-class education system that nurtures creativity, critical thinking, and problem-solving skills. This will equip our citizens to meet the challenges of the future and lead India's knowledge economy.

3. **Technology and Innovation Hub:** India will emerge as a hub for cutting-edge research and innovation across sectors, including artificial intelligence, renewable energy, biotechnology, and space exploration. Through strategic collaborations with international partners, we will drive global technological advancements.
4. **Sustainable Development:** As a responsible global leader, India will prioritize sustainability and environmental conservation. We will champion green initiatives, combat climate change, and promote renewable energy adoption to secure a greener and healthier planet for generations to come.
5. **Cultural Diplomacy:** India's rich cultural heritage will act as a bridge that connects us with the world. Through cultural exchanges, we will foster understanding, empathy, and harmonious relationships with other nations, promoting peace and unity across the globe."Re-envisioning India @ 2047: Initiatives for Global Leadership" is not just a lofty ambition but a roadmap to be realized through the collective efforts of every citizen. It calls for unity, dedication, and a shared commitment to progress. Together, we will shape a future where India stands tall as a global leader, contributing positively to the world's development and inspiring generations to come.

Sustainable Development

Sustainable Development plays a crucial role in re-envisioning India's path towards global leadership by 2047. Sustainable Development refers to meeting the needs of the present without compromising the ability of future generations to meet their own needs. By adopting sustainable practices across various sectors, India can address environmental, social, and economic challenges, leading to long-term prosperity and global recognition. Here's how Sustainable Development initiatives can help India in its journey towards global leadership:

1. **Environmental Conservation:** Sustainable Development emphasizes responsible use of natural resources, pollution control, and climate action. By promoting green technologies, renewable energy sources, and sustainable agricultural practices, India can reduce its carbon footprint and combat climate change. Taking a lead in environmental conservation will not only benefit the country but also position India as a global champion of sustainability.
2. **Social Inclusion and Equity:** Sustainable Development encourages inclusive growth and social equity. By focusing on poverty alleviation, healthcare, education, and empowering marginalized communities, India can create a society where everyone has equal access to opportunities. This commitment to social welfare will earn India respect and admiration on the global stage.

3. **Global Partnerships:** Sustainable Development is a global agenda, and India's active participation in international forums and collaborations will enhance its global leadership status. By cooperating with other nations, sharing best practices, and contributing to global sustainable development goals, India can showcase its commitment to building a better world for all.
4. **Urban Planning and Infrastructure:** As India's urban centers grow, Sustainable Development can guide smart urban planning and infrastructure development. Creating sustainable cities with efficient public transport, green spaces, and eco-friendly buildings will not only improve the quality of life for citizens but also serve as a model for other countries facing similar urbanization challenges.
5. **Circular Economy and Resource Efficiency:** Embracing a circular economy model, where products are designed for longevity, reuse, and recycling, can reduce waste and conserve resources. By implementing resource-efficient practices, India can demonstrate its dedication to a sustainable future, attracting international attention and admiration.
6. **Education and Awareness:** Raising awareness about Sustainable Development through education and public campaigns will foster a culture of sustainability among the population. An informed and conscious citizenry can drive sustainable practices, support policymakers' decisions, and contribute to India's global leadership efforts. By integrating Sustainable Development into its policies, India can showcase its commitment to responsible and inclusive growth, becoming a role model for other nations. This transformation will not happen overnight, but through persistent efforts and collective action, India can position itself as a global leader in sustainable development by 2047.

Knowledge and Skill Revolution

A Knowledge and Skill Revolution refers to a transformative shift in the education and training landscape that empowers individuals with the necessary knowledge, skills, and competencies to adapt to changing times and contribute effectively to society and the economy. In the context of India's development and aspirations for global leadership, such a revolution can play a crucial role in several ways:

1. **Economic Growth and Innovation:** A well-educated and skilled population can drive innovation and economic growth. India could become a hub for cutting-edge research, technology, and startups, attracting foreign investments and fostering indigenous innovation.

2. **Competitive Workforce:** A highly skilled workforce will make India's labor market more competitive globally. This could lead to increased employability and higher income levels for its citizens.
3. **Global Trade and Investment:** With a knowledge-driven economy, India can become a preferred destination for global businesses looking to leverage a skilled workforce and vibrant market.
4. **Sustainable Development:** Emphasizing knowledge and skills in areas like renewable energy, sustainable agriculture, and environmental conservation could position India as a leader in addressing global challenges like climate change.
5. **Social Development and Inclusivity:** A focus on education and skill development can lead to greater social inclusion by providing equal opportunities for all, irrespective of their backgrounds, leading to reduced poverty and inequality.
6. **Soft Power and Diplomacy:** A knowledge and skill-oriented approach can enhance India's soft power and influence on the global stage, strengthening diplomatic relations and partnerships with other countries.

To achieve this vision by 2047, India should consider a multi-pronged approach, which may include the following initiatives:

1. **Education Reforms:** Implementing reforms in the education system to emphasize practical skills, critical thinking, and creativity alongside traditional academic knowledge.
2. **Vocational Training:** Enhancing vocational training programs to equip the workforce with job-specific skills demanded by industries.
3. **Investment in Research and Development:** Increasing funding for research and development across various sectors to drive innovation and technological advancements.
4. **Public-Private Partnerships:** Collaborating with private sector entities to bridge the gap between academia and industry and to ensure that educational programs align with industry needs.
5. **Digital Infrastructure:** Investing in robust digital infrastructure to promote e-learning, online courses, and remote education, especially in remote and underserved regions.
6. **Promotion of Entrepreneurship:** Encouraging and supporting entrepreneurs to foster innovation and create new ventures that can contribute to economic growth.
7. **International Collaboration:** Collaborating with other nations, institutions, and organizations to share knowledge, expertise, and best practices.

Social Development and Inclusivity

It's essential to note that achieving these goals requires sustained commitment and dedication from all stakeholders, including the government, private sector, educational institutions, and civil society. Additionally, adaptability to evolving technologies and global trends will be crucial in ensuring that India remains on the path of growth and leadership in the ever-changing world.

- 1. Economic Growth and Stability:** Social development and inclusivity ensure that economic growth is equitable and benefits all segments of society. When marginalized groups have access to opportunities, education, and resources, they can actively participate in the economy. This leads to a more robust and stable economic foundation, fostering India's status as a reliable and attractive investment destination.
- 2. Human Capital Development:** By focusing on social development, India can nurture its human capital effectively. Investing in education, healthcare, and skill development empowers the workforce, making them more productive and innovative. A skilled and healthy workforce is a critical asset for India's global leadership aspirations.
- 3. Fostering Innovation and Entrepreneurship:** Inclusive policies foster innovation by providing diverse perspectives and ideas. When individuals from different backgrounds and regions have equal access to opportunities, they can contribute unique insights, leading to a more vibrant and dynamic innovation ecosystem. This fosters entrepreneurship, driving India's technological advancements and competitiveness on the global stage.
- 4. Strengthening Diplomatic Relations:** Demonstrating a commitment to social development and inclusivity enhances India's reputation on the international stage. It sends a positive message to other nations and can foster stronger diplomatic ties. Nations often prefer to collaborate with countries that prioritize the well-being of their citizens and address social challenges.
- 5. Peace and Stability:** Inclusivity and social development can reduce social disparities and minimize conflicts arising from inequality. A more harmonious and inclusive society is better equipped to handle internal challenges, which contributes to national stability. As a stable nation, India can effectively engage in global affairs and initiatives for promoting peace and cooperation.
- 6. Sustainable Development Goals (SDGs):** Social development and inclusivity are fundamental to achieving the United Nations' Sustainable Development Goals. By actively pursuing these goals, India can showcase its commitment to global welfare, positioning itself as a responsible global leader that addresses pressing global challenges.

7. **Cultural Diplomacy:** Inclusivity celebrates India's diverse cultures and traditions, fostering cultural diplomacy. Embracing diversity can lead to greater cultural understanding and cooperation with other countries, building stronger bonds and respect on the global stage.
8. **Soft Power Projection:** A socially inclusive and developed nation has a higher soft power quotient. Soft power refers to the ability to influence others through attraction and persuasion rather than force. By projecting its achievements in social development and inclusivity, India can enhance its soft power and become an inspirational model for other countries. In summary, social development and inclusivity are essential pillars in India's journey towards global leadership. They not only contribute to the country's internal growth and stability but also enhance its reputation and influence in the international community. By 2047, a socially developed and inclusive India can inspire the world and actively contribute to solving global challenges, earning its place as a global leader.

In the year 2047, India aims to emerge as a Vishwa Guru, a global leader that promotes peace, prosperity, and progress while embracing its rich cultural heritage and values. Here are some initiatives that India can undertake to achieve this vision of global leadership:

1. **Healthcare and Wellness:** India will prioritize healthcare and wellness initiatives, ensuring accessible and affordable healthcare for all its citizens. The country will also actively participate in global health efforts, contributing to research, disease prevention, and the development of life-saving medical treatments.
2. **Digital Transformation:** India will continue to embrace technology and innovation, promoting a digital-first approach across sectors. The country will encourage startups and digital entrepreneurs to create solutions for global challenges.
3. **Diplomacy and Peacekeeping:** India will play an active role in international diplomacy, seeking peaceful resolutions to conflicts and promoting cooperation among nations. The country will be a strong advocate for the United Nations and other global forums, contributing to peacekeeping missions and humanitarian aid.
4. **Cultural Diplomacy:** India will leverage its rich cultural heritage to foster better global understanding and appreciation. Initiatives like cultural exchanges, festivals, and cultural centers will be promoted to strengthen people-to-people ties between India and other nations.
5. **Inclusive Governance:** India will promote inclusive governance, where every citizen's voice is heard and considered. The country will uphold democratic

principles, ensuring transparency, accountability, and the protection of human rights.

6. Space Exploration: India will continue to advance its space exploration programs, contributing to scientific discoveries and space research. Collaborations with other space-faring nations will be pursued to jointly explore the frontiers of space.
7. Global Poverty Eradication: India will actively participate in global efforts to eradicate poverty and uplift the underprivileged. Sharing its successful poverty alleviation strategies, India will work with other nations to implement sustainable development goals.
8. Disaster Management and Humanitarian Aid: India will enhance its disaster management capabilities and extend humanitarian aid to nations in times of crises, reinforcing its commitment to global solidarity and support.
9. Cyber security and Data Protection: India will champion efforts to strengthen global cyber security and data protection measures, safeguarding the digital world from cyber threats and ensuring the responsible use of technology. Through these initiatives and a commitment to progress and peace, India aspires to be a guiding light, a Vishwa Guru, inspiring other nations towards sustainable development, inclusivity, and prosperity.

Vision Healthcare and Wellness

Vishwa Guru" or a global leader can be greatly enhanced by focusing on healthcare and wellness, especially concerning vision and eye care. Here are some initiatives that can contribute to India's global leadership in this domain:

1. Universal Eye Care Access: Implementing a comprehensive and accessible eye care system that covers all citizens, regardless of their socio-economic status, will be a crucial step. This can include establishing eye care centers and mobile clinics in rural and remote areas, where access to healthcare might be limited.
2. Technological Advancements: Investing in cutting-edge technology and research for eye care can lead to improved diagnosis, treatment, and surgical procedures. This will ensure that India stays at the forefront of medical advancements and attracts patients from around the world seeking top-notch eye care services.
3. Medical Tourism Promotion: Leveraging India's advanced healthcare facilities and skilled medical professionals, the country can actively promote medical tourism for eye-related treatments. Offering high-quality and cost-effective services to international patients can significantly boost India's reputation as a global healthcare destination.

4. **Telemedicine and E-health Initiatives:** Developing robust telemedicine platforms and e-health initiatives can help reach a broader population, including those in remote areas. Virtual consultations and remote monitoring of patients can improve access to eye care services and foster better patient outcomes.
5. **Research and Innovation:** Encouraging research and innovation in the field of ophthalmology will lead to the development of new treatments, medications, and assistive technologies for vision-related issues. Government and private sector collaboration can play a vital role in fostering research and bringing innovations to the market.
6. **Eye Health Education:** Promoting awareness about eye health and preventive measures will be essential in reducing the burden of avoidable blindness and visual impairments. Educational campaigns can focus on regular eye check-ups, eye protection, and healthy lifestyle habits to maintain good vision.
7. **Collaboration with Global Organizations:** Partnering with international organizations and research institutions will facilitate knowledge exchange, access to resources, and the adoption of best practices in eye care. Such collaborations can also open up avenues for joint research and training programs.
8. **Focus on Preventive Care:** Prioritizing preventive eye care through regular eye screenings in schools, workplaces, and communities can help detect and address vision issues early on, preventing further complications.
9. **Inclusive Approach:** Ensuring that eye care services are inclusive and cater to the needs of vulnerable populations, such as the elderly, children, and individuals with disabilities, will reflect positively on India's commitment to universal healthcare and global leadership. By taking these initiatives and prioritizing vision healthcare and wellness, India can strengthen its position as a global leader in healthcare and contribute significantly to the well-being of its citizens and the world at large.

Disaster Management and Humanitarian Aid

Disaster Management and Humanitarian Aid play a crucial role in helping India achieve its vision of becoming a "Vishwa Guru" (world leader) by 2047 and taking initiatives for global leadership. Here are some ways in which these efforts contribute to India's vision:

1. **Strengthening Resilience:** Disaster Management focuses on enhancing the country's ability to withstand and recover from natural and man-made disasters. By building resilient infrastructure, preparedness plans, and response mechanisms, India can ensure that its development progress is not

derailed by frequent disasters. A resilient nation can better handle crises and continue its progress towards global leadership.

2. **International Cooperation:** By actively participating in global humanitarian aid efforts, India can establish itself as a responsible and compassionate global player. Offering assistance to other countries during disasters fosters goodwill and strengthens diplomatic ties, positioning India as a reliable partner in the international community.
3. **Regional Influence:** Effective disaster management and humanitarian aid contribute to India's leadership role in the South Asian region. As neighbouring countries often face similar challenges, India can provide expertise, resources, and support, earning the trust of its neighbours and becoming a regional leader.
4. **Innovation and Expertise:** By investing in disaster management research, technology, and training, India can become a hub of expertise in this field. This expertise can then be shared with other countries facing similar challenges, positioning India as a knowledge leader and a go-to resource for disaster management solutions.
5. **Addressing Global Challenges:** Through humanitarian aid initiatives, India can contribute to addressing global challenges, such as poverty, hunger, health crises, and climate change. Active involvement in tackling these issues demonstrates India's commitment to being a responsible global leader.
6. **Fostering National Unity:** Disaster management and humanitarian aid efforts often require coordination and collaboration among various government agencies, NGOs, and citizens. These endeavours can foster a sense of national unity and pride in contributing to the well-being of fellow citizens and the global community.

Overall, Disaster Management and Humanitarian Aid initiatives can significantly contribute to India's vision for 2047 as a Vishwa Guru by showcasing its leadership, compassion, and capability to address global challenges, thereby strengthening its position on the world stage.

Conclusions

Re-envisioning India @ 2047: Initiatives for Global Leadership" outlines a bold and ambitious roadmap for India to become a global leader in various spheres by the year 2047. This vision envisions India not only as an economic powerhouse but also as a nation that leads in promoting peace, sustainability, innovation, and social progress on the global stage. Through a multifaceted approach, India seeks to harness its demographic dividend, rich cultural heritage, and technological prowess

to address the challenges and opportunities of the 21st century. This involves investing in education, research, and development to foster innovation and build a highly skilled workforce capable of driving cutting-edge industries.

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INDIA IN TRANSIT TO DECARBONIZATION - A FUTURE PERSPECTIVE



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India in Transit to Decarbonization – A Future Perspective

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CO/CR LAYERED DOUBLE HYDROXIDE AND ITS ENHANCED PHOTO CATALYTIC ACTIVITY ON *para*- NITRO PHENOL DEGRADATION UNDER SOLAR LIGHT IRRADIATION

K. Poonkodi*, K. Vimaladevi, V. Prabhu, M. Anusuya, M. Velayutham Pillai and Vivin. K.S

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ABSTRACT:

In recent years, environmental pollution caused by synthetic dyes has become a significant concern, highlighting the need for efficient and sustainable wastewater treatment methods. Photocatalysis using layered double hydroxides (LDHs) has emerged as a promising approach due to its cost-effectiveness and potential for utilizing solar energy. This study focuses on the synthesis and characterization of a novel Co/Cr LDH photo catalyst and investigates its photocatalytic activity on the degradation of Malachite Green (MG) dye under solar light irradiation. The Co/Cr LDH photocatalyst was synthesized through a facile and environmentally friendly co-precipitation method, and its structural properties were analyzed using XRD, SEM and EDX characterization techniques. The results revealed a well-defined layered structure and a high surface area, which are favorable for efficient photocatalysis. Photodegradation experiments were conducted under solar light irradiation, and the results demonstrated that the Co/Cr LDH exhibited significantly enhanced photocatalytic efficiency in degrading *para* nitro phenol surpassing conventional catalysts. The enhanced photocatalytic activity of Co/Cr LDH can be attributed to its unique electronic structure and high charge carrier mobility, which promotes the generation of reactive species for efficient dye degradation. Overall, this study highlights the potential of Co/Cr LDH as an effective and sustainable photocatalyst for the removal of *para* nitro phenol and potentially other organic pollutants from wastewater using solar energy, contributing to the advancement of green technologies for environmental remediation.

Keywords: Co/Cr LDH, photo catalyst, *para*-Nitro Phenol dye and catalyst dosage

INTRODUCTION:

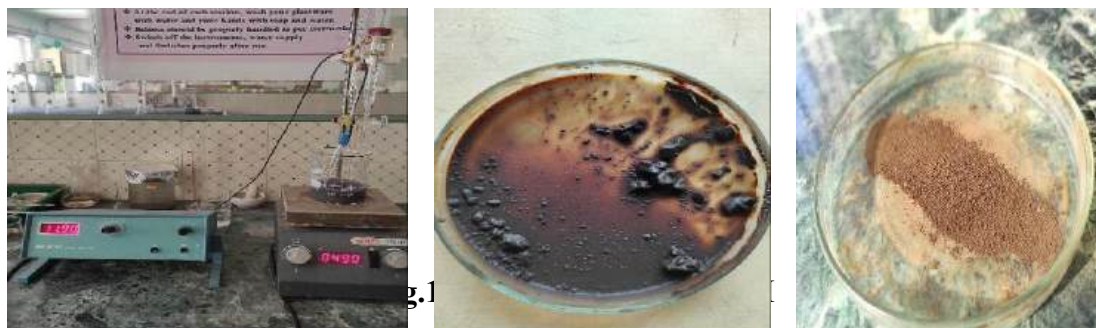
In recent years, the increasing global concern over environmental pollution and the need for sustainable energy solutions has driven extensive research in the field of advanced photocatalytic materials. Among these materials, Layered Double Hydroxides (LDHs) have gained considerable attention due to their unique structural features and excellent photocatalytic properties. LDHs are an intriguing class of layered inorganic materials consisting of positively charged metal hydroxide layers with intercalated anions, providing a promising platform for various applications, including wastewater treatment. One particularly significant application of

LDHs is in the degradation of organic dyes, which are commonly found in industrial effluents and pose a significant threat to aquatic ecosystems and human health. Among these dyes, para-nitrophenol is harmful to aquatic life and may cause long-term damage to aquatic ecosystems. It can enter water bodies through industrial discharges, runoff, or improper disposal, leading to contamination of water sources and adversely affecting aquatic organisms. Hence, the development of efficient and eco-friendly photocatalysts for para-nitrophenol degradation has become a pressing need. In this context, the combination of LDHs with metal cocatalysts has demonstrated remarkable potential in enhancing photocatalytic performance. Co/Cr Layered Double Hydroxide, in particular, has emerged as a promising candidate for photocatalytic applications. The incorporation of cobalt and chromium in the LDH structure introduces synergistic effects, leading to improved charge separation, extended light absorption, and enhanced photocatalytic activity. Furthermore, the earth-abundant nature of cobalt and chromium elements adds to the environmental sustainability of this photocatalyst. Solar light, being an abundant and renewable energy source, presents an excellent opportunity for harnessing photocatalytic processes [1-5]. By utilizing solar light irradiation, Co/Cr LDH-based photocatalysts can achieve efficient and cost-effective degradation of MG dye, making them a viable green technology for large-scale wastewater treatment applications. In this study, we present a comprehensive investigation of Co/Cr Layered Double Hydroxide and its exceptional photocatalytic activity in the degradation of Malachite Green dye under solar light irradiation. We explore the synthesis methods, structural characteristics, and optical properties of Co/Cr LDH, and examine the factors influencing its photocatalytic efficiency. Additionally, we assess the reaction kinetics, degradation mechanism, and the potential for reusability of the photocatalyst, aiming to shed light on the practical application of Co/Cr LDH-based materials for sustainable and effective water purification. Overall, this research contributes valuable insights into the development of high-performance photocatalytic materials and brings us closer to a cleaner and healthier environment through advanced solar-driven wastewater treatment technologies.

MATERIALS AND METHODS

Synthesis Of Co/Cr LDH

A facile coprecipitation route was employed for the synthesis of Co/Cr LDH. First an aqueous solution containing $(\text{Co}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O})$, $(\text{Cr}(\text{NO}_3)_3 \cdot 9\text{H}_2\text{O})$ was prepared by taking the mole ratio of the nitrate salts as 2:1 respectively. With above prepared solution, mmol NaOH was added drop wise with vigorous stirring until the pH reaches 12. After which, the mixture was stirred at room temperature for 6 hours. Finally, the obtained precipitate was filtered and washed thoroughly with deionized water and methanol. Subsequently, the Material was dried. To investigate the effect of para-nitrophenol degradation, the Para- nitro phenol (1000ppm) dye was prepared, the dye (100ppm) and catalytic dosage of Co-Cr LDH (50mg) also kept as constant with varying time optimum (0,30, 60,90 and 120min).



Results and Discussions

XRD analysis

X-ray diffraction characterization was carried out in order to confirm the structure and the phase purity of Co/Cr LDH. The XRD pattern presents the expected profile for LDH-type compound. The intense peaks at low diffraction angles ($2\theta = 10.65^\circ, 20.02^\circ, 23.14^\circ$) are indexed to the basal planes (003), (006) and (009).¹⁹ An interlayer separation of 0.76 nm can be calculated from the (003) peak at 10.65° , indicating that CO_3^{2-} ions and water molecules may occupy the interlayer space[5-8].

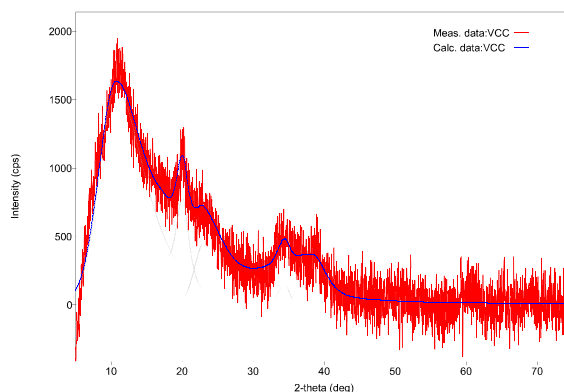
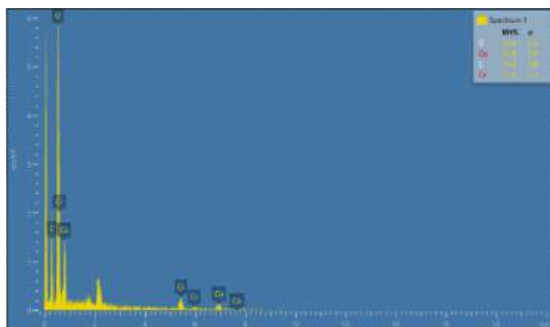


Fig.2 XRD analysis of Co/Cr LDH



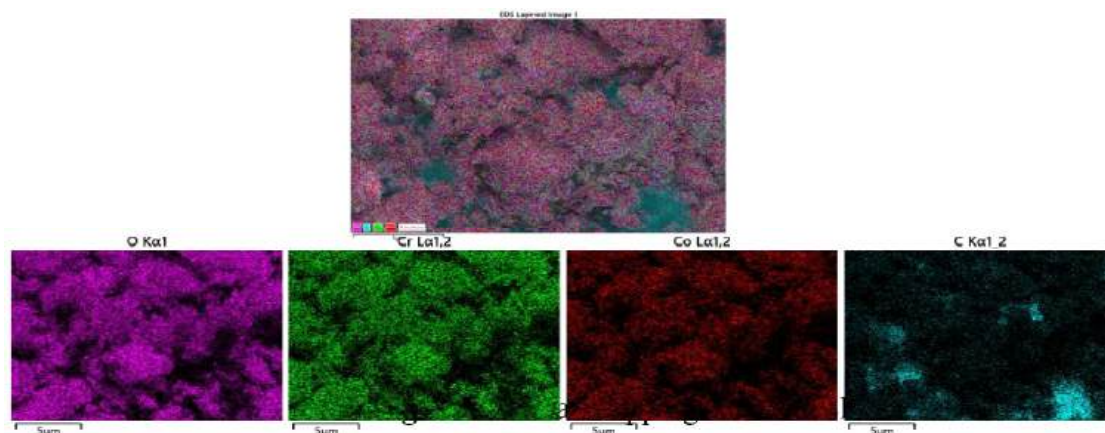
Element	Wt%	Atomic %
C	18.21	34.23
O	32.65	46.07
Cr	17.37	7.54
Co	31.76	12.17
Total:	100.00	100.00

Table 1. Elemental composition of Co/Cr LDH

Fig.3.EDX Analysis of Co/Cr LDH

EDX analysis

The chemical composition of the prepared samples was analyzed using EDX, and the corresponding spectra are displayed in Fig. 3. The presence of Co, Cr, C, and O peaks in the EDX spectrum indicates the high purity of the synthesized Co/Cr LDH, with no detectable peaks related to other elements, an additional C peak is observable alongside the Co/Cr LDH peaks, confirming the successful synthesis of LDH nanocomposites. The relatively weak intensity of the C peak in the EDS spectra of the nanocomposites can be attributed to the low molar ratio of the carbonous materials used in the nanocomposite synthesis. EDX analysis of the elemental composition (Fig.3) showed that as prepared sample had a cobalt and chromium content ratio of 3/1, corresponding to the initial reaction processing. It can be attributed to the expansion of the structure and the growth of gaps in the modified sample. Elemental mapping from EDX analysis of the elemental composition (Fig.4) showed that nanocomposite had a cobalt and chromium throughout the phase corresponding to the initial reaction processing. It can be attributed to the expansion of the structure and the growth of gaps in the modified sample.



FESEM Analysis

The surface characteristics of two samples, Co/Cr-LDH was studied using scanning electron microscopy (SEM) and energy-dispersive X-ray spectroscopy (EDX). From Fig. 5, it was observed that unmodified Co/Cr-LDH0.6M, 90°C exhibited hexagonal nanoplates. The SEM analysis estimated the average particle size to be approximately 100–150 nm for Co/Cr-LDH nanostructures. The results indicated that the average particle size decreased after modification with sodium stearate, which coincided with the crystal size obtained from X-ray diffraction (XRD) data. This reduction in particle size can be attributed to the influence of organic groups on the structure's stability. Notably, the particle size obtained from SEM analysis was found to be higher than the crystal size calculated from XRD, which can be explained by the coalescence of LDH crystallites leading to hexagonal nanoplates with lower Gibbs free energy.

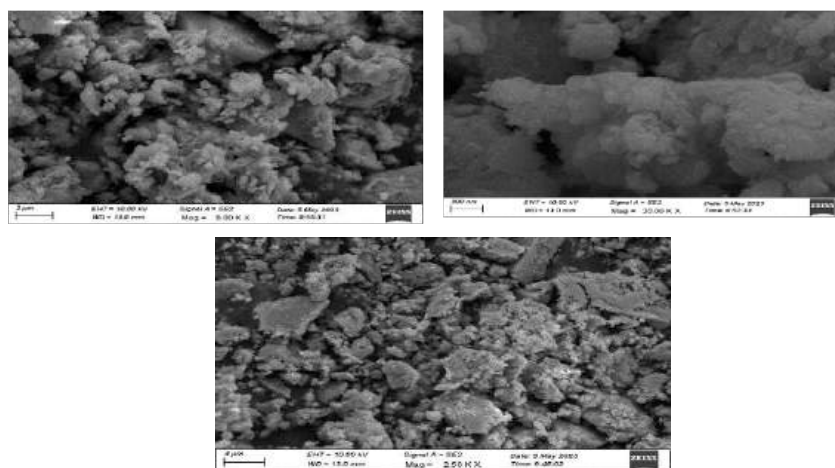


Fig.5. FESEM analysis of Co/Cr LDH

Photocatalytic Studies By UV- Visible Spectroscopy

To investigate the effect of para-nitrophenol degradation, the concentration of the Para-nitrophenol(1000ppm) dye was held constant at an optimum value in each case (100ml 100ppm), and the dose of Co-Cr LDH (50mg) also kept as constant. The photocatalytic activity of the prepared samples was measured as a function of the degradation of the para- nitrophenol degradation. All measurements were performed under the same conditions. Detailed absorption spectra of the degradation process are shown in Figure.

Dye and catalyst were sonicated for 30minutes in order to disperse the catalyst. Then, for a variable period of time (0, 30, 60, 90 and 120 minutes), it was kept in solar light absorbance.

After 90 minutes, Co-Cr LDH destroys 77% of para nitrophenol. The results showed that as prepared Co-Cr LDH is a efficient photocatalyst which will be very useful for efficient degradation of organic dyes due to its large band gap. Photo-induced charge carriers in Co-Cr LDH nanoparticles can be activated by absorbing UV light from sunlight exposure and initiated the photoelectrochemical reaction for the decomposition of organic molecules and their visible light sensitivity and lifetime of charge carriers increases significantly which enhances their photocatalytic activity. Figure 6 depicts the photodegradation behavior of Co-Cr sample.

The degradation ability depends on factors such as morphology and the preparation techniques employed. The chemical properties of the added components help in the formation of a heterojunction Co-Cr leading to an increase in the efficacy of the final catalyst towards the degradation of dyes. The Co-Cr based nanomaterials show great degradation activity towards organic dyes and toxic pollutants. This area of study offers significant opportunities for fabricating excellent photocatalysts to affect the degradation of organic pollutant dyes from various sources.

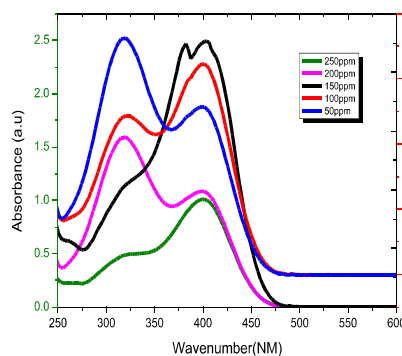


Fig.6.UV - visible spectrum of photocatalytic degradation

Conclusions:

In summary, we have successfully developed a novel 2D Co/Cr layered double hydroxide using a direct co-precipitation method. The resulting composite material was characterized by XRD, FESEM and UV-DRS and photocatalytic degradation was performed against para nitro phenol which significantly improved photocatalytic efficiency, achieving up to 77% dye removal. This enhanced photocatalytic activity is attributed to the synergistic effects between the Co and Cr layered double hydroxides, as well as the cake-like porous nanocomposite, which have been confirmed through various characterization techniques. The formation of superoxide and hydroxide radicals, evident through the use of radical scavengers, plays a significant role in converting the para nitro phenol to para quinone. Ultimately, the results indicate that the sunlight-driven Co/Cr LDH nanocomposite shows promising potential for various applications.

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PERSPECTIVE OF ICT TOOLS IN EDUCATION

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A REVIEW ON ROLE OF TEACHERS IN BLENDED LEARNING-ITS CHALLENGES AND LEARNING OUTCOMES

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Abstract

Blended learning is becoming more and more popular in higher education as a result of the quick growth of information technology. Blended learning, which blends in-person and online instruction, gives students access to timely, ongoing, and flexible learning options. It improves the e-learning activities' engagement, aids students in learning more deeply, and encourages their independent and group learning. Blended learning can significantly improve student learning while also lowering the cost of instruction when it is effectively designed and implemented. However, there are still certain issues with the application of blended learning. It is a widespread complaint among university teachers that if an online component of a blended course is not required, many, if not most, of the students do not actively participate in it. The adoption of the e-learning system by college students in required blended learning contexts was our main focus as a result. In this review, the importance of blended learning, its implications challenges and learning outcomes of students were discussed.

Keywords: *blended learning, challenges and learning outcomes*

Introduction

In view of this scientific shift, the education sector has assimilated the application of ICTs in education resulting in the establishment of e-learning platforms (Lee, 2010). Competitive global institutions of higher education were under significant pressure to expand their delivery of courses through e-learning platforms such as Moodle or Blackboard. Past studies have shown the adaptation of e-learning to be effective in connecting people and resources, facilitating active learning, deepening understanding, enhancing critical thinking skills as well as promoting creative communication (Romero-Frias et al., 2013; Khan et al., 2012).

The introduction, administration, and ongoing improvement of blended learning in higher education depend greatly on the successful application of the e-learning system. Universities in the twenty-first century are still undergoing quick socioeconomic and technical developments. Universities are being urged by these shifts to thoroughly review their instructional strategies from a fresh viewpoint and to prepare for the problems that a knowledge-based society will present. The need for more "client" responsive and flexible courses; the push to use information and communication technology (ICT) in teaching and administration are a few of these challenges. There is a large population of students with a variety of needs, motivations, abilities, learning preferences, time availability, and course

content requirements (Challis, Holt&Rice, 2005). Academic leaders in higher education must rethink organizational structures, operational tactics, and regulations fit for the current digital age in order to meet these difficulties.

However, as there is a growing need for qualified teachers, e-learning platforms continue to grow. For the future development of their institutions as well as the development of young minds, well-established universities and developing institutions must hire knowledgeable teachers and train them effectively.

To address the complexity of ICT integration in higher education, this paper attempts to explore the pedagogical use of ICT in a blended learning context. The exploration is focused on the experiences of teachers and students, and guided by two research questions: What are the students' and teachers' experiences in engaging with different blended learning modes? What are the teaching approaches involved in blended learning across disciplines?.

ICT Implementation in Higher Education

ICT implementation in higher education is not a simple technological adoption, but involves the consideration of a number of issues, such as infrastructure, pedagogical practices, obstacles, student learning, organizational culture, organizational structures, operational strategies, and appropriate policies (Duderstadt, Atkins & Houweling, 2002; Guri-Rosenblit, 2005). There is a need to relate the normative interpretations of the potential effects of ICT on teaching and learning in higher education to the empirical realities that higher education institutions are facing (Stensaker, et al., 2007) because "successful technology integration is a sociological issue" and "appropriate use of technology in teaching requires the thoughtful integration of content, pedagogy, and technology" (Mishra, Koehler & Zhao, 2007, pp. 1-2).

Blended Learning

Information and communication technologies based on the internet have created new opportunities in higher education. Most colleges now provide some coursework online, and some have even transformed entire degree programmes to be fully accessible online (Ward, Peters, & Shelley, 2010). Today, distance learners have access to a variety of online materials and can study at their own speed while working together with other students rather than alone. Web-based learning modules by their very nature provide the adaptability of self-directed learning and the chance to depart from teacher-directed methods of instruction. Many instructional design approaches are available to help with course design, but for a well-designed, student-centered course, alignment between learning objectives, assessment methods, and instructional activities is crucial (Rubin, 2013).

LMS for Blended Learning

Online learning has grown in favour as a practical and adaptable substitute for conventional brick-and-mortar academic methodologies due to the abundance of web applications. Today, educational courses are delivered to students via a variety of

electronic distance media without regard to their physical location or available time. Online technologies for synchronous and asynchronous communication and collaboration offer learning opportunities that are adaptable and sensitive to the needs, learning preferences, and backgrounds of learners. There is no discernible difference in learning results between traditional face-to-face learning in higher education and online training, according to study comparing their efficacy (U.S. Department of Education, 2010)

Blended Learning is Facilitated through LMS Software

Campuses have embraced LMSs, such as Blackboard and Moodle, for their features for content development, communication, evaluation, and administration in order to allow online, onsite, and hybrid courses (Pia, 2010). LMSs compile and deliver learning information quickly, customize content, and enable knowledge re-use in addition to centralizing and automating administrative duties including creating and managing user accounts, preparing syllabi and assignments, grading, etc. (Ellis, 2009). Teachers can design and maintain a learning structure or sequence in an LMS environment, load and replace resource files, manage access to resources, plan and facilitate group activities, monitor learner activity, alter learning sequences, mark assignments, and offer feedback. Using sophisticated relational database software based on data independence, such as Oracle, Microsoft SQL, or MySQL, which place an emphasis on security, connectivity, and data independence, LMSs include different login roles (instructor, student, and guest) that enable the instructor to communicate privately with one student or form teams and discussion groups with various profiles (Kats, 2010).

Students can connect with professors and peers, submit assignments, and access learning materials like papers, spreadsheets, PowerPoint presentations, hyperlinks, audio, and video of lectures through LMS platforms. Both synchronous and asynchronous LMS platforms can support all of the social and collaborative features of blended learning. Tools that are asynchronous (not in real-time) include email, calendars, wikis, blogs, and threaded discussion forums.

Implications of Blended Learning

Teaching in blended learning environments is a challenging process that, among other responsibilities, calls for constant observation of students' comprehension and engagement with the online course material. By analysing data about how students are interacting with the online environment, learning analytics give teachers the tools they need to better educational results. Different levels of autonomy, collaboration, and online technology can allow various blended learning methodologies, but the goal of learning analytics is to enable deeper understanding and better decision.

Role of Teachers in Online mode of Teaching

Nevertheless, the e-learning modes continues to expand as there is augmenting demand for proficient instructors. The developing institutes or well established universities has to appoint knowledgeable instructors and train them efficiently for future

growth of institutes as well as young minds (Gregory and Lodge, 2015; Alvarez et al., 2009). Today, the online mode of teaching, research is opted. Hence, much skilled and effective instructor appointment is initiated for teaching several online courses.

Learning Outcomes and Challenges

The online environment of the teaching and learning process expedites various challenges to educators. The major problem faced is the acclimatizing practice to the latest digital mode of teaching-learning environment (Mills, 2015). In accordance to Fletcher and Bullock (2015), the online mode of teaching is certainly a challenge for teacher educators as they have to create a positive relationship between the teacher and student which encourage attention, interest along with concentration in students to learn more from educators.

Conclusions

It's not always simple to create a blended learning course that is effective. There is a considerable demand for monitoring and tracking students' social media platforms to connect in addition to the need to address technology requirements, choose the best content to offer, or build an engaging collection of classroom and online activities. Instructors can track student progress and develop interventions by extracting and analyzing LMS usage data from their log files. The implementation of blended teaching also required technology and a learning teacher community, age old teachers suffer or lack of the technical knowledge, before implementing this points also to be considered.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

Volume - 1

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EMPOWERING MSMEs WITH SCIENTIFIC INNOVATION AND TECHNOLOGY: A CATALYST FOR SUSTAINABLE GROWTH

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Abstract

Micro, Small, and Medium Enterprises (MSMEs) play a pivotal role in driving economic growth and employment generation in emerging economies. To enhance their competitiveness and sustainability, it is imperative to equip MSMEs with the latest scientific knowledge and technology. This article explores the strategies and mechanisms to empower MSMEs through targeted knowledge dissemination and technology adoption. By fostering collaboration between MSMEs and research institutions, providing access to cutting-edge scientific advancements, and offering tailored training programs, this approach enables MSMEs to harness the transformative power of technology. The article highlights case studies and best practices to illustrate the tangible benefits that accrue from this empowerment, including increased productivity, enhanced product quality, and improved market access. Ultimately, empowering MSMEs with scientific knowledge and technology not only fortifies their capacity for innovation and growth but also contributes to the overall economic resilience and competitiveness of the broader industrial landscape. This article serves as a roadmap for policymakers, industry stakeholders, and academia to strategically leverage the potential of MSMEs in driving sustainable economic development.

Keywords: MSME, Empowerment, Technology, Innovation and sustainable Growth

Introduction

In the dynamic landscape of global commerce, Micro, Small, and Medium Enterprises (MSMEs) have emerged as the lifeblood of economies worldwide. In India, they form the backbone of industry, contributing significantly to employment, innovation, and economic output. However, in an era defined by rapid technological advancements and an increasing focus on sustainability, the empowerment of MSMEs with scientific knowledge and cutting-edge technology has become not just an advantage, but an imperative[1].

This article embarks on a journey into the realm of MSMEs, illuminating the transformative potential that arises when scientific acumen converges with technological prowess. We delve into the pivotal role that this synergy plays in enhancing the competitiveness, resilience, and sustainability of these enterprises. From adopting eco-friendly practices to harnessing the power of data-driven insights, the infusion of scientific knowledge and technology not only catapults MSMEs into the forefront of industry but also aligns them with the ethos of a rapidly evolving global marketplace. Join us as we navigate through a landscape where innovation is not a luxury but a lifeline, where scientific knowledge is not confined to laboratories but is wielded on factory floors and in

storefronts. Through a series of insightful analyses and compelling case studies, we will unveil the tangible benefits and unprecedented opportunities that await MSMEs on this transformative trajectory. In the following sections, we will explore key strategies, success stories, and the far-reaching impact of empowering MSMEs with scientific knowledge and technology. From sustainable practices that mitigate environmental impact to data-driven insights that refine operational efficiency, this article aims to shed light on a paradigm shift that promises to not only redefine the trajectory of MSMEs but also shape the economic destiny of nations. This strategy is pivotal in enhancing their competitiveness, resilience, and contribution to economic and environmental well-being. Here are the key strategies within this approach. Empowering MSMEs (Micro, Small, and Medium Enterprises) involves leveraging various scientific disciplines and technologies to enhance their capabilities, productivity, and sustainability. Here are some key areas of science involved in empowering MSMEs[3]:

Technology Transfer

Engineering and Technology Sciences: This includes fields like mechanical engineering, electrical engineering, and materials science. These disciplines help in transferring cutting-edge technologies to MSMEs, enabling them to improve their production processes and product quality.

Information Technology

Computer Science and Information Technology: These fields are fundamental in enabling MSMEs to leverage digital technologies, such as cloud computing, data analytics, and automation, to streamline operations, improve decision-making, and enhance competitiveness.

Environmental Science and Sustainability

Environmental Sciences: Understanding environmental impact assessments, pollution control, waste management, and sustainable practices are crucial for MSMEs to operate in an eco-friendly manner.

Energy Efficiency and Renewable Energy

Energy Sciences and Engineering: This encompasses the study of energy systems, renewable energy technologies (solar, wind, biomass), and energy-efficient practices. Implementing energy-saving measures and adopting renewable energy sources can significantly reduce operational costs for MSMEs.

Biotechnology

Bioprocessing and Biomanufacturing: Biotechnology plays a role in various industries, including pharmaceuticals, food processing, and biofuels. MSMEs can benefit from advances in bioprocessing technologies to develop sustainable and innovative products.

Quality Assurance and Control

Metrology and Quality Control: These disciplines ensure that products meet specified quality standards through precise measurement techniques and quality control processes.

Automation and Robotics

Mechatronics and Automation Engineering: Automation technologies involving robotics, artificial intelligence, and machine learning can help MSMEs optimize production processes, increase efficiency, and reduce human error.

Nanotechnology

Nanoscience and Nanotechnology: This field deals with materials and processes at the nanoscale, offering opportunities for innovation in areas like electronics, healthcare, and materials science.

Data Analytics and Business Intelligence

Analyzing large datasets can provide valuable insights for decision-making, market research, and process optimization within MSMEs.

By leveraging these scientific disciplines, MSMEs can drive innovation, improve operational efficiency, enhance product quality, and contribute to sustainable economic development. Integrating science into their operations enables MSMEs to compete on a global scale and adapt to evolving market demands.

Technology Transfer and Adoption

Collaborative Partnerships: Facilitate collaborations between MSMEs and research institutions, universities, and technology providers. Foster a culture of innovation and knowledge-sharing to promote the adoption of cutting-edge technologies. **Technology Assessment and Feasibility Studies:** Provide support for MSMEs to assess the suitability, feasibility, and potential benefits of adopting specific technologies. This could include conducting pilot projects and feasibility studies. **Innovation Grants and Subsidies:** Offer financial incentives to MSMEs for the adoption and integration of innovative technologies that align with sustainable development goals[4].

Customized Technical Assistance

Technical Advisory Services: Establish expert panels or consultancy services that provide customized technical advice to MSMEs. This could cover areas like process optimization, resource efficiency, and technology selection. Conduct comprehensive assessments of MSME operations to identify areas where technological interventions can lead to improved sustainability, productivity, and profitability.

Market Intelligence and Trends

Technology Watch Programs: Monitor and analyze global and local trends in technology and sustainable practices. Provide regular updates to MSMEs to keep them informed about emerging opportunities and potential disruptors. **Market Research and Demand Analysis:** Conduct studies to understand market demands for sustainable products and services. Equip MSMEs with market intelligence to align their offerings with evolving customer preferences[5].

Intellectual Property Rights (IPR) Support

IPR Workshops and Clinics: Organize workshops and clinics to educate MSMEs about the importance of intellectual property rights, including patents, copyrights, and trademarks. Provide guidance on how to protect and leverage their innovations. **Assistance in Patent Filing and Protection:** Offer support in the process of filing for patents and protecting intellectual property, including assistance in drafting applications and navigating legal procedures. By implementing these strategies, MSMEs can be transformed into dynamic engines of sustainable growth, leveraging scientific knowledge and technology to enhance their operational efficiency, reduce environmental impact, and contribute to the overall economic and ecological well-being of the nation[6].

Conclusions

Empowering the Micro, Small, and Medium Enterprises with scientific innovation and technology stands as a potent catalyst for sustainable growth. This integrated approach capitalizes on a diverse range of scientific disciplines to revolutionize the operational landscape of MSMEs. The infusion of technology drives efficiencies across various sectors, fostering a culture of competitiveness and adaptability. Moreover, it positions MSMEs as dynamic players in the global economic ecosystem, capable of leveraging their newfound capabilities on an international scale. The path forward lies in a continued commitment to nurturing this union of science, technology, and MSMEs, as it holds the promise of a brighter, more sustainable future for economies and societies around the globe.

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ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT

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Chief Editor
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GREEN TECHNOLOGIES FOR A SELF-RELIANT INDIA: A SUSTAINABLE DEVELOPMENT AGENDA

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Abstract

This paper examines the pivotal role of green technologies in propelling India towards self-reliance and sustainable development. It explores the integration of environmentally conscious practices and innovative technologies as a cornerstone for achieving economic autonomy while mitigating environmental impacts. Through a comprehensive analysis of policy frameworks, technological innovations, and case studies, this study outlines strategies to foster a green technology-driven paradigm in India's pursuit of self-reliance. The study employs an interdisciplinary approach, combining insights from environmental science, engineering, and policy analysis to provide a multifaceted understanding of this transformative agenda. Commencing with an overview of India's evolving green technology landscape, the paper evaluates the progress made in renewable energy adoption, energy-efficient practices, and eco-friendly manufacturing processes. It underscores the critical importance of technological innovation in enhancing resource efficiency, reducing emissions, and fostering a more sustainable industrial ecosystem. It concludes by presenting recommendations for policy refinement and strategic interventions to further advance India's sustainable development agenda through the integration of green technologies.

Keywords: *Green technologies, self-reliance, sustainable development, renewable energy, resource efficiency, environmental impact.*

Introduction

In an era marked by environmental challenges and the imperative for self-reliance, the fusion of innovative green technologies with India's ambitious development goals emerges as a pivotal strategy. This paradigm shift towards sustainable practices not only underscores India's commitment to ecological stewardship but also lays the foundation for a self-sustaining and resilient future. As the global community grapples with the urgency of mitigating climate change, this concerted effort resonates far beyond national borders [1]. The pursuit of a greener, self-reliant India is rooted in a strategic vision that combines cutting-edge technological advancements with age-old wisdom in harnessing natural resources. From renewable energy systems to waste management solutions, and from sustainable agriculture practices to eco-friendly transportation, this transformative agenda is multifaceted and dynamic. It exemplifies a holistic approach towards not only fostering economic growth but also preserving the fragile ecosystems upon which our collective well-being depends [2].

This introduction sets the stage for an enlightening exploration of the vital role played by green technologies in India's journey towards self-reliance. By integrating both established and emerging green technologies into the fabric of India's developmental landscape, we envision a future where economic prosperity is indelibly intertwined with environmental integrity. In the pursuit of self-reliance and sustainable development, nations worldwide are

increasingly turning towards green technologies as a cornerstone of their economic and environmental policies. India, with its burgeoning population and rapidly expanding economy, stands at the forefront of this paradigm shift [3]. As the country strives for self-sufficiency across various sectors, from energy to agriculture and transportation, the integration of green technologies emerges as a potent strategy for achieving these ambitious goals. Green technologies encompass a wide array of innovative solutions designed to minimize environmental impact, conserve resources, and promote sustainable practices across industries. These technologies range from renewable energy sources, such as solar and wind power, to energy-efficient building designs, waste recycling systems, and low-emission transportation solutions. The implementation of such technologies not only mitigates environmental degradation but also fosters economic growth, job creation, and improved quality of life for citizens [4-8]. This paper delves into the pivotal role of green technologies in India's journey towards self-reliance and sustainable development. Through an exploration of cutting-edge research and case studies, we will highlight the transformative potential of these technologies across various sectors. Additionally, we will elucidate the socio-economic and environmental benefits that can be harnessed through their widespread adoption. Below is the list of policies adopting for sustain.

Promoting Renewable Energy Adoption

This strategy focuses on accelerating the transition towards renewable energy sources, including solar, wind, and biomass. Incentives, policy frameworks, and technological advancements in energy storage will be explored to bolster India's energy independence and reduce reliance on fossil fuels [9-10].

Advancing Sustainable Agriculture Practices

This section outlines the importance of sustainable agricultural practices in achieving food security and economic self-reliance. Precision farming techniques, organic farming, and agro ecology will be examined as key strategies to enhance agricultural productivity while minimizing environmental impacts.

Facilitating Circular Economy Initiatives

Circular economy principles, including recycling, reusing, and reducing waste, will be evaluated as essential components of a self-reliant economic model. Strategies to incentivize and support industries in adopting circular practices will be discussed.

Encouraging Innovation and Research in Green Technologies

This strategy emphasizes the need for robust research and development in green technologies. Support for startups, collaborations between research institutions and industries, and funding mechanisms will be analyzed to foster a culture of innovation in sustainable technologies [6].

National Action Plan on Climate Change (NAPCC)

A comprehensive framework launched in 2008, focusing on various sectors including solar energy, water, agriculture, and sustainable transportation.

Renewable Purchase Obligation (RPO)

Government enforces the mandates a specific percentage of energy generation to come from renewable sources, incentivizing the adoption of green technologies in the power sector.

FAME India Scheme (Faster Adoption and Manufacturing of Hybrid and Electric Vehicles)

Encourage the adoption of electric vehicles (EVs) and hybrid vehicles to reduce vehicular emissions and dependence on fossil fuels.

Smart Cities and Green Urban Planning

Developing urban centers with a focus on green infrastructure, efficient public transportation, and sustainable building practices to create livable and environmentally-friendly cities. This paper provided a comprehensive overview of the policies and strategies driving India's green technology agenda towards self-reliance and sustainable development. Through a critical analysis of these initiatives, it seeks to evaluate their impact and effectiveness in achieving the envisioned goals.

Conclusions

The confluence of green technologies and India's pursuit of self-reliance presents a formidable opportunity to shape a future that is both economically vibrant and ecologically sound. By prioritizing the adoption of renewable energy, sustainable agriculture, circular economy practices, and fostering innovation, India can forge a path towards a self-reliant paradigm that serves as a beacon for sustainable development globally. This paper advocates for a concerted effort in policy formulation, technological innovation, and collaborative partnerships to realize this vision, ultimately leading India towards a more resilient, self-reliant, and sustainable future. It concludes by offering recommendations for policy refinement and future trajectories to bolster India's resilience and self-reliance in the face of evolving global dynamics.

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IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

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IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

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THE IMPLEMENTATION OF THE NEW EDUCATION POLICY: A REVIEW OF ITS IMPACT ON TEACHERS AND STUDENTS

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Abstract:

The New Education Policy (NEP) is a comprehensive reform initiative aimed at transforming the education landscape in a country. This review critically examines the implementation of the New Education Policy and its repercussions on both teachers and students.

The review analyses the key components of the NEP, including changes in pedagogical practices, curriculum restructuring, assessment methods, teacher training, and the integration of technology in education. Additionally, it explores the challenges faced during the policy implementation process and the strategies employed to overcome them.

To understand the impact on teachers, the review delves into the changes in their roles and responsibilities, professional development opportunities, and attitudes towards the policy reforms. Furthermore, it evaluates the effectiveness of the new teacher evaluation systems and the overall job satisfaction among educators.

Regarding students, the review investigates the adjustments required in their learning approaches, curriculum preferences, and performance trends post-NEP implementation. It also assesses the inclusivity and accessibility of education for diverse student populations, including those from marginalized backgrounds.

The review draws from a comprehensive range of primary and secondary sources, including official policy documents, research studies, academic papers, and interviews with stakeholders such as teachers, students, policymakers, and education experts.

The findings of this review highlight both the positive and negative aspects of the NEP's implementation on teachers and students. It underscores the importance of continuous evaluation and improvement in the policy's execution to ensure its long-term success in fostering a more effective and inclusive education system.

The review also discusses potential future implications and provides insights for policymakers, educators, and researchers to inform further advancements in education policy and practice.

Keywords: New Education Policy, Impacts, Challenges, opportunities and outcomes

Introduction:

Education plays a pivotal role in shaping the future of individuals and societies.

Recognizing the need for a transformative overhaul of the existing education system, many countries have adopted new education policies to meet the evolving demands of the 21st century. In this review, we will delve into the implementation of the New Education Policy (NEP) and its profound impact on both teachers and students.

Historical Perspective of National Education Policies in India:

Since its independence, India has witnessed the formulation of several NEPs, each designed to address the prevailing educational challenges and meet the changing socio-economic demands. From the first NEP in 1968 to the latest policy in [current year], these policies have sought to create a more inclusive, equitable, and relevant education system.

Reforms and Innovations in the Education Sector:

The successive NEPs have introduced several transformative reforms and innovations in the education sector. These reforms encompass various aspects of education, such as curriculum design, pedagogical approaches, assessment methods, teacher training, and technology integration.

1. **Curriculum Revisions:** NEPs have regularly updated and revised the curriculum to reflect contemporary knowledge and real-world applications. The shift from rote learning to conceptual understanding and critical thinking has been a central objective.
2. **Focus on Holistic Development:** Policies have emphasized the holistic development of students, promoting physical fitness, emotional intelligence, and creative expression alongside academic excellence.
3. **Teacher Empowerment:** Recognizing the pivotal role of teachers, NEPs have emphasized their professional development through training programs, capacity building workshops, and the introduction of new teaching methodologies.
4. **Integration of Technology:** The latest NEPs have emphasized the integration of technology in education, encouraging the use of digital tools for interactive and personalized learning experiences.

NEP and its Potential Impact on Teachers

The NEP's implementation brings forth significant changes in the roles and responsibilities of teachers. It emphasizes professional development and continuous training to ensure that educators are well-equipped with the latest teaching methodologies and technologies.

The policy encourages a shift from rote learning to experiential learning, enabling teachers to adopt innovative and interactive teaching techniques.

Additionally, the NEP promotes a multidisciplinary approach, encouraging teachers to collaborate across subjects and integrate knowledge from various disciplines. This approach fosters a deeper understanding of subjects and helps students recognize the interconnectedness of knowledge in real-world applications.

However, the policy's implementation also poses some challenges for teachers. Adapting to new teaching methodologies, incorporating technology into classrooms, and managing diverse learning needs can be demanding. Proper support systems and resources must be in place to facilitate a smooth transition and alleviate the burden on educators.

1. **Professional Development and Training:** The NEP emphasized the importance of continuous professional development and training for teachers to enhance their teaching skills and keep them up-to-date with the latest teaching methodologies. It aimed to promote high-quality teacher training programs to improve the overall quality of education in the country.
2. **Flexibility in Subject Choices:** The NEP proposed flexibility in subject choices for students, encouraging teachers to adapt their teaching methods to cater to individual student needs and interests. This shift required teachers to develop a deeper understanding of their subjects and be more creative in designing lessons.
3. **Emphasis on Multilingual Education:** The NEP encouraged the use of the mother tongue or regional language as the medium of instruction up to at least Grade 5, with a gradual transition to a multilingual approach. This change might have required teachers to be proficient in multiple languages and adapt their teaching strategies accordingly.
4. **Integration of Technology:** The NEP acknowledged the importance of integrating technology in education and promoting digital literacy. Teachers needed to adapt to technology-enhanced teaching methods, such as using digital resources, online assessments, and virtual classrooms.
5. **Assessment Reforms:** The NEP proposed changes in assessment methods to shift the focus from rote memorization to critical thinking and conceptual understanding. Teachers were expected to adopt innovative assessment techniques that could effectively evaluate students' higher-order thinking skills.
6. **Reduction in Administrative Burden:** The NEP aimed to reduce the administrative burden on teachers, allowing them to focus more on teaching and learning. It proposed restructuring teacher recruitment processes and minimizing non-teaching responsibilities to improve their overall job satisfaction and productivity.

7. **Autonomy and Decision-Making:** The NEP intended to provide more autonomy to schools and teachers to design their own curricula and assessment frameworks. This shift might have empowered teachers to personalize their teaching methods and cater to the specific needs of their students.
8. **Teacher Accountability and Performance Evaluation:** The NEP emphasized the need for teacher performance evaluation based on specific indicators, such as students' learning outcomes and feedback from students and parents. This could have led to greater accountability among teachers and motivated them to enhance their teaching practices.

NEP and its Potential Impacts on Students

Impact on Students:

The NEP is designed to cater to the diverse learning needs of students, promoting a learner-centric approach. The policy focuses on reducing academic pressure, encouraging critical thinking, and nurturing creativity. It emphasizes the development of essential life skills, such as problem-solving, communication, and collaboration, to better prepare students for future challenges. Furthermore, the policy acknowledges the importance of early childhood education, ensuring a strong foundation for young learners. It also provides opportunities for vocational training and practical skill development, catering to the needs of students inclined towards non-academic pursuits. However, while the NEP strives to create a more holistic learning environment, its implementation may encounter obstacles such as limited resources, infrastructure challenges, and resistance to change. Ensuring equitable access to quality education for all students remains a significant concern.

1. **Holistic Development:** The NEP emphasizes a shift from rote learning to a more holistic approach, promoting critical thinking, creativity, and problem-solving skills. This change intends to foster a deeper understanding of concepts and improve students' overall cognitive abilities.
2. **Flexibility and Choice:** The policy intends to offer students greater flexibility and choice in their education journey. It encourages multi-disciplinary studies and allows students to select subjects based on their interests and career aspirations, providing a more personalized learning experience.
3. **Early Childhood Education:** The NEP emphasizes the importance of early childhood education, aiming to ensure that children receive quality education and care from an early age. This focus on early childhood education can have long-term positive effects on a child's learning and development.

4. **Skill Development:** The NEP stresses the importance of skill development, aiming to equip students with practical and vocational skills, making them more employable and prepared for the job market.
5. **Technology Integration:** The NEP recognizes the significance of technology in education and advocates for its integration in the learning process. This can enhance the accessibility of education and create a more engaging and interactive learning environment for students.
6. **Assessments and Examinations:** The NEP proposes a change in the assessment and examination system, moving towards a more continuous and comprehensive evaluation. This shift aims to reduce the burden of high-stakes examinations on students and encourage a more in-depth understanding of subjects.
7. **Teacher Training and Professional Development:** The policy highlights the need for improving teacher training and professional development programs to enhance the quality of teaching and learning in schools and higher education institutions.
8. **Higher Education Reforms:** The NEP proposes structural changes in the higher education system, aiming to increase research opportunities, promote autonomy and accountability in institutions, and foster international collaborations. It is essential to note that the successful implementation of the NEP relies on various factors, such as effective policy execution, infrastructure development, financial support, and stakeholder cooperation. The impact on students will depend on how well these reforms are implemented and how they align with the specific needs and challenges of the education system in India.
9. **Flexible Curriculum and Multiple Exit Points:** The NEP introduces a flexible curriculum that allows students to choose their subjects and pace of learning. It also provides multiple exit points, enabling students to receive certificates and diplomas after completing specific years of study. This can help reduce drop-out rates and promote lifelong learning.
10. **Teacher Training and Professional Development:** The policy emphasizes the importance of teacher training and aims to enhance the quality of teachers through continuous professional development programs. This opens up opportunities for organizations to provide teacher training and development services.
11. **Increased Investment in Education:** The NEP calls for increased public investment in education, raising the total education spending to 6% of GDP. This provides opportunities for private and public sector entities to contribute to the growth of the education sector.

12. Foreign Universities and Collaboration: The policy aims to allow top international universities to set up campuses in India, fostering global collaboration and providing access to world-class education for Indian students. This can create opportunities for foreign universities and educational institutions. It is important to note that the implementation of the NEP would require careful planning, coordination, and adequate resources. Policies like these can lead to significant opportunities for various stakeholders in the education sector, including students, educators, entrepreneurs, and investors. However, the success of the NEP will depend on how effectively it is executed at all levels of the education system. For the latest information and updates, I recommend checking official government sources and educational news outlets.

Challenges and Road blocks:

Despite the progressive vision of the NEPs, the education sector in India faces numerous challenges in their implementation:

1. **Infrastructural Gaps:** Inadequate infrastructure and resource constraints continue to hinder the effective implementation of reforms.
 2. **Socio-Economic Disparities:** Educational disparities between rural and urban areas, as well as across different socio-economic groups, persist, impacting access and quality of education.
 3. **Teacher Shortages:** There is a shortage of well-qualified and trained teachers, particularly in remote and underserved regions.
 4. **Assessment and Examination System:** The traditional examination-centric assessment system remains a challenge, discouraging creativity and deep understanding.
- **Implementation Challenges:** One of the most significant hurdles is the effective implementation of the NEP across the vast and diverse education landscape in India. The policy proposes changes in school curricula, pedagogy, assessments, teacher training, and higher education, requiring coordinated efforts from all stakeholders.
 - **Infrastructure and Resource Constraints:** The NEP envisions the transformation of schools and colleges into vibrant learning centers. However, achieving this vision requires substantial investment in infrastructure and resources, particularly in rural and underprivileged areas.
 - **Training and Capacity Building:** The NEP emphasizes the need for quality teacher training and professional development. Upskilling millions of teachers to adapt to new teaching methodologies and approaches could be a considerable challenge.

- **Multilingual Education:** The NEP promotes mother-tongue or regional language as the medium of instruction up to Grade 5. While this approach has educational advantages, ensuring enough qualified teachers and resources for various regional languages might be challenging.
- **Standardization vs. Diversity:** The NEP aims to strike a balance between standardization and promoting creativity and critical thinking. However, achieving this balance while adhering to a common framework may be difficult, as some regions or institutions might struggle to adapt to these changes.
- **Inclusivity and Equity:** While the NEP emphasizes inclusivity and equitable access to education, marginalized communities, and economically backward regions might face additional barriers in implementing these policies.
- **Assessment and Evaluation:** The NEP proposes changes in the assessment and evaluation system to shift the focus from rote learning to holistic development. However, designing and implementing a new assessment framework that measures a student's overall growth and skills can be complex.
- **Higher Education Reforms:** The NEP introduces significant changes in the higher education sector, including the restructuring of regulatory bodies and the introduction of a multidisciplinary approach. Harmonizing these reforms with existing universities and institutions may pose challenges.
- **Monitoring and Evaluation:** Regular monitoring and evaluation are crucial to assess the effectiveness of the NEP's implementation and make necessary adjustments. Setting up a robust monitoring system across the entire education sector could be demanding. It is important to remember that the New Education Policy was intended to address many longstanding issues in the Indian education system and bring about positive changes. However, overcoming these challenges requires continuous collaboration, dedication, and support from the government, educational institutions, teachers, and other stakeholders.
- **Outcomes and Future Prospects:**
The impact of NEPs on the education sector in India has been mixed. While there have been notable improvements in terms of increased enrolment, access, and literacy rates, challenges remain in achieving quality education for all.
The future prospects of the education sector in India lie in addressing the existing challenges and building on the strengths of previous NEPs. By focusing on teacher empowerment, technology integration, research-based curriculum development, and equitable distribution of resources, India can pave the way for a truly revolutionary education system that fosters innovation, critical thinking, and prepares its citizens for the challenges of the 21st century.

Conclusions:

The New Education Policy holds immense promise in transforming the education system, benefiting both teachers and students alike. Its emphasis on a learner-centric approach, multidisciplinary learning, and the integration of life skills can foster a generation of well-rounded individuals equipped to face the complexities of the future.

However, the successful implementation of the policy hinges upon effective planning, adequate investment, and a collaborative effort from all stakeholders involved. By addressing the challenges and capitalizing on the opportunities, the New Education Policy can pave the way for a brighter and more prosperous future for the education landscape in [country's name].

Education is the bedrock of any nation's progress, empowering its citizens with knowledge, skills, and critical thinking abilities. Recognizing the transformative potential of education, India has continually evolved its National Education Policies (NEPs) over the years. These policies represent the country's aspirations to revolutionize the education sector, catering to the needs of a diverse and dynamic population.



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SRI RAMAKRISHNA
COLLEGE OF ARTS & SCIENCE
Formerly Sri Ram College of Engineering



INDIA IN TRANSIT TO DECARBONIZATION - A FUTURE PERSPECTIVE



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REVIEW OF APPLICATIONS FOR GREENLY PRODUCED COPPER NANOPARTICLES

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ABSTRACT

A new area of nanotechnology study is the green synthesis of nanoparticles (NPs). Antimicrobial and disinfectant activities can be found in copper nanoparticles. Environmentally friendly synthetic NPs are very effective in recycling and removing heavy metals from sewage. They could address several global problems with water quality. Nanomaterial synthesis mediated by plants is cost-effective, environmentally benign, and non-pathogenic. The plant extract already contains the biomolecules needed for the metal ions to be reduced and stabilised. Within 10 minutes, silver nanoparticles could be created and demonstrated antibacterial efficacy against microorganisms. Copper nanoparticles (Cu NPs) produced through green synthesis were employed as a nano-adsorbent to remove Ibu, Nab, and Dic from wastewater samples. The best removal outcomes were found at 298 K, pH 4.5, 60 min, and an endothermic adsorption method. A high bacterium decrease of log 8.8 for *E. coli* was seen in paper sheets with a greater copper concentration. The CuNP paper filter has the potential to be a very affordable method of water filtration.

Keywords: Copper, Nanoparticles, Green Synthesis, Characterization, Applications Wastewater Treatment and Disinfection

Introduction

Domestic wastewater, which includes wastewater from the kitchen, shower, wash basin, toilet, and laundry, is defined as wastewater created as a result of human activity in homes. Domestic wastewater undergoes hourly, daily, and seasonal strength and composition fluctuations, with the normal strength dependent on per capita water usage, habits, diet, living standards, and lifestyle. The main cause is the difference in home water usage. Compared to households in underdeveloped nations, households in affluent nations consume more water. Due to their great efficacy and biocompatibility, a variety of green synthetic NPs are currently being used in water and wastewater treatment. As this method is nontoxic or less hazardous, environmentally friendly, effective, and economical when compared to other traditional physical and chemical procedures, green nanotechnology is an emerging research topic. Various biological agents, including plants, bacteria, algae, and fungus, are used in the green synthesis of NPs, but recently plant-based green synthesis of NPs has drawn greater interest from researchers

all over the world. Due to their great efficacy and biocompatibility, a variety of green synthetic NPs are currently being used in water and wastewater treatment. Greenly synthesised NPs are incredibly effective at recycling, removing heavy metals from waste waters without losing their stability, and degrading a wide range of organic pollutants from waste waters. As a result, waste waters are made clean enough to be reused and recycled and may be used to address various water quality issues around the world [1]. Due to their distinct physical and chemical characteristics, as well as their easy synthesis, copper nanoparticles have recently attracted a lot of attention. Antimicrobial and disinfectant activities can be found in copper nanoparticles. More surface area is seen in copper nanoparticles. The particles get stronger, more stable, and more durable as the area and volume increase. Copper nanoparticles facilitate biological and chemical processes. Nanoparticles have significant specific surface areas and great adsorption capabilities because of their small sizes. Nanoparticles are highly mobile in solutions. There have been reports of the removal of heavy metals, organic contaminants, inorganic anions, and microorganisms by nanoparticles [2].

Review work

Plant-mediated nanoparticle synthesis has gained attention in recent years due to its affordability, environmental friendliness, and lack of pathogenicity. Proteins, amino acids, polysaccharides, terpenes, alkaloids, phenolics, saponins, and vitamins—as well as other biomolecules necessary for the reduction and stabilisation of the metal ions—are already present in the plant extract as phytochemicals, making the production of NPs more practical and affordable. In comparison to other biosynthetic techniques, the kinetics of plant-mediated nanomaterial synthesis are significantly greater and are comparable to chemical nanoparticle creation. For the quick creation of silver nanoparticles between 50 and 100 nm in size, *Alternanthera dentata* aqueous extract was utilised. The extracellular silver nanoparticles have antibacterial efficacy against *Pseudomonas aeruginosa*, *Escherichia coli*, *Klebsiella pneumonia*, and *Enterococcus faecalis* and were produced in less than 10 minutes. Using *Cymbopogon citratus* leaf extract, gold nanoparticles with spherical, triangular, hexagonal, and rod-shaped morphologies were created. These particles were reported to increase the predation effectiveness of the copepod *Mesocyclops aspericornis* against malaria and dengue mosquitoes. It was proposed that the terpenoids and peptides found in the latex of the medicinal plant *Euphorbia nivulia*, which was used to create copper oxide nanoparticles extracellularly, stabilised the particles. The particles' antimicrobial efficacy was also evaluated[3]. In a study, indium acetylacetonate, a solution produced from the aloe vera plant, was used to create indium oxide (In₂O₃) nanoparticles. The particles were then examined for their structural, morphological, and optical characteristics. *Sedum alfredii*, a zinc hyperaccumulator plant, was used to produce zinc oxide nanoparticles with hexagonal wurtzite structure, with a mean size of 53.7 nm. Additionally, lucerne was used to create iron oxide nanoparticles with four different pH levels in the solution, and aggregates 1 to 10 nm in size were produced. Under ideal pH

circumstances, it was suggested that the size of the nanoparticles may be adjusted between 1-4 nm[4].

Copper oxide nanoparticles produced sustainably and used successfully in the Biginelli reaction, BTB photodegradation, and antibacterial activities.

A more environmentally friendly method was used to create copper oxide nanoparticles (CuO NPs). Copper oxide nanoparticles (CuO NPs) were produced more environmentally friendly by using the aqueous flower extract of *Cordia sebestena* (C. sebestena). In TEM and DLS inspection, the particle size was discovered to be between 20 and 35 nm, and the TEM-SAED pattern verified crystallinity and respectable stability. These nanoparticles were evaluated against four hazardous bacterial pathogens, including *Bacillus subtilis* (B. subtilis), *Staphylococcus aureus* (S. aureus), *Escherichia coli* (E. coli), and *Klebsiella pneumoniae* (K. pneumoniae), that are found in household waste water, and against two gramme positive and two gramme negative pathogens. The finding implies that NPs might be used in photolysis to purge water of pollutants. Furthermore, the biological significance of green generated CuO NPs was assessed using antibacterial activity against the aforementioned dangerous bacterial pathogens[7].

Copper nano-adsorbent produced via green synthesis is used to remove pharmaceutical contaminants from actual wastewater samples.

Using *Tilia* leaf extracts, copper nanoparticles (Cu NPs) of high purity and stability were greenly synthesised. The sizes of the well-dispersed, spherical and semi-spherical nanoparticles produced ranged from 4.7 to 17.4 nm. The absorption process is described as being physical, endothermic, and spontaneous. Non-steroidal anti-inflammatory medicines (NSAIDs), including Ibuprofen (Ibu), naproxen (Nab), and diclofenac (Dic), pose major environmental issues when they are released into the aquatic system. In this study, Ibu, Nab, and Dic were removed from wastewater samples using copper nanoparticles (Cu NPs) that were produced via green synthesis. Temperature 298 K, pH 14 4.5, 10.0 mg Cu NPs, 60 min, and a spontaneous, endothermic adsorption process were the parameters that produced the best removal results. Ibu, Nap, and Dic clearance rates at these settings were discovered to be 74.4, 86.9, and 91.4%, respectively. According to calculations, the maximal monolayer adsorption capacities for Dic, Nap, and Ibu were 36.0, 33.9, and 33.9 mg/g, respectively. These findings indicated that green-synthesized copper nanoadsorbent may be utilised to effectively remove anti-inflammatory medicines from actual wastewater[8].

For the purpose of removing water pollutants, copper oxide nanoparticles were created and impregnated on activated carbon via green synthesis.

Explains the use of pomegranate leaf extract as a reducing and stabilising agent in the creation of CuO nanoparticles on vegetal activated carbon (VAC) for the elimination of various

contaminants. The production and impregnation of the copper oxide nanoparticles were done using an adaptation of the Wang et al.⁴ process. As a support for the nanoparticles, coconut activated carbon was employed. On the surfaces of the activated carbon, CuO nanoparticles between 104 and 165 nm in diameter and CuO between 40 and 78 nm have been discovered. Carbon impregnated with 1.5% Cu-24h stands out among the samples because it demonstrated removal of organic contaminants like atrazine pesticide, diclofenac, caffeine, and nitrate that was comparable to pure carbon, but it increased carbon efficiency in nitrate ions removal by more than four times. Therefore, a 24 hour impregnation period is adequate to produce copper oxide nanoparticles on carbon activated that have a high capacity for pollution removal. The impregnated carbons demonstrated excellent nitrate removal capabilities from water, offering a non-polluting and economical alternative to the traditional treatment approaches[9].

Water purification using green synthetic copper oxide nanoparticles mediated by algae and toxicity testing.

The focus of this paper is on green CuO nanoparticles that are produced utilising algal extract. The NPs are 3.6 nm in size. The properties of the synthesised NP depend on a number of variables, including the stirring rate, impact of pH, concentration of algal extract, and concentration of Cu⁺ ions. Gramme negative bacteria like E-COLI were resistant to the CuO NP's antibacterial effects. A 50mg/L E-COLI dose is ideal for surface water samples. Fish blood was used for the toxicology assessment, and mononuclei development was examined. On cell lines from Chinese hamster ovary and human gastric epithelium, cell death assessment was done. Surface water is more likely to develop disease-causing germs since it is exposed to home and industrial waste. One of the most popular disinfection procedures is the activated sludge process, however one of its main downsides is bulking. A column type Sequential Batch Reactor (SBR) has a COD removal efficiency of roughly 87%. Recently, nanoparticles/powders and nano-membranes have been widely employed to remove various biological and heavy metal substances[5]. The key determinants of particle size are pH, temperature, Cu ion concentration, and incubation period. Heavy metals are mainly used in the physical and chemical synthesis of nanoparticles, which likewise takes a long time to complete. A technique known as "green synthesis" uses reducing chemicals that are found in nature. The materials created in this way are utilised to sterilise surfaces like membranes by immobilising them there. The phytochemicals or polyphenols in the plant extract serve as catalysts or capping agents during synthesis. There are lots of these polyphenols in microalgae. These environmentally safe and non-toxic green nanoparticles were created by synthetic means. These NPs can be produced economically because of their rapid development and high biomass productivity[6].

Creation of functionalized CuO nanoparticles to improve methylene blue dye adsorption.

Dye-related water pollution is a significant environmental issue. The toxicity of dyes poses a serious threat to both human and environmental health. Using copper nitrate as a

precursor, the co-precipitation process was used to create the nanoparticles. The effectiveness of functionalized and unfunctionalized nanoparticles in improving chitosan's ability to absorb the colour methylene blue is compared. CuO particles were discovered to have crystallites that were 10 nm or smaller. The development of these functionalized nanoparticles results in multifunctional capabilities including the capacity to act as catalysts for the degradation of dyes as well as for the adsorption of dyes in the presence of sunlight. The EDTA functionalized CuO nanoparticle has a larger surface area than bare CuO nanoparticles, and the BET adsorption research also reveals the presence of pores. The increased surface area of the nanoparticles gives the nanoparticles different properties, such as the ability to improve the adsorption of chitosan and boost photocatalytic activity. Chitosan and CuO nanoparticles that have been functionalized by EDTA and silane removed 54% of the dye. Although the precipitation process doesn't produce uniformly sized particles, it is nonetheless efficient and appropriate for large-scale applications such waste water treatment where economic considerations are important[10].

Studies on Green Synthesis of Copper Nanoparticles Using *Punicagranatum*

The goal of the current work was to create copper nanoparticles in a sustainable manner by using diverse plant extracts as reducing and stabilising agents. It might also investigate the copper nanoparticles' antimicrobial properties. Within 112 to 2 hours, the green synthesis of copper nanoparticles employing a 10mM copper sulphate solution and a 50% concentrated pomegranate fruit rind extract produced a good yield of medium-sized nanoparticles. According to the O.D values obtained from UV-Visible spectroscopy testing, stable copper nanoparticles were produced by the aqueous solutions of several plant extracts. SEM measurements of the synthesised nanoparticles revealed their size to be between 56 and 59 nm. Copper, particularly at the nanoscale, has substantial antibacterial activity and may be produced at a very low cost. By using an Agar well assay, the biosynthesized nanoparticles were put to the test against the Gram-positive bacteria *Staphylococcus aureus*. *Staphylococcus aureus* showed a strong antibacterial activity against the synthesised copper nanoparticles. The pomegranate fruit rind extract is used to create copper nanoparticles, which are frequently used as effective antimicrobial agents against *Staphylococcus aureus*. As a result, the study is essential at this time because drug-resistant infections of *Staphylococcus aureus* are becoming more common and well-known[11].

Usage of copper nanoparticles in paper to purify water at the point of usage

The use of copper nanoparticles in paper filters for point-of-use water filtration was embraced as a more affordable substitute for silver nanoparticles. The direct in situ synthesis of copper nanoparticles (CuNPs) in paper using ascorbic acid to reduce sorbed copper ions is described in this report as an environmentally friendly method. Water filtration at the point of use (POU) offers a practical and economical solution to lessen contact with dangerous bacteria. In less than 10 minutes, copper nanoparticles were efficiently generated and evenly distributed

on the paper fibre surfaces. X-ray diffraction, scanning electron microscopy, energy dispersive x-ray spectroscopy, and atomic absorption spectroscopy were used to characterise paper sheets. *Escherichia coli* bacterium suspensions were run over the CuNP sheets to test for antibacterial activity. Copper release and viable bacterial counts were assessed in the wastewater. For *E. coli*, the CuNP sheets with increased copper contents shown a significant reduction in bacteria of log 8.8. The test bacteria were successfully rendered inactive as they travelled through the copper nanoparticle-coated paper sheets. The effluent water's copper levels were below the acceptable limit of 1 ppm for copper in drinking water. This CuNP paper filter has the potential to develop into a very affordable water filtration system[12]

Biofloculant Passivated Copper Nanoparticles: Optimisation and Use in Wastewater Treatment

Water contaminant and pathogenic microorganism elimination using nanotechnology is a fantastic potential. Using a polysaccharide biofloculant, copper nanoparticles were created, and their flocculation, removal effectiveness, and antibacterial characteristics were assessed. Thermogravimetry, UV-Visible spectroscopy, Fourier-transform infrared spectroscopy (FT-IR), powder X-ray diffraction, scanning electron microscopy (SEM), and transmission electron microscope (TEM) were used to characterise the synthesised nanoparticles. The lowest concentration of copper nanoparticles (0.2 mg/mL) produced the most flocculation activity (FA), which was 96%, and the highest flocculation activity (FA), which was 80% at 1 mg/ml[13]. The flocculation activity of the copper nanoparticles (CuNPs) was 96% and it performed best at weakly acidic, neutral, and alkaline pH with the optimal FA of 96% at pH 7. The nanoparticles were also discovered to be thermostable at 100 °C with 91% FA. The created copper nanoparticles have excellent qualities for cleaning up contaminants from river water, home wastewater, and coal mine water. Both river water and coal mine water showed above 89% removal effectiveness for COD and BOD. The synthesised nanoparticles may be utilised to remove dye effluents, pathogens, and other microorganisms from wastewater due to their amazing abilities to remove staining colours and disinfect the wastewater. At the lowest dose of 3.13 mg/ml, they were able to inhibit and kill all of the tested strains when their antibacterial activity was tested against both Gram-negative and Gram-positive bacteria[14].

CuO nanoparticles were made environmentally friendly using *Allium sativum* extract, and the extract's antibacterial, antioxidant, and larvicidal properties were characterised.

CuO nanoparticles were produced using an extract of *Allium sativum* in a green process. The high degree of crystallinity and the estimated crystallite size of 25–35 nm were both explained by the powder's X-ray diffraction pattern. The CuO bonding nature was explained using the Fourier transform infrared spectra. The CuO nanoparticles were visible in the 20–40 nm size range on the particle size analyser. The spherical and oval-shaped morphology of CuO

nanoparticles was visible in the SEM pictures. The purity of CuO was demonstrated by the EDAX spectra and mapping with the presence of Cu and O. The phytochemical study identified the phytochemicals used to make CuO nanoparticles from extract of *Allium sativum*. The antibacterial activity revealed effective bacterial and fungal infection. The free radical scavenging potential of the antioxidant activity was revealed. CuO nanoparticles produced through an eco-friendly synthesis have a unique and effective use in the treatment of wastewater in the twenty-first century[15].

Conclusion

Due to their qualities, such as a high specific area, high surface energy, size, and volume, nanotechnology has recently gained prominence in the water disinfection industry. By carefully varying variables like pH, temperature, etc., one may readily modify the physiochemical characteristics of the nanoparticles. Nanoparticle filtration is superior to conventional methods of disinfection or filtration, which require chemical reagents that make water hazardous and appear to be more expensive. This is due to the multifunctionality of the nanoparticles. Sometimes microbial resistance renders chlorination ineffective.

The physical strategy requires more time to achieve thermal stability, while the chemical approach involves the use of hazardous chemicals, making green synthesis superior to all other methods. The biological approach to green synthesis makes it easier to complete because it uses plants and their more accessible parts. The nanoparticles' features, such as their antimicrobial, catalytic, and antibacterial activities, are likewise influenced by phytochemicals. Depending on the kind of phytochemicals that were obtained, the nanoparticles that were created utilising different plant extracts displayed a range of different features. Additionally, pH, copper ion concentration, solution stirring rate, and plant extract content all had an impact on the size and other distinguishing characteristics of the synthesised nanomaterial. To determine the ideal circumstances for obtaining the greatest possible nanoparticles for disinfection, experimental study is required. It was important to characterise the nanoparticle for a variety of physical characteristics, including form, size, surface area, and surface energy, in order to divide the nanoparticles into different groups based on their intended uses. The size and shape of the particles are displayed using tools like scanning electron microscopes (SEM) and transmission electron microscopes (TEM). By examining the visual depiction of the absorption spectrum, UV-Visible spectroscopy was used to assess the development of nanoparticles. The nanoparticle was discovered to have a thin layer of plant extracts or phytochemicals surrounding it that gave the NPs their behaviour. The NPs demonstrated potent anti-microbial and anti-bacterial capabilities against gramme positive (*Staphylococcus aureus*) and gramme negative (*Escherichia coli*) bacteria by permeating cell walls and compromising cell fluids, ultimately causing cell death. Additionally, the EDTA functionalized NPs had improved qualities such a large surface area and the presence of pores that were useful in the removal of dyes to a degree of 54%. The copper nanoparticles may be used for water filtration and disinfection after being immobilised on

membranes or textiles, and retrieving the particles was also made simple. Such membranes were utilised in point-of-use filters, which were successful in removing colours and preventing the growth of microorganisms. The copper nanoparticles that made it through the filter were much less than what is allowed in drinking water. Copper nanoparticles were evaluated for their effects on people and aquatic creatures, and an ideal concentration was found at which the nanoparticles either proved to be safe or had no negative effects on the test subjects. Thus, it was discovered that using environmentally friendly copper nanoparticles was effective in disinfecting domestic waste water. The water treated could then be used for secondary purposes, such as cleaning or watering plants, which would reduce the demand for water and offer an affordable alternative to harmful and occasionally ineffective methods like chlorination.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

VOLUME - 2

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FOSTERING INDEPENDENCE: MSMEs DRIVING SUSTAINABLE PROGRESS FOR A SELF-RELIANT INDIA

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Abstract

It explores the pivotal role of Micro, Small & Medium Enterprises (MSMEs) in catalyzing sustainable development, with a focus on the burgeoning field of battery technology. The narrative unfolds against the backdrop of India's quest for self-reliance, emphasizing the potential of MSMEs as agents of change. Through innovation, collaboration, and environmental consciousness, these enterprises emerge as key contributors to economic growth, job creation, and the pursuit of sustainable energy solutions. The abstract delves into the intricate interplay between MSMEs, research institutions, and governmental support, envisioning a future where locally-driven, eco-friendly battery technologies redefine energy landscapes. The holistic approach not only envisions profitability for businesses but also underscores the intrinsic link between economic prosperity and environmental stewardship. This abstract serves as a glimpse into a narrative that transcends business and embraces a culture of sustainability, envisioning a self-reliant India at the forefront of green innovation.

Introduction

In the epoch of globalization, where economic interdependence often takes center stage, the quest for self-reliance becomes a nuanced endeavor, especially for a nation as vast and diverse as India. Amidst this complexity, Micro, Small & Medium Enterprises (MSMEs) emerge as the unsung heroes, threading the delicate balance between economic autonomy and environmental sustainability. This paper embarks on a multifaceted exploration, weaving together the narratives of sustainable development and the dynamic role played by MSMEs, spotlighting their transformative potential in the domain of battery technology¹.

India's pursuit of self-reliance is not merely a national agenda; it is a paradigm shift in redefining economic strategies and fostering resilience. Within this transformative landscape, MSMEs take center stage, not merely as contributors to GDP but as torchbearers of innovation, agility, and localized sustainability. As we navigate through this discourse, the focus sharpens on the realm of battery technology – a linchpin in the transition towards cleaner, greener energy sources. This narrative unfolds against a backdrop where collaboration becomes a cornerstone, where the innovative spirit of MSMEs converges with the research acumen of institutions, propelled by the supportive winds of governmental initiatives².

The synergy of these forces paints a vision of a self-reliant India not just economically robust but also environmentally conscientious. Beyond the profit margins and market shares, the exploration here delves into the intrinsic connection between business practices and ecological resilience. MSMEs, often characterized by their adaptability and creativity, stand as dynamic contributors to a future where battery technology isn't just a commodity but a gateway to sustainable progress. Join us in traversing through the layers of this narrative, where the aspirations of a self-reliant India find resonance in the sustainable innovations orchestrated by MSMEs. It's a journey through interconnected realms—economic, environmental, and societal—where the heartbeat of progress is not just measured in financial gains but in the sustainable cadence of a nation charting its course towards a resilient future³.

Strategic Framework: Advancing Sustainable Development Through MSMEs in Battery Technology⁴⁻⁷

Collaborative Ecosystem Building:

Objective: Foster collaboration between MSMEs, research institutions, and governmental bodies to create a robust ecosystem.

Actions:

- ❖ Establish innovation hubs that bring together MSMEs and researchers.
- ❖ Facilitate knowledge-sharing platforms and collaborative projects.
- ❖ Encourage public-private partnerships for shared infrastructure.

Research and Development Incentives:

Objective: Stimulate innovation in battery technology through targeted R&D incentives.

Actions:

- ❖ Introduce financial incentives for MSMEs engaged in sustainable technology development.
- ❖ Create grants and subsidies for collaborative research initiatives.
- ❖ Establish technology parks specifically focused on battery R&D.

Skill Development and Capacity Building:

Objective: Enhance the capabilities of MSMEs in the field of battery technology.

Actions:

- ❖ Implement skill development programs tailored to the needs of the battery industry.

- ❖ Establish training centers and workshops for technology adoption.
- ❖ Encourage academic-industry partnerships to bridge skill gaps.

Market Access and Funding Support:

Objective: Facilitate market access and financial support for MSMEs in the battery sector.

Actions:

- ❖ Create a dedicated funding mechanism for sustainable technology ventures.
- ❖ Develop market linkage programs connecting MSMEs with potential buyers.
- ❖ Simplify loan processes and provide low-interest loans for sustainable projects.

Regulatory Framework for Sustainability:

Objective: Integrate sustainability criteria into regulatory frameworks.

Actions:

- ❖ Develop standards for eco-friendly battery technologies.
- ❖ Incentivize compliance with sustainable practices through tax benefits.
- ❖ Establish a certification system for environmentally responsible products.

Public Awareness and Consumer Education:

Objective: Build awareness about the importance of sustainable battery technologies.

Actions:

- ❖ Launch public awareness campaigns on the environmental impact of batteries.
- ❖ Provide consumer education on choosing eco-friendly products.
- ❖ Recognize and promote MSMEs that prioritize sustainability in their products.

International Collaboration and Export Promotion:

Objective: Position Indian MSMEs as global leaders in sustainable battery technology.

Actions:

- ❖ Encourage collaboration with international research institutions.
- ❖ Facilitate participation in global technology exhibitions and conferences.
- ❖ Develop strategies for promoting sustainable battery exports.
- ❖ This strategic framework aims to create a conducive environment for MSMEs to thrive in the battery technology sector while fostering sustainability and contributing to India's self-reliance goals.

Technology Transfer and Licensing:

Objective: Accelerate technology adoption by facilitating the transfer of sustainable battery technologies.

Actions:

- ❖ Create platforms for MSMEs to access patented technologies through licensing agreements.
- ❖ Establish technology transfer offices to streamline the process.
- ❖ Encourage established players to mentor and support smaller enterprises in technology adoption.

Circular Economy Integration:

Objective: Embed circular economy principles in the battery life cycle, from manufacturing to disposal.

Actions:

- ❖ Incentivize MSMEs to design batteries with recyclability and reusability in mind.
- ❖ Establish collection and recycling facilities for end-of-life batteries.
- ❖ Introduce regulations mandating environmentally responsible disposal practices.

Government Procurement Support:

Objective: Drive demand for sustainable batteries through government procurement policies.

Actions:

- ❖ Prioritize the procurement of eco-friendly batteries in government projects.
- ❖ Include sustainability criteria in tendering processes.
- ❖ Create a certification system for MSMEs supplying to government projects.

Networking Platforms for MSMEs:

Objective: Enhance collaboration and knowledge-sharing among MSMEs in the battery sector.

Actions:

- ❖ Establish a dedicated online platform for MSMEs to connect, share experiences, and form partnerships.
- ❖ Organize industry-specific conferences and networking events.
- ❖ Facilitate mentorship programs where successful MSMEs guide newcomers.

Risk Mitigation Mechanisms:

Objective: Provide financial instruments to mitigate risks associated with sustainable technology adoption.

Actions:

- ❖ Create an insurance scheme to cover risks related to innovation and market uncertainties.
- ❖ Establish a fund for MSMEs to access in case of unforeseen challenges.
- ❖ Develop a risk-sharing mechanism in collaboration with financial institutions.

Inclusive Innovation Grants:

Objective: Promote inclusivity by supporting innovation from diverse groups within MSMEs.

Actions:

- ❖ Allocate grants specifically for women-led and socially inclusive MSMEs.
- ❖ Encourage projects that address the energy needs of underserved communities.
- ❖ Establish a mentorship program to guide innovative projects from underrepresented groups.

Benchmarking and Impact Assessment:

Objective: Continuously evaluate the impact of MSME initiatives in sustainable battery technology.

Actions:

- ❖ Develop key performance indicators (KPIs) for sustainability in battery technology.
- ❖ Conduct regular impact assessments to measure economic, environmental, and social outcomes.
- ❖ Recognize and celebrate MSMEs achieving notable milestones in sustainability.

Regulatory Sandboxing for Innovation:

Objective: Encourage experimentation and innovation by providing a regulatory sandbox.

Actions:

- ❖ Create a controlled environment where MSMEs can test new technologies without full regulatory compliance.

- ❖ Establish a streamlined process for transitioning successful innovations into mainstream regulatory frameworks.
- ❖ Encourage collaboration between regulatory bodies, MSMEs, and environmental experts to ensure responsible innovation.
- ❖ This extended strategic framework aims to address various facets of sustainable development through MSMEs in battery technology, covering technology adoption, circular economy practices, government support, networking, risk mitigation, inclusivity, impact assessment, and regulatory innovation.

Conclusions

As we draw the threads of this strategic framework together, a compelling narrative emerges—one that envisions a future where Micro, Small & Medium Enterprises (MSMEs) play a transformative role in India's journey towards self-reliance and sustainability. The intricate dance between economic progress and environmental stewardship finds its harmonious rhythm in the innovative endeavors of these enterprises within the battery technology sector⁸.

The collaborative ecosystem envisioned—forged through partnerships between MSMEs, research institutions, and governmental bodies—creates a fertile ground for innovation. Incentives for research and development, skill enhancement, and market access act as catalysts, propelling MSMEs towards the forefront of sustainable progress.

By embracing circular economy principles, fostering technology transfer, and integrating inclusivity into innovation grants, the strategy outlined here is designed not just for economic growth but for societal well-being. Government procurement policies and regulatory sandboxes provide the necessary scaffolding for these enterprises to experiment, evolve, and lead in the green revolution⁹⁻¹⁰.

As we anticipate the outcomes of this strategic vision, it becomes clear that the impact extends beyond business bottom lines. It's about nurturing a culture where sustainability isn't a buzzword but a way of life. MSMEs, often celebrated for their agility and creativity, emerge as the engines of change, steering the nation towards a future where sustainable battery technologies redefine not only energy landscapes but also societal norms.

This isn't just a strategy; it's a roadmap towards a self-reliant India that thrives on innovation, resilience, and a profound respect for the environment. It's a call to action, inviting stakeholders from all sectors to join hands in shaping a future where progress isn't measured merely in economic indices but in the sustainable cadence of a nation marching towards a resilient and eco-conscious tomorrow.

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INDIA IN TRANSIT TO DECARBONIZATION - A FUTURE PERSPECTIVE



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REVIEW OF PbO NANOPARTICLES: SYNTHESIS, PROPERTIES, APPLICATIONS, AND CHALLENGES

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ABSTRACT

Lead oxide nanoparticles (PbO NPs) have garnered significant interest in the scientific and industrial communities due to their unique properties and potential applications. This review provides an overview of PbO nanoparticles, including their synthesis methods, properties, and diverse applications. PbO nanoparticles can be synthesized through chemical precipitation, hydrothermal synthesis, or the sol-gel method, with their properties, such as high surface area and size-dependent behavior, making them suitable for catalysis, sensors, and optoelectronics. Their potential applications extend to battery technology, biomedical uses, and more. However, the inherent toxicity of lead-based materials remains a challenge, necessitating stringent safety measures. This review underscores the importance of continued research to harness the benefits of PbO nanoparticles while mitigating environmental and health risks. To delve deeper into this subject, the bibliography provides key references for further exploration.

Keywords: PbO nanoparticles, Synthesis methods, Properties, Applications

INTRODUCTION

Nanotechnology, a revolutionary field in materials science and engineering, has ushered in a new era of innovation by exploring and harnessing the unique properties of nanoscale materials. Among these nanomaterials, lead oxide nanoparticles (PbO NPs) have emerged as intriguing candidates with a wealth of promise. This comprehensive introduction delves into the world of PbO nanoparticles, shedding light on their synthesis methods, remarkable properties, and a multitude of potential applications. While offering unparalleled opportunities for advancements in diverse fields, PbO nanoparticles also pose significant challenges and concerns, primarily owing to the toxicity associated with lead-based materials world.

The synthesis of PbO nanoparticles represents a fundamental pillar of exploration within this domain. Researchers have developed various methods to craft these nanoscale wonders, including chemical precipitation, hydrothermal synthesis, and the sol-gel technique. Each of these methods affords control over the size, morphology, and structure of PbO nanoparticles, offering researchers the means to tailor their properties for specific applications.

One of the standout features of PbO nanoparticles is their exceptional surface area-to-volume ratio, a consequence of their nanoscale dimensions. This heightened surface area is a game-changer, particularly in the realm of catalysis. PbO nanoparticles have been employed as catalysts in numerous chemical reactions, capitalizing on their catalytic activity to accelerate processes and yield higher product yields. Their reactivity and surface properties make them prized assets in the development of advanced catalytic systems. Beyond catalysis, PbO nanoparticles exhibit versatility that extends across a wide spectrum of applications. Their sensitivity to changes in the environment has found practical utility in sensors, where PbO nanoparticles are employed in gas sensors, humidity sensors, and biosensors. These applications capitalize on the responsiveness of PbO nanoparticles to alterations in external factors, enabling precise and rapid detection mechanisms.

Furthermore, the world of energy storage has not remained untouched by the influence of PbO nanoparticles. Researchers have investigated their potential in cutting-edge battery technologies, including lithium-ion batteries and supercapacitors. Their electrical properties and nanoscale structure open doors to enhanced energy storage solutions, critical for the advancement of renewable energy systems and portable electronic devices.

In the realm of optoelectronics, PbO nanoparticles have made significant strides. They hold promise in the development of photodetectors, solar cells, and light-emitting devices. The tunable properties of these nanoparticles enable the engineering of materials with specific optical and electrical characteristics, aligning with the demands of the rapidly evolving electronics industry.

However, it is vital to acknowledge that alongside their immense potential, PbO nanoparticles carry a substantial burden - that of toxicity. Lead-based materials, including PbO, are notorious for their adverse health and environmental effects. Careful handling and disposal practices are imperative when working with PbO nanoparticles to mitigate these risks. Additionally, long-term stability and behavior of PbO nanoparticles in various environments require extensive study to ensure their safe incorporation into practical applications.

As the scientific community continues to explore the multifaceted world of PbO nanoparticles, this review aims to provide a comprehensive understanding of their synthesis, properties, applications, and associated challenges. By examining the latest research findings and drawing attention to key references, we embark on a journey through the fascinating and complex landscape of PbO nanoparticles, where innovation converges with responsibility in the pursuit of scientific advancement.

Materials and Methods

The synthesis and characterization of PbO nanoparticles (PbO NPs) require meticulous attention to detail and precision to achieve reproducible results. In this expansive section, we provide an in-depth look at the materials, synthesis methods, and characterization techniques commonly employed in working with PbO NPs^{1,2}. The following outlines the key components and methodologies involved in the study of PbO nanoparticles:

Lead Precursors: High-purity lead compounds, such as lead nitrate ($\text{Pb}(\text{NO}_3)_2$) or lead acetate ($\text{Pb}(\text{CH}_3\text{COO})_2$), serve as the primary source of lead for PbO NP synthesis. These chemicals should adhere to stringent purity standards to minimize impurities in the final product.

Oxidizing Agents: Depending on the chosen synthesis method, various oxidizing agents like hydrogen peroxide (H_2O_2), sodium hydroxide (NaOH), or nitric acid (HNO_3) may be required to facilitate the conversion of lead precursors into PbO NPs.

Solvents: High-quality solvents, including deionized water, ethanol, or organic solvents, are essential for preparing precursor solutions and for washing and dispersing PbO NPs.

Surfactants/Stabilizers: Surfactants such as cetyltrimethylammonium bromide (CTAB) or polyvinylpyrrolidone (PVP) are often used to control the size and stability of PbO nanoparticles during synthesis.

Chemical Precipitation:

Procedure: Lead precursors are dissolved in a suitable solvent, and an oxidizing agent is added gradually under controlled conditions, leading to the formation of PbO NPs as precipitates.

Parameters: Factors like reaction temperature, pH, and reaction time are carefully optimized to control the size and morphology of the NPs.

Hydrothermal Synthesis:

Procedure: A solution containing lead precursors is sealed in a high-pressure vessel and subjected to elevated temperature and pressure for an extended period, resulting in the formation of PbO NPs.

Parameters: Pressure, temperature, reaction duration, and precursor concentrations are adjusted to tailor the NP properties.

Sol-Gel Method:

Procedure: Lead-containing precursors undergo hydrolysis and condensation reactions in a sol-gel matrix to produce PbO NPs.

Parameters: The choice of precursor, solvent, and reaction conditions influence the final NP characteristics.

Characterization Techniques^{1,2}:

Transmission Electron Microscopy (TEM): TEM is used to visualize the size, shape, and distribution of PbO nanoparticles at the nanoscale. It provides high-resolution images of individual NPs.

Scanning Electron Microscopy (SEM): SEM offers a broader view of nanoparticle morphology and can provide information on the surface structure and aggregation behavior.

X-ray Diffraction (XRD): XRD is employed to determine the crystalline structure and phase purity of PbO NPs. It helps identify crystallographic phases and lattice parameters.

Fourier Transform Infrared Spectroscopy (FTIR): FTIR spectroscopy is used to study the chemical composition and surface functional groups of PbO nanoparticles. It can reveal the presence of surfactants or stabilizers.

UV-Visible Spectroscopy: UV-Visible spectroscopy is used to investigate the optical properties of PbO nanoparticles, including their absorption and bandgap characteristics.

Energy-Dispersive X-ray Spectroscopy (EDS): EDS is employed in conjunction with SEM or TEM to determine the elemental composition of PbO NPs and assess their purity.

Dynamic Light Scattering (DLS): DLS measures the hydrodynamic size and distribution of nanoparticles in solution, providing insights into their stability and aggregation behavior.

Zeta Potential Measurement: Zeta potential analysis assesses the surface charge of nanoparticles, aiding in understanding their colloidal stability.

Safety Considerations:

Working with lead-based materials, including PbO nanoparticles, necessitates adherence to strict safety protocols. Researchers should wear appropriate personal protective equipment (PPE), work in a well-ventilated laboratory, and dispose of waste materials in accordance with hazardous waste regulations to mitigate health and environmental risks associated with lead toxicity.

By employing these materials and methods, researchers can advance our understanding of PbO nanoparticles and unlock their full potential across various applications while ensuring safety and precision in their work.

Result and Discussion

Properties of PbO Nanoparticles:

Size-Dependent Properties: One of the most intriguing aspects of PbO nanoparticles is their size-dependent behavior. As the size of nanoparticles decreases, their properties change, leading to unique optical, electrical, and catalytic characteristics. For instance, smaller PbO nanoparticles tend to exhibit higher catalytic activity due to their increased surface area, making them valuable in catalysis applications^{3,4}.

Crystalline Structure: X-ray diffraction (XRD) analyses confirm the crystalline nature of PbO nanoparticles. The most commonly observed crystallographic phase is tetragonal α -PbO, although variations in synthesis conditions can yield different phases, influencing the material's properties.

Optical Properties: UV-Visible spectroscopy reveals that PbO nanoparticles exhibit size-dependent optical properties. Smaller nanoparticles often have a blue shift in their absorption spectra, indicating a wider bandgap compared to bulk PbO. This feature makes them suitable for optoelectronic applications, including photodetectors and solar cells.

Morphology and Size Distribution: Scanning electron microscopy (SEM) and transmission electron microscopy (TEM) images provide valuable insights into the morphology and size distribution of PbO nanoparticles. These images reveal the formation of spherical or cuboidal nanoparticles with a well-defined size distribution. Controlling these parameters during synthesis is crucial for tailoring the material's properties.

Surface Chemistry: Fourier-transform infrared spectroscopy (FTIR) and X-ray photoelectron spectroscopy (XPS) investigations elucidate the surface chemistry of PbO nanoparticles. They often feature surface functional groups originating from surfactants or stabilizers used during synthesis, influencing their reactivity in various applications.

Applications of PbO Nanoparticles:

Catalysis: PbO nanoparticles have demonstrated remarkable catalytic activity in a range of chemical reactions. Their high surface area and reactivity make them effective catalysts for processes such as the oxidative conversion of organic compounds. Moreover, their size-dependent catalytic properties enable precise tuning of reaction kinetics and selectivity^{5, 6}.

Sensors: PbO nanoparticles have found a pivotal role in sensing technologies. Gas sensors utilizing PbO nanoparticles exhibit excellent sensitivity to gases like carbon monoxide (CO) and nitrogen dioxide (NO₂). Additionally, humidity sensors based on these nanoparticles offer rapid and accurate humidity detection, making them valuable for environmental monitoring and industrial applications^{5, 6}.

Battery Technology: The integration of PbO nanoparticles into energy storage devices, such as lithium-ion batteries and supercapacitors, has garnered considerable attention. Their nanoscale dimensions enhance electrode performance by facilitating faster charge and discharge rates, contributing to improved battery efficiency and energy storage capacity^{7, 8}.

Optoelectronics: The ability to engineer the optical properties of PbO nanoparticles makes them promising candidates for optoelectronic applications. They have been utilized in the development of photodetectors, where their enhanced absorption properties enable the detection of low-intensity light signals. Additionally, PbO nanoparticles have shown potential in solar cell technology, contributing to the quest for efficient and cost-effective renewable energy sources^{9, 10}.

Implications and Challenges:

Toxicity Concerns: It is essential to emphasize the potential toxicity of PbO nanoparticles, given their lead-based composition. Handling, storage, and disposal of PbO nanoparticles must adhere to strict safety protocols to prevent environmental contamination and health risks. Research into alternative, non-toxic materials for similar applications is an ongoing priority.

Environmental Impact: The widespread use of PbO nanoparticles necessitates a thorough understanding of their environmental impact. Studies evaluating the release of nanoparticles into ecosystems and their long-term behavior are crucial for assessing potential risks and implementing appropriate safeguards.

Stability and Longevity: The stability of PbO nanoparticles in different environments and under varying conditions is an ongoing research area. Ensuring the long-term functionality of PbO-based devices and materials is vital for their practical application and commercial viability.

Conclusion

PbO nanoparticles offer a tantalizing array of possibilities across diverse scientific and industrial domains. Their size-dependent properties, crystalline structure, and versatile applications make them valuable materials for catalysis, sensing, energy storage, and optoelectronics. However, researchers must remain vigilant about the associated toxicity and environmental concerns, advocating for responsible handling and disposal practices. Continued investigation and innovation in the field of PbO nanoparticles promise to yield breakthroughs that balance their immense potential with the imperative of safety and sustainability.

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INDIA IN TRANSIT TO DECARBONIZATION - A FUTURE PERSPECTIVE



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UTILIZING THE POTENTIAL OF HOMEOPATHIC MOTHER TINCTURES FOR NANOPARTICLE SYNTHESIS

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ABSTRACT:

Homeopathic remedies, known for their efficacy and holistic principles, have found an unexpected application in the realm of nanotechnology. This chapter explores the intriguing fusion of homeopathy and nanotechnology on the capability of homeopathic mother tinctures as innovative agents for nanoparticle synthesis.

Introduction:

Homeopathy, a holistic system of medicine originated from German, rooted in the principle of "like cures like," has been in practice for centuries. At its core, homeopathy involves the preparation of highly diluted remedies, each with its unique energetic imprint. In recent times, interest has grown in exploring the applications of homeopathic mother tinctures beyond its use as a traditional medicine for treating various health conditions. Now-a-days, homeopathic remedies have entered the realms of unconventional science, particularly in the field of nanotechnology. This chapter provides a brief account into the fascinating convergence of homeopathy and nanotechnology, on the untapped potential of homeopathic mother tinctures as novel agents for nanoparticle synthesis.

Homeopathic Mother Tinctures: A Brief Overview:

To comprehend the synergy between homeopathy and nanotechnology, it is imperative to grasp the fundamentals of homeopathic remedies. These remedies commence their journey with the creation of a mother tincture, a potent and concentrated extract derived from a variety of natural sources. The therapeutic use of homeopathic remedies based on the preparation of a mother tincture, a highly concentrated extract derived from natural sources such as plants, minerals with distinct crystalline structures and animal substances. These mother tinctures serve as the cornerstone for subsequent processes of serial dilution known as succussion, rendering the remedy extremely diluted yet exceptionally potent in terms of its dynamic qualities related to the curative power.

Nanoparticles and Their Multifaceted Applications:

In parallel to the evolution of homeopathy, the field of nanotechnology has been making monumental strides. Nanoparticles, characterized by their extremely small size, typically in the range of 1 to 100 nanometers, exhibit a plethora of unique physical, chemical, and biological properties compared to their bulk counterparts. These exceptional attributes have fueled their integration into diverse fields, including medicine, electronics, catalysis, and environmental science. However, the conventional methods employed for nanoparticle synthesis often involve chemical reagents, which may carry environmental and health risks.

Possibility of Sustainable Nanoparticle Synthesis:

The environmental sustainability and the impact of conventional manufacturing processes, demand a quest for greener and more eco-friendly alternatives. Homeopathic mother tinctures, which are alcoholic preparations of phytochemicals, provide an intriguing potential to revolutionize nanoparticle synthesis. The question arises: can the energetically potent and bioactive nature of these mother tinctures offer a sustainable and benign pathway to the creation of nanoparticles with tailored properties?

Navigating the Nexus of Homeopathy and Nanotechnology:

This chapter discusses the mechanisms by which homeopathic mother tinctures may influence nanoparticle synthesis. This includes case studies, experimental findings, and the evolving body of knowledge that illuminates the synergy between these seemingly disparate disciplines. Moreover, the challenges that lie ahead and the uncharted territories that await exploration in this captivating interplay between holistic healing and cutting-edge technology will also be discussed.

Nanoparticles and Their Applications

Nanoparticles, characterized by their nanoscale dimensions (typically of 1-100 nanometers) possess unique physical and chemical properties compared to bulk materials. These properties have fueled their extensive use in diverse fields, from medicine to electronics. Although conventional nanoparticle synthetic methods involve chemical reagents, an emerging approach explores the use of homeopathic mother tinctures for environmentally friendly and sustainable synthesis.

Homeopathic Mother Tinctures in Nanoparticle Synthesis:

This section delves into the mechanisms through which homeopathic mother tinctures can play a pivotal role in nanoparticle synthesis:

1. Biochemical Mediation:

Homeopathic mother tinctures, especially those derived from plant sources may contain bioactive compounds which are capable of reducing metal ions to form nanoparticles. The resonance principle in homeopathy suggests that these remedies could facilitate

specific biochemical reactions conducive to nanoparticle synthesis.

2. *Water Memory:*

Homeopathic preparations are believed to retain a "memory" of the original substance, even at extremely high dilutions. This phenomenon may provide a structural template or informational framework for guiding nanoparticle growth and stabilization.

3. *Energetic Impartation:*

According to homeopathic principles, remedies carry the dynamic potential of the source material. It is conceivable that this energy might influence the formation and properties of nanoparticles during synthesis.

Case Studies and Experimental Findings

This section describes the selection of case studies and experimental findings that utilizes the potential of homeopathic mother tinctures in nanoparticle synthesis. Researchers have explored a diverse range of nanoparticles, including metallic, semiconductor, and magnetic variants. The investigations have scrutinized the impact of different homeopathic remedies, dilution levels, and succussion techniques on nanoparticle characteristics such as size, shape, and stability.

Challenges and Future Directions

While the integration of homeopathy and nanotechnology presents exciting possibilities, it is also inclusive of challenges and questions. These encompass standardization of preparation methods, in-depth understanding of underlying mechanisms, and the assurance of reproducibility. Future research shall also delve into broader applications of such nanoparticles, spanning drug delivery, catalysis, and imaging etc.

Applications of Homeopathic Mother Tinctures in Nanoparticle Synthesis:

1. *Biological Homeopathic Mother Tinctures for Nanoparticle Synthesis:*

Researchers have explored the potential of homeopathic mother tinctures derived from various botanical sources in nanoparticle synthesis. These tinctures contain a wide array of bioactive compounds, including phytochemicals and secondary metabolites, which possess unique properties conducive to nanoparticle formation. For instance, plant extracts rich in polyphenols and flavonoids have demonstrated the ability to reduce metal ions, such as silver or gold, into nanoparticles. The resonance principle in homeopathy suggests that these natural compounds may impart their specific dynamic principle to the nanoparticles, potentially influencing their biological interactions and applications.

2. *Mineral Homeopathic Mother Tinctures and Nanoparticle Formation*

In addition to botanical sources, mineral-based homeopathic mother tinctures have also garnered interest for nanoparticle synthesis. Minerals, due to their intrinsic properties, offer a different avenue for nanoparticle generation. For example, homeopathic mother tinctures derived

from minerals like quartz and calcite may carry the energetic signatures of these substances. When used in nanoparticle synthesis, these tinctures might influence the crystalline structure and properties of the resulting nanoparticles

Mechanisms Underlying Homeopathic Nanoparticle Synthesis

The precise mechanisms by which homeopathic mother tinctures influence nanoparticle synthesis remain a topic of ongoing research. Several hypotheses have been proposed:

1. ***Resonance and Energetic Transfer:***

Homeopathic remedies are believed to resonate with the vital force or energy within living organisms. When used in nanoparticle synthesis, these remedies may transfer their energetic information to the nanoparticles, potentially influencing their behaviour, stability, and biological interactions.

2. ***Template Effect:***

Homeopathic mother tinctures may act as templates or scaffolds for nanoparticle growth. The structured water clusters within highly diluted homeopathic preparations could guide the formation of nanoparticles with specific sizes and shapes.

3. ***Biological Signalling:***

Homeopathic remedies, particularly those derived from plants, might carry biological signaling molecules. When used in nanoparticle synthesis, these molecules could influence the nanoparticles' biocompatibility and targeted drug delivery properties.

Challenges and Future Directions

The integration of homeopathic mother tinctures into nanoparticle synthesis faces several challenges:

1. ***Standardization:***

Establishing standardized protocols for preparing homeopathic mother tinctures for nanoparticle synthesis is essential to ensure reproducibility and consistency.

2. ***Mechanistic Understanding:***

A deeper understanding of the mechanisms underlying the influence of homeopathic remedies on nanoparticle synthesis is needed to optimize the process and tailor nanoparticles for specific applications.

3. ***Safety and Toxicology:***

Assessing the safety and toxicity of nanoparticles synthesized using homeopathic mother tinctures is crucial for their potential use in medical and environmental applications.

4. ***Regulatory Approval:***

Regulatory bodies may require novel nanoparticle synthesis methods to meet specific safety and efficacy criteria before widespread adoption.

Conclusion

The amalgamation of homeopathy and nanotechnology offers a captivating avenue for sustainable and eco-friendly nanoparticle synthesis. Homeopathic mother tinctures, with their distinctive energetic attributes, have the potential to reshape the landscape of nanoscience. As the mysteries at this intersection unravel, the synthesis of nanoparticles via homeopathic principles may emerge as a potent tool in our quest for innovative and sustainable technological solutions.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

VOLUME - 2

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SUSTAINABILITY IN ENERGY WITH RELEVANCE TO SELF-RELIANT INDIA

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Abstract

The pursuit of sustainability in the energy sector is a paramount concern in the context of a self-reliant India. This conference proceeding delves into the multifaceted aspects of achieving energy sustainability while aligning with the 'Atmanirbhar Bharat' (self-reliant India) initiative. It explores the current energy landscape, strategies for promoting self-reliance, and the role of renewable energy, all of which are critical components in India's journey towards a sustainable and self-reliant energy future.

Keywords: Sustainability, Energy, Self-Reliance, Strategies, Environment, Atmanirbhar Bharat.

Introduction

India's energy sector plays a pivotal role in the nation's economic development and self-reliance goals. The integration of sustainability principles into this sector is crucial to ensure a resilient and self-sufficient future. This section sets the stage for the conference proceeding, highlighting the significance of sustainable energy practices in the 'Atmanirbhar Bharat' initiative.

India's Energy Landscape

Understanding the existing energy infrastructure and consumption patterns is crucial to chart the path toward sustainability and self-reliance. India's energy mix, dominated by fossil fuels, presents both opportunities and challenges. This section provides a comprehensive overview of:

- i. **Energy Sources:** The role of coal, oil, natural gas, renewables, and nuclear energy in India's energy mix.
- a) **Coal:** Coal has historically been the dominant source of energy in India. It is used for electricity generation and industrial processes. India has substantial coal reserves, and coal-fired power plants continue to play a significant role in the energy mix.

- b) **Oil and Natural Gas:** Oil and natural gas are essential for transportation, industrial processes, and as feedstocks for the petrochemical industry. India imports a significant portion of its oil and natural gas to meet domestic demand.
- c) **Renewable Energy:** India is making significant strides in the field of renewable energy. This includes solar, wind, hydropower, and biomass. Solar and wind energy, in particular, have seen substantial growth in recent years, with India becoming one of the world's largest producers of solar energy.
 - ❖ **Solar Energy:** Solar power, harnessed through photovoltaic cells, is a rapidly growing energy source in India. The country's solar capacity has expanded through large-scale solar parks and rooftop solar installations.
 - ❖ **Wind Energy:** India has a substantial wind energy capacity, and wind farms are spread across various states, especially in coastal areas and regions with favorable wind conditions.
 - ❖ **Hydropower:** Hydropower plants utilize the flow of water to generate electricity. India has several hydropower projects, especially in regions with abundant water resources.
 - ❖ **Biomass Energy:** Biomass, including agricultural residues and organic waste, is used for electricity generation and as a source of renewable energy in rural areas.
- d) **Nuclear Energy:** Nuclear power plants are another source of electricity in India. These plants use nuclear reactions to generate heat, which is then converted into electricity.
- e) **Natural Gas:** Natural gas is used for electricity generation, industrial processes, and as a cleaner alternative to coal in some power plants.
- f) **Rural Energy Sources:** In rural areas, energy sources include traditional biomass, such as firewood and cow dung, for cooking and heating. Efforts are being made to transition to cleaner and more sustainable energy sources in these areas.
- g) **Electricity Imports:** Some regions in India rely on electricity imports from neighboring countries to meet their energy needs, particularly during times of high demand.
- ii. **Energy Consumption Patterns:** Energy consumption patterns in India are influenced by various factors, including the country's large population, economic growth, industrialization, and diverse climate conditions. Understanding these consumption patterns is crucial for policymakers and energy planners. Here are some key aspects of energy consumption in India:
 - a) **Residential Sector:** The residential sector is a significant consumer of energy in India. Energy is primarily used for lighting, cooking, heating, and cooling. In rural areas, traditional biomass sources like firewood and cow dung are commonly used for cooking and heating, while urban areas rely on electricity and LPG (liquefied petroleum gas). The adoption of energy-efficient appliances and building designs is growing, especially in urban areas.

- b) **Industrial Sector:** India's industrial sector is energy-intensive and accounts for a significant portion of total energy consumption. Industries such as manufacturing, steel production, cement manufacturing, and textiles are major energy consumers. There is a growing focus on improving industrial energy efficiency and adopting cleaner technologies to reduce energy consumption and greenhouse gas emissions.
- c) **Transportation Sector:** The transportation sector is a major and rapidly growing consumer of energy in India. It includes road transportation (private vehicles, commercial vehicles, and public transport), railways, aviation, and shipping. The reliance on fossil fuels, primarily gasoline and diesel, for transportation contributes significantly to energy consumption. The promotion of electric vehicles (EVs) and the development of public transportation systems are efforts to reduce the sector's carbon footprint.
- d) **Agricultural Sector:** Agriculture plays a vital role in India's economy and energy consumption. Energy is used for irrigation, machinery operation, and processing. Diesel pumps are commonly used for irrigation in rural areas. There is an increasing emphasis on the adoption of solar pumps to reduce energy costs and environmental impacts.
- e) **Commercial Sector:** The commercial sector, which includes offices, retail establishments, and educational institutions, consumes energy for lighting, heating, cooling, and electronic equipment. Energy-efficient building designs and technologies are becoming more prevalent in this sector.
- f) **Renewable Energy Adoption:** India is making significant progress in adopting renewable energy sources, such as solar and wind power, to diversify its energy mix and reduce dependence on fossil fuels. Solar rooftop installations, solar parks, and wind farms have expanded rapidly in recent years.
- g) **Energy Access:** Achieving universal energy access is a priority in India. Many rural areas still lack reliable access to electricity, and efforts are underway to extend the power grid and provide electricity through off-grid solutions like microgrids and solar home systems.
- h) **Government Initiatives:** The Indian government has launched various *programmes* and initiatives to promote energy efficiency and conservation, such as the Perform, Achieve, and Trade (PAT) scheme, the *UJALA programme* for LED bulb distribution, and the *Pradhan Mantri Ujjwala Yojana* for LPG access.
- i) **Energy Imports:** India imports a significant portion of its oil and natural gas, which also contributes to energy consumption. Efforts are being made to reduce dependence on energy imports and boost domestic production.

India's energy consumption patterns are evolving as the country strives to balance economic growth with environmental sustainability. Policies and initiatives are aimed at

promoting energy efficiency, expanding renewable energy capacity, and achieving a more sustainable and self-reliant energy future.

3. Energy Sustainability Strategies

Efforts to promote sustainability in the energy sector are multifaceted and critical for India's self-reliance goals. This section explores various strategies, including:

3.1. Renewable Energy Expansion

India's commitment to renewable energy sources, such as solar, wind, and hydro, is evident in its ambitious targets. This subsection discusses:

i. Targets and Incentives: Setting ambitious renewable energy targets and providing incentives for clean energy adoption.

a) Targets:

- ❖ **Renewable Energy Capacity Targets:** India has set ambitious targets for increasing its renewable energy capacity. The most notable target is the goal to achieve 175 gigawatts (GW) of renewable energy capacity by 2022, which was later increased to 450 GW by 2030. This includes solar, wind, hydropower, and biomass energy.
- ❖ **Solar Power Targets:** The National Solar Mission has set specific solar power capacity targets. These include achieving 100 GW of solar capacity by 2022 and 280 GW by 2030. India aims to become one of the world's largest producers of solar energy.
- ❖ **Wind Power Targets:** India has set targets to increase its wind power capacity, aiming to achieve 60 GW of wind power capacity by 2022 and 140 GW by 2030.
- ❖ **Hydropower Targets:** The government has plans to add hydropower capacity, with targets set for the development of small and large hydropower projects.
- ❖ **Biomass and Other Renewable Sources:** Targets are also set for increasing the use of biomass and other renewable energy sources.

a) Incentives:

- ❖ **Financial Incentives:** The government offers various financial incentives to promote renewable energy. These include subsidies, tax benefits, and incentives for renewable energy projects. Special incentives are often provided for solar and wind power projects.
- ❖ **Generation-Based Incentives (GBIs):** GBIs provide financial incentives to renewable energy generators based on the amount of electricity they produce. These incentives are designed to encourage higher renewable energy generation.
- ❖ **Feed-in Tariffs:** Feed-in tariffs guarantee a fixed payment for electricity generated from renewable sources, providing predictability for investors and project developers.

- ❖ **Accelerated Depreciation:** Accelerated depreciation benefits allow businesses to write off a significant portion of the cost of renewable energy equipment in the early years, reducing tax liabilities.
- ❖ **Viability Gap Funding (VGF):** VGF is provided to bridge the gap between the cost of setting up renewable energy projects and the revenue generated. It helps make projects financially viable.
- ❖ **Renewable Purchase Obligation (RPO):** RPO mandates that a certain percentage of electricity purchased by utilities come from renewable sources. Non-compliance results in penalties, encouraging utilities to invest in renewables.
- ❖ **Net Metering and Feed-in Tariffs for Solar Rooftop:** Net metering allows individuals and businesses to sell excess solar power back to the grid, while feed-in tariffs provide incentives for feeding solar power into the grid.
- ❖ **Customs and Excise Duty Exemptions:** Renewable energy equipment and components are often exempt from customs and excise duties, making them more affordable.
- ❖ **Clean Energy Certificates (RECs):** RECs are tradable certificates that represent the environmental attributes of renewable energy generation. They provide additional revenue for renewable energy projects.
- ❖ **Green Energy Corridors:** Infrastructure development, such as green energy corridors, is encouraged to improve the transmission and distribution of renewable energy.
- ❖ **International Collaboration:** India collaborates with international organizations and nations to access funding and expertise for renewable energy projects.

These targets and incentives are part of India's comprehensive strategy to promote renewable energy expansion, reduce greenhouse gas emissions, and achieve its sustainable energy goals. They have contributed to significant growth in the renewable energy sector in the country.

ii. Solar and Wind Power Initiatives: India has implemented several key solar and wind power initiatives to promote renewable energy expansion and achieve its ambitious targets for sustainable energy generation. These initiatives aim to accelerate the deployment of solar and wind energy projects, attract investments, and create a conducive environment for renewable energy growth. Here are some of the significant solar and wind power initiatives in India:

a) Solar Power Initiatives:

- ❖ **National Solar Mission (NSM):** Launched in 2010, NSM is one of India's flagship programmes for solar energy expansion. It has several components, including:

- ❖ **Jawaharlal Nehru National Solar Mission (JNNSM):** The primary aim is to promote solar power generation in India and reduce the cost of solar energy through various mechanisms, such as feed-in tariffs, incentives, and subsidies.
- ❖ **Grid-Connected Solar Rooftop Programme:** Encourages the installation of solar panels on rooftops of homes, commercial buildings, and institutions. It offers financial incentives and net metering for surplus energy fed into the grid.
- ❖ **Off-Grid Solar Applications:** Promotes the use of solar power in remote and off-grid areas through decentralized solar power generation.
- ❖ **Solar Parks:** India has initiated the development of large-scale solar parks and ultra-mega solar power projects to attract investments and boost solar capacity. The parks provide the necessary infrastructure and land for solar developers.
- ❖ **Solar Energy Corporation of India (SECI):** SECI is a government-owned company dedicated to promoting solar energy projects, including the development of solar parks and auctions for solar capacity.
- ❖ **International Solar Alliance (ISA):** India co-founded the ISA, a global initiative aimed at promoting solar energy in solar-rich countries. It fosters cooperation in solar technology development, capacity building, and sharing of best practices.

b) Wind Power Initiatives:

- ❖ **Wind Energy Promotion:** India has set ambitious targets for wind power capacity expansion. The government has implemented various measures to promote wind energy, including:
- ❖ **Generation-Based Incentives (GBIs):** GBIs provide financial incentives based on the amount of electricity generated from wind power projects, encouraging higher generation.
- ❖ **Accelerated Depreciation:** Businesses investing in wind power projects can claim accelerated depreciation benefits, reducing tax liabilities.
- ❖ **Feed-in Tariffs (FiTs):** FiTs guarantee a fixed payment for wind power generation, providing predictability for investors.
- ❖ **Wind Energy Resource Assessment:** The National Institute of Wind Energy (NIWE) conducts detailed wind resource assessments to identify suitable locations for wind farms and provide wind data to potential investors.
- ❖ **Wind-Solar Hybrid Policy:** India has introduced policies to encourage the development of hybrid power projects that combine wind and solar energy generation. These projects optimize land use and grid integration.
- ❖ **Bidding and Competitive Auctions:** Wind power projects are often allocated through competitive bidding and auctions, ensuring transparency and cost-effective development.

- ❖ **Transmission Infrastructure:** Investments have been made in strengthening the transmission infrastructure to facilitate the integration of wind power into the grid.

Both solar and wind power initiatives in India aim to attract investments, reduce the cost of renewable energy, and support the transition to a cleaner and more sustainable energy future. These initiatives have contributed significantly to India's position as a global leader in renewable energy capacity expansion.

3.2. Energy Efficiency Programmes

Improving energy efficiency is a cornerstone of sustainability. This subsection addresses:

- Energy-Efficient Appliances and Buildings:** Energy-efficient appliances and buildings play a crucial role in India's pursuit of self-reliance in energy. By reducing energy consumption in households and commercial structures, these initiatives not only help conserve resources but also contribute to energy security and environmental sustainability. Here are some key aspects of energy-efficient appliances and buildings in self-reliant India:

- Energy-Efficient Appliances:**

- ❖ **Star Labeling Programme:** India has implemented the Bureau of Energy Efficiency's (BEE) star labeling programme for various appliances such as refrigerators, air conditioners, and LED bulbs. This programme rates appliances on their energy efficiency and helps consumers make informed choices. Appliances with higher star ratings are more energy-efficient.
- ❖ **Appliance Standards and Regulations:** The government has established minimum energy performance standards (MEPS) for various appliances, setting requirements for energy efficiency and encouraging manufacturers to produce more efficient products.
- ❖ **LED Lighting:** The Unnat Jyoti by Affordable LEDs for All (UJALA) programme aims to distribute energy-efficient LED bulbs to households at affordable prices. The programme has led to significant energy savings in lighting.
- ❖ **Energy-Efficient Fans and Air Conditioners:** BEE has introduced star labeling and energy efficiency standards for fans and air conditioners, promoting the adoption of energy-efficient cooling and ventilation systems.
- ❖ **Appliance Rebate Programmes:** Various state and central government initiatives offer rebates and incentives for the purchase of energy-efficient appliances, encouraging consumers to invest in these products.

- Energy-Efficient Buildings:**

- ❖ **Energy Conservation Building Code (ECBC):** The ECBC sets energy efficiency standards for commercial buildings and aims to reduce energy consumption in the

commercial sector. It encourages the use of energy-efficient building materials, insulation, lighting, and HVAC systems.

- ❖ **Green Building Certification:** Organizations like the Indian Green Building Council (IGBC) and LEED (Leadership in Energy and Environmental Design) promote the construction of green and sustainable buildings. These certifications recognize buildings that meet specific energy efficiency and sustainability criteria.
- ❖ **Smart and Sustainable Design:** Architects and builders are increasingly incorporating passive design principles, which optimize natural lighting and ventilation to reduce the need for artificial lighting and HVAC systems. This not only conserves energy but also improves indoor comfort.
- ❖ **Energy Audits:** Energy audits of existing buildings identify areas for improvement and recommend energy-efficient upgrades, such as insulation, energy-efficient windows, and lighting retrofits.
- ❖ **Net-Zero and Zero-Energy Buildings:** There is a growing interest in designing and constructing net-zero energy buildings, which produce as much energy as they consume over the course of a year. These buildings rely on renewable energy sources and energy-efficient design.
- ❖ **Energy-Efficient Materials:** The use of energy-efficient construction materials, such as cool roofs and high-performance windows, is becoming more prevalent in building design.
- ❖ **Building Energy Management Systems (BEMS):** BEMS technologies help monitor and control energy usage within buildings, optimizing HVAC, lighting, and other systems for efficiency.

The adoption of energy-efficient appliances and building practices not only reduces energy consumption but also contributes to India's self-reliance by reducing its dependence on energy imports and enhancing energy security. These initiatives also align with India's commitment to global climate goals by reducing greenhouse gas emissions associated with energy use in buildings.

- ii. **Industrial Energy Efficiency:** Industrial energy efficiency is a critical aspect of India's journey toward self-reliance in energy. Industries are significant energy consumers, and improving efficiency not only reduces energy costs but also enhances competitiveness, reduces carbon emissions, and conserves valuable resources. Here are key strategies and initiatives related to industrial energy efficiency in self-reliant India:
 - a) **Perform, Achieve, and Trade (PAT) Scheme:** The PAT scheme is a market-based mechanism that sets energy efficiency targets for energy-intensive industries like cement, steel, aluminum, and pulp and paper. Industries that achieve and exceed these targets receive energy-saving certificates that can be traded.

- b) **Energy Audits:** Conducting regular energy audits helps industries identify energy-saving opportunities and implement cost-effective energy conservation measures. The government encourages industries to undertake energy audits.
- c) **Energy Management Systems (EnMS):** Implementing EnMS based on ISO 50001 standards helps industries establish a systematic approach to continuously improve energy performance, reduce energy costs, and achieve energy efficiency targets.
- d) **Technology Upgrades:** Encouraging industries to invest in modern, energy-efficient technologies and machinery helps reduce energy consumption and improve productivity. Subsidies and incentives are often provided for such upgrades.
- e) **Waste Heat Recovery:** Capturing and utilizing waste heat generated during industrial processes is an effective way to improve energy efficiency. Combined Heat and Power (CHP) systems are commonly used for this purpose.
- f) **Energy-Efficient Lighting:** Replacing conventional lighting with energy-efficient alternatives such as LEDs can significantly reduce energy consumption in industrial facilities.
- g) **Lean Manufacturing and Process Optimization:** Lean manufacturing principles and process optimization techniques help eliminate energy-wasting inefficiencies and streamline production processes.
- h) **Demand-Side Management (DSM):** Implementing DSM strategies helps industries manage and reduce peak electricity demand, thereby lowering energy costs.
- i) **Training and Capacity Building:** Offering training and capacity-building programmes to industry professionals on energy-efficient practices and technologies enhances awareness and implementation of energy-saving measures.
- j) **Industry-Specific Initiatives:** Tailoring energy efficiency programmes to specific industries, considering their unique energy requirements and challenges, helps drive sector-specific improvements.
- k) **Standards and Labeling:** The BEE sets energy efficiency standards for various industrial equipment and appliances. Labeling products with their energy efficiency ratings helps industries make informed choices.
- l) **Financing and Incentives:** Providing access to low-interest loans, grants, and incentives for energy-efficient projects helps industries overcome financial barriers to adoption.
- m) **Research and Development:** Supporting research and development in energy-efficient technologies and processes encourages innovation and the development of cutting-edge solutions.
- n) **Public-Private Partnerships (PPPs):** Collaboration between government agencies, industry associations, and private companies can facilitate the adoption of energy-efficient practices and technologies.

- o) Reporting and Benchmarking:* Mandating industries to report their energy consumption and efficiency data encourages transparency and competition.

By implementing these strategies and initiatives, India aims to improve industrial energy efficiency, reduce energy imports, enhance energy security, and contribute to a more sustainable and self-reliant energy future. It also aligns with India's commitment to global climate goals by reducing greenhouse gas emissions associated with industrial processes.

3.3. Environmental Conservation and Mitigation

Addressing environmental concerns is integral to sustainability. This subsection covers:

- i. Policies for Reducing Carbon Emissions:* India has implemented several policies and initiatives aimed at reducing carbon emissions and addressing climate change. These policies are critical for mitigating the impacts of climate change, enhancing environmental sustainability, and promoting a low-carbon economy. Here are some of the key policies and measures for reducing carbon emissions in India:
 - a) National Action Plan on Climate Change (NAPCC):* The NAPCC, launched in 2008, is a comprehensive framework that outlines India's strategies and policies to combat climate change. It consists of eight national missions, each focusing on specific sectors, including solar energy, energy efficiency, sustainable agriculture, and water resources.
 - b) Renewable Energy Initiatives:*
 - ❖ *National Solar Mission:* India's National Solar Mission aims to promote the deployment of solar energy and achieve significant solar capacity additions. It includes ambitious targets for solar power generation and incentives for solar projects.
 - ❖ *National Wind Mission:* The Wind Mission focuses on expanding wind power capacity, improving grid integration, and increasing wind energy generation.
 - c) Perform, Achieve, and Trade (PAT) Scheme:* The PAT scheme sets energy efficiency targets for energy-intensive industries and allows them to trade energy-saving certificates when they exceed their targets. It encourages industries to adopt energy-efficient technologies and practices.
 - d) Energy Efficiency Measures:*
 - ❖ *Standards and Labeling:* The Bureau of Energy Efficiency (BEE) has established energy efficiency standards for appliances and equipment, including air conditioners, refrigerators, and lighting. Products are labeled to indicate their energy efficiency levels.
 - ❖ *Energy Conservation Building Code (ECBC):* ECBC sets energy efficiency standards for commercial buildings, promoting the use of energy-efficient construction practices and technologies.

- e) **Carbon Pricing and Trading:** While India has not implemented a nationwide carbon pricing mechanism, there are discussions and pilot projects exploring carbon trading and carbon tax options.
- f) **Green Transportation Initiatives:** Promotion of electric vehicles (EVs) through incentives, subsidies, and charging infrastructure development to reduce carbon emissions from the transportation sector.
- g) **Reforestation and Afforestation:** India has various afforestation and reforestation programmes to increase forest cover, sequester carbon, and promote biodiversity conservation.
- h) **Sustainable Agriculture Practices:** Policies that encourage sustainable farming practices, including organic farming and efficient water use, to reduce emissions from agriculture.
- i) **Waste Management and Recycling:** Initiatives to reduce methane emissions from landfills and promote recycling and waste-to-energy technologies.
- j) **International Commitments:** India is committed to meeting its international climate obligations, including those under the Paris Agreement, which includes targets for reducing carbon emissions.
- k) **Sustainable Urban Development:** Policies promoting sustainable urban planning, public transportation, and the development of smart cities to reduce emissions associated with urbanization.
- l) **Research and Development:** Investment in research and development of clean and efficient technologies across various sectors, including energy, transportation, and agriculture.

These policies and initiatives are part of India's comprehensive approach to addressing climate change and reducing carbon emissions. They are crucial for achieving sustainability, energy security, and environmental conservation while contributing to global efforts to combat climate change.

4. Self-Reliance in Energy

India's 'Atmanirbhar Bharat' initiative is a driving force behind energy self-reliance. This section discusses:

4.1. The 'Atmanirbhar Bharat' Initiative

- i. **Goals and Objectives:** The initiative's objectives to reduce energy dependence on imports, boost domestic manufacturing, and promote indigenous solutions. The "Atmanirbhar Bharat" initiative, launched by the Government of India, aims to foster self-reliance and boost economic growth and resilience. The term "Atmanirbhar" translates to "self-reliant" in English, and the initiative encompasses various economic,

social, and governance aspects. The primary goals and objectives of the *Atmanirbhar Bharat* initiative are:

- a) **Economic Self-Reliance:** The initiative seeks to reduce dependence on imports, especially in critical sectors like defense, healthcare, and technology. It aims to make India self-sufficient in essential goods and services, thereby enhancing economic sovereignty.
- b) **Promotion of Domestic Manufacturing:** One of the core objectives is to promote domestic manufacturing, increase the share of "Made in India" products, and create a robust manufacturing ecosystem. This involves providing incentives, simplifying regulations, and improving infrastructure.
- c) **Boosting Micro, Small, and Medium Enterprises (MSMEs):** The initiative aims to support MSMEs, which play a crucial role in employment generation and economic growth. Measures include financial assistance, easier access to credit, and simplification of compliance procedures.
- d) **Agricultural Reforms:** *Atmanirbhar Bharat* seeks to transform the agricultural sector by liberalizing trade, removing barriers, and enhancing the income of farmers. Initiatives like the Agricultural Produce Market Committee (APMC) reforms and contract farming aim to empower farmers.
- e) **Infrastructure Development:** The initiative focuses on infrastructure development, including transportation, logistics, and energy. Investment in infrastructure is seen as a key driver of economic growth and job creation.
- f) **Promotion of Digital India:** Expanding digital infrastructure, internet access, and e-governance is a critical component. Digitalization is seen as a means to enhance efficiency, transparency, and accessibility of government services.
- g) **Healthcare Strengthening:** The COVID-19 pandemic highlighted the importance of a robust healthcare system. The initiative aims to enhance healthcare infrastructure, including hospitals, medical research, and pharmaceutical production.
- h) **Environmental Sustainability:** While promoting economic growth, *Atmanirbhar Bharat* also recognizes the importance of environmental sustainability. It encourages the development and adoption of green technologies and practices.
- i) **Global Engagement:** The initiative does not advocate isolationism but instead encourages global engagement on India's terms. It seeks to position India as a competitive player in the global market and forge strategic partnerships.
- j) **Employment Generation:** Creating job opportunities, especially for the youth, is a priority. Investments in various sectors are expected to generate employment, which is essential for economic and social stability.

- k) **Ease of Doing Business:** Simplifying regulatory procedures, reducing bureaucratic hurdles, and improving the ease of doing business are vital objectives. A business-friendly environment is seen as essential for attracting investments.
- l) **Social Inclusivity:** Ensuring that the benefits of economic growth reach all segments of society, especially marginalized and economically disadvantaged groups, is emphasized.
- m) **Resilience to External Shocks:** Developing resilience to external economic shocks, such as the global economic downturn, is a key objective. This includes building buffers in the form of foreign exchange reserves and reducing vulnerabilities.

Atmanirbhar Bharat represents a multi-faceted approach to economic and social development in India. Its objectives encompass economic growth, self-reliance, job creation, infrastructure development, and social inclusivity. The success of the initiative depends on effective policy implementation, public-private partnerships, and adaptability to changing global economic dynamics.

ii. **Role of Energy Self-Reliance:** Energy self-reliance plays a pivotal role in the "Atmanirbhar Bharat" initiative, which aims to make India self-reliant across various sectors. Energy is a fundamental enabler of economic growth, industrialization, and overall development. Here's how energy self-reliance contributes to the objectives of the *Atmanirbhar Bharat* initiative:

- a) **Reducing Dependence on Energy Imports:** India is one of the largest importers of crude oil, natural gas, and coal. By enhancing domestic energy production and reducing reliance on energy imports, India can improve its energy security and reduce its vulnerability to fluctuations in global energy prices and supply disruptions.
- b) **Enhancing Energy Access:** Energy self-reliance entails expanding domestic energy production, which can help provide reliable access to electricity and clean cooking fuels for all citizens, including those in rural and remote areas. This aligns with the goal of universal energy access, a crucial aspect of the initiative.
- c) **Supporting Domestic Industry:** Reliable and affordable energy is essential for the growth of domestic industries. By ensuring a stable energy supply, India can boost its manufacturing sector and reduce production costs, making its industries more competitive in both domestic and international markets.
- d) **Promoting Renewable Energy:** The *Atmanirbhar Bharat* initiative recognizes the potential of renewable energy sources like solar and wind power. Expanding domestic renewable energy capacity reduces dependence on fossil fuels, contributes to environmental sustainability, and aligns with India's commitments to combat climate change.
- e) **Energy Efficiency:** Self-reliance in energy includes improving energy efficiency across various sectors, such as industry, transportation, and buildings. Enhanced energy

efficiency not only reduces energy consumption but also lowers production costs and reduces greenhouse gas emissions.

- f) **Infrastructure Development:** Developing energy infrastructure, including power generation, transmission, and distribution, is a critical component of the initiative. Reliable and modern energy infrastructure is essential for supporting economic growth, urbanization, and industrialization.
- g) **Rural Electrification:** Expanding electricity access to rural areas is a priority. This involves not only providing electricity connections but also ensuring a reliable and affordable energy supply, which can support rural industries and agricultural productivity.
- h) **Green Technologies and Innovation:** Energy self-reliance encourages the development and adoption of green technologies and innovations. Investments in research and development can lead to breakthroughs in energy efficiency, renewable energy technologies, and sustainable practices.
- i) **Foreign Exchange Savings:** Reducing energy imports can lead to substantial savings in foreign exchange reserves, which can be allocated to other priority areas, such as healthcare, education, and infrastructure development.
- j) **Environmental Sustainability:** Reducing dependence on fossil fuels and promoting renewable energy sources contributes to environmental sustainability and helps India meet its climate commitments. It aligns with global efforts to mitigate the impacts of climate change.
- k) **Job Creation:** The energy sector, including renewable energy, offers significant opportunities for job creation. The growth of domestic energy production and related industries can generate employment opportunities, especially in rural and semi-urban areas.

The energy self-reliance is a crucial pillar of the *Atmanirbhar Bharat* initiative. It not only strengthens India's energy security and economic resilience but also supports environmental sustainability and inclusive development. Achieving energy self-reliance requires a multi-pronged approach, including investments in renewable energy, energy efficiency, infrastructure development, and policy reforms.

6. Future Prospects and Conclusion

In conclusion, sustainability in energy, as part of the *Atmanirbhar Bharat* initiative, represents a transformative journey for India. It encompasses renewable energy growth, energy efficiency, technological innovation, and inclusive development. The future prospects are promising, with India poised to become a global leader in renewable energy adoption, energy efficiency advancements, and green innovation. This pursuit of energy self-reliance not only strengthens the nation's economic resilience but also contributes

significantly to environmental conservation and social progress. As India continues on this path, it sets an inspiring example of sustainable development for the world to follow.

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ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT

Volume - 2

Chief Editor
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SELF-RELIANCE IN RESOURCE UTILIZATION AND ENVIRONMENTAL CONCERNS IN INDIA

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Abstract

India's pursuit of self-reliance in resource management and its concurrent efforts to address environmental challenges is of paramount importance in its pursuit for sustainability. In this regard, various dimensions of resource utilization and environmental conservation, highlighting the need for sustainable practices, technological innovations, and effective policies are needed to be studied. A brief survey on relevant literature and government reports would provide insights into India's journey towards self-reliance within the global context of environmental sustainability and the same is presented in this report.

Keywords: Self-reliant India (Atmanirbhar India), Resource utilization, Resource Management, Renewable energy, Environment concerns.

Introduction

India, with its With a burgeoning population, a rapidly expanding economy, and pressing environmental challenges, the nation seeks to strike a delicate balance between achieving self-sufficiency in resource management and safeguarding its natural environment. The multifaceted aspects of India's endeavor to achieve resource self-sufficiency and its implications for environmental sustainability are of importance in global economy. Self-reliance in resource utilization and addressing environmental concerns stands as a defining aspiration for India in the 21st century. This journey encompasses efficient resource management, renewable energy adoption, sustainable agriculture, rational water use, waste reduction and recycling, technological innovation, effective policy frameworks, and international cooperation. This article delves into the various dimensions of India's efforts to attain self-reliance while addressing the complexities of environmental sustainability, highlighting the interconnectedness of these critical goals in shaping India's future.

Efficient Resource Management

Efficient resource management is a cornerstone of India's self-reliance strategy (UNDP, 2020). Rational consumption, sustainable extraction, and waste reduction are vital to this approach. It is also the linchpin of India's journey towards self-reliance. It involves responsible consumption, sustainable extraction, and waste reduction practices across various sectors, from agriculture and energy to manufacturing. By optimizing resource use, embracing circular economy principles, and leveraging technological innovations, India can enhance self-sufficiency while considering environmental concerns. Effective policy frameworks further incentivize resource efficiency, ensuring a sustainable path to self-reliance in resource utilization and economic growth.

Renewable Energy

India's emphasis on renewable energy, exemplified by its National Wind-Solar Hybrid Policy (Government of India, Ministry of New and Renewable Energy, 2020), aims to reduce the dependency on fossil fuels and mitigate climate change. Renewable energy is a cornerstone of India's vision for self-reliance. The country's commitment to harnessing renewable sources such as solar, wind, and hydropower not only reduces dependence on fossil fuels but also promotes energy self-sufficiency. India's National Wind-Solar Hybrid Policy and various other initiatives have strengthened the growth of renewable energy infrastructure. By investing in clean and sustainable energy technologies, India not only secures its energy future but also contributes to environmental sustainability, aligning with the broader goal of becoming a self-reliant nation.

Agriculture and Food Security

The promotion of sustainable agriculture practices, as outlined in the NITI Aayog's strategy for doubling farmers' income (2018), is pivotal for self-reliance in food production. Agriculture and food security play a pivotal role in India's journey toward self-reliance. Sustainable farming practices, precision agriculture, and water-efficient irrigation systems are instrumental in enhancing crop yields and reducing resource wastage. By focusing on these aspects, India aims to bolster its self-sufficiency in food production, ensuring a stable food supply for its growing population. This approach not only strengthens the nation's resilience but also supports the broader goal of self-reliance by reducing dependence on external sources for food and agricultural resources.

Water Management

With water scarcity in many regions, efficient water utilization and conservation are imperative (World Bank, 2019). Rainwater harvesting and efficient irrigation methods play key roles in this regard. Efficient water management is a critical element in India's pursuit of self-reliance. In a country facing water scarcity in many regions, strategies such as rainwater harvesting, efficient irrigation techniques, and wastewater recycling are vital. By optimizing water use and conservation, India aims to enhance self-sufficiency in water

resources. This not only ensures access to a crucial resource but also reduces dependence on external sources, aligning with the broader goal of self-reliance and environmental sustainability.

Waste Management

Effective waste management, including recycling and waste-to-energy initiatives (Central Pollution Control Board, 2021), contributes to resource conservation and pollution reduction. Waste management is a key component of India's self-reliance efforts. Through effective waste segregation, recycling initiatives, and the adoption of waste-to-energy technologies, the country aims to minimize waste generation and reduce its environmental impact. By managing waste efficiently, India not only mitigates pollution and conserves resources but also fosters self-sufficiency by harnessing the potential value in waste materials. This approach reinforces the broader goal of self-reliance by reducing the requirements for external waste disposal methods and promoting sustainable practices for a cleaner, more self-reliant future.

Environmental Protection

Conservation of biodiversity, forest protection, and measures to mitigate air and water pollution are vital components of India's self-reliance journey towards a sustainable future. (Ministry of Environment, Forest and Climate Change, 2020). Environmental protection is at the heart of India's self-reliance journey. These efforts not only safeguard India's natural heritage but also contribute to self-reliance by ensuring access to clean air, water, and ecosystems. By prioritizing environmental sustainability, India strengthens its resilience and reduces dependencies on external resources for environmental remediation, in line with the broader goal of self-reliance.

Technology and Innovation

Investing in green technologies and environmental monitoring systems is essential for resource efficiency (Department of Science and Technology, Government of India, 2021). Technology and innovation are driving forces in India's path to self-reliance. The nation is investing in green technologies, such as renewable energy and digital environmental monitoring systems, to optimize resource utilization and environmental sustainability. These innovations not only reduce dependencies on imported technologies but also position India as a global leader in sustainable solutions. By promoting a culture of innovation and supporting research and development, India is enhancing self-sufficiency across various sectors and enhances economic growth while reducing reliance on external sources. This commitment to technological advancement aligns with the broader goal of self-reliance in resource utilization and environmental concerns.

Policy and Governance

Effective policies and governance mechanisms are crucial for implementing sustainable practices and regulating harmful activities (NITI Aayog, 2019). Effective policy and

governance are fundamental pillars of India's journey toward self-reliance. By implementing robust policies that develop sustainable practices and regulate harmful activities, the nation is fostering an environment conducive to self-sufficiency. Policies such as the National Resource Efficiency Policy, mainstream resource efficiency practices across sectors, contributing to resource conservation and self-reliance. Good governance ensures the efficient implementation of these policies and creates an enabling environment for businesses and individuals to adopt sustainable practices. Together, policy and governance mechanisms are essential in achieving India's self-reliance goals, reducing dependencies on external resources, and promoting a resilient and sustainable future.

International Cooperation

While pursuing self-reliance, India actively engages in international cooperation on environmental issues, recognizing the global nature of challenges (Ministry of External Affairs, Government of India, 2020). International cooperation plays a pivotal role in India's pursuit of self-reliance. While striving to enhance self-sufficiency in various sectors, India actively engages in global partnerships and collaborations on environmental and economic challenges. Recognizing the interconnectivity of these issues, India seeks to leverage international expertise and resources to address common challenges, such as climate change and sustainable development. This approach is in agreement with India's broader goal of self-reliance by ensuring that the nation remains globally integrated while reducing dependencies on external sources. By enhancing international cooperation, India aims to achieve self-reliance in a rapidly changing global landscape.

Conclusion

India's journey toward self-reliance in resource utilization and environmental sustainability is a complex yet imperative endeavor. It necessitates a harmonious blend of efficient resource management, technological innovation, and robust policies, while admitting the global context of environmental challenges. In the pursuit of self-reliance in resource utilization and the simultaneous commitment to address environmental concerns, India embarks on a transformative journey that holds immense significance for its future. The harmonious integration of efficient resource management practices, renewable energy adoption, sustainable agriculture, responsible water use, waste reduction, technological innovation, and sound policy frameworks reflects a nation's poise to meet its needs while minimizing dependencies on external sources. India's quest for self-reliance is not just a national aspiration; it is globally imperative. By advancing self-sufficiency and preserving its environment simultaneously, India models a path for sustainable development that resonates far beyond its borders, offering a convincing vision of a future where resource utilization and environmental protection are intrinsically linked.

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SUSTAINABLE DEVELOPMENTS THROUGH MSMEs: A PATHWAY TO SELF-RELIANT INDIA

VOLUME - 2

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ENERGY EFFICIENCY AND RENEWABLE ENERGY ADOPTION FOR SELF RELIANT INDIA

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Abstract

This study highlights the critical importance of energy efficiency and renewable energy adoption in India's journey towards self-reliance. With a growing population and increasing energy demands, India faces the challenge of ensuring energy security while minimizing its carbon footprint. This paper puts a focus on the diverse benefits of investing in energy-efficient technologies and scaling up renewable energy sources to achieve energy independence. By taking up these sustainable solutions, India can enhance its energy adaptability, reduce greenhouse gas emissions, create new job opportunities and secure a sustainable future for its citizens. This research explores the policy, technological and economic avenues that can accelerate the transition to a self-reliant and environmentally responsible energy landscape in India.

Keywords: renewable energy, self-reliance, greenhouse gas, sustainable future

Introduction

India, with its growing population and rapid urbanization, faces formidable challenges in meeting its growing energy demands. Historically reliant on fossil fuels, this dependence not only strains the nation's energy security but also contributes significantly to environmental degradation and global climate change¹. Recognizing the urgency of the situation, India has embarked on a transformative journey, seeking to harmonize economic development with environmental stewardship through a multifaceted approach. Simultaneously, the integration of renewable energy sources takes center stage. India's vast and diverse geography offers a wealth of renewable energy resources, from the abundant sunlight in the arid plains to the brisk winds along coastal regions, and the unexploited potential of biomass and hydroelectricity. Harnessing these resources through innovative technologies and strategic investments has the potential to redefine India's energy landscape².

Energy Resources and Consumers

Energy resources and consumers in India are critical components of the country's energy landscape, which is undergoing significant changes due to growing demand, environmental concerns, and efforts to enhance energy security. Balancing the growing energy needs of India's diverse consumer base with the imperative of sustainability and energy security poses significant challenges. India's policymakers, businesses, and civil society are actively working to address these challenges while exploring opportunities for

clean and efficient energy solutions. This dynamic relationship between energy resources and consumers in India is central to the nation's aspirations for sustainable and self-reliant energy development, making it a topic of crucial importance in the global energy landscape³.

The Importance of Energy Efficiency

Energy efficiency is a fundamental aspect of sustainable development and a key driver in achieving energy self-reliance for India. It refers to the practice of using less energy to accomplish the same tasks or achieve the same level of output. The importance of energy efficiency cannot be overstated, as it offers a wide range of economic, environmental and societal benefits. Energy efficiency measures lead to reduced energy consumption, resulting in lower energy bills for households, businesses, and industries. These cost savings can be substantial over time and significantly improve economic well-being⁴.

Renewable Energy in India

India is one of the world's largest greenhouse gas emitters. Renewable energy sources, such as solar and wind power, produce little to no greenhouse gas emissions during electricity generation, making them essential for mitigating climate change⁵. The use of renewable energy reduces reliance on fossil fuels, which are a significant source of air pollution and health issues in India. By transitioning to cleaner sources, India can improve air quality and public health. Renewable energy adoption plays a crucial role in achieving self-reliance in energy for a nation. It reduces dependence on imported fossil fuels, enhances energy security, and promotes sustainable development.

Renewable energy adoption

Renewable energy adoption is a critical component of achieving energy self-reliance in India. The country's energy demand is growing rapidly, and reducing dependence on fossil fuels through the use of renewable energy sources can help secure a sustainable and self-reliant energy future. India's journey toward energy self-reliance through renewable energy adoption requires a multi-faceted approach that includes policy support, incentives, infrastructure development, and public awareness. By prioritizing these strategies, India can reduce its dependence on fossil fuels, mitigate environmental impacts, and ensure a more sustainable and self-reliant energy future⁶.

Empowering India's Self-Reliance through MSMEs

Micro, Small, and Medium Enterprises (MSMEs) are the backbone of India's economy. They play a crucial role in fostering economic growth, generating employment opportunities, and promoting entrepreneurship. Empowering India's self-reliance through

MSMEs is not just an economic imperative. it's a strategic approach to achieving sustainability and resilience in the face of global challenges⁷. Empowering India's self-reliance through MSMEs is a multifaceted strategy that involves job creation, innovation, technology adoption, regulatory reforms, and sustainability practices. By nurturing and supporting the growth of MSMEs, India can enhance its economic independence and resilience, contributing to the nation's overall development and self-reliance goals.

Conclusion

In conclusion, energy efficiency and renewable energy adoption are not only essential for India's energy security but also for its economic growth, environmental preservation, and social development. As India continues to make strides in these areas, it is positioning itself as a global leader in sustainable energy practices, contributing to a brighter and more self-reliant future. However, achieving these goals will require sustained efforts, collaboration among stakeholders, and a commitment to clean and sustainable energy solutions. To achieve these benefits and strengthen self-reliance, India must continue to invest in research and development, implement supportive policies and incentives, enhance public awareness, and foster collaboration among various stakeholders. By doing so, India can secure a sustainable, resilient, and self-reliant energy future, reducing its carbon footprint and ensuring access to reliable energy for all its citizens.

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ROLE OF MICRO, SMALL AND MEDIUM ENTERPRISES (MSME'S) IN ACHIEVEING SUSTAINABLE DEVELOPMENT GOALS

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Abstract

Micro, Small, and Medium Enterprises (MSMEs) play a pivotal role in driving economic development worldwide, and India is no exception to this trend. The researcher presents a set of recommendations aimed at enhancing the sustainability of MSMEs. These measures are designed to foster the resilience and longevity of these enterprises, which, in turn, would bolster their capacity to contribute meaningfully to the achievement of the SDGs. In essence, MSMEs emerge as not just economic actors but as essential agents of change in the global pursuit of a sustainable and equitable future as envisioned by the SDGs.2. MSMEs have a significant part to play in achieving several SDGs, with a particular focus on goals like Poverty Alleviation (Goal 1), Decent Work and Economic Growth (Goal 8), and Industry Innovation and Infrastructure (Goal 9). However, their impact extends beyond these goals, as they also directly or indirectly contribute to other SDGs. In this research paper, we delve into the multifaceted role of MSMEs in advancing the SDGs. We categorize their contributions based on various activity attributes, demonstrating their involvement in the attainment of different goals.

Keywords: *Poverty Alleviation, Sustainable and Equitable Future, Decent Work and Economic Growth, Multifaceted Role, Industry Innovation and Infrastructure, Global Pursuit.*

Introduction

The term "Sustainable Development" was initially coined by Barbara Ward in the "Cocoyoc Declaration" of 1974. It has since been extensively discussed in various international gatherings, summits, conferences, and reports, including notable mentions in the IUCN Reports of 1980 and 1990 and the World Commission on Environment and Development (WECD). The WECD's seminal report, titled "Our Common Future," marked a significant milestone by emphasizing sustainability as the only viable path to mitigate threats to humanity's survival.

This concept gained further traction during events like the Earth Summit in 1992 and The Norway Round Table in 1995. The Earth Summit of 1992 yielded two critical documents for sustainable development, namely "Agenda 21" and the "Rio Declaration on Environment and Development." The Norway Round Table also established key principles to advance the cause of sustainable development.



ENVISIONING A SELF-RELIANT RURAL INDIA FOR SUSTAINABLE ECONOMIC DEVELOPMENT

Volume - 1

Chief Editor
Dr. R. Gayathri



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RESILIENT AND SELF-RELIANT: INDIA'S JOURNEY TOWARDS SUSTAINABLE DEVELOPMENT

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Abstract

This paper illuminates India's transformative journey towards sustainable development, with a focus on fostering resilience and self-reliance. Against a backdrop of dynamic global challenges, India has set forth a visionary agenda aimed at achieving economic prosperity while safeguarding environmental integrity and societal well-being. This document delves into the multifaceted strategies, policies, and initiatives that underpin this ambitious undertaking. The paper commences by delineating the socio-economic context that necessitates India's pursuit of self-reliance. It explores the intricate interplay of factors ranging from demographic shifts to geopolitical dynamics, providing a comprehensive understanding of the challenges and opportunities at hand. It underscores the imperative for India to establish self-reliance as the linchpin of its development paradigm. Moreover, the paper underscores the significance of inclusive policies in cultivating self-reliance at the grassroots level. It elucidates initiatives aimed at empowering local communities, enhancing skill development, and fostering entrepreneurship. Through these endeavors, India seeks to amplify the capacities of its citizens, ensuring they become active stakeholders in the nation's sustainable development trajectory. Through a judicious blend of strategic policies, inclusive practices, and technological innovation, India endeavors to forge a future where resilience and self-reliance are the bedrock of a flourishing and sustainable society. This paper serves as a testament to India's unwavering commitment to a more equitable, resilient, and sustainable future for its citizens and the global community.

Keywords: self-reliance, resilient, Sustainable Development and future

Introduction

In the tapestry of nations, India has long stood as a beacon of diversity, culture, and resilience. As a nation of over a billion aspirations, it faces a unique set of challenges and opportunities. In recent years, the clarion call for self-reliance has resonated across the Indian landscape, heralding a transformative shift in economic strategy. This shift, however, is not merely an endeavor in economic autonomy; it is a profound commitment to sustainability, weaving together the threads of prosperity, environmental stewardship, and social inclusivity. This journey towards self-reliance is a dynamic narrative, characterized by innovation, adaptability, and an unwavering dedication to equitable progress [1-2]. It is a voyage propelled by a confluence of factors from the harnessing of cutting-edge technologies to the nurturing of indigenous industries and the elevation of local communities. This paradigm shift is not only a testament to India's resilience in the face of global challenges, but a testament to its determination to chart a course towards a more sustainable and prosperous future. This introductory chapter sets the stage for a compelling exploration of India's path towards self-reliance, rooted in principles of sustainable development. We will delve into the multifaceted strategies, technological advancements, and policy frameworks that are shaping this narrative. From fostering innovation hubs to

promoting green practices, and from revitalizing traditional crafts to embracing renewable energies, each facet contributes to an integrated vision of a self-reliant India that stands tall on the global stage [3-4]. This enlightening journey as we unravel the tapestry of resilience and self-reliance that is propelling India towards a future of sustainable development, where economic vitality harmonizes with environmental consciousness and social inclusivity. It is a journey that not only defines the destiny of a nation but inspires a vision for a more sustainable and equitable world. The following policies and strategies are encompassed for the sustainable future [5-7].

Promoting Renewable Energy Adoption

Increase the adoption of renewable energy sources like solar, wind, and biomass to reduce dependency on fossil fuels.

Enhancing Agricultural Sustainability

Implement sustainable agricultural practices like organic farming, crop diversification, and water conservation techniques.

Empowering Micro, Small, and Medium Enterprises (MSMEs)

Provide financial support, technology transfer, and skill development programs to enhance the productivity and sustainability of MSMEs.

Investing in Green Infrastructure

Develop and invest in green infrastructure projects like public transportation, renewable energy grids, and eco-friendly urban planning.

Strengthening Disaster Resilience

Invest in disaster preparedness, early warning systems, and resilient infrastructure to mitigate the impact of natural disasters.

Fostering Research and Development (R&D)

Promote R&D activities in key sectors such as clean energy, agriculture, and healthcare to drive innovation and technological advancement.

Advocating for Policy Reforms

Advocate for policies that incentivize sustainability, innovation, and responsible business practices at the government level. These strategies, supported by research findings from reputable journals, can serve as a framework for India's journey towards sustainable and self-reliant development. Implementing these approaches can lead to long-lasting positive impacts on the environment, economy, and society as a whole policy that can contribute to India's journey towards resilient and self-reliant sustainable development, along with corresponding journal Strategies to both adapt to and mitigate the impacts of climate change, including setting emission reduction targets [8-9].

Waste Management and Circular Economy Policy

India recognizes the critical importance of effective waste management and the adoption of a circular economy model in achieving sustainable development. This policy outlines a comprehensive framework that aims to minimize waste generation, maximize resource recovery, and promote a circular economy approach across all sectors.

Minimize Waste Generation

Implement measures to reduce the overall generation of waste through source reduction, recycling, and responsible consumption patterns. Encourage the adoption of sustainable packaging and product design principles to minimize waste at its source.

Promote 3R Principles (Reduce, Reuse, Recycle)

Establish mechanisms to promote the reduction, reuse, and recycling of waste materials in all sectors of the economy. Encourage industries to adopt innovative technologies for waste reduction and recovery[10].

Strengthen Waste Segregation and Collection Systems

Implement robust waste segregation at source and collection systems at the community level, ensuring separate streams for recyclables, organic waste, and non-recyclables. Promote community awareness and participation in waste segregation practices.

Facilitate Resource Recovery and Circular Economy Practices

Encourage industries to adopt circular economy principles, emphasizing the recycling and repurposing of materials. Support research and development in technologies that enable the efficient recovery of resources from waste streams.

Promote Extended Producer Responsibility (EPR)

Enforce EPR policies to hold producers accountable for the entire lifecycle of their products, including responsible disposal and recycling. Establish incentives for producers to design products with consideration for end-of-life disposal.

Invest in Waste-to-Energy and Bio fuel Technologies

Promote the development and deployment of waste-to-energy technologies and biofuel production from organic waste. Encourage public-private partnerships for investment in sustainable waste-to-energy projects.

Capacity Building and Skill Development

Provide training and capacity-building programs for waste management professionals, local authorities, and communities. Foster knowledge-sharing platforms to disseminate best practices in waste management and circular economy principles.

Regulatory Compliance and Enforcement

Strengthen enforcement mechanisms to ensure compliance with waste management regulations and standards. Implement penalties for non-compliance and reward exemplary waste management practices.

Monitoring and Evaluation: Regular monitoring and evaluation mechanisms will be established to assess the effectiveness of waste management and circular economy initiatives. Key performance indicators will be tracked, and necessary adjustments to the policy framework will be made based on evaluation outcomes. These policies collectively form a multifaceted approach towards resilient and self-reliant sustainable development in India. They address various aspects of environmental conservation, economic resilience, and social well-being. Please note that while the references provide further reading, it's important to consult official government documents and scholarly articles for the most up-to-date and accurate policy information[11].

Conclusions

In the pursuit of sustainable development, India's journey towards resilience and self-reliance is both commendable and promising. Through strategic measures, innovative approaches, and a steadfast commitment to environmental and economic well-being, India is charting a course towards a future characterized by self-sufficiency and sustainability. This transformative path not only strengthens India's economic foundation but also positions it as a beacon of responsible and resilient development on the global stage. As the nation continues to forge ahead, the world watches with anticipation, hopeful for the positive impacts that India's endeavors will have on the broader landscape of sustainable progress.

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A STUDY ON DEVELOPMENT OF VILLAGE AND COTTAGE INDUSTRIES WITH SPECIAL REFERENCE TO COIMBATORE CITY

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Abstract

In the setting of Coimbatore City in Tamil Nadu, India, this study examines the growth of rural and cottage industries. Coimbatore City, historically known for its industrial capabilities, particularly in textiles and manufacturing, now has to diversify its economy and promote sustainable growth. This study evaluates the state of the village and cottage industries in Coimbatore City using a mixed-methods approach, identifies major obstacles and opportunities, and develops tactical suggestions for their long-term growth. This study provides insights that can guide policies and practices aimed at reviving rural economies and enhancing urban-rural links in comparable locations by concentrating on the particular instance of Coimbatore City.

Keywords: Village and Cottage Industries, Economic Development, Socio-economic Impact, Local Economy , Small-Scale Enterprises.

Introduction

The establishment of cottage and village industries has a lot of potential to promote economic development, job creation, and sustainable development in both urban and rural settings. The goal of this study is to examine the potential and difficulties of rural and cottage industries in the setting of Coimbatore City, a thriving metropolis in the Tamil Nadu region of southern India. Coimbatore City, traditionally renowned for its industrial prowess, particularly in the textile and manufacturing sectors, is at a crucial juncture where it aims to diversify its economic base and establish strong rural-urban links to ensure long-term and inclusive development.

In addition to being important for Coimbatore City, the development of village and cottage industries also fits with larger national and international agendas for encouraging small businesses, offering livelihood possibilities, and developing sustainable practices. It is crucial to review the role and potential of these businesses in forming the urban and rural economies as economic paradigms change and global concerns like climate change and economic inequities worsen. This study intends to present a thorough analysis of the state of village and cottage industries in Coimbatore City, to evaluate their socioeconomic effects, to pinpoint the difficulties they encounter, and to offer tactical suggestions for their

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WOMEN ENTREPRENEURSHIP DEVELOPMENT IN INDIA

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Abstract

Women are an important part in achieving inclusive growth in an economy. In economic development entrepreneurship plays an important role. In India only a very few women participated in entrepreneurial activities till 1980. In 1980 "New Delhi Declaration and Plan of Action" focus development of entrepreneurial skills among women. In 1980-1990 many institutional initiatives were taken for women entrepreneurship. In 1990 after the liberalization, opportunities were recognized and started flourish for women entrepreneurs. The concept and classification of women entrepreneur is discussed. Analysis of hurdles faced by women and various government schemes available for women entrepreneurship is also studied. The few stories of successful women entrepreneurship are also shared. Finally, the conclusion came more rural and lower middle-class women should be supported with more entrepreneurial opportunities for overall growth in the economy.

Keywords: Women Entrepreneurship, Economy, Women Empowerment, Government.

Introduction

Large number of women entrepreneurs have setting up their business. But setting up these were not easy for them, they have faced a lot of difficulties and barriers to become successful. They have to face many challenges and hurdles coming in their way to create a successful business venture. Discrimination in the male dominated society, putting more efforts to prove their credibility. Women choose different style of entrepreneur than men.

Shanta Kahlil Chandra said the women focus more on relationships and believe in intuitions while serving a business, whereas men prefer logical thinking and efficacy. The strength of recognizing the hidden opportunities make them able to gain edge over men. The important part and characteristic in women are "Motherhood skills" which she can easily transfer to job. It includes monitoring, guiding and share information. In developing countries business women have general characteristics like:

1. More concentrated to market sectors as low entry level barriers and less communication required.
2. More focus on services, trade and manufacturing activities

WOMEN ENTREPRENEURS IN INDIA

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Abstract

Women is an important part in achieving inclusive growth in an economy. In economic development entrepreneurship plays an important role in India only a very few women participated in entrepreneurial activities till 1980. In 1980 "New Delhi Declaration and plan of Action" focus development of entrepreneurial skills among women. In 1980-1990 many institutional initiatives were taken for women entrepreneurship. In 1990 after the liberalization, opportunities were recognized and started flourish for women entrepreneurs. The concept and classification of women entrepreneur is discussed. The study was made on very government scheme women entrepreneurship and holed faced by women entrepreneurship in this regard. The few stories of successful women Entrepreneurship is also discussed in the article it is conducted that more rural and lower middle -class women should be supported with more entrepreneurial opportunities for overall growth in the economy.

Keywords: Women Entrepreneurship, Economy, Government.

Introduction

"Women entrepreneurs may be defined as the women or a group of women who initiate, organise and run a business enterprise. According to Schumpeter, "Women who innovate, imitate or adopt a business activity are called women entrepreneurs." According to the Government of India, a woman entrepreneur is defined as "an enterprise owned and controlled by a woman and having a minimum financial interest of 51 percent of the capital and giving at least 51 percent of the employment generated in the enterprise to women."

In a nutshell, we may state that women entrepreneurs are those women, who thinks of a business enterprise, initiate it, organise and combine the various factors of production, operate the enterprise and undertake risks and handle economic uncertainties involved in running a business enterprise.

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A STUDY ON THE CHALLENGES OF DIGITAL FINANCIAL INCLUSION

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Abstract

Financial inclusion through digital means has initiated the concept of digital financial inclusion which is intended to reach out vulnerable community without having digital financial access. This study is an attempt to analyze the various challenges concerning digital financial inclusion. As the main objective of this study was to assess the challenges and prospects of digital financial inclusion, ABCD analysis also has been undertaken to assess its Advantages, Benefits, Constraints and Disadvantages. This research is conducted through secondary sources in order to provide a full-fledged evidence-based study on the challenges of digital financial inclusion. The semi-systematic review is done through various published reports and articles from Springer, Taylor & Francis, Emerald, GoogleScholar, ResearchGate, etc.

Keywords: Digital Financial Inclusion, Challenges, ABCD Analysis.

Introduction to Digital Financial Inclusion

Financial inclusion is one of the cornerstones of a developing economy. Launched in 2015, Digital India has been regarded as a significant intervention to bring the unbanked population, who had been kept out of the mainstream economy, into the formal financial net. While there has been an improvement in digital transactions across the country, issues still remain of last-mile connectivity of banks and other financial institutions, dormant accounts, among others.

Financial inclusion relates to connecting marginalised and the underprivileged in the society to the mainstream economy, by means of providing financial literacy and access to banking and financial services. It is a multidimensional approach that involves bringing on board various stakeholders from the government and the people. India, with a population of more than 1.3 billion, has a large number of people who are still out of the formal financial net. As per the World Bank, about half of India's population is financially excluded (World Bank 2017a). On the other hand, a survey by Standard & Poor's Financial Services estimates that only 24% adults in India are financially literate (Klapper et al 2014). This study has been carried out to identify the major challenges in digital financial inclusion.

START-UP IN INDIA: OPPORTUNITIES AND CHALLENGES

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Abstract

The basic purpose of this article is to put some light on the challenges to be countered and opportunities to be capitalised upon by the start-ups entrepreneurs and the initiative taken by the Indian govt. The start-ups are the kind of companies which are innovative in their course of development, analysis, evaluation, research for the target segment. In this paper various govt. policies, plans, schemes, start up life cycle, financial and operational strategies related to start-ups will be discussed. Start up is one of the scorching events this era which everyone is talking about. This campaign is particularly based on enhancing the bank financing for the start-ups to encourage the entrepreneurship and creating skilled job availability towards the strengthening of economy at large.

Keywords: Entrepreneur, Govt. plans, Initiatives, Start-ups life cycle.

Introduction

Technological innovation is a new or improved product or process whose technological characteristics are significantly different from before. Implemented technological product innovations are new products (product innovations) or processes in application (process innovations) that have been brought to market. A startup or start-up is a company or project undertaken by an entrepreneur to seek, develop, and validate a scalable business model. While entrepreneurship includes all new businesses, including self-employment and businesses that do not intend to go public, startups are new businesses that intend to grow large beyond the solo founder. At the beginning, startups face high uncertainty and have high rates of failure, but minorities of them do go on to be successful and influential.

Startups typically begin by a founder (solo-founder) or co-founders who have a way to solve a problem. The founder of a startup will do the market validation by problem interview, solution interview, and building a minimum viable product (MVP), i.e. a prototype, to develop and validate their business models. The startup process can take a long period of time (by some estimates, three years or longer), and hence sustaining effort is required. Over the long term, sustaining effort is especially

GENDER EQUALITY AND WOMEN EMPOWERMENT IN INDIA

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The term gender refers to the economic, social and cultural attributes and opportunities associated with being male or female. In most societies, being a man or a woman is not simply a matter of different biological and physical characteristics. This paper deals with importance of gender equality towards achieving the goal of women empowerment. It outlines the gender inequality scenario in India and types of inequalities between men and women. This paper sheds light on importance of gender equality and role of gender equality in women empowerment, gender concern in development and gender mainstreaming in development. This paper concludes with some interesting findings along with policy suggestions.

Keywords: Gender, Attributes, Empowerment, Inequality, Economic development etc.

Introduction

Gender equity is the process of being fair to women and men. To ensure fairness, strategies and measures must often be available to compensate for women's historical and social disadvantages that prevent women and men from otherwise operating on a level playing field. Equity leads to equality. Gender equality requires equal enjoyment by women and men of socially-valued goods, opportunities, resources and rewards. Where gender inequality exists, it is generally women who are excluded or disadvantaged in relation to decision-making and access to economic and social resources. Therefore a critical aspect of promoting gender equality is the empowerment of women, with a focus on identifying and redressing power imbalances and giving women more autonomy to manage their own lives. Gender equality does not mean that men and women become the same; only that access to opportunities and life changes is neither dependent on, nor constrained by, their sex. Achieving gender equality requires women's empowerment to ensure that decisionmaking at private and public levels and access to resources are no longer weighted in men's favour, so that both women and men can fully participate as equal partners in productive and reproductive life .

NATIONAL EDUCATION POLICY 2020

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Abstract

The New Education Policy announced by Government of India (NEP 2020) was a welcoming change and fresh news amidst all the negativities surrounding the world due to the challenges posed by Covid-19 pandemic. The announcement of NEP 2020 was purely unexpected by many. The changes that NEP 2020 has recommended were something that many educationists never saw coming. Though the education policy has impacted school and college education equally, this article mainly focuses on NEP 2020 and its impact on Higher Education. This paper also outlines the salient features of NEP and analyses how they affect the existing education system.

Keywords: NEP 2020, Features of NEP, Challenges

Introduction

The Ministry of Human Resource Development formed a Committee chaired by Dr K. Kasturirangan for preparing the National Education Policy. The Committee was constituted in June 2017. The Committee submitted its report on May 31, 2019. The National Policy on Education covers elementary and university education in urban as well as rural India. The very first policy for education was promulgated in 1968 with the second one following in 1986. The first NPE was based on the recommendations of the Education Commission (1964-66). This policy sought to have a 'radical restructuring' of India's educational system and equalizing opportunities for education for all, to accomplish national integration and better economic and cultural development. The NPE also called for realizing compulsory education for every child until the age of fourteen, as mentioned in the Indian Constitution. It also aimed at providing enhanced training and improving teachers' qualifications. Compare NEP 2020 with NEP 1991 in the linked article. Some relevant points from the official NEP 2020 PDF that can be useful for the UPSC Mains Exam: NEP 2020 is the 21st Century's first education policy in India. The development of the creative potential of each student is emphasized in the National Education Policy 2020.



Volume 1

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Dr. R. Ramya

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WOMEN ENTREPRENEURS FACED BY PROBLEMS AND CHALLENGES

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Abstract

Women Entrepreneur is a single woman or group of women, who involves in the activity of planning, initiating, organizing, and adopting Business enterprise. Female entrepreneurship is gaining attention and importance in light of the evidence of the importance of new business creation for economic growth and development. Entrepreneurship refers to the act of setting up a new business so as to take advantages from new opportunities. Entrepreneurs are responsible for shaping the economy and they help in creation of new wealth and new jobs by inventing new products, process and services. We all understand that economic development of the today's women is crucial for economic development.

Keywords: *women entrepreneurs, challenges, problems, opportunities of women entrepreneurship*

Introduction

Women's entrepreneurship needs to be studied separately for two main reasons. The first reason is that women's entrepreneurship has been recognized during the last decade as an important untapped source of economic growth. Women entrepreneurs create new jobs for themselves and others and by being different also provide society with different solutions to management, organization and business problems as well as to the exploitation of entrepreneurial opportunities. Women are Born Managers as they can manage their entire home. They have the skill of balancing both business as well household responsibilities. Entrepreneurship refers to the act of setting up a new business or reviving an existing business so as to take advantages from new opportunities.

Objective

- To understand the concept and emergence of women entrepreneurship in India.
- To explore the challenges for women entrepreneurs
- To study the problems faced by women entrepreneurs

RURAL WOMEN EMPOWERMENT THROUGH SKILL DEVELOPMENT

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Abstract

Women participation and empowerment are fundamental women's rights to enabling women to have control over their lives and put forth influence in society. Women often face discrimination and gender inequalities, with some women experiencing multiple discrimination and exclusion because of factors such as background or caste. This paper is about skills development through vocational training along with various measures such as Pradhan Mantri Kausal Vikas Yojna, National Skills Development Corporation, National Skills Development Mission. Ministry of Labor and Employment has taken a number of initiatives in the field of skill development and employment. For instance, training of trainers, Vocational Training for girls is being conducted by Advanced Training Institutes and Regional Vocational Training Institutes run by the Ministry. Vocational Education and training are essential mechanism of any strategy to improve farm and nonfarm productivity that improves rural incomes. Skill is the bridge between job and workforce. Women often have different training needs than men, since they are more likely to work as contributing family workers, subsistence farmers, home-based micro entrepreneurs, or low-paid seasonal laborers, in addition to handling their domestic work and care responsibilities. Skills development is a key to improving household productivity, employability and income-earning opportunities for women and also for enhancing sustainable rural development and livelihoods.

Keywords: Women empowerment, Skills development, Vocational Education, Sustainable rural development, Livelihoods, Employability.

Introduction

Skills development and training is a key factor in tackling the challenges of rural poverty. By promoting employability and enhancing income earning opportunities, skills training can lift women and men out of poverty and promote sustainable rural livelihood. The ILO's Training for Rural Economic Empowerment (TREE) Programme provides an example of a proven approach that assists those working in poor rural communities to build the relevant skills and abilities for employment and income generation.

Historically, rural women are powerful, strong and purposeful women who are deprived by the circumstances of abuse, inequality, and lack of opportunities. These challenges have hindered their personal development, economic empowerment, and community leadership.

SKILL INDIA: CONNECTING INDIAN YOUTH TO GLOBAL OPPORTUNITIES

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*The more we give importance to skill development
and the more competent will be our youth*

- **Narendra Modi**

Abstract

Skill development is pivotal in empowering young individuals, enabling them to contribute meaningfully to their communities and societies. Acquiring practical skills enhances their employability and job prospects, boosting their confidence and self-esteem. Moreover, skill training equips young people with entrepreneurial abilities, enabling them to create their employment opportunities and contribute to economic growth. As a result of developing skills, youth gain self-sufficiency, reduce poverty, and become more socially integrated. This study mainly focuses on the opportunities and government initiatives on the development of youth skills.

Keywords: Skill, Empowerment, Global opportunities.

Introduction

Union Education Minister Dharmendra Pradhan chaired the 3rd meeting of the steering committee of National Skill Development Mission (NSDM). In the meeting, discussions centered around skill development schemes, skill gap analysis and skill mapping. A significant point of deliberation was on how the curriculum be developed keeping in mind the emerging trends so that Indian youth can connect with global opportunities.

Various steps are taken to make India's youth ready for the future. The future expects one to be updated with the skills of emerging times. On 21st April 2022, the Pradhan Mantri National Apprenticeship Mela was launched. Apprenticeship is considered the most sustainable model of skill development, and it has been getting a big boost under Skill India Mission. The government is aiming to train one million youth per annum through apprenticeship training. The training is conducted every month from June 2022. Even to sail the boat of unplanned times, over 1.20 lakh candidates were trained under Customised Crash Course programme for COVID warriors.

PERSPECTIVE OF ICT TOOLS IN EDUCATION

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PERSPECTIVE OF ICT TOOLS IN EDUCATION

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WOMEN EMPOWERMENT IN INDIA AND ITS IMPORTANCE

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Abstract

Entrepreneurs play a crucial role in any economy. The economic progress of any country or society will be impossible unless female population is encouraged to engage in entrepreneurship. Entrepreneurs are those who come out with innovative ideas which play a significant role in the growth of a business. Women empowerment refers to the practice of making women independent, so that they can make their own decisions as well as handle their lives without any familial or societal restrictions. Women are known for delivering multiple roles effortlessly. Women are empowered when they have an unrestricted access to education, training, profession to help them improve their position. In a male chauvinistic society, they were confined to four walls. In the present scenario, due to changing trends in industrial sector because of globalisation, rural women empowerment is given more attention to flourish rural entrepreneurship. Rural women entrepreneurs are not only participating in the upliftment of rural economy but also generating rural employment. It reveals that the major challenges faced by the rural women entrepreneurs are competition from urban markets, lack of family support, difficulty in availing Government grants, marketing issue, shortage of resources, lack of transportation, lack of entrepreneurship skill, and lack of training. Despite of all these difficulties, there is a gradual increase in the recognition of rural women entrepreneurs in India. A proper analysis of rural locations and determining the strengths favouring rural women entrepreneurs would encourage more young people to shop in rural areas. Women entrepreneurship must be moulded properly with entrepreneurial traits and skills to meet the changes in trends, challenges in global markets and also be competent enough to continue and struggle for excellence in the entrepreneurial arena. This paper brings out the role played by women entrepreneurs in rural area and their importance in India.

Keywords: Entrepreneurship, Empowerment, Rural women entrepreneurs, Male chauvinism, Economic progress.

Introduction

An entrepreneur is a person who is motivated to satisfy a high need for achievement in innovative and creative activities. This creative behaviour and innovative spirit forms a process of an endless chain and is termed as entrepreneurship. Entrepreneurship acts as a crucial pillar for the economic prosperity of a nation, as it leads to generation of employment, contribution to national income, rural development, industrialisation, technological development, export promotion, etc. For, decades, we have been witnessing changes that have been taken place in terms of roles and statuses among human beings. There have been an enormous evolution in the status of women in past two decades. For centuries, women haven't been provided with proper education from

ICT FOR PROFESSIONAL DEVELOPMENT

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Topic of Ict

- Introduction
- Objectives
- ICT in Education
- ICT Tools for teaching learning process
- Professional development of teaching
- Tools of ICT
- Modern Technology in ICT
- Covid-19
- Conclusion
- Reference



Introduction

Information and communication technology (ICT) is an umbrella term that include any communication device or application encompassing mobile phone, computer and network hardware, software, internet, satellite and so on...

ICT in Education is the mode of education that use information and communication technology to support, enhance, and optimize the delivery of information. worldwide

EMERGING DISRUPTIVE TECHNOLOGY IN EDUCATION

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Introduction

Before the age of computer and digital communication technology, traditional classroom education has been used for the transfer of knowledge from teacher for the student and high dependency was there on the capabilities of the tutor. Knowledge transformation was also limited in time and space by there sources available to students such as libraries etc. But the scenario is change now. There are many digital technologies are available which have high impact on education system. Also due to globalization, there is a pressure on nations of the world to use new technologies in teaching.

There are many technologies have disrupted both our every day lives and commerce. Many disruptive technologies in education are also introduced and the students (according to their needs and teachers can use different technologies controlled by different higher education institutions to support and entire their learning and teaching. The use of ICT is rapidly changing the technological forces that will shape the structure of educational systems of the world.

The role of teaching in a classroom is to help students who are slow learner and to catch up them with other students. But what is about them who are faster at learning? For those students, there are additional courses according to their interests to fulfill their requirements of free elective students. MOOCs is there to enhance online learning with technology.

The teachers can post their instructions online to participants through MOOCs, which is helpful to students to know how to complete the course. The integration of online course material can increase interaction among students and between the students and the teacher, for exp. through virtual group work, building an online community for module, discussion questions, instructor participation and so on. A number of institutions offer virtual distance learning which allows teachers and students to interact with each other.

Digital technology thus provide the potential for establishing communities of inquiry in which elements of social presence and teaching presence interact to create an education experience. Disruptive technologies are also provide an opportunity to those students who can't not come to traditional institutions due to scheduling issues. There are other disruptive technologies also which are useful in education such as cloud learning, mobile learning, e learning, artificial intelligence etc. And are mentioned in the next section of this paper.

ICT TOOLS IN TEACHING AND LEARNING

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Abstract

The objective of this research was to study in depth the thoughts, beliefs and opinions of the teachers " attempt towards pedagogical improvement as part of the Smart School Project. Specifically this research examines and describes the teachers implementation of T&LICT in the classroom in terms of the instructional practice, the instructional roles and the instructional environment. A case study research methodology is employed. The case is Sekolah Menengah Bestari (a pseudonym), which is a Smart School in Sabah. Analysis of data from 52 survey questionnaires complemented the qualitative data from the 13 interviews and 3 observations, as well as document analysis. Findings indicated that hardware and software technology infrastructure were available to support the T&LICT implementation. Nevertheless, the teachers felt it was not enough to implement T&LICT effectively. It was estimated that about half of Sekolah Menengah Bestari staff, mainly Bestari and ETeMS teachers, implemented T&LICT. Findings indicated that teacher practices were little changed. IT was used mainly to support the existing teacher-directed and teacher-centered approach. The role of the teacher extended to that of facilitating without releasing control of lesson to the students.

In relation to the integration of ICT in teaching and learning (T&LICT) is aimed at addressing the need to create a knowledge society and a technology literate workforce for the twenty-first century. Schools have a need to adopt an information-literacy curriculum; and students have a need to develop their ICT and thinking skills and take the responsibility for their own learning. Such needs would be met within a technology-enabled teaching and learning environment that emphasizes student self-direction and self-regulation. The Smart School Project is an example of a major educational change initiative to improve classroom teaching and learning practice within such an environment (Smart School Project Team, 1997). Technology, especially the computer, is seen as a critical tool to support this change in instruction by allowing and supporting inquiry and exploration by student.

Change towards T & L ICT

In the Smart School The Malaysian Smart School was visualized as "a learning institution that has been systemically re-invented in terms of learning-teaching practices and school management in order to prepare children for the Information Age" (Smart School Project Team, 1997, p. 10). The Smart School pedagogy that integrates ICT would see a paradigm shift from the directed to the constructivist teaching and learning.



IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

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IMPACT OF NEW EDUCATION POLICY AMONG FUTURE GENERATION

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ROLE OF NEP 2020 IN TRANSFORMING HIGHER EDUCATION IN INDIA

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Abstract:

Well defined and futuristic education policy is essential for a country at school and college levels due to the reason that education leads to economic and social progress. India with the leadership of its current prime minister and an expert team with members of varied backgrounds has developed and planned to implement a new education policy during the next decade of the 21st century called Indian National Education Policy (NEP-2020). The aim, objectives, and details are well known to practitioners and the public. NEP-2020 is an innovative and futuristic proposal with both positive and negative aspects, framed with the objective to provide a quality school education and higher education to everyone with an expectation of holistic & research-oriented progress. This paper initially depicts an overview of NEP-2020, distinguish the strengths & weakness of the policy at higher education & research part, evaluation of the implementation suggestions given in the policy, identifying and analyzing possible generic strategies for implementation of NEP-2020 to fulfill its objectives based on focus group discussions. The paper also includes many predictive proposals on issues like developing quality universities & colleges, institutional restructuring & consolidation, more holistic & multidisciplinary education, optimal learning environment & student support, transforming the regulatory system of higher education, technology usage & integration, and online & digital education. Finally, some recommendations are made to implement the NEP2020 effectively irrespective of various constraints. This article can be considered as a reference to the policy implementation teams of Government of India.

Keywords: *NEP 2020, , features of NEP, vision of NEP Indian Higher Education Policy, Implementation Strategies, Indian Higher Education System,*

Introduction

Education is fundamental for achieving full human potential, developing an equitable and just society, and promoting national development. It is becoming increasingly critical that children not only learn, but more importantly learn how to learn. The curriculum must include basic arts, crafts, humanities, games, sports and fitness, languages, literature, culture, and values, in addition to science and mathematics, to develop all aspects and capabilities of learners; and make education more well-rounded, useful, and fulfilling to the learner. The gap between the current state of learning outcomes and what is required must be bridged through undertaking major reforms that bring the highest quality, equity, and integrity into the system, from early childhood care and education through higher education. This

OPPORTUNITIES AND CHALLENGES IN NEP AND HEI

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Introduction:

India, with its massive and diverse population, recognizes the pivotal role of education in shaping the nation's future. In response to the evolving global landscape and the need for a comprehensive educational overhaul, the Indian government introduced a new education policy. This policy extends its scope beyond primary and secondary education to encompass reforms in higher education institutions (HEIs) as well. This article explores the opportunities and challenges presented by the new education policy in India and its impact on HEIs, analysing how it can shape the future of higher education in the country.

Opportunities:

Holistic Development and Interdisciplinary Approach

The new education policy emphasises holistic development, focusing on nurturing well-rounded individuals rather than encouraging rote learning. This approach creates an opportunity for HEIs to design interdisciplinary programs that allow students to explore diverse subjects and develop critical thinking, problem-solving, and creativity.

Flexibility and Choice-Based Credit System:

The policy advocates a flexible approach to higher education, promoting choice-based credit systems (CBCS). This system enables students to select courses based on their interests and career aspirations, providing a personalised learning experience.



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ROLE OF MSME SECTOR IN INDIA ECONOMY

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Abstract

The micro small and medium enterprises (MSMEs) have been accepted as the engine of economic growth and for promoting equitable development. The labour intensity of the MSME sector is much higher than that of the large enterprises. The micro small and medium enterprises (MSMEs) have been accepted as the engine of economic growth and for promoting equitable development. The labour intensity of the MSME sector is much higher than that of the large enterprises. The MSMEs constitute over 90% of total enterprises in most of the economies and are credited with generating the highest rates of employment growth and account for a major share of industrial production and exports. The MSMEs play a vital role in the overall growth of industrial economy of the country. With its agility and dynamism, the sector has shown admirable innovativeness and adaptability to survive the recent economic downturn and recession and have lots of opportunities to grow in the future. This paper enlightens the growth of MSMEs and outlining the opportunities available for the MSMEs in the Indian economy.

Keywords: MSME, vital, economy, employment, challenges.

Introduction

In the past few years, MSMEs have generated a huge number of employments, at a relatively lower cost of capital as compared to the large-scale business or ventures or establishments. As there is the increase in employment opportunities in the MSME sector, they help increase the country's socio-economic development. The MSME sector not only providing employment but also helped rural development which was the biggest challenge in front of the Government as in initial phase of industrialization which has attracted rural population towards urban region. It has provided balanced regional development of the country and proved as a key success factor for rural development. The Ministry of Micro, Small and Medium Enterprises (MSME) intends to make the MSME sector, including Khadi, Village and Coir Industries even more vibrant by providing support to existing enterprises and encouraging creation of new enterprises, by way of various programmes and schemes in cooperation with concerned Ministries, Departments and State Governments.

EMPOWERING INDIA'S MSMEs: PATHWAY TO ECONOMIC GROWTH, RESILIENCE, SOCIAL INCLUSION

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Abstract

Micro, Small, and Medium Enterprises (MSMEs) play a pivotal role in India's economic landscape. They contribute significantly to employment generation, GDP growth, and foster economic inclusivity. The study begins by providing an overview of the MSME sector's current state, acknowledging its challenges and potential. It then delves into the strategies necessary for fostering growth and resilience. These strategies include streamlined regulatory frameworks, access to finance, technology adoption, skill development, and market linkages. Moreover, it highlights the need for a supportive ecosystem that encourages innovation and entrepreneurship. It emphasizes the importance of gender diversity and equitable opportunities for marginalized communities. Inclusive growth not only ensures a fair distribution of economic benefits but also enhances social harmony and stability.

Keywords: *Self-Reliant India Mission, MSME, Self-reliant and globally competitive*

Introduction

Micro, Small, and Medium Enterprises (MSMEs) stand as the backbone, serving as engines of growth and innovation. These nimble and dynamic entities collectively form the bedrock of economic activity, contributing significantly to GDP, generating employment opportunities, and fostering regional development. The unparalleled potential of India's MSME sector to drive economic growth, build resilience in the face of challenges, and promote social inclusion cannot be overstated. It delves into the myriad ways in which these enterprises have consistently emerged as pillars of economic development, even in the face of adversities. Furthermore, it underscores the imperative of empowering MSMEs, providing them with the resources, support, and opportunities necessary to unleash their full potential.

India's MSME sector is remarkably diverse, encompassing a wide range of industries from manufacturing to services. It is characterized by its adaptability and ability to cater to both domestic and international markets. As a major source of employment, particularly for marginalized sections of society, it acts as a catalyst for social inclusion and poverty alleviation. However, the sector also faces numerous challenges, ranging from access to finance to technology adoption. In an increasingly interconnected and competitive world, it



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SELF-RELIANT INDIA MISSION- A REVOLUTION IN THE GROWTH OF INDIAN ECONOMY

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Abstract

The Self-Reliant India Mission, also known as 'Aatmanirbhar Bharat Abhiyan,' is a comprehensive economic and policy initiative launched by the Government of India. This mission aims to transform the Indian economy into a self-reliant and resilient one, reducing dependency on imports and promoting domestic production. The mission was unveiled against the backdrop of the COVID-19 pandemic and global economic challenges, making it a significant turning point in the growth trajectory of the Indian economy. The Self-Reliant India Mission is a bold and transformative initiative that aims to revolutionize the Indian economy. By fostering domestic production, encouraging innovation, and reducing dependency on imports, it aspires to make India self-reliant and globally competitive.

Keywords: *Self-Reliant India Mission, 'Aatmanirbhar Bharat Abhiyan, India self-reliant and globally competitive*

Introduction

Hon'ble Prime Minister during his address to the Nation on 12th May, 2020 mentioned that a virus has destroyed the world. Crores of people around the world are facing a crisis. World all over is engaged in a battle to save precious lives. This crisis is unthinkable as well as unprecedented for mankind. He directed to remain vigilant, closely monitor, follow the rules of engagement in such a war, save ourselves and move ahead. He informed that the state of the world today teaches us that a (Atmanirbhar Bharat) "Self-reliant India" is the only path. In order to fulfill the dream of making the 21st century India's, the way forward is through ensuring that the country becomes self-reliant. This vision of India - turning crisis into opportunity- is going to prove equally effective for our resolve of self-reliant India as the production of PPE kits, N-95 masks in India has gone up from almost being negligible to 2 lakh each, on a daily basis. Prime Minister remarked that the definition of self-reliance has undergone a change in the globalized world and clarified that when the country talks about self-reliance, it is different from being self-centered. He said that India's culture considers the world as one family, and progress in India is part of, and also contributes to, progress in the whole world.

Key Highlights of Self-Reliant India Mission

The Self-Reliant India Mission aims towards cutting down import dependence by focussing on substitution while improving safety compliance and quality goods to gain



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